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STATE OF FLORIDA

PUBLIC SERVICE COMMISSION

Florida Power & Light Company's Petition for Approval of Optional Electric Vehicle Public Charging Pilot Tariff	**Docket No. 20200170-EI** **Filed June 23, 2020**

WRITTEN COMMENTS OF TESLA, INC.

Tesla, Inc. ("Tesla") hereby submits comments to the Public Service Commission ("Commission") in Docket No. 20200170-EI, Florida Power & Light Company's ("FPL") Petition for Approval of Optional Electric Vehicle Public Charging Pilot Tariff. Tesla appreciates the opportunity to provide written comments.

Electric vehicle ("EV") adoption has steadily increased over the past several years as well as the public charging infrastructure to support increased EV adoption. The availability of charging infrastructure is essential for EV adoption and for EV drivers to confidently travel. Public utilities can play an important role in the competitive landscape of EV charging by providing competitive and affordable rate options for EV charging accounts, beneficial line extension policies including "make-ready" infrastructure, and where appropriate, offer EV charging infrastructure programs.

Tesla appreciates FPL's proposal and collaborative and constructive approach they have taken to help third party charging operators quickly deploy charging infrastructure at scale. The proposal is a good first step and we respectfully suggest the follow modifications and alternative approaches:

1. Increase the proposed demand limiter from 75 hours to 150 hours.

2. Consider converting demand-based billing components to an equivalent $/kWh based on the class average cost to serve.
3. Price FPL charging services based on a third-party charging prices that does not include prices from Tesla Superchargers, or set pricing based on FPL's expected costs of providing charging services.

I. Introduction to Tesla and Tesla's Charging Deployments in Florida

Tesla's mission is to accelerate the transition to sustainable energy through the development of all-electric vehicles and clean energy products including photovoltaic solar and battery storage. Tesla is a U.S. based manufacturer whose vehicle line-up includes the Model S sedan, Model X crossover vehicle, Model 3 sedan, and Model Y crossover vehicle. The vehicles have all-electric range of up to 402 miles per charge, and industry leading performance and safety ratings. In 2019, Tesla delivered 367,500 vehicles globally. Since the company's inception, it has manufactured more than one million all-electric vehicles. In the coming years, Tesla is planning to launch the Cybertruck, the Roadster sports car, and the Class 8 Semi truck.

Additionally, Tesla has made significant investments in charging stations to support the transition to electric transportation. Tesla owns and operates an extensive direct current fast charging ("DCFC"), Supercharger network ("Superchargers"). Supercharger stations are conveniently located near desirable amenities like restaurants, shops and WiFi hot spots. Each station contains multiple Superchargers to get customers back on the road quickly.

The Tesla Supercharger network is extensive and designed to provide customers a seamless and convenient charging experience. Globally, there are more than 2,100 Supercharger stations and over 18,650 total Supercharger charging stalls. There are currently 22 Tesla Supercharger locations across FPL's utility territory and a total of 256 Supercharger stalls. Supercharger stations are located in a variety of locations in order to best serve drivers. Tesla owns and operates the Supercharger equipment and is the utility customer of record. Tesla vehicles make up approximately 81% of the battery electric vehicle ("BEV") registrations in Florida as of December

2019.[1] For Tesla owners that pay to use Superchargers in Florida, they are billed approximately 26 cents per kilowatt-hour (kWh).

II. The Importance of Rate Design for Electric Vehicle Charging Stations

A key role for regulated utilities to advance transportation electrification is to provide rate options for EV charging accounts, and to send signals through rates about the best times to charge. Affordable rate options that enable charging services to be competitive with gasoline fuels are a foundational step to encouraging third-party charging investments and greater EV adoption. Sending signals about the best times to charge will also help integrate EV charging load and can lead to benefits for all ratepayers by increasing the load factor of grid infrastructure. Tesla appreciates the Commission's thoughtful questions contained in its three data requests around the EV charging pilot tariffs and welcomes the development of commercial EV tariffs or additional commercial tariff alternatives for FPL's territory.

