

Testimony to the Senate Committee on Transportation

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**Electric Vehicle Definitions and
Electric Vehicle Purchase and Lease Incentive Program**

I. Overview

Today I am following up on testimony I provided on March 21, 2019 on the definitions in section 25 of the Transportation Bill (H.529) and on the electric vehicle purchase and lease incentive program in section 26.

II. Electric Vehicle Definitions

Section 25 of the Transportation Bill would amend of Section 4 the Motor Vehicle Code (Title 23) by adding definitions of “electric vehicle” and “plug-in hybrid electric vehicle.” The reason for adding these definitions to the Motor Vehicle Code would be to refer to them in Sections 26 and 27 of the Transportation Bill, which would establish an electric vehicle purchase and lease incentive program for low- to moderate-income Vermonters.

The last time I was here, I testified that the definitions currently proposed in section 25 may be more complicated than necessary and could create confusion by creating inconsistencies with existing terminology. As I pointed out, the 2018-2021 ZEV Task Force Multi-State ZEV Action Plan includes some simple, practical definitions. ZEV Action Plan ([file:///C:/Users/ddutcher/Downloads/2018-zev-action-plan%20\(1\).pdf](file:///C:/Users/ddutcher/Downloads/2018-zev-action-plan%20(1).pdf)) at 1.

Those definitions are listed here with some minor clarifications based on Vermont’s participation in the Multi-State ZEV Task Force:

Zero Emission Vehicles (ZEVs), include:

Battery Electric Vehicles (BEVs)—electric drive powered solely by an electric battery,

Fuel Cell Electric Vehicles (FCEVs)—electric drive powered by a fuel cell using hydrogen fuel, and

Plug-In Hybrid Electric Vehicles (PHEVs)—powered by a combination of a rechargeable electric battery and an internal combustion engine.

The term Plug-In Electric Vehicle (PEV) is a subset of ZEVs and includes both PHEVs and BEVs.

I also testified that in addition to introducing new terms that may not be necessary, the definitions currently proposed for section 25 of the Transportation Bill would limit EVs to pleasure cars, which may needlessly exclude pickup trucks and SUVs. I suggested that it might work better for the Transportation Bill to adopt the ZEV Action Plan definitions and then place any restrictions on program eligibility in the part of the bill that addresses the elements of the incentive program.

Further, I testified that it is unlikely that anyone could use the EV incentive program to purchase a hydrogen fuel cell vehicle but that the incentive program is aimed at scaling up battery electric vehicles and plug-in hybrid electric vehicles and that the definitions or program elements could therefore be modified to exclude hydrogen fuel cell electric vehicles from coverage.

I would like to point out today that while the proposed definitions of “electric vehicle” and “plug-in hybrid electric vehicle” in section 25 of the Transportation Bill would amend the definitions section of the Motor Vehicle Code (23 V.S.A. § 4), these new definitions would not be used in the Motor Vehicle Code. Rather, the Transportation Bill proposes these definitions to be able to refer to them in Section 27 of the Transportation Bill, which is the proposed electric vehicle purchase and lease incentive program and which does not propose to amend the Motor Vehicle Code or any other provision of the Vermont Statutes.

As a result of Act 139 of 2018 (H.410), the Motor Vehicle Code (Title 23) currently refers to “electric vehicle charging station” in section 1104 and to “plug-in electric vehicles” in sections 1106 and 1008a, all related to EV parking. However, neither of these terms appear in Title 23, section 4—the definitions section of the Motor Vehicle Code. Instead, they must be understood by their plain meaning.

Thus, as drafted, the definitions of “electric vehicle” and “plug-in hybrid electric vehicle” in section 25 of the Transportation Bill would be inconsistent not only with the ZEV Action Plan, but also with the Motor Vehicle Code. And these definitions would appear in the definitions section of the Motor Vehicle Code without any reference to them in the body of the Code. All this could confuse the Motor Vehicle

Code and insert definitions there that might need to be changed in the event the Motor Vehicle Code needs to address additional matters relating to electric vehicles.

On a related matter, and to complicate the subject of definitions a bit further, section 32 of the Transportation Bill would remove the PUC's jurisdiction over electric vehicle charging stations. This would implicitly give the AAFM the responsibility for weights and measures relating to EV charging infrastructure. The Committee Bill on EVs (19-0462, draft 10.1), which could be folded into the Transportation Bill, would expressly grant the responsibility for weights and measures relating to EV charging infrastructure to AAFM. The Committee Bill contains its own definitions of "Electric vehicle," "Electric vehicle charging station," and "Plug-and-go technology."

The Committee Bill would add these definitions to section 4 of the Motor Vehicle Code, and like the Transportation Bill, would not make additional amendments to the Motor Vehicle Code, although the Committee Bill would refer to these definitions in amendments to Title 30 (Public Service). The definition of "Electric vehicle" in the Committee Bill is different from the definition contained in the Transportation Bill and the definitions in the ZEV Action Plan.

Although the term "electric vehicle charging station" appears in sections 1008a and 1106 of the Motor Vehicle Code, AAFM proposes eliminating the definition of "electric vehicle charging station" in the Committee Bill and substituting the term "electric vehicle supply equipment" (EVSE), which is commonly used to describe electric vehicle charging infrastructure. AAFM has made this suggestion to make the terminology in the Committee Bill and in Title 30 consistent with the terminology used by the National Institute of Standards and Technology (NIST). AAFM will rely on NIST as AAFM assumes responsibility for weights and measures relating to EV charging infrastructure. VTrans supports the use of the term EVSE but would suggest moving the definition to Title 30 because that is where the term will be used.

How to resolve what the terminology should be and where it should go?

