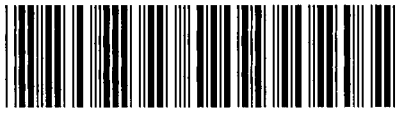

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TEXAS
ADVANCED ENERGY
BUSINESS ALLIANCE

PROJECT NO. 49125

REVIEW OF ISSUES RELATING TO ELECTRIC VEHICLES	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

COMMENTS OF TEXAS ADVANCED ENERGY BUSINESS ALLIANCE

Texas Advanced Energy Business Alliance (TAEBA) hereby submits these comments regarding the Commission's questions in the above-referenced proceeding. TAEBA includes local and national advanced energy companies seeking to make Texas's energy system more secure, clean, reliable and affordable.[1] "Advanced energy" encompasses a broad range of products and services that represent the best available technologies for meeting energy needs. Among these are energy efficiency, energy storage, demand response, natural gas electric generation, solar, wind, hydro, nuclear, and electric vehicles (EVs). When considering issues related to EVs, it is important to comprehensively consider how EV-related technologies work together with other advanced energy technologies in the broader context to make the electricity system more secure, clean, reliable, and affordable. TAEBA brings this broad, systems-level perspective to this proceeding.

As a business alliance, TAEBA is focused on reducing barriers to the economic adoption of advanced energy and continuing job growth in the State of Texas. Transportation electrification is just one of several advanced energy segments that is contributing to economic growth and job creation in Texas. The advanced vehicle industry, which includes hybrid, electric, natural gas, and fuel cell vehicles, has created 17,300 jobs, which accounts for 7% of the 254,300 advanced energy jobs in the state.[2] Specifically, within the transportation sector, our member companies participate in the EV industry in a variety of ways including manufacturing EVs of different vehicle sizes (from small low-speed vehicles to large heavy-duty vehicles), manufacturing and deploying charging infrastructure, providing grid integration solutions, operating fleets, and offering a variety of other supporting technologies and software services. As the adoption of EVs increases along with the build out of supporting charging infrastructure, there will be an acceleration in job creation and economic activity in Texas. Policy

[1] About TAEBA. https://www.texasadvancedenergy.org/about-taeba.
[2] TAEBA's Advanced Energy Jobs in Texas 2020 fact sheet is available for download https://www.texasadvancedenergy.org/.

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decisions that remove market barriers and promote competition are also key to continued economic growth in the state.

As we think about utility regulatory matters related to EVs, it is important to consider the transportation electrification sector in light of the changing world. We all have been forced to make changes in our lives over the past several months to confront the stark realities of COVID-19. Events that are unfolding are placing unprecedented economic pressure on Texas businesses and workers directly impacted by the necessity of social distancing, including those in the EV industry.[3] We encourage the Commission, therefore, to view transportation electrification as an engine to help power Texas' economic recovery. As the adoption of EVs increases, there will be a growing need for the construction of supporting infrastructure. In the United States, the light-duty EV market has seen a compound annual growth rate (CAGR) of 39% from 2010-2019;[4] on a global level, EVs are expected to hit 28% of all passenger vehicle sales in 2030;[5] and as of 2020, there are 15+ electric models available for sale in the U.S. ranging from Chevrolet to Audi. A host of manufacturers from Ford and General Motors to startups like Rivian are planning additional vehicle releases over a variety of categories from cars to pick-up trucks and sport utility vehicles over the next two years. And in the midst of a global pandemic, a number of EV manufacturers, including Tesla, Rivian, Lordstown, Nikola, and Workhorse have all raised significant amounts of new capital. Additionally, Tesla's recent decision to locate a manufacturing facility in Texas highlights the additional jobs EVs will bring, as well as accelerating EV adoption in the state.[6] These are all indicators of the increasing interest in EVs, and subsequent growth of the EV market. Policy decisions that remove barriers, promote competition, build consumer awareness, and accelerate the deployment of infrastructure will not only support this market, but will bring additional well-paying jobs to Texas and cultivate an advanced energy workforce that has been affected by COVID-19.

In addition to encouraging economic and employment growth, EVs stand to provide a wide range of additional benefits to the state and all Texans. Owners of EVs experience lower maintenance and fueling costs for the vehicle, and research shows that rising EV adoption

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[3] Advanced Energy Economy Press Release, (March 2020). https://www.aee.net/articles/aee-to-u.s.-congress-white-house-advanced-energy-now-suffering-impacts-but-should-be-key-contributor-to-economic-rebound.

