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 (Filed December 13, 2018)

SAN DIEGO AIRPORT PARKING COMPANY (SDAP) COMMENTS ON METRICS AND MTHEDOLOGIES WORKSHOP FROM MAY 9, 2019

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May 30, 2019

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I. INTRODUCTION

San Diego Airport Parking Company (SDAP) respectfully submits the following comments. Pursuant to the e-mail issued by Carolyn Sisto on May 10, 2019, parties are granted an opportunity to submit written comments.

SDAP agrees with many aspects of the Data Collection that has been prepared for the evaluation process and would like to identify other improvements to the current efforts that needs to be considered and will achieve a more accurate measurement of the parameters that can help to determine standards that will be critical to achieve a TEF solution that creates a reliable, feasible TE feet deployment for all stakeholders including the MHD which is much more complex and the reliability and safety elements for commercial motor carriers needs are more highly sensitive and require these fleets to meet the California Code of Regulations for Title 13 Motor Vehicles, Division 2 Department of the California Highway Patrol, Chapter 6.5 Motor Carrier Safety.

> The general provisions of this chapter are as follows:
> (a) Inspections by Department. Motor carriers shall afford authorized representatives of the department a reasonable opportunity to enter terminals, maintenance facilities, farm labor camps, or other private property to inspect vehicles and records to determine compliance with this chapter. Every driver shall permit the inspection of any vehicle or pertinent records for which the driver is responsible or has under his or her control.

(b) Authority of District Boards. The governing board of any school district, county superintendent of schools, or equivalent private school entity or official, may adopt and enforce additional requirements governing the transportation of pupils. Such requirements shall not conflict with any law or state administrative regulation.

(c) Application to Private School Buses. The provisions of this chapter shall apply equally to private school buses and to private school officials and agencies unless the context clearly indicates that no such application may reasonably be made.

(d) Special Application. Regulations in this title relating to buses and to the transportation of passengers shall also apply to trailer buses.

(e) Exemptions. The Commissioner may grant exemptions from any of the requirements of this chapter when, in his judgment, requests appear reasonable, or the results intended by these regulations can be accomplished by alternate methods of compliance. However, no exemption will be granted if, in the opinion of the Commissioner, the exemption would compromise the safety requirements of these regulations. In addition, any exemption granted by the Commissioner is nontransferable and may be rescinded at any time for cause.

This code of Regulations and the TE technology will need to prioritize safety for the MHD fleets that will be displacing into these heavier vehicles that are 100% proprietary equipment, which creates new barriers and challenges than that of the Light Duty passenger cars. Many of these Motor Carrier fleets require safety inspections every 45 days. San Diego Airport Parking Company adopted and displaced 50% of it's fleets into TE in 2015 and thereby has gained experience on the ground regarding the limitations of the technology and the barriers and cost, thereby SDAP has lessons learned from their experience and along with the current advancements in technology , this has encouraged SDAP to evaluate its next procurement into its 2nd generation of the EV technology. SDAP will have delivery by July 1, 2019 of the 2nd generation of EV vehicles and EVSE, which will now incorporate fast DCFC charging for the first time in SDAP's fleet.

II. DISCUSSION ON DATA COLLECTION

A. Site Capacity Limitations

- Be sure to gather data of the site limitations prior to the deployment on both the energy and voltage limitation.
- Circuit capacity
- Then after install what is the "new" limitation of capacity and voltage.
    - This will be good to understand if this site will ever be able to grow to 100% and then, what is the new limit.

B. Building Load

- Understand the facilities existing building load.

C. Upgrade cost Drivers and Alternatives

- Site Agreements
    - What kind of agreements are required before install beyond planning permits?
        - Easements
        - Licensing Agreements
        - Environmental
        - ADA
- Making sure that all construction and upgrade cost are documented as these details can sometimes be mitigated by alterative solutions and thereby understanding the following data for construction and installation is imperative:
    - Trench length
    - Trench distance to EVSE
    - Is Transformer shared
    - Is Transformer on same side of street and accessible
    - For 100% TE what would be required?
    - How many spaces does each piece of equipment require?
    - How many total parking spaces or SF was required and lost to the business due to the infrastructure installation?
    - Dimension of each piece of equipment
    - Dimension and SF required AFTER installed as the following are "other" requirements which take up more space:
        - Bollards
        - Cement Casting
        - Easement from building or other requirements
        - Working room for Utilities or for other reasons which prohibit area to be used either in front, behind or on the sides of the completed infrastructure.
            - For example, the Transformer requires working room in front of it for the Utilities.
    - Reach distance of the cable on EVSE to plug into the vehicle.
        - This can be different with pullies or with the location of the connector on the vehicle. Typically, the length is 20 feet; but with pullies and the location of the door for the connector on the vehicle you could end up with a problem.
        - Alternatively, this can be solved if all parties think this through in advance.
    - Design Sign-off document of verses Civil plans
        - Be sure all inches and feet are accounted for as a design sign-off document does not provide the same details as the Civil plans, which leaves room for interpretation and thereby potential problems.
    - Number of Change Orders

- What was change order?

- Alternatives
    - What other solutions were explored beyond Grid tied 100% and or an EVSE for each vehicle. What other devices and equipment could enable flexibility of charging or shaving load, construction cost and upgrades.
        - Battery Storage
        - AC verses DC
        - Higher Power at 480 Volts
        - Rates during daytime
            - Reduced Carbon Intensity during the daytime periods should be a priority.

