

**STATE OF NEW HAMPSHIRE**  
**PUBLIC UTILITIES COMMISSION**

**ELECTRIC DISTRIBUTION UTILITIES**

**PUBLIC UTILITIES COMMISSION**

**DOCKET NO. IR 20-004**

*Investigation of Electric Vehicle Rate Design Standards, Electric Vehicle Time of Day Rates for Residential and Commercial Customers*

**WRITTEN COMMENTS OF TESLA, INC.**

Tesla, Inc. (“Tesla”) hereby submits comments to the Public Utilities Commission (“Commission”) in Case No. IR 20-004, the Matter of the Commission’s Investigation of Electric Vehicle Rate Design Standards, Electric Vehicle Time of Day Rates for Residential and Commercial Customers. Tesla appreciates the Commission taking up this important matter and for 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 is essential for EV sales and for EV drivers to confidently travel. Regulated utilities can play an important role in the competitive landscape of EV charging by providing EV charging specific utility rates, beneficial line extension policies, and where appropriate, offer EV charging infrastructure incentives in the market.

## **I. Introduction to Tesla and Tesla's Charging Deployments in New Hampshire**

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 headquartered in Palo Alto and Tesla vehicles are currently manufactured in Fremont, CA. Tesla's 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, a Roadster sports car, and a Class 8 Semi truck.

Tesla has also made significant investments in charging stations to support the transition to electric transportation. Tesla owns and operates an extensive Supercharger network of direct current fast chargers ("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. Superchargers are currently only available to Tesla vehicles. Tesla has periodically provided promotions that offer free use of Superchargers in order to incentivize the purchase of the vehicle. For Tesla owners that pay to use Superchargers in New Hampshire, they are billed approximately 28 cents per kilowatt-hour (kWh).

While Tesla owns and operates the Supercharger equipment and is the utility customer of record, it does not own the underlying property on which the stations are located. Instead, Tesla partners with businesses, such as convenience stores and shopping centers, to host Superchargers on their property.

The Tesla Supercharger network is extensive and designed to provide customers a seamless and convenient charging experience. Globally, there are more than 2,000 Supercharger stations and over 18,000 total Supercharger charging stalls. There are currently 6 Tesla Supercharger locations across New Hampshire and a total of 52 Supercharger stalls. Supercharger stations are located in a variety of locations in order to best serve drivers.

Currently, the Supercharger network is primarily composed of a couple of different types of customer facing hardware. The first are stations often referred to as V2 Superchargers, which currently operate up to 150 kW per charge stall. V2 Superchargers can provide about 200 miles of range in as little as 30 minutes.

The second are stations typically referred to as Urban Superchargers because of their compact design with reduced clearance requirements. Urban Superchargers can deliver up to 75 kW per stall. For both of the aforementioned applications, two charge stalls are connected to a single charging cabinet capable of 150 kW of direct current output, and the two stalls share the power. For example, an 8 stall V2 Supercharger station has a maximum DC output of 600 kW (4 charging cabinets multiplied by 150 kW per cabinet).

New Supercharger locations are predominantly Tesla's V3 Supercharger product that features a power cabinet that supports power sharing across the entire site with up to 250 kW charge rates per stall. At this rate, a Model 3 can recover about 75 miles of charge in 5 minutes. The typical charging session time with a V3 Supercharger is cut by 50 percent to about 15 minutes when compared to charging on a V2 Supercharger.

Tesla also has an extensive publicly accessible Level 2 "Destination Charging" network. Level 2 charging is on 208/240 volt, alternating current circuits and can provide about 25-50 miles of range per hour. Destination Chargers are typically located at hotels, restaurants, and shopping

centers around the country. There are nearly 27,000 Destination Chargers deployed globally. There are 28 Destination Charging locations in New Hampshire, with a total of 44 Tesla Destination Chargers.<sup>1</sup>

Unlike the Supercharger network, Tesla does not own Destination Chargers. Instead, Tesla works with businesses and property owners to install the charging equipment, and the site host owns the equipment and pays for electricity while Tesla markets the charging locations to drivers. Use of Destination Chargers is currently free.