[4] Based on data taken from InsideEVs. https://insideevs.com/news/343998/monthly-plug-in-ev-sales-scorecard/.

[5] BloombergNEF Electric Vehicle Outlook 2020. https://about.bnef.com/electric-vehicle-outlook/.

[6] Office of the Texas Governor, (July 2020). https://gov.texas.gov/news/post/governor-abbott-welcomes-tesla-to-texas

coupled with beneficial charging patterns actually puts downward pressure on rates for all ratepayers.[7] Transportation electrification will also promote increased competition in the transportation sector and provide grid and electricity market benefits that leverage the flexible nature of EV charging load. Given the economic and grid benefits that EVs provide, transportation electrification will serve as a catalyst for creating jobs, spurring investment and expanding competitive markets, while having the added benefit of improving public health through cleaner air. The Commission can use this time as an opportunity to prepare for the inevitable transition to electric transportation, including ensuring that the proper charging infrastructure is in place, encouraging charging behavior that provides consumer and grid benefits, and removing barriers to market growth. By doing so at an early stage, Texas, and all electricity system customers, will be able to maximize the full range of benefits provided by EVs.

TAEBA appreciates the opportunity to provide the perspective of advanced energy companies to inform this proceeding, and these comments address the Commission's questions regarding EV charging station ownership, whether charging constitutes a retail sale of electricity, and cost recovery options for distribution system infrastructure in the competitive electric market and in remote areas.

Question 1: As a matter of policy, which entity or entities should be permitted to own or operate an electric vehicle charging station in the Texas competitive electric market? Is a different ownership structure appropriate for service areas not open to retail competition?

When considering the roles that different entities have to play as it relates to EV charging station deployment, the policy goal of the Commission should be to eliminate underlying market barriers to facilitate the development of an expanded competitive market while simultaneously ensuring service provision in areas that are outside the reach of the competitive market.

At this relatively early stage of EV market development, all capital resources should be brought to bear, including but not limited to private capital, utility investment, automaker and other partner direct support, public funds, and other sources of funding (e.g., Volkswagen (VW) settlement money via the Environmental Mitigation Trust). This all-of-the-above approach will accelerate the needed deployment of charging infrastructure in Texas. As such, both utilities

[7] Electric Vehicles Are Driving Electric Rates Down, Synapse Energy, (2019). https://www.synapse-energy.com/sites/default/files/EVs-Driving-Rates-Down-8-122.pdf.

and third-party charging infrastructure companies have critical roles in the deployment of charging infrastructure, also referred to as electric vehicle supply equipment (EVSE.)

Third parties should be able to develop and own charging facilities, and they should be allowed to provide electricity through these facilities to customers for the purposes of EV charging without it triggering the treatment of these companies as a regulated utility or retail electric provider (REP), as we will discuss in greater detail in our response to Question 2. Third-party EVSE ownership and operation harnesses the power of the competitive market in a way that ultimately benefits consumers.

It has long been clear that third-party EVSE operators have a desire to build out in Texas. Dating back to 2011, EVgo, then owned by NRG Energy, built the first public Direct-Current Fast Charger (DCFC) station in the state.[8] Today, numerous companies involved in the deployment of charging infrastructure are active in Texas, including EVgo, Tesla, Blink Charging, ChargePoint, Electrify America, EV Connect, SemaConnect, and Volta.[9] Together these third-party operators represent a little over 1,200 public Level 2 and DCFC stations out of the overall 1,330 public charging stations in Texas.[10] With policies in place to support and encourage infrastructure buildout in the state and active collaboration between the EVSE providers and utilities, the list of companies and the work that they do can continue to grow.

In sectors where it is difficult for these companies to make a business case for developing, owning, and operating EVSE (e.g., deployments in rural areas with lower population densities or historically economically disadvantaged communities), a more expansive role for utilities may be warranted until the business case improves. This approach allows for the state to ensure equitable access to charging infrastructure in areas that may be traditionally underserved and will prevent the stranding of traveling EV drivers in "charging deserts."

This approach applies to both competitive and non-competitive markets. In both service areas, the goal remains the same — to drive market growth. This goal is best achieved by leveraging both utility and third-party capital. In our response to Question 3 below, we provide additional recommendations regarding how utilities and third parties can work together to accelerate market growth.

