Cal PA DATA REQUEST
Cal PA-SDG&E-DR-02
Application for Approval of Electric Vehicle High Power Charging Rate SDG&E
RESPONSE
DATE RECEIVED: August 7, 2019
DATE RESPONDED: August 20, 2019

1. For each of the five use cases SDG&E assumes in Chapter 3 of its testimony, provide the source SDG&E used to obtain the following information:

   a. # of vehicles per site.

   SDG&E Response:

   - MD EV Depot (Large): The assumption of 20 vehicles is an illustrative example which reflects a potential scenario and the illustrative bill impacts under that scenario.
   - MD EV Depot (Small): The assumption of 3 vehicles is an illustrative example of a small fleet which reflects a potential scenario and the illustrative bill impacts under that scenario.
   - Transit Bus Depot: The assumption of 20 vehicles is an illustrative example which reflects a potential scenario and the illustrative bill impacts under that scenario.
   - School Bus Depot: The assumption of 20 vehicles is an illustrative example which reflects a potential scenario and the illustrative bill impacts under that scenario.
   - DC Fast Charger: N/A.

   b. Non-direct current fast charger (DCFC) use cases: Miles driven per vehicle per day. DCFC use case: Hours/day utilized.

   SDG&E Response:

   - MD EV Depot (Large): The assumption of 50 miles per vehicle per weekday is based on national average annual miles traveled reported by the Federal Highway Administration for a single-unit truck (12,958 miles per vehicle per year).[1]

[1] Federal Highway Administration. Highway Statistics 2016, Table VM-1. Single Unit Trucks, annual miles traveled: 12,958. Accessed 11/20/18 at http://www.fhwa.dot.gov/policyinformation/statistics/2016/.

- MD EV Depot (Small): The assumption of 36 miles per vehicle per day is based on national average annual miles traveled reported by the Federal Highway Administration for a single-unit truck (12,958 miles per vehicle per year).[2]

- Transit Bus Depot: The assumption of 129 miles per vehicle per weekday is based on the national average annual miles traveled reported by the American Public Transit Association for a transit bus (34,053 miles per vehicle per year).[3][4]

- School Bus Depot: The assumption of 48 miles per vehicle per weekday year-round is based on national average annual miles traveled reported by the American School Bus Council for a school bus (12,000 miles per vehicle per year).[5]

- DC Fast Charger: Seven hours per day is an illustrative example of a

DCFC station with moderate usage.

c. kW/Charger.

SDG&E Response:

- MD EV Depot (Large): The assumed 20 kW charger is an illustrative example based on SDG&E's observation of industry trends.

- MD EV Depot (Small): The assumed 20 kW charger is an illustrative example based on SDG&E's observation of industry trends.

- Transit Bus Depot: The assumed 80 kW charger is an illustrative example based on SDG&E's observation of industry trends.

- School Bus Depot: The assumed 20 kW charger is an illustrative example based on SDG&E's observation of industry trends.

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[2] Ibid.
[3] Alternative Fuels Data Center, Average Annual Vehicle Miles Traveled of Major Vehicle Categories. Accessed
[4] /30/2019. https://afdc.energy.gov/data/10309
[5] Alternative Fuels Data Center, Average Annual Vehicle Miles Traveled of Major Vehicle Categories. Accessed 5/30/2019. https://afdc.energy.gov/data/10309

- DC Fast Charger: The assumed 100 kW charger is an illustrative example based on SDG&E's observation of industry trends.

d. What assumptions went into SDG&E's assumed load profiles.

SDG&E Response:

- MD EV Depot (Large): This illustrative load profile is consistent with the vehicles fully recharging during Super Off-Peak hours.
- MD EV Depot (Small): This illustrative load profile is consistent with the vehicles fully recharging during Super Off-Peak hours.
- Transit Bus Depot: This illustrative load profile is consistent with the vehicles fully recharging during Super Off-Peak hours.
- School Bus Depot: This illustrative load profile is consistent with the vehicles fully recharging during Super Off-Peak hours.
- DC Fast Charger: [redacted]

2. In SDG&E's Chapter 3 Workpapers, Worksheet "2 MD EV Depot (Small)", Note #8, SDG&E states "Annual VMT assumed to be similar to scenario 2 due to similar class vehicle". Please clarify what "scenario 2" SDG&E is referring to, as the note is present in the worksheet numbered "2".

SDG&E Response: This is an error. The footnote should refer to scenario 1, the MD EV Depot (Large). The annual Vehicle Miles Travelled are similar for both the Large and Small EV Depots, as both are based on the same Federal Highway Administration data.

3. In SDG&E's Chapter 3 Workpapers, Worksheet "3 Transit Bus Depot", SDG&E assumes that transit buses will only charge on weekdays.

   a. Please explain why SDG&E assumes that transit buses will not also operate on weekends.

   SDG&E Response: This is an assumption made for modeling simplicity in this illustrative example.

b. Please explain why even if the transit buses will not operate on weekends, why SDG&E assumes there will not be any charging on weekdays. For example, if a bus operates Monday-Friday and connects to a charger Friday evening, it could begin charging Saturday at midnight, rather than waiting until Monday at midnight.[6]

SDG&E Response: The assumption in this illustrative example that the transit buses modeled only charge on weekdays is made for modeling simplicity.

4. In SDG&E's Chapter 3 Workpapers, Worksheet "4 School Bus":

a. Note #4, SDG&E states "Vehicle efficiency data from industry sources". Please state and provide the industry source SDG&E used for its vehicle efficiency data.

SDG&E Response: This scenario assumes a diesel school bus efficiency of 8 miles per gallon and an electric school bus efficiency of 1.3 kilowatt-hours per mile. The electric and diesel school bus efficiency data was provided by Kevin Matthews of National Strategies, a state and local government consulting firm.

b. In Rows 16-30, SDG&E appears to assume that school buses will have the same rates of charging per week in the summer as in the winter.[6] Please explain why SDG&E makes this assumption, considering that most schools have an extended break between June-August.

SDG&E Response: This is an assumption made for modeling simplicity in this illustrative example.

5. In SDG&E's Chapter 3 Workpapers, Worksheet "5 DC Fast Charger":

a. Provide the source of SDG&E's assumption that DCFCs will be utilized for 7 hours per day.

SDG&E Response: See response to question 1.b.

b. Provide the source of SDG&E's assumptions for utilization factors by hour.[7]

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[6] Public Advocates Office is aware that under the EV-HP time-of-use periods a vehicle charging from midnight to 4 am on a Saturday will be charged the same rate as a vehicle charging from midnight to 4 am on a Monday. Nevertheless, SDG&E should provide insight for why it makes this assumption of weekday-only charging.
[6] I.e. because the kWh for each hour are the same in rows 20, 25, and 30.
[7] Column O starting at Row 33.

SDG&E Response: See response to question 1.d.

6. In SDG&E's Chapter 3 Workpapers, the Note #2 for each of SDG&E's five use cases states "Hourly load profile for [use case] is based on SDG&E's data/assumptions." For each use case, please elaborate on what data and assumptions SDG&E used to develop its hourly load profiles.

SDG&E Response: See response to question 1.d.

7. Please confirm that SDG&E is not proposing to make a new customer class for DCFC and medium- and heavy-duty (MD/HD) vehicles.

SDG&E Response: SDG&E is not proposing to create a new customer class for DCFC and MD/HD EV charging.