## **II. Rate Design Standards for Electric Vehicle Charging Stations**

Tesla appreciates Staff's thoughtful consideration of issues related to rates for EV charging and generally supports Staff's Recommendations from April 3, 2020. Tesla especially supports the development of all-volumetric time of use (TOU) rates by New Hampshire utilities for different EV charging use cases, including public "high demand draw charging stations." Tesla more specifically addresses the fifteen separate recommendations offered by Commission Staff with comments below.

- 1. Cost of Service: Issue guidance that, to the maximum extent practicable, electric vehicle charging rate designs shall reflect the marginal cost of providing electric vehicle charging services.*

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<sup>1</sup> Department of Energy Alternative Fuels Data Center, Electric Vehicle Charging Station Locations: [https://afdc.energy.gov/fuels/electricity\\_locations.html#/find/nearest?fuel=ELEC](https://afdc.energy.gov/fuels/electricity_locations.html#/find/nearest?fuel=ELEC)

Tesla supports this guidance. there is precedent of other utilities including Pacific Gas & Electric and San Diego Gas & Electric designing EV rates to reflect marginal costs of providing EV charging services.

*2. Declining Block Rates: Issue guidance prohibiting declining block rates for any separately metered electric vehicle supply equipment.*

Tesla has no comments on this Staff recommendation at this time.

*3. Time of Use Rates – Appropriateness: Issue guidance supporting time of use rates as an appropriate rate design component for electric vehicle charging.*

Tesla generally supports time of use rates for EV charging and views all-volumetric TOU rates as an appropriate design for EV charging. Below is a table of other utilities that have provided commercial EV rate options many of them opting for TOU rates as an appropriate rate design component for electric vehicle charging.

Utility	TOU Rate	Demand Charge Credit	EV Adjustment
Alabama Power	X		
Anaheim Public Utilities	X		
ConEdison			X
Connecticut Light and Power			X
Hawaiian Electric	X		
Indiana Michigan Power	X		

Northern States Power Company	X		
NV Energy	X		
OtterTail Power	X		
Pacific Gas and Electric	X		
Pacific Power (Oregon)		X	
Southern California Edison	X		
Tacoma Power		X	
Xcel Energy (Colorado)	X		

4. **Time of Use Rates – Whole Facility/House vs Separately Metered:** Issue guidance that any electric vehicle TOU rates offered by the utilities should provide an option for customers to enroll in a separate rate class specific to electric vehicle charging end use.

Tesla generally does not support the partitioning of EV charging load into a separate rate class. EV drivers may charge in different rate classes depending on whether they are charging at a public charging station (commercial rate class) or charging at home (residential rate class). Tesla’s current position is that charging load should be considered among existing rate classes dependent on use case – i.e. commercial vs. residential charging.

5. **Time of Use Rates – Alternative Metering:** Direct the electric distribution companies to file a feasibility assessment within 90 days relating to opportunities for offering an electric vehicle time of use rate for residential and commercial facilities that utilizes interval metering capability of devices other than a utility owned meter. If an electric distribution company finds such an offering would not be feasible at this time, the

*assessment should nonetheless include a quantification of costs that would need to be incurred to deploy such a strategy, an explanation of any other barriers that may exist, and a roadmap for overcoming those barriers.*

Tesla supports this direction.

6. ***Time of Use Rates – Energy, Transmission, and Distribution:*** *Issue guidance that any separately metered electric vehicle charging rates developed by the utilities should include a time-varying component for energy, transmission, and distribution. Once a utility has collected data regarding the average annual load shape of 500 electric vehicle rate customers, the Company shall solicit a separate tranche for full requirements, load following energy service within its default service solicitation for the electric vehicle customers using an average annual load shape specific to that customer class.*

Tesla generally supports this Staff recommendation.

7. ***Time of Use Rates – Consistency Among Utilities:*** *Issue guidance that any separately metered residential electric vehicle charging rate should: (1) be based directly on cost causation; (2) incorporate time varying energy supply, transmission, and distribution components; (3) have three periods (e.g.- off peak, mid-peak, and peak); (4) be seasonably differentiated (e.g.- summer and winter); (5) have an average price differential between off-peak and peak of no less than 3:1; and (6) have a peak period no longer than four hours in duration.*

Tesla generally supports this Staff recommendation.