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[8] "NRG Opening First Quick Electric Vehicle Charging Station in Texas." From Dallas Morning News, (April 2011). https://www.dallasnews.com/business/2011/04/08/nrg-opening-first-quick-electric-vehicle-charging-station-in-texas/.

[9] Data retrieved from the Alternative Fuels Data Center (AFDC). Level 2 and DCFC public charging stations, (August, 2020). https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?fuel=ELEC.

[10] Data retrieved from the Alternative Fuels Data Center (AFDC). Level 2 and DCFC public charging stations, (August, 2020). https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?fuel=ELEC.

Question 2: Is the operation of an electric vehicle charging station a retail sale of electricity?

For clarity, TAEBA interprets this question to be asking whether charging the battery in an EV is a retail sale of electricity. This clarification is made to recognize that the mere ownership, maintenance, etc. of an EV charging station would not entail a transfer of electricity and therefore could not be a retail sale of electricity. With that clarification, TAEBA respectfully submits that charging the battery of an EV is not a retail sale of electricity. This result reflects not only the provisions of the Utilities Code, but also the impacts that would result from an interpretation that such a service was a retail sale of electricity.

Although the term "retail sale of electricity" is not defined in the Public Utility Regulatory Act (PURA), Title II, Utilities Code, the meaning reflected in the statute is that a retail sale of electricity is the sale of electricity to a retail customer who purchases and consumes the electricity. The question then is whether the EV charging station is the "retail customer" or if the person receiving the charge in the battery of their EV is the "retail customer." Nothing in PURA prohibits the EV charging station being considered the retail customer – the station is interconnected with the transmission and distribution utility, and, in the areas of ERCOT open to retail competition, the station purchases from a Retail Electric Provider (REP) the electricity it consumes for its operations, including its charging services. Customers then purchase charging services from the EV charging station and are charged in the manner determined by the owner of the station.

Interpreting the provision of charging services to be a "retail sale of electricity," though, would result in greater regulatory burden applicable to EV charging stations and charging services. Under PURA, a "retail customer" is "the separately metered end-use customer who purchases and ultimately consumes electricity."[11] Without consideration as to whether the measurement used to calculate billing for EV charging service would qualify as "separately metered," in areas of ERCOT open to retail competition, if the charging service is a "retail sale," current law would require this service to be provided by a REP[12] since no provision of PURA

[11] *Id.*at § 31.002(16).

[12] PURA defines a REP as "a person that sells electric energy to retail customers in this state." Utilities Code § 31.002(17); see also § 39.352(a) ("After the date of customer choice, a person, including an affiliate of an electric utility, may not provide retail electric service in this state unless the person is certified by the commission as a retail electric provider, in accordance with this section.") *See also* PUC Subst. R. § 25.107(a)(1) ("A person must obtain a certificate pursuant to this subsection [Certification of REPs] before purchasing, taking title to, or reselling electricity in order to provide retail electric service.")

would otherwise authorize a charging station to make retail sales of electricity.[13] At the same time, though, the statutory requirements that a REP must satisfy to provide service largely would be unworkable in an EV charging transaction. For example, the enrollment requirements imposed by Subchapter D of Chapter 17, Utilities Code, including verified customer consent prior to obtaining service, would be unworkable for a customer who drives up to a charging station for service.

An additional result of defining charging service as a retail sale of electricity is that the charging station itself would be classified as an "electric utility."[14] As an electric utility, the Commission would be required to grant the EV charging station a certificate of convenience and necessity.[15] Establishing EV charging stations as regulated electric utilities would be inconsistent with state policy that electric utilities are prohibited from providing competitive electric services.[16] The fact that EV charging stations continue to be developed in the state on a competitive basis demonstrates that these charging stations are competitive in nature rather than natural monopolies.[17] Requiring EV charging stations to be regulated electric utilities also could result in each station being required to allow more than one REP the ability to sell electricity to EV charging customers at each charging station, which would be wholly unworkable.

In areas of ERCOT that are not open to retail competition as well as non-ERCOT regions of the state, not classifying EV charging service as the retail sale of electricity will help ensure the

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[13] While Chapter 184 of the Utilities Code provides instances in which a retail customer can submeter electricity consumed by others, such as to tenants in an apartment building or residents in RV parks, none of these provisions would be applicable in this situation.

