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January 31, 2020

Ms. Ana Trevino
Public Utility Commission of Texas
1701 N. Congress Avenue, Room 8-100
P.O. Box 13326
Austin, TX 78711-3326

RE: Project No. 49125, Review of Issues Related to Electric Vehicles

Dear Ms. Trevino:

I write on behalf of TechNet to provide comments on Project No. 49125, a review of issues related to electric vehicles.

TechNet is the national, bipartisan network of technology CEOs and senior executives that promotes the growth of the innovation economy by advocating a targeted policy agenda at the federal and 50-state level. TechNet's diverse membership includes dynamic American businesses ranging from startups to the most iconic companies on the planet and represents more than three million employees and countless customers in the fields of information technology, e-commerce, the sharing and gig economies, advanced energy, cybersecurity, venture capital, and finance.

Our member companies include current and potential adopters of electric vehicles as well as companies offering electric vehicle charging solutions. As electric vehicle adoption increases not only in Texas, but across the globe, our companies are investing in the infrastructure necessary to charge electric vehicles and do so in ways that support efficient grid operations and provide operational savings through reduced fuel cost. We appreciate the Commission's inquiry into electric vehicles and offer the following comments for the Commission's consideration.

General Data

The Commission requests current and forward-looking information related to the adoption of electric vehicles, new electric load attributable to electric vehicles, potential "hot spots" for new load, load profiles of electric vehicles, and emerging technologies for electric vehicles. In response to these questions, TechNet offers the following:

Planning horizon: The Commission's questions generally request information related to adoption, impacts, and technologies available in a timeframe of "in the next ten

years." TechNet encourages the Commission to focus the majority of its inquiry on these issues on a shorter temporal scale – perhaps the next three years – while also examining the information available regarding a longer time frame. TechNet understands and supports exploring issues in the ten-year time frame, however there is much less certainty beyond three years related to vehicle adoption and charging infrastructure.

Vehicle adoption: Currently, Texas has approximately 50,000 registered electric vehicles. These vehicles are primarily light-duty passenger vehicles for personal use. In the next five years, TechNet expects sales of electric light duty passenger vehicles for personal use to increase each year as more models become available in the state. In the near term, we expect the adoption rate of electric vehicles to largely be driven by model availability, anticipated fuel savings, and declining battery cost.

Load profiles: Although several manufacturers are working to bring heavy-duty electric vehicles to market, there are relatively few on the road today. TechNet believes heavy duty electric vehicles will begin to become more prevalent in the market in the next three to five years, at which point additional observations on the load profiles and charging behavior of heavy-duty electric vehicles will be available. There are many charging options available to light duty passenger vehicles including public level two and public direct current fast charging (DCFC). These public stations will play an essential role in increasing the adoption of electric vehicles by, for example, ensuring that electric vehicles can travel longer distances away from the vehicle's home charging station. Home charging stations are also very important, as the Department of Energy has estimated that 80% of electric vehicle charging will take place at home.[1] When consumers charge at home and in particular when they use smart charging equipment to schedule charging during off peak hours, the entire grid can benefit.

Emerging technologies: While there are many emerging technologies, including some being developed by TechNet members, TechNet encourages the Commission to focus on the value of existing technologies. Today's smart charging equipment allows consumers to schedule charging at times when energy prices are low and grid capacity is readily available, as well as participate in demand response programs allowing charging to be interrupted or slowed to respond to energy availability and/or grid conditions. TechNet believes that competition drives innovation and encourages the Commission to ensure open and competitive markets for electric vehicle charging services.