8. ***Time of Use Rates – Quantification of Incremental Costs:*** *Require each utility seeking approval of an electric vehicle time of use rate to provide an assessment of incremental costs associated with that offering, including but not limited to those costs associated with billing, metering, and marketing.*

Tesla does not oppose this Staff recommendation but encourages the incremental costs and benefits associated with electric vehicle charging load to be tracked, including the potential benefit to all ratepayers of reduced per unit costs as a result of increased system utilization.

9. ***Seasonal Rates:*** *Issue guidance expressing a preference for seasonally differentiated electric vehicle charging time of use rates consistent with the underlying cost causation of the summer and winter seasons.*

Tesla generally supports this Staff recommendation.

10. ***Interruptible Rates:*** *Issue guidance that interruptible rates are not an appropriate rate design for electric vehicle charging.*

Tesla supports this Staff recommendation.

11. ***Load Management Techniques:*** *Issue guidance that load management techniques may be an appropriate strategy for electric vehicle rate design, but express a clear preference for delivery of such offerings in conjunction with TOU rate offerings, to the extent reasonably practicable.*

Tesla agrees in principle and views well-designed, all-volumetric TOU rates for EV charging as foundational to any load management strategy. Load management techniques that go beyond TOU rates should be optional and evaluated based on impact for specific charging applications.

***12. Demand Charges – Peak Coincidence or Volumetric Pricing Structure Alternative:***

*Issue guidance that demand charges may be a component of an appropriate rate design for high demand draw charging stations, but that utilities should explore alternatives to the customer peak demand charges prevalent in New Hampshire, such as the use of volumetric pricing structures or demand charges which are based on coincidence with system peak and other peaks reflective of cost causation. Demand charges are not likely warranted for most residential charging applications.*

Tesla supports having multiple rate options for high power charging stations and supports the use of volumetric pricing structures for high power charging stations as a baseline. Demand charges based on coincidence with system peak are an improvement over non-coincident demand charges due to better reflection of cost causation. As a relevant example of such a rate, the Maine Public Utilities Commission recently approved an EV charging station pilot rate for direct current (DC) fast chargers that differentiates between non-coincident demand and demand that coincides with the Company's monthly system peak.<sup>2</sup>

***13. Demand Charges – Rate Design Alternative Analyses: Require Eversource to file for review within 90 days the results of any analysis conducted by its affiliates relating to***

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<sup>2</sup> Maine Public Utilities Commission Docket No. 2020-00165. Optional Targeted Service Rate: DCFC-B. <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2020-00165>

*rate design alternatives to demand charges or if it is not available, then file it when it becomes available.*

Tesla supports this Staff recommendation.

***14. Demand Charges – Peak Coincidence Billing/Metering Feasibility:*** *Issue guidance directing each utility to file within 90 days a feasibility assessment of incorporating peak-coincident demand charges into its billing and metering system for the purposes of offering an electric vehicle charging rate to commercial and industrial customers.*

Tesla has no comments on this Staff recommendation at this time.

***15. Time of Use Rate Proposal Filings for Separately Metered EV Chargers:*** *Open an adjudicative proceeding and direct each electric utility to file within 120 days, consistent with the guidance above: (1) an electric vehicle time of use rate proposal for separately-metered residential and small commercial customer applications; (2) an electric vehicle time of use rate proposal for separately metered high demand draw commercial customer applications that may incorporate direct current fast charging or clustered level 2 chargers. Both proposals should be accompanied by testimony explaining how those rates were developed, any plans for marketing residential electric vehicle time of use rates, and how the rate is consistent with the Commission guidance.*

Tesla supports this Staff recommendation.

### III. Conclusion

Tesla sees New Hampshire as an important EV market in New England and appreciates Staff's thorough consideration of issues related to EV charging utility rates. Public utility companies play an important role in the deployment of public EV charging infrastructure and can actively accelerate EV charging infrastructure deployment by offering all-volumetric TOU rates for EV charging, implement EV "make-ready" programs, enact beneficial line-extension policies, and where appropriate, provide EV charging infrastructure incentives. Thank you for the opportunity to provide comments in this case. Tesla looks forward to continuing to engage with the Commission and other stakeholders to support transportation electrification in New Hampshire.

Respectfully submitted,

TESLA, INC.

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