[14] Utilities Code § 31.002(6), "'Electric utility' means a person ... that owns or operates for compensation in this state equipment or facilities to ... sell ... electricity in this state." None of the exemptions from this definition appear applicable to the situation at hand. See also definition of "retail electric utility" in Section 37.001(3), Utilities Code, "'Retail electric utility' means a person ... that operates, maintains, or controls in this state a facility to provide retail electric utility service."

[15] *See* Utilities Code § 37.051 et seq.

[16] *See* Utilities Code § 39.051(a) (separation of regulated utility services from competitive customer energy services) and § 39.105(a) ("After January 1, 2002, a transmission and distribution utility may not sell electricity or otherwise participate in the market for electricity except for the purpose of buying electricity to serve its own needs."); *see also* PUC Subst. R. 25.341(3) ("Competitive energy services – Customer energy services business activities that are capable of being provided on a competitive basis in the retail market.")

[17] The Legislature may determine that there are instances in the areas of ERCOT that are open to retail competition where an electric utility should be allowed to own and operate EV charging stations, such as in rural areas and underserved and disadvantaged areas. *See, e.g.* Utilities Code § 39.905 (allowing an electric utility serving rural areas to directly provide to customers energy efficiency rebates or incentive funds upon certain showings). A legislative clarification to enable that result would have a much narrower impact on the competitive market structure than a blanket determination that EV charging service is a retail sale of electricity

robust development of EV charging stations. If EV charging service is considered a retail sale of electricity, then the incumbent utilities in these areas could argue that no EV charging stations owned by any third party are allowed in their service area since these utilities are the only entities authorized to make retail sales of electricity in their service areas. Such a result would discourage investment by private entities in EV charging stations to the detriment of EV owners in the region. In contrast, not classifying EV charging service as a retail sale of electricity does not hinder the potential for these utilities to own and operate EV charging stations in their service areas in addition to the development of these facilities by third parties.

A determination that EV charging service is not a retail sale of electricity would be consistent with the determination that a majority of states already have made. To date, 34 states, the District of Columbia, and Austin, Texas have decided that EV charging is not a utility service or a retail sale of electricity.[18] As these other jurisdictions have recognized, EV charging stations do not function like typical commercial or industrial customers, and they are providing a service rather than selling (or reselling) electricity.[19]

In the event the Commission is concerned that PURA requires further clarification to ensure that EV charging service is not classified as a retail sale of electricity, three definitions could be added to Utilities Code § 31.002. First, the following could be added to the end of Utilities Code § 31.002(16): "A retail customer does not include an end-use customer purchasing electricity charging service for consumption by an alternatively fueled vehicle." For clarity, the following definition also could be added to Utilities Code § 31.002: "'Alternatively fueled vehicle' has the meaning assigned by Section 502.004, Transportation Code." Finally, for further clarity,

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[18] Alabama, Docket No. 32694; Arkansas Code § 23-1-101(9); Arizona Docket No. RU-00000A-18-0284; Cal. Pub. Util. Code, § 216(I); Colo. Rev. Stat. § 40-1-103.3(2); CT Section 16-1 of the 2016 supplement to gen. statutes; D.C. Council Bill 19-749 and Code §§ 34-207, 34-214; Delaware PSC Docket No. 19-0377, Order No. 9516; Fla. Stat. § 27-366.94; Haw. Rev. Stat. § 261-1(2); Idaho Code § 61-119; Ill. 220 ILCS §§ 5/3-105(C), 5/16-102; Iowa Docket No. RMU-2018-0100; Kentucky Case No. 2018-00372; Massachusetts Case D.P.U. 13-182-A; Me. Rev. Stat. Ann. Tit. 35, §§ 313-A, 3201(5), 3201(8-B); Md. Code Pub. Utils. §§ 1-101(J)(3), 1-101(X)(2); Michigan Case Nos. U-17990 & U-20162, Final PSC Order, Consumers & DTE service areas; Minn. Stat.§ 216B.02 (Subd. 4); Missouri PSC File No. ET-2016-0246, and HB 355 (2019). RSMo 386.020; Nevada SB145, NRS 704.021 (11.); New Hampshire RSA 236:133 as amended by SB 575 of 2018; New Jersey S. 2252 (c. 362, 2019); New Mexico HB 521 (2019); NY PSC Case No. 13-E-0199; North Carolina HB 329; Oklahoma OAC 165:35-13-1(c); Or. Rev. Stat. § 757.005(1)(B)(G); PA PUC Order R-2014-2430058, M-2017-2604382; Rhode Island R.I.G.L. Section 39-1-2(20); Utah Code §§ 54-2-1(7)(C), 54-2-1(19)(J); Texas (Austin Energy Territory Only) City Code Section § 15-9-121; Vermont Sec. 39. 30 V.S.A. § 203 as amended by Act No. 59 of 2019; Va. Code Ann. § 56-1.2:1; Wash. Rev. Code § 80.28.310; W. Va. Code § 24-2D-3