There are a variety of standard commercial and EV charging specific utility tariff structures that have been implemented around the country to expand and integrate more EV charging load. All of the structures are aligned in seeking to mitigate the outsized effect of demand charges on EV charging stations which typically have lower load factors than other commercial customers. Much like the electric grid, charging stations and networks are designed and built to serve peak customer demand, which typically occurs around travel holidays or evacuation events. Achieving high load factors at DCFC stations can be a challenge. Stations that become frequently congested with drivers waiting to charge is a poor customer experience which can impede EV sales, thus necessitating the need for additional network capacity. Station utilization is also low in overnight

[1] FPL Response #6 to Staff's First Data Request.

hours since there are much fewer drivers on roads. As a result, commercial EV charging stations tend to have relatively low load factors,[2] and demand charges can result in EV charging operators paying far above other commercial customers. FPL's petition states "While the average cost per kWh in 2019 for the GSD-1 and GSLD-1 rate schedules was $0.09 per kWh, the effective cost per kWh was significantly greater for fast charge stations . . . For these stations demand charges create unfavorable operating economics. Fifty percent of stations paid between $0.33 and $1.33 per kWh, which put them in the top 99th percentile of GSD-1 and GSLD-1 customers with regard to energy average cost."[3]

Commercial EV rates are particularly important to support public charging deployments and fleet electrification, whether it be public transit, light-, medium- or heavy-duty fleet, which also can have lower load factors depending on use case. Similar to commercial EV charging accounts, electricity costs are the largest lifetime cost component for commercial EV fleets. Targeting effective electricity rates for commercial EV charging accounts to be on par with average commercial customers will encourage additional investments in EV charging and vehicles and would provide customers with the opportunity to realize fuel savings relative to gasoline or diesel.

One potential concern that has been debated by Public Service Commissions, utilities, charging operators and other stakeholders around the country is whether developing commercial rate mechanisms or options that bring down the effective price per kWh of electricity for charging accounts results in a cost shift that would be borne by other ratepayers. It is important to note that conventional cost-of-service ratemaking and electric vehicle rates are not mutually exclusive. Multiple utilities and commissions around the country, have developed

[2] For example, to achieve a 50% load factor would mean that a station is completely congested for at least 12 hours a day, seven days a week, with drivers queuing.

[3] FPL's Petition for Approval of Optional Electric Vehicle Public Charging Pilot Tariffs, p.13-14.

revenue neutral rate designs that reduce the effective costs for commercial charging operations because of the beneficial load profiles that tend to have more charging occurring in off-peak periods.[4]

An additional consideration is that electric vehicles are unique in that they are mobile resources that can consume electricity as part of multiple rate classes. For example, a vehicle being charged at home one day will be consuming electricity and contributing revenue and margin in the residential class. That same vehicle can be charge at a DCFC station the next day in the commercial rate class. It is important to consider the potential revenues and contribution of margin that occurs as a result of this dynamic, especially if the objective of new rate options or mechanisms is to encourage additional public charging investment and to induce additional electric vehicle purchases. FPL highlighted this dynamic in their response to Staff's first set of data requests, but stated that it can be difficult to predict the magnitude of the potential upsides.[5]

Tesla believes, however, that sufficient information is available to assess the potential level magnitude of upside for ratepayers. The US Department of Energy found that the majority of charging, approximately 80%, occurs at home.[6] Therefore, a minority of charging occurs at public charging stations or locations taking services under commercial rates. Conservatively assuming an average EV travels 10,000 miles per year, can travel 3.25 miles per kWh, and 70% of charging occurs at home results in approximately 2,150 kWh of incremental consumption in the residential rate class per car per year.[7] Under FPL's current residential rates, an additional $184 in residential

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[4] *See* NV Energy Electric Vehicle Commercial Charging Rider Time-of-Use schedule as part of Nevada PUC Docket Numbers 20-03024 and 20-03025. *See* Eversource Energy Connecticut EV Rate Rader in Docket No. 17-10-46RE01. *See* PG&E Commercial Electric Vehicle Rate in California PUC Application 18-11-003. *See* Xcel Colorado S-EV Rate Tariff, Colorado PUC Proceeding No. 19AL-0209E.

[5] FPL response to Staff's First Set of Data Requests. Response No. 13. August 13, 2020.

[6] Department of Energy. "Charging at Home". Accessed 9/22/20 from https://www.energy.gov/eere/electricvehicles/charging-home

[7] 10,000 miles/year / 3.25 miles/kWh * 70% charging at home = 2154 kWh/year at home

class revenue can be expected from an average EV with the aforementioned characteristics, or $1.84 million/year for a fleet of 10,000 EVs.[8]

III. Electric Vehicle Charging Infrastructure Riders (GSD-1EV and GSLD-1EV)

Instead of a TOU rate, FPL's petition opts to use a "demand limiter" which can be an effective mechanism for an EV rate and has been effectively used in other utility territories. For example, Dominion Virginia's standard commercial GS-2 rate includes a demand limiter mechanism which uses 200 hours as a threshold for non-demand billing versus demand billing.[9] Xcel Energy in Minnesota institutes a demand limiter of 100 hours as a standard rule for commercial customers on general service.[10]