D. Vehicle Information

- Create a Vehicle ID for each Vehicle
    - In cases where a hub is shared, you may have multiple Classifications of vehicles charging from the EVSE.
        - A light duty car parking for several days will not have the same requirements as the fleet.
        - The power level capability of one vehicle from another could vary.
        - The health and/ or SOC of the vehicle charging impacts opportunities.
    - GVWR and Unladen Weight
        - Impacts the fuel economy of the vehicle
        - Impacts cargo limits and or number of seats
    - Downtime
        - What was reason
        - What was equipment
            - Vehicle
            - EVSE
            - Other
        - How many days down
            - Reported date to OEM?
            - Date of failure?
            - How long to get back on road?
    - Delivery timeline of EV vehicles.
    - Vehicle Maintenance cost
    - Local Garage Support
        - Time and Hours available
        - Distance to fleet site
        - Experience with EV's
        - High Voltage Experience
        - Tools to diagnose EV failures

E. Power Mix of the Grid

- What is the Power Mix at the circuit that is providing the power to the premises?

F. Events Triggered by Load

- Circuit Load
- System Load
- Number of Events by Season
- Number of Events Weekend verses Weekdays
- Compare Events by Circuits
    - This should be watched as events have an impact on rates.
    - We need to learn more about dynamic rates and this data.
    - Events will have a higher impact on fleets and could be difficult to manage and will result in some very high kWh rates in the Summer that will greatly impact the budget of fleets if this is not well planned.

G. Rates

- Billing number of kWh
- Billing number of kW (Non-Coincidental Demand)
- Billing number of kW (Peak Demand)
- Final Billing Price
    - Final price determines the "actual" out the door kWh cost.
    - This is NOT the same as the advertised kWh.

H. EVSE Charging Sessions

- How many Charging sessions per driver shift?
    - This can increase range when planned into the solution.
    - This creates a new "sweat equity" cost to manage drivers to top-off during the day.
    - Understanding the success of new EV driver protocols will enhance the experience and bring an understanding on the types of requirements and opportunities for improvement by each fleet and or vocation.
    - Power Level can be a deal breaker if it is too slow it will prohibit the vehicle to stay on the road.
    - Dwell time before and after implementing EV charging.
- How many times charging occurred OFF site?
- EVSE warranty

I. Driving Education

- What is the Miles replenished by minute?
    - This can help drivers support the technology at optimal cost per mile.
- Ability to convert kWh to Mileage

- This impacts cost

J. Worse Operational Use Case Scenarios

- Any new prototype will require testing its limits to understand the benchmark for that vocation in this new technology.
- Test each use case for its vocational limits:
    - Hottest day
    - Loaded vehicle
    - High demand day
    - On the road back to back with limited and very short dwell time
    - Auxiliaries being used for comfort of service and safety
    - Hilly route
    - 2 driver shifts, back to back
        - running 140 miles each shift
        - 4am to 2pm and then 2pm to midnight for each driver shift.
    - Example for Airport Vocation:
        - <u>Scenario 1</u>
            - Thanksgiving and Christmas Weeks
            - Very high demand of customers
            - All supply of parking and bus seat capacity will sell out.
            - All vehicles loaded with no daytime dwelling available
            - 2 driver shifts are back to back, running 140 miles each shift, 4am to 2pm and then 2pm to midnight for each driver shift.

        - <u>Scenario 2</u>
            - August 15th Summer Day, hottest day of the year
            - Grid is loaded
            - Events triggered from 7am to 7pm
            - Buses loaded
            - AC being used all day
            - 2 driver shifts are back to back, running 140 miles each shift, 4am to 2pm and then 2pm to midnight for each driver shift.
        - These types of "worse" case scenarios will educate all of us on what is "required" for each vocation.
        - SDAP has learned that it cannot successfully operate without a minimum of 50 kW of charging power with 3-phase 480 Volts of wiring on the premises and vehicles and EVSE's to match it.
            - Anything slower than 50 kW we run out of range.
            - Battery pack is limited due to payload limitations.
            - Fuel Economy, too much battery pack, will increase the cost per mile, finding the sweet spot for each vocation in this technology is critical for good experiences.
                - Understanding the requirements can determine how to create a benefit if the elements in your solution are considered and implemented.

K. Break Even Point

- How many years to pay back?
- Other Alternatives:
    - Reduced number of EVSE's
    - Reduced construction cost
- Cost Solution Alternatives
    - Storage
    - High Power
    - Incentive Day-Time Rates

L. Revenue

- Number of kWh sales and Revenue to IOU for each use case

M. LCFS Credits

- Cost effects to manage
- Credits earned
    - How many?
- Reduced kWh cost?
    - Able to monetize and sell credits?
- EVSE ownership model
    - Who reported and earned revenue from the credits?
        - Fleet
        - IOU
        - EVSP

SDAP continues to express how imperative that this data collection effort is to our TE projects and it should also incorporate alternative solutions for fleets that have little to no data to reference. The equipment and rates need to support the business case and the recommendation in the new OIR states the following:

> *…should identify mechanisms such as stronger cost-based time-of-use (TOU) rates that reduce the cost of using off-peak electricity as a transportation fuel well below the cost of conventional fuels such as diesel and petroleum…[and] should also ensure ZEV rates align with other demand response and load management programs to facilitate and encourage customers to participate in all existing applicable efforts to better integrate ZEV charging load onto the grid*.

SDAP believes that the balances of various alternative cost and incentives needs to be addressed in the data collection all while achieving the TEF goals for driving ZEV's at a cost below conventional fuel.

III. CONCLUSION

SDAP thanks the CPUC Commission and the Evaluator team for creating this opportunity to provide comments.

Respectfully submitted on this day of May 30, 2019.

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