[19] Alabama Public Service Commission, Docket No. 32694, Order (June 22, 2018); Florida, passed into law in 2012, amended Fl. Rev. Stat. §27- 366.94; Kentucky Public Utilities Commission, Docket No. 2018-00372, Order (June 14, 2019); North Carolina, House Bill 329, 2019; Utah, House Bill 180, 2020, amended Utah Code 54-2-1.

the following definition also could be added to Utilities Code § 31.002: "'Retail electric service' means the retail sale of electricity to a retail customer. Retail electric service does not include the sale to an end-use customer of electricity charging service for consumption by an alternatively fueled vehicle."

Question 3: As a matter of policy, how should the cost of the distribution system infrastructure associated with an electric vehicle charging station be recovered in the Texas competitive electric market?

In the Texas competitive electric market, utilities play an important role in providing safe and reliable distribution infrastructure and providing a foundation upon which a variety of services can be offered by competitive service providers including generation companies, retail electric providers, and a variety of competitive service providers including EV charging companies. The duty to serve all distribution system customers remains fundamentally unchanged with transportation electrification, and therefore utility costs that are reasonable and necessary should be recovered through rates as with other distribution infrastructure costs. Competitive third-party providers of EVSE and charging services have been active in the Texas market for a number of years, so there is no question about whether competitive providers stand ready to invest in and provide EVSE and charging services, although financial barriers remain in this nascent market. A key question in ERCOT, however, is where to draw the line on how active a role should be taken by regulated utilities to spur development of EV infrastructure. In considering this question, TAEBA recommends that the Commission address development of and costs related to two different categories of "make-ready" infrastructure: utility-side and customer-side.

Utilities should be able to design, install, own and maintain equipment on the utility side of the meter, including a new service connection, transformer, conductors, connectors and conduit up to and including the electric meter along with any necessary construction to comply with local regulations. Existing tariffs and line extension policies already in place at the utilities provide a basic framework for utility-side infrastructure development to interconnect new facilities such as EVSE and no major changes are needed to these processes. However, TAEBA recommends that the Commission allow utilities to either waive or modify Contribution in Aid to Construction (CIAC) allowances for line extensions involving EVSE to facilitate more rapid expansion of EV-related infrastructure. CenterPoint Energy made such a proposal to increase its CIAC allocation for EVSE installations in its most recent rate case, Docket No. 49421. In that docket, CenterPoint witness Julienne P. Sugarek submitted testimony stating that utility involvement in promoting EV adoption should take the form of supporting the

interconnection of third-party owned stations rather than installing and owning the charging stations themselves, and that this approach would help facilitate development of EV infrastructure to meet the growing needs of their customers.[20] We agree with the general concept, but it is important to retain an incentive for utility cost minimization in these investments, so additional discussion is likely warranted. The Commission could either waive or modify the amount of CIAC, while ensuring cost minimization incentives are retained, in support of EVSE as a matter of policy to promote EV market development. While the specific supplemental CIAC allowance amounts might vary by utility, the policy should be standardized and set forth in the pro-forma TDU tariff so that it applies to all utilities in competitive areas of the state.

Because ratepayers must ultimately bear the costs for utility infrastructure, optimizing the infrastructure in which ratepayers have already invested is critically important. TAEBA continues to recommend, therefore, that the Commission adopt rules to promote greater transparency in distribution utility planning to promote optimization of existing utility infrastructure. TAEBA has commented previously on the need for increased transparency in distribution planning processes in this proceeding and also in Project No. 48023, relating to *Non-traditional Technologies in Utility Delivery Service*.[21,22] In the specific context of promoting competitive markets for EV charging, utilities should make available to market participants information regarding distribution hosting capacity to aid charging companies in identifying locations for charging equipment where the distribution system can best accommodate the additional loads. In prior comments filed in this project, AEP-Texas and SWEPCO noted that maps can be made available to EV charging companies to help identify good locations for EVSE, but also stated that charging providers typically come to them first with a proposed location and then the utility sometimes responds with a different suggestion based on lower costs and more distribution system capacity.[23] This process could be more efficient if charging companies had more hosting capacity information on the front end of the process to avoid unnecessary, and more time-consuming, back and forth discussions. Other parties have commented previously in this proceeding regarding the benefits of making available hosting capacity information.[24] All utilities should be required to provide hosting capacity data, and should be required to offer transparent,