FPL's proposal includes a much lower demand limiter of 75 hours. FPL explains that the "75-hour denominator was chosen to target an effective volumetric rate on demand and energy charges (excluding customer charge, taxes, and franchise fees) of approximately 20 cents per kWh, based on our current rates."[11] And that 20 cents/kWh "is below the estimated market price of fast charge services (~30 cents/kWh) and leaves some margin to contribute toward the fast charge station's other costs."[12] Tesla appreciates FPL's proposed EV Charging Infrastructure Riders as a first step to addressing demand charges and electricity costs for third party charging operators. However, as noted earlier, achieving high load factors at DCFC stations without significantly hurting customer experience through frequent vehicle queuing can be challenging.

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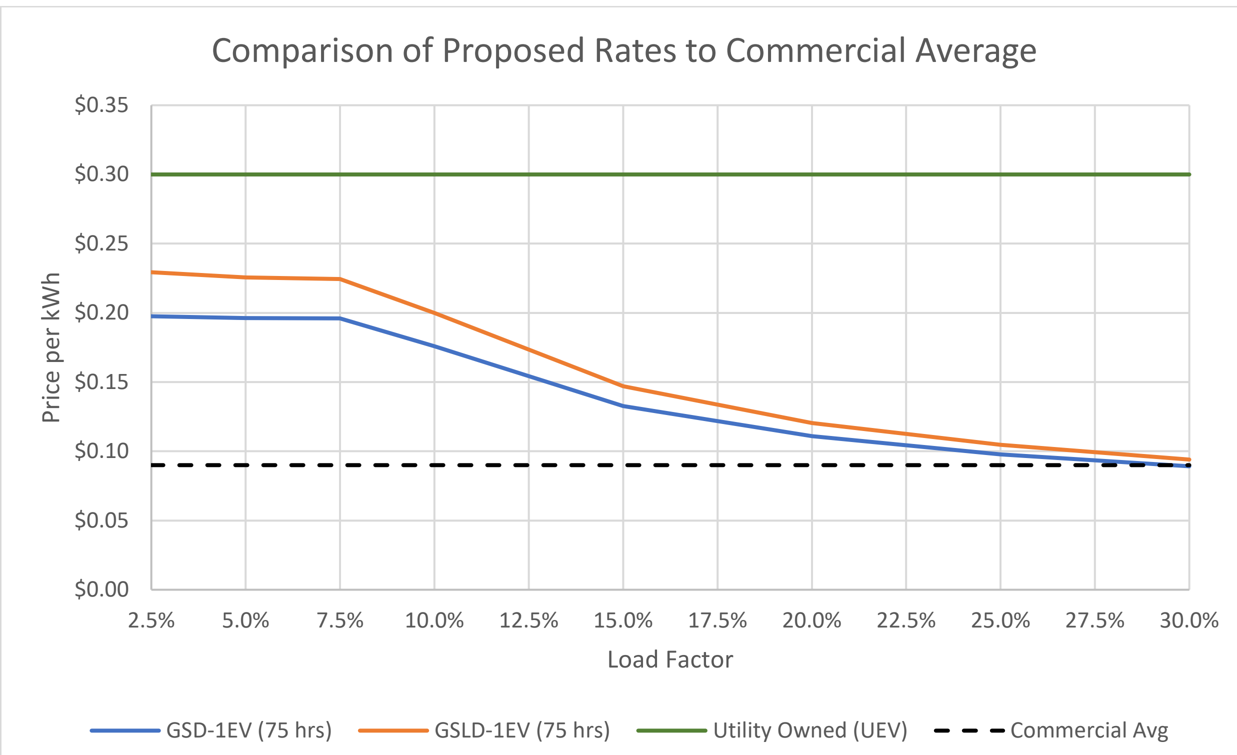
[8] Based on FPL Residential Service schedule RS-1, with charges for the first 1000 kWh and published billing adjustment charges included which total approximately 8.57 cents/kWh.
[9] https://www.dominionenergy.com/virginia/rates-and-tariffs/business-rates
[10] https://www.xcelenergy.com/staticfiles/xe/Regulatory/Regulatory%20PDFs/rates/MN/MNBusRateCard.pdf
[11] FPL Response 11 to Staff's First Data Request.
[12] Ibid.

