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This document was electronically filed using ePUC

April 8, 2019

Ms. Judith Whitney, Clerk
Vermont Public Utility Commission
112 State Street, Floor 4
Montpelier, Vermont 05620

Re: Docket 18-2660-INV
Investigation into promoting the ownership and use of electric vehicles in the State of Vermont

Dear Ms. Whitney:

The Public Utility Commission (“Commission”) issued a Notice of Workshop on March 22, 2019. The notice contained requests for information on a number of issues. Please find the Department of Public Service’s (“Department”) responses to these topics below. The responses were developed in collaboration with the Agency of Natural Resources, the Agency of Transportation, and the Department of Buildings and General Services.

Questions for Vermont’s Distribution Utilities

- 6. What pace of EV adoption and EVSE deployment is needed for Vermont to achieve the goals of the State’s Comprehensive Energy Plan and its greenhouse gas reduction goals? How can Vermont’s utilities assist in meeting those goals, and what level of effort and investment is required to meet them? What can the PUC do or change to help in meeting those goals? Are you aware of the type of incentive, the level of incentive, or any approaches (such as marketing and sales information) that have proven to motivate a substantial shift to buying EVs, in Vermont or elsewhere?***

Vermont’s Comprehensive Energy Plan (“CEP”) contains a goal of increasing the share of renewable energy in the sector to 10% by 2025 and 80% by 2050.¹ The CEP also contains a goal of reducing green-house gas emissions from the transportation sector by 30% by 2025.² As of January 2019, there are 2,985 EVs, including both Battery Electric Vehicles (“BEV”) and Plug-in Hybrid Electric Vehicles (“PHEV”), registered in the State.³ The Agency of Transportation tracks progress in the transportation sector towards the goals contained in the CEP; as of 2015

¹ See page 140 of the 2016 Vermont Comprehensive Energy Plan.

² Id.

³ Vermont Department of Environmental Conservation. *Quarterly EV Registration Trends*. January 2019. <https://dec.vermont.gov/air-quality/mobile-sources/zev>

(the most recent data available at the time the report was prepared), approximately 5.5% of the energy consumed in Vermont’s transportation sector is renewable.⁴

As an approximation of the 10% renewable goal by 2025, Vermont could aim to have 10% of Vermont’s vehicle fleet electrified by 2025. Vermont has approximately 615,000 registered vehicles⁵, which roughly translates to a goal of having 60,000 vehicles electrified by 2025. The pace of adoption needed to reach 60,000 vehicles by 2025 from the 2,985 registered today is an approximately 54% compound annual growth rate.

The Role of State Government

- 1. What role can state government play in providing incentives to encourage the purchase or lease of EVs, new or used? Please provide specific examples of state-government-sponsored EV-incentive programs in other states of which you are aware, including how those programs are funded. Are you aware of the type of state incentive, the level of state incentive, or any state approaches (such as marketing and sales information) that have proven to motivate a substantial shift to buying EVs, in Vermont or elsewhere?***

State governments can oversee purchase and lease incentive programs for EVs. The table below contains information on some of the state-government-sponsored EV-incentive programs of which the Department is aware. The table below does not include utility-sponsored or other incentive programs at a less-than state scale.⁶

| State | Amount | Vehicles Covered | New and Used | Purchase and Lease | MSRP Cap | Notes |
|-------|---------------|--------------------------|--------------|--------------------|--------------------------------|---|
| NY | \$500-\$2,000 | EVs with 120+ mile range | New | Both | \$500 if MSRP is over \$60,000 | Funded through a mix of Regional Greenhouse Gas Initiative proceeds and a system benefits charge. |
| MA | \$1,500 | BEV Only | New | Both | \$50,000 | |
| CT | \$500-\$2,000 | BEV and PHEV | | Both | \$50,000 | Incentive is range dependent. |
| RI | Up To \$2,500 | BEV and PHEV | New | Both | None | <u>Program has been</u> |

⁴ Vermont Agency of Transportation, *2017 Transportation Energy Profile*, September 2017.

⁵ Id.

⁶ For a more comprehensive list of incentive programs, see the list at the following link:

[https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Transportation/Electric%20Vehicle%20Incentives/W~Andrew%20Perchlik~Electric%20Vehicle%20Incentives%20\(Compiled%20by%20Pamela%20Hathaway\)~4-2-2019.pdf](https://legislature.vermont.gov/Documents/2020/WorkGroups/Senate%20Transportation/Electric%20Vehicle%20Incentives/W~Andrew%20Perchlik~Electric%20Vehicle%20Incentives%20(Compiled%20by%20Pamela%20Hathaway)~4-2-2019.pdf)

| | | | | | | |
|----|---------------------------------------|-----------------|------------------------------|------|---------------------------------------|--|
| | | | | | | <u>discontinued.</u> Incentive is range dependent. |
| QC | \$500- \$8,000 | BEV and PHEV | Both – lower for used. | Both | \$75,000+ have lower incentive. | |
| CA | \$1,500 (PHEV) \$2,500 (BEV) | BEV and PHEV | New | Both | None | Income cap. Low income eligible for additional amount. |

The upfront price of EVs remains one of the largest hurdles to consumer adoption of EVs. Purchase incentives at the time of sale have been shown to motivate consumers’ purchase of an EV. However, it is difficult to determine the exact incentive level that motivates buyers. A recent study by the Department of Energy’s National Renewable Energy Laboratory and Tufts University concluded that a \$1,000 time-of-purchase incentive increased the purchase of EVs by 4.8%.⁷

2. What source of funding should the State of Vermont use to provide incentives for the purchase or lease of EVs?

The state agencies do not have any specific recommended sources of funding for an EV purchase and lease incentive. The Administration proposed, in this year’s Transportation Bill, a \$1.5 million-dollar incentive program funded by various legal settlements. The State is committed to vehicle electrification and will continue to look for opportunities to fund a purchase and lease incentive program while the upfront cost of an EV remains one of the major barriers to adoption.