[20] Direct Testimony of Julienne P. Sugarek (Apr. 5, 2019) at 21-24.
[21] Project No. 49125, Comments of TAEBA (Feb. 3, 2020) at 5.
[22] Project No. 48023, Comments of TAEBA (Nov. 2, 2018) at 6, 18-19 and Reply Comments of TAEBA (Nov. 11, 2018) at 1-5.
[23] Initial Comments of AEP Texas Inc and SWEPCO (Feb. 3, 2020) at 8.
[24] Tesla Comments (Feb 3, 2020) at 5,9. EVgo Comments at 7

standardized processes for interconnection. TAEBA and others have filed comments previously in this proceeding expressing a desire for implementation of utility best practices to streamline interconnection processes to speed deployment of private capital through EVSE infrastructure investment.[25] Competitive markets will benefit from adopting these standard practices, and such practices should be more efficient and less costly for utilities as well.

We also recommend that the Commission adopt a mechanism to facilitate customer-side infrastructure development. One mechanism that fits within the Texas competitive model and that has the potential to accelerate electrification of transportation would be to establish a utility-administered rebate to help defray costs associated with customer-side equipment. Texas utilities have substantial experience with offering market-neutral, nondiscriminatory incentives to support policy goals related to energy efficiency and demand management.[26] EVs are a storage technology with the capability to provide additional load management benefits to the utility and therefore potentially could be included as customer energy management and demand response technologies to be incentivized under existing rules. The Commission could also require utilities to adopt targeted incentives specifically to direct investment to areas of the distribution grid where the demand response and load-shifting benefits of EVs would be most advantageous to promote distribution system reliability. If EVSE-related incentives are included under existing mechanisms, then the costs could be recovered through non-bypassable charges as they are for existing energy efficiency and demand response programs. Another option would be to create a separate, new rebate program specifically focused on accelerating the growth of EVSE as other states are doing to meet specific state EV-related policy objectives.[27] For example, the Michigan PSC has authorized utilities to provide "make-ready" incentives to defray costs of customer-side equipment, and such costs are treated as a regulatory asset until they can be considered in the next rate case.[28]

Commercial fleet electrification presents unique opportunities for the state given that fleets are large loads with predictable charging patterns, and in some cases, long dwell times that make them excellent candidates for load shifting. Fleets are likely to be able to bring substantial benefits to the grid by reducing peak demand during times of scarcity and charging during periods of abundant and inexpensive renewable generation, lowering overall costs to the

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[25] TAEBA Comments at 11; EVgo Comments at 7; NRG Comments at 10; Tesla Comments at 9.
[26] P.U.C. Subst. R. 25.181
[27] Michigan PSC Case U-20134, Order (January 9, 2019), New York DPS Case 18-00561/18-E-0138, Order (July 16, 2020), Massachusetts DPU Case 17-05, Order (November 30, 2017), the District of Columbia Case 1130, and Case 1155, Order 19898 (April 12, 2019), and California Application 17-01-020, Application 17-01-021, Application 17-01-022, Proceed Decision (March 30, 2018)
[28] Michigan PSC Case U-20134, Order (Jan. 9, 2019)

market. School buses, for example, could be used to shift load in the hottest hours of summer afternoons when the grid is the most stressed. Texas is second among U.S. states in the number of school buses on the road, with more than 43,000 as of the 2017-2018 school year.[29] Assuming that a portion of these electric school buses in Texas could collectively shift up to several hundred megawatts of load at peak hours, TAEBA estimates that the value to Texans over ten years could be in the hundreds of millions of dollars.[30] New and innovative business models, such as "school buses as a service," are emerging and combine public and private investment to accelerate adoption of electric school buses so that these grid benefits can be realized, along with other public health benefits.[31] Transit and commercial fleets could also benefit from focused policy choices to facilitate electrification (e.g., through customer-side EVSE support), thus helping Texas businesses to grow their business operations post-COVID in support of the broader Texas economic recovery. Charging infrastructure has been identified as one of the primary unknown factors and sources of anxiety for fleets considering near-term adoption of EVs, and utilities are in a unique position to help fleets evaluate their charging needs and facilitate infrastructure build-out.[32]

Question 4: Is the answer to Question 3 different for an electric vehicle charging station located in a remote area, primarily for use by long-distance rather than local motorists?