- The Motor Vehicle Code (Title 23) can stay the way it is. It uses the terms "electric vehicle charging station" and "plug-in electric vehicles" in connection with EV parking. The term "plug-in electric vehicles" is consistent with the definitions in the ZEV Action Plan and can be understood in the Motor Vehicle Code by its plain meaning without being defined. The ZEV Action Plan does not define the term "electric vehicle charging station" but liberally

refers to charging and charging stations, which are becoming common terms as EVs proliferate and can be readily understood.

- In the Transportation Bill, VTrans suggests eliminating the current text of section 25, which would add definitions of “electric vehicle” and “plug-in hybrid electric vehicle” to section 4 of the Motor Vehicle Code and substituting the following:

30 V.S.A. § 201 is amended by adding:

(c) As used in this chapter, “plug-in electric vehicle” (PEV) means a battery electric vehicle (electric drive powered solely by an electric battery) and a plug-in hybrid electric vehicle (powered by a combination of a rechargeable electric battery and an internal combustion engine) but shall not include a fuel cell electric vehicle (electric drive powered by a fuel cell using hydrogen fuel) or a hybrid electric vehicle that does not plug in to recharge from a source off the vehicle.

(d) As used in this chapter, “electric vehicle supply equipment” (EVSE) means a device or system designed and used specifically to transfer electrical energy to an electric vehicle, either as charge transferred via physical or wireless connection, by loading a fully charged battery, or by other means.

- A new section 1(b)(2) of the Transportation Bill would be added to read:

“Plug-in electric vehicle” (PEV) means a battery electric vehicle (electric drive powered solely by an electric battery) and a plug-in hybrid electric vehicle (powered by a combination of a rechargeable electric battery and an internal combustion engine) but shall not include a fuel cell electric vehicle (electric drive powered by a fuel cell using hydrogen fuel) or a hybrid electric vehicle that does not plug in to recharge from a source off the vehicle.

Current sections (2) through (4) would be renumbered accordingly.

- In section 26(a) of the Transportation Bill (legislative findings supporting a purchase and lease incentive program for PEVs), the references to electric vehicles (EVs) would be changed to plug-in electric vehicles (PEVs). Subsequent references to EVs in section 26 would be changed to PEVs.
- Sec. 27(a) of the Transportation Bill would be changed to read as follows:

(a) As used in this section: “plug-in electric vehicle” (PEV) shall have the same meaning as in 30 V.S.A. § 201(c).

Subsequent references to EVs in section 27 (elements of the PEV purchase and lease incentive program) would be changed to PEVs.

- In section 28 (study of implementing fees for PEV charging and of extending the PEV incentive program), references to electric and plug-in hybrid electric vehicles should be changed to PEVs.
- In sections 29 through 31 of the Transportation Bill (fees for use of state owned or controlled charging stations), which would amend Title 32 (Taxation and Finance), references to electric vehicle charging stations could be changed to EVSE to be consistent with the proposed use of the term EVSE in Title 30 (through section 32 of the Transportation Bill). AAFM recommends this change.

This would require cross referencing the definition of EVSE in Title 30 in sections 29 and 30. Thus, a new 32 V.S.A. § 604(a) would be added to read:

As used in this section: “electric vehicle supply equipment” (EVSE) shall have the same meaning as in 30 V.S.A. § 201(d).

The existing proposed amendment to section 604 would be converted to section 604(b).

In section 31, the proposed amendment to 19 V.S.A. § 11(8) would be changed to read as follows:

, and fees collected for the use of electric vehicle supply equipment owned or controlled by the Agency pursuant to 32 V.S.A. § 604.

- Section 32 of the Transportation Bill amends Title 30 to eliminate the PUC’s jurisdiction over charging infrastructure not operated by regulated utilities. References to electric vehicles and plug-in hybrid electric vehicles should be changed to plug-in electric vehicles, or PEVs.
- Regarding the Committee Bill on PEVs (19-0462), AAFM has suggested substituting the term EVSE for electric vehicle charging stations. As noted above, VTrans suggests the definition of EVSE go in Title 30 rather than

Title 23. Otherwise, the definition of EVSE seems consistent with the definitions in the ZEV Action Plan, which all incorporate the term electric vehicle.

- Finally, Kevin Miller from ChargePoint provided testimony about the proposed definition of “plug-and-go technology” in the Committee Bill. Here again, VTrans would suggest locating any definitions relating to EV charging requirements in Title 30 (Public Service) rather than in Title 23 (Motor Vehicles). The agencies may have more to say about the substance of this definition tomorrow, when they are scheduled to testify about PUC jurisdiction over EVSE.

III. Electric Vehicle Purchase and Lease Incentive Program

When I testified about the incentive program on March 21, the Committee suggested simplifying sections 26 and 27 of the Transportation Bill to give the agencies additional flexibility in setting up an electric vehicle purchase and lease incentive program for low- and moderate-income Vermonters. VTrans would have no opposition to that approach.

Also, on March 21, I suggested updating the findings in section 26(c), if the Committee intends to continue to include findings in the Bill, to reflect that the number of PEVs on the road are now approaching 3,000 and that new passenger vehicle registrations are closer to 6%. These figures are accurate, except that the 6% of new passenger vehicle registrations represents an uptick in the last quarter of 2018 that reflects the arrival of the Tesla Model 3. This may represent some latent demand that may not continue in upcoming quarters. The Committee may therefore want to strike any reference to new vehicle registrations.

IV. Conclusions/Questions/Discussion

In general, the EV sections of the T-Bill are moving in the right direction. The challenges are associated not so much with substance but with drafting to ensure consistent and accurate terminology. I am happy to take any additional questions the Committee may have.