3. What educational programs should the State of Vermont engage in to convey the benefits of transportation electrification to Vermonters, including environmental benefits, lower maintenance and fuel costs, and lower costs for ratepayers generally?

The State of Vermont provides funding support to the Vermont Energy Investment Corporation to administer the Drive Electric Vermont (“DEV”) program. One of DEV’s main goals is to increase the education and awareness of EVs in Vermont. Annual grants as well as in-kind contributions across state agencies have leveraged the DEV platform to convey the benefits of transportation electrification by:

⁷ Easwaren Narassimhan and Caley Johnson, 2018 *Environ. Re. Lett.* 13 074032. Available at: <https://www.nrel.gov/news/program/2018/nrel-research-shows-hov-lanes-and-purchase-rebates-are-effective-incentives-for-plug-in-electric-vehicle-purchase.html>.

- Maintaining and enhancing the DEV website and social media channels as an EV resource for consumers, businesses and others;
- Preparing data analyses and information to inform Agency reporting and outreach to stakeholders, including quarterly summaries of EV registrations;⁸
- Conducting DEV outreach events, including EV “ride and drive” demonstrations;
- Coordinating DEV quarterly stakeholder meetings;
- Providing technical assistance regarding electric vehicles and electric vehicle charging infrastructure to Vermont municipalities; and
- Providing technical assistance to entities seeking or awarded funding from the State’s Volkswagen (“VW”) Electric Vehicle Supply Equipment (“EVSE”) Grant Program.

The State should continue to fund the DEV program and, as needed, reconsider or expand the scope of work related to education and awareness of EVs to incorporate lessons learned or newly emerging best practices. Other strategies that have proven to be effective include dealer education and outreach related to the EV driving experience.

The State also is a participant in the Drive Change Drive Electric campaign. Drive Change Drive Electric is a partnership between automakers and Northeast states with the goals of advancing consumer awareness, understanding, consideration, and adoption of EVs.⁹

4. What can state government do to ensure that the benefits of transportation electrification are not limited to citizens with higher levels of income?

Broadly speaking, the State can ensure that the benefits of transportation electrification are extended to low-to-moderate income households (“LMI”) by ensuring that these populations are considered when incentive programs, education campaigns, and other activities are proposed, implemented, administered, or reviewed by the State. More specifically, LMI can be considerations in the education and awareness campaigns designed and administered by DEV. Additionally, as is proposed in the Administration’s purchase incentive program, the State can design programs to provide a higher incentive level to LMI households. Specifically, the proposed incentive program doubles the amount of funding available for households at or below Vermont’s median household income. Finally, the State of Vermont, through the Department and the Public Utility Commission, can monitor and ensure that other programs, such as the incentives offered through Tier III of the Renewable Energy Standard, consider access to LMI when those programs are designed and implemented.

5. What other suggestions or ideas do you have for the role of state government?

The State should continue its participation in the Zero-Emission Vehicle Multi-State Task Force as well as oppose federal rollback of the CAFÉ/emission standards.

⁹ For more information see: <https://driveelectricus.com/about-us/>

6. *What other incentives can the State provide — for example, providing EVSE in state employee parking lots?*

In all new major construction projects where state employees and the public are likely to need EVSE now or in the future, the Department of Buildings and General Services (“BGS”) incorporates the installation of Electric Vehicle Supply Equipment (“EVSE”) in the project contract. The most recent locations are the Waterbury Office Complex and the Vermont Agriculture and Environmental Lab. Not all state employee parking lots can accommodate charging stations without significant costs to upgrade electrical infrastructure.

BGS will continue to electrify the State’s Fleet and when fleet dedicated charging is installed, an analysis will be conducted to determine whether it is feasible for the state to include additional publicly accessible charging stations in the installation project.

State agencies are currently working with the legislature to enact language that allows agencies to charge a fee for the use of State owned EVSE. This language will help facilitate the installation of additional EVSE available to the public by creating an avenue for agencies to be reimbursed for electricity and associated costs.

The BGS Commissioner recognizes that electric vehicle technology is rapidly changing and the demand for EVSE by state employees is growing. To meet these needs the Commissioner has created an EVSE Planning Task Team to develop a strategic plan for deploying EVSE at BGS owned and operated facilities.

7. *Should the State do more to switch its vehicle fleet to electric and prioritize the use of the most efficient vehicles in its current fleet?*

The State Motor Pool currently has 25 PHEV and 2 BEV. Over the next year, the BGS Fleet Management Services (“FMS”) plans to add 12 BEV into the state motor pool. BGS will be installing EVSE infrastructure throughout the state at Fleet motor pool locations to accommodate these vehicles. BGS Fleet Management Services uses vehicle right sizing to assign the appropriately sized vehicles from our motor pool, based on the travel needs of state employees, when a vehicle request is submitted.