Recent growth in EV adoption has raised the question of how EVs affect the electricity rates paid by all ratepayers, including those that do not own EVs, or those in remote and hard to reach areas. This is an important equity question that should be analyzed when determining the roles that electric utilities and public finance should play in supporting the transition to EVs. As EV adoption rates continue to rise, there will be a growing need for the installation of charging infrastructure in remote areas, along major transportation corridors, or along emergency hurricane evacuation routes, in order to ensure the safety of EV drivers. As battery ranges continue to improve (some vehicles now exceed 300 miles in range), the potential gaps are shrinking, but they still exist.[33] When thinking about EV charging infrastructure in these harder to reach locations, it is important to consider the benefits that EVs bring to ratepayers and to the

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[29] "Pupil Transportation Statistics, 2017-18 School Year." www.schoolbusfleet.com.
[30] This estimate is extrapolated from a TAEBA-commissioned study by Demand Side Analytics published in November 2019 to quantify the potential value of distributed energy resources in Texas, including electric vehicles. The report is available at www.texasadvancedenergy.org.
[31] https://www.highlandet.com/
[32] https://nacfe.org/future-technology/amping-up-charging-infrastructure-for-electric-trucks/
[33] "EV range of selected MY 2020 electric vehicles." From Statista, (June 2020). https://www.statista.com/statistics/266633/ev-range-of-selected-plug-in-hybrid-and-electric-vehicles/.

grid, the economic opportunities surrounding EV stations, and lastly, the role of public finance in spurring third party market development.

When considering the impact of EVs in hard to serve areas, it is important to remember that EV benefits outweigh the costs to a community, while bringing value to all customers in the region. Studies have shown that rising EV adoption coupled with beneficial charging patterns puts downward pressure on rates for all ratepayers while benefiting the grid and providing a range of other societal benefits, such as reducing air emissions and incentivizing economic growth.[34,35] MJ Bradley & Associates conducted cost benefit analyses of EV adoption in 17 states. Taking Florida, Arizona, South Carolina and Kentucky, for example, on average in these states, EVs will increase utility net revenue by $176 to $1,100 per EV over its lifetime (depending on the state).[36] According to MJ Bradley this could result in cumulative utility bill savings of more than $1.6 to $31 billion state-wide by 2050 (net present value), with additional savings to EV drivers (again, depending on the state). As the transportation system shifts from an almost exclusively gasoline-based model to a more electrified model, utilities will be able to generate higher revenues, which supports investment in the electric system and reduces the need for future electricity rate increases, thereby benefiting all ratepayers.

Installing EV charging stations in remote areas can provide economic benefits for these communities. For example, when EV drivers stop to recharge their batteries, they have 30+ minutes of dwell time to go shopping or eat at a restaurant.[37] Researchers have found that co-locating charging facilities with retail and restaurant locations is one of the most profitable ways to increase EV infrastructure.[38] Charging stations bring in new customers and increase how long they stay, which results in additional retail sales. These sales are usually more significant to the

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[34] Charging Ahead: Deriving Value from Electric Vehicles for All Electricity Customers. From Citizens Utility Board, (2019). https://www.citizensutilityboard.org/wp-content/uploads/2019/03/Charging-Ahead-Deriving-Value-from-Electric-Vehicles-for-All-Electricity-Customers-v6-031419.pdf.

[35] "Electric Vehicles Are Driving Electric Rates Down." From Synapse Energy, (2019). https://www.synapse-energy.com/sites/default/files/EVs-Driving-Rates-Down-8-122.pdf.

[36] MJ Bradley & Associates. https://mjbradley.com/content/electric-vehicle-cost-benefit-framework. (NPV of Projected Life-time Utility Net Revenue per EV)

[37] Public DCFC charging stations along destination routes provide anywhere from 75 to 225 miles of range in about 30 minutes. (Information from "Issue Brief: EVs 101- A Regulatory Plan for America's Electric Transportation Future." From Advanced Energy Economy, (2018) https://info.aee.net/advanced-energy-policy-brief-ev-101.)

