January 9th, 2019

Judith Whitney, Clerk of the Commission
Vermont Public Utilities Commission
112 State Street
Montpelier, VT 05620

Re: Case No. 18-2660-INV – Information Request - RE: Transportation Funds

Dear Ms. Whitney,

Tesla appreciates the opportunity to provide comments to the Vermont Public Utility Commission ("Commission") in its evaluation of issues related to electric vehicle ("EV") charging as directed by Section 25 of Act 158. Tesla's mission is to accelerate the world's transition to sustainable energy through electric vehicles and sustainable energy products. A focus on customer experience and satisfaction is core to Tesla's success, and maintaining fair policies is critical for the continued growth of EV adoption. We understand the challenges facing government leaders at all levels in terms of transportation infrastructure investment, and are interested in working with stakeholders to find solutions to infrastructure funding that are fair and don't create unintended consequences for our customers and an emerging electric transportation sector.

While it is important to begin evaluating EVs in the context of highway infrastructure investments at this early stage of adoption, it is also vital to ensure potential solutions are thoroughly vetted and considered in the broader context of all on-road vehicles and the larger factors that are influencing the reduction in funds for highway infrastructure. Currently, the Federal Highway Trust Fund and state infrastructure funds are below requirements because (a) the tax rate is not keeping pace with inflation, (b) infrastructure improvement costs are rising faster than revenue into the program, and (c) fuel-efficient vehicles consume less gasoline.

There are a variety of potential ways to raise additional revenues for transportation funding in Vermont and it is important to take a holistic approach of all potential options to ensure that EVs are not penalized relative to non-electric vehicles. For example on average, a Toyota Prius driver in Vermont could pay around $80 towards gas tax annually, any gas tax or similar fee applied to EVs should not exceed this number.[1] Any proposed transportation funding mechanisms therefore should seek to achieve additional policy objectives of Vermont, including achieving goals of the State's Zero Emission Vehicle program and improving the environment and air quality

To have a wide and immediate impact on the state's fund for infrastructure, any proposed programs should coincide with reforms to gasoline tax, including tying the gas tax to inflation. Vermont's tax is currently lower than neighboring states so an increase in the gas tax would be appropriate and tying it to inflation would make it more sustainable.

Electric Vehicles provide direct and indirect benefits such as lower emissions, and thus improved air quality and their associated health benefits, increased use of locally generated electricity, lower dependence on foreign oil and generally safer roads. Tesla vehicles have some of the most advanced safety features seen in any vehicle today, either combustion or electric. These benefits should be accounted for in any proposals that could negatively impact adoption during this critical early stage of the industry.

[1] Assumptions:
- Average miles travelled by Vermont resident (13,458 miles)
- EPA Fuel Economy for Toyota Prius (52 MPG)
- Current Vermont gas tax = $0.31

Proposals to increase registration fees on EVs may not be impactful in the near-term and may actually have a negative effect on adoption. According to IHS Markit data, there are currently only a couple hundred pure battery electric EVs registered in Vermont, and when including hybrids and plug-in hybrids, there are less than 1300. Fees assessed on EVs will have a negligible impact on the overall transportation fund in the near-term and therefore should not be hastily considered as an adequate solution given the potential unintended consequences and implementation complexity.

Rather, the state should outline several potential options and thoroughly study designs, including a program that accounts for both emissions impacts and road usage by having a percentage of fees collected based on road use, and a percentage based on the emissions or efficiency profile of the vehicle.

A thorough assessment of implementation considerations is necessary for potential mechanisms given the complexity and variety of ways EVs operate. Unlike gasoline taxes which are paid by fuel distributors and collected at discrete fueling stations, a similar mechanism of taxing the electricity where EVs charge is more complex due to the variety of charging options and locations where an EV can charge and the infrastructure required to monitor and record usage, which are additional costs borne by the EV driver.

For example, unlike an internal combustion engine vehicle that only fuels up at gas stations, the majority of EV charging occurs at home or at work (80%+)[2] and the remainder at public charging stations. It is likely that only a small fraction of home charging is separately metered by the utility, thus making it difficult to distinguish electricity consumed for transportation that would be subject to taxes, and electricity consumed for other uses around the house. EV drivers are charging their vehicles at a variety of locations, including in existing wall outlets or charging stations, some of which are separately metered but others that are not.

Tying transportation fees to the consumption of kWh would require additional means of measurement or separate metering for homes, and a means to provide specific vehicle usage data to a validating/reporting body. All these factors add significant cost and retrofit requirements to EV drivers, unfairly penalizing them.

The approach of assessing fees on a kWh basis would also likely unfairly impact charging station providers in Vermont. As discussed previously in this case, it is unclear whether charging providers are able to bill customers on a kWh basis for charging services in Vermont without being considered a public utility. Most existing providers bill for charging services on a time basis, such as per minute of charging. Charging operators would not be able to pass along a $/kWh transportation fee, and instead would need to translate it into a $/minute fee. As a result, EV drivers may be paying more per kWh than they would otherwise because the time it takes to charge can differ significantly between vehicles, chargers and situations. This adds an additional layer of financial inequity versus gasoline drivers. Moreover, gasoline is exempt from sales tax while electricity is subject to sales taxes. Adding additional taxes on top of electricity can put EVs at a further disadvantage as drivers are effectively paying more per unit of power.

In conclusion, there are several mechanisms that the Commission and Department of Transportation should consider in its evaluation with increased focus on equity, policy goals, and implementation and potential unintended consequences since EV charging is a fundamentally different model than gasoline fueling. It is also important to not only look towards EVs but to also consider increasing the gas tax and tying it to inflation. Doing so would have greater impact on transportation funding and not negatively influence adoption of EVs. The state should account for all the additional variables regarding the use of EVs such as those environmental benefits when developing any program for use-taxes on EVs. Tesla agrees that over the long-term, a solution to road funding is required and it will likely be a complex undertaking to balance a sustainable revenue source whilst still being fair to all vehicle owners.

[2] US. Department of Energy. “Charging at Home”. Available from: https://www.energy.gov/eere/electricvehicles/charging-home

TESLA Tesla, Inc.
3500 Deer Creek Road, Palo Alto, CA 94304

Tesla welcomes the opportunity to continue contributing to the Vermont PUC inquiry and thanks the commission for its interest in an important and timely topic.

Sincerely,

/s/ Junaid Faruq

Junaid Faruq
Sr Charging Policy Engineer
Tesla Inc.
Fremont, CA
Telephone: (410) 292-4487
E-mail: jufaruq@tesla.com

/s/ Carine Dumit

Carine Dumit
Sr Policy Advisor
Tesla Inc.
New York, NY
Telephone: (845) 803-5390
E-mail: cdumit@tesla.com