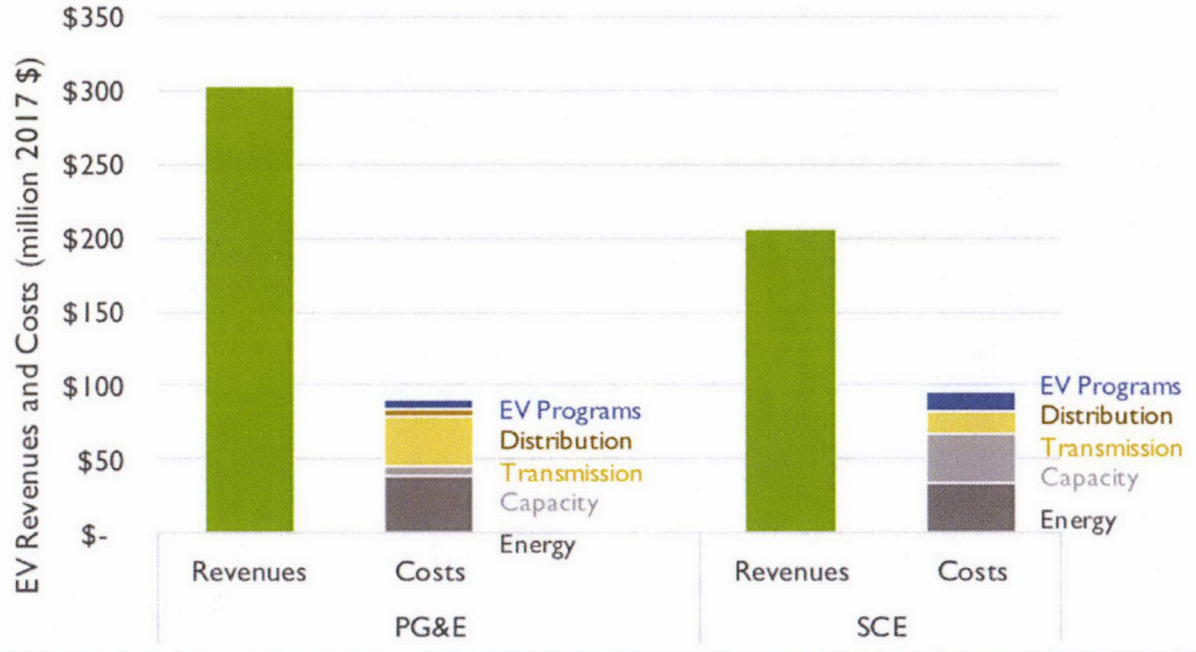
[1] https://www.energy.gov/eere/electricvehicles/charging-home

Grid Impacts

The Commission requests information related to the impacts of electric vehicle charging on the distribution system, transmission system, peak demand, and siting and design standards. In response to these questions, TechNet offers the following:

System Impacts: Studies have shown that electric vehicle charging can be a benefit to the grid, providing more revenues to energy and distribution providers than cost. While Texas's energy market is unique, it is comprised of many of the same elements such as energy generation, transmission, and distribution. Synapse Energy Economics has analyzed the cost and revenues associated with EV charging from 2012-17 in the PG&E and SCE service territories.[2] As you can see from the figure below from the Synapse analysis, revenues significantly outweighed cost related to EV charging.

Figure 4. PG&E and SCE Revenues and Costs of EV Charging, 2012-2017



Energy and Demand: The energy demands from electric vehicles will be driven by the number of electric vehicles on Texas roads. While the new energy demands may seem large over a ten-year planning horizon, the increase in any given year will be manageable. TechNet believes that with proper planning, including annual updates to EV sales forecast, Texas' distribution utilities, transmission planners, and energy providers will be able to plan for the manageable year-over-year growth of electric vehicles.

[2] https://www.synapse-energy.com/sites/default/files/EVs-Driving-Rates-Down-8-122.pdf

Siting and Design: Electric vehicle charging stations are constructed and operated under numerous planning, construction, and safety guidelines at local, state, and federal levels. When charging stations are connected to the grid, they go through standard utilities processes to ensure appropriate connection to the distribution system. However, it is important to keep in mind that there is no standard configuration for charging stations. Stations could consist of anywhere from one to 100 level two charging ports to provide charging services for a single company vehicle or a large fleet. Similarly, stations could be comprised of anywhere from one to 20 DCFC charging ports to provide charging services at a traditional gasoline fueling station or a facility dedicated only to electric vehicle charging. Finally, some stations may have a combination of DCFC and level 2 ports to serve a wide variety of customers.

TechNet and our members companies thank the Commission for the opportunity to provide comments in this proceeding.

Sincerely,

David Edmonson
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