[38] "Public EV Charging Business Models for Retail Site Hosts." From Atlas Public Policy, (April 2020). https://atlaspolicy.com/wp-content/uploads/2020/04/Public-EV-Charging-Business-Models-for-Retail-Site-Hosts.pdf.

retailer than the user fees from the charging itself.[39] This is the same as with traditional gas station businesses whose owners make the majority of their profits from the retail sale of the goods inside of their convenience store (food, drink, other goods), rather than the sale of the gasoline itself.[40] As such, incentivizing charging infrastructure in some of these hard to reach locations can serve a dual purpose of supporting needed economic development in those regions.

When considering how to fund transportation electrification in hard to reach areas at this early stage of market development, all financing options should be considered. These include private capital, utility investment, automaker and other partner direct support, public funds, and other sources of funding (e.g., VW settlement money via the Environmental Mitigation Trust). As administrator of the VW funds in Texas, the Texas Commission on Environmental Quality (TCEQ) plays an important role in the future of transportation electrification in the State. For an upcoming VW settlement grant round for level 2 and DCFC chargers, TCEQ Staff has indicated their intent to include a scoring methodology that includes considerations for how much demand the charging station would serve, if it would be along an evacuation route, and if the charging station would be able to serve remote areas that have not already been addressed when determining grant allocations. These, and other state funds directed at achieving air quality requirements, such as Texas Emission Reduction Program (TERP) should be utilized to help meet the public policy goals of the state. Other states have already realized the benefits of investing in these rural charging stations in order to encourage public health and cost-savings benefits of EVs while also prompting commerce, tourism, and economic development across the state. For example, Florida recently committed $8.5 million from their VW Settlement funds to improve the state's EV charging infrastructure by focusing on electrifying the state's major highways and evacuation routes.[41] Additionally, over 35 states have allocated at least 15% of their VW funds to be allocated to charging infrastructure projects: for example, New Hampshire allocated $4.6 million to build out EV infrastructure, and Colorado allocated $10.3 million to zero emission vehicle (ZEV) equipment (primarily EV charging stations) to build out key charging

[39] "Public EV Charging Business Models for Retail Site Hosts." From Atlas Public Policy, (April 2020). https://atlaspolicy.com/wp-content/uploads/2020/04/Public-EV-Charging-Business-Models-for-Retail-Site-Hosts.pdf.
[40] "The Average Annual Income of a Gas Station." From BizFluent, (November 2018). https://bizfluent.com/about-6375645-difference-wholesale-retail-gasoline-prices-.html.
[41] "Florida Politics: Florida Investing $8.5M Toward Electric Vehicle Charging Stations." From Advanced Energy Economy and Florida Politics, (July 2020). https://www.aee.net/articles/flapol-florida-investing-8.5m-toward-electric-vehicle-charging-stations.

corridors across the state.[42,43,44] By using these public funds to help offset costs to promote a broader public purpose, we can accelerate the deployment of charging infrastructure by opening markets, in turn spurring EV adoption and improving the utilization of utility grid infrastructure.

Conclusion

The Commission has taken a necessary step to preparing for EVs by opening this proceeding and posing the questions to which we respond in this filing. In addition to the questions posed by the Commission, we continue to encourage the Commission to examine and consider taking action on additional EV-related topics including:

- Rate design to implement EV-specific rates that would transition away from non-coincident peak demand charges for commercial customers, and provide time-varying price signals; and
- The development of opportunities for distribution level services for transmission and distribution utilities through vehicle-to-grid-integration (VGI) and other distributed energy resources (DERs) to enhance grid reliability.

We appreciate the opportunity to provide the perspective of advanced energy businesses in Texas and look forward to working with the Commission and stakeholders on these important issues.

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[42] "Volkswagen Settlement State Scorecard." From US PIRG Education Fund, (May 2019). https://uspirg.org/sites/pirg/files/reports/USP%20VW%20Scorecard%20May19.pdf.
[43] "New Hampshire to use $4.6M of VW settlement to build EV infrastructure." From UtilityDive, (September 2018). https://www.utilitydive.com/news/new-hampshire-to-use-46m-of-vw-settlement-to-build-ev-infrastructure/532258/.
[44] "Proposed Beneficiary Mitigation Plan." From Colorado Government, (August 2017). https://www.colorado.gov/pacific/sites/default/files/AP_VW_Beneficiary_Mitigation_Plan.pdf.

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