FPL's petition states that DCFC stations in their service territory, "have average load factors generally ranging from 1% to 23%, with most stations operating with a load factor of less than 10%."[13] In Tesla's experience, vehicle queueing and station congestion can occur when load factors are in the low teens, and can get significantly worse as load factors increase, thus driving the need to construct new stations or DCFC network capacity to meet driver demand. FPL's proposed EV pilot tariff does not provide improvement over existing tariffs for EV charging stations above 10% load factor. As a result, stations with load factors between 10% and 25% still pay an effective rate well above the $0.09 per kWh average price of electricity for other customers on GSD-1 and GSLD-1.[14]



FPL's EV pilot tariff suggests setting the price of third-party EV charging providers at $0.20/kWh "which is below the estimated market price of fast charge services (~30 cents per kWh)

[13] FPL Petition p.7.
[14] FPL Petition p.13

and leaves some margin to contribute toward the fast charge station's other costs."[15] Tesla appreciates FPL's rationale behind trying to set an effective electricity price relative to a presumed average price for DCFC, but we also note that the approach is not appropriate and can lead to potential unintended consequences arising from FPL's proposal to also deploy charging stations. In particular, Tesla's business model for the Supercharger network is unique and not representative of how other networks operate or price their services in the industry. Tesla has not operated the Supercharger network as a profit center, and customers that purchase Tesla vehicles are effectively contributing to the construction, operation and maintenance of the network when they purchase the vehicle, in addition to paying for the network when they use a Supercharger. Therefore, including Tesla's pricing to set a rate threshold will skew the estimated price for third-party services lower than is likely appropriate. Standalone charging operators, such as EVgo and Electrify America, appear to primarily price their services based on the total cost to build, maintain and operate DCFC equipment. As such, the 75 hour demand limiter proposal when coupled with challenges of achieving higher load factors at DCFC and with FPL's proposal to own and operate DCFC equipment that charges customers 30 cents/kWh, leaves charging operators with little wiggle room between their electricity operating costs and competing for EV drivers to use their DCFC stations based on charging prices.

To mitigate these issues, Tesla proposes several possible modifications to FPL's current rider proposal, both of which are currently in use in other utility territories. One modification, which would support a majority of charging stations and provide a similar path towards regular commercial rates, would be to increase the demand limiter to 150 hours. A demand limiter of 150 hours provides demand charge mitigation for EV charging stations up to ~21% load factor (150

[15] FPL Response 11 to Staff's First Data Request.

hours / 730 hours in a month = 20.55%). With a demand limiter of 150 hours a public EV charging station at 10% load factor could expect to pay $0.12/kWh, or 33% more than the average commercial customer, versus $0.18/kWh with the proposed demand limiter of 75 hours.[16]

As stated in FPL's response to Staff's question, the demand limiter in the case of FPL's EV pilot tariffs is ultimately working to achieve a "set-point." A second tariff example that follows a "set-point" methodology comes from Eversource Connecticut's Electric Vehicle Rate Rider.[17] This successful "set-point" mechanism functions where if *"a rate component of such schedule is priced on a demand basis (i.e. per kW or per kVA), the EV customer under this Rider will be subject to a charge determined on an equivalent per kWh basis using the corresponding average price of such rate component."* To the degree a "set-point" mechanism is desired to be used, Tesla supports the methodology used by Eversource Connecticut and sees merit in this approach.

Two potential options to mitigate potential unintended consequences of charging operators having to compete on a set price of 30 cents/kWh for end use services, is to remove Tesla from the average price calculation of third-party charging services, and/or set prices for FPL's charging services based on an estimate of the total cost of providing DCFC services. As noted previously, Tesla's business model for our Supercharger network is unique and not necessarily replicable by other charging operators.

IV. Conclusion

Florida is one of the most important EV markets in the United States and Tesla appreciates the Commission's thoughtful consideration of the issues related to the EV pilot tariffs proposed

[16] Based on an 8-stall charging station with chargers capable of simultaneously charging at 75 kW. 10% load factor based on station nameplate 600 kW, max billed demand assumed to be 500 kW, and usage at 43,200 kWh/month.
[17] https://www.eversource.com/content/ct-c/business/my-account/billing-payments/about-your-bill/rates-tariffs/electric-vehicle-rate-program

by FPL. Public utility companies play a crucial role supporting investment in EV charging infrastructure. Tesla looks forward to continuing to engage with the Commission and other stakeholders to support transportation electrification in Florida.

Respectfully submitted,

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By: *___/s/ Bill Ehrlich_______*

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