

November 5, 2018

Ms. Judith C. Whitney, Clerk  
Vermont Public Utility Commission  
112 State Street  
Montpelier, Vermont 05620-2701

RE: Case No. 18-2660-INV: Department's Post-Workshop Recommendations

Dear Ms. Whitney:

In its *Order Commencing Next Step of Investigation* dated October 24, 2018, the Public Utility Commission ("PUC") requested that participants answer a series of questions to inform the Commission's decision regarding the appropriate level of jurisdiction. The Department has answered those questions below.

#### **Questions:**

##### ***Usage Fees***

- 1) Describe how usage fees would be calculated for Vermont customers using public EV charging stations. Please identify each component used in determining the final fee, and if a component is not always used in determining the final fee, explain the circumstances under which it is used and the reasons why.**

The owners and operators of EV charging stations should be able to use kilowatt hours (kWh) as one of the components that determine the final fee for usage of an EV charging station. Owners and operators should use kWh as the determinant for actual energy dispensed by the station during the course of a charging session. Different cars can charge at different rates which, when using only a time-based fee, results in different amounts of energy dispensed for the same amount of money. They should also be free to add additional billing determinants that are designed to move vehicles along after they are finished charging and manage charging behaviors. These determinants could include a time-based fee, e.g. \$1/per hour after your car has finished charging; a demand-based fee, per kilowatt (kW); or time varying energy rates.

The Department believes that the owners and operators of EV charging stations should have flexibility in setting their billing schemes as long as they are easily understood and transparent. The pricing information should be provided to customers prior to initiating the charging sessions (see also the answer to question 15 below). Pricing information should also be included in any EVSE provider applications as well as in EV charging station maps such as the Alternative Fuels Data Center Electric Vehicle Charging Station Location Map. The access to pricing information through these resources will better enable consumers to make informed decisions and facilitate competition in this market. Additionally, the owners and operators of EV charging stations are best suited to propose billing schemes.

- 2) Are usage fees variable based on factors such as time spent at the charging station, time of day when charging occurs, type of vehicle charging at the station, etc.? For example, if a kWh charge applies to the first hour of charging and a vehicle remains at the station charging beyond that hour, could or would an additional fee above and beyond the kWh fee apply to all subsequent hours? Please explain your company's approach to setting and applying fees at charging stations.**

The Department believes that the owners and operators of EV charging stations are best suited to answer this question.

- 3) Describe any limitations imposed on the fee structures for EV charging station use in states other than Vermont.**

The Department believes that the owners and operators of EV charging stations are best suited to answer this question.

- 4) Do or should the fees charged to consumers at public EV charging stations vary based on the electricity rates charged by the utility that serves the charging station?**

The Department believes that the owners and operators of EV charging stations are best suited to answer this question. However, the pricing mechanism between the owner and operator of EV charging stations and their customers should not be prescribed. These entities should have the flexibility to provide free charging (such as a store owner that uses an EV charger to draw in customers) or to vary the fee based on market or utility price signals in order to manage their own peak (e.g. a commercial outfit that wants to minimize their demand charges). If the Commission agrees that these pricing mechanisms will not be regulated, the Department would like to reiterate the importance of ensuring transparent and easily understood rates. Regardless of the pricing scheme between the EV charging station and the customer, the pricing scheme between a distribution utility and the owner and operator of a station should be governed by a tariff. Currently, most, if not all, of these stations are on existing small commercial or general service tariffs. However, it may be worth examining EV charging station specific tariffs as part of this investigation.

- 5) Will or should variations in electricity rates due to time-of-use rate structures offered by the electric utility serving a public charging station be passed through to the users of public EV charging stations?**

Utilities and third-party providers of charging stations should be incentivized, but not required, to manage EV charging at publicly available charging stations. This does not necessarily mean that variations in electricity rates due to time-of-use rate (TOU) structures should be passed along to the users of charging stations. That is one option that a utility could use in order to send price signals to their customers. However, there are other options that could also work just as well. They include the installation of a battery to manage EV charging during peaks or high electricity rates due to TOU rates or direct control of the charging station by the utility with sufficient public notice with the consumer option to override that at a higher cost. The regulatory framework surrounding EV charging should not be prescriptive regarding how prices are set between the owners and operators of EV charging stations and their customers. Having

said that, the EV and EV charging market is rapidly evolving and we may learn things as it evolves that could trigger the need for reconsideration.

**6) Can the charging capabilities (e.g., speed) of the EV affect the rates that a consumer will be charged at the EV charging station? Please explain and offer examples from your experience.**

The Department believes that the owners and operators of EV charging stations are best suited to answer this question. However, the speed at which a charging station can charge up an EV can be used in determining the rate at which the customer is billed. Customers may be willing to pay a premium for the convenience of fast charging. Additionally, as the equipment for fast charging is much more expensive to purchase and maintain, the owner and operator may need to bill their customers at a higher rate in order to recapture their investment.

**7) How would drivers charging their vehicles at a public EV charging station pay for their usage (e.g., by credit card)?**

The means by which consumers currently pay for charging their vehicles at public EV charging stations varies considerably in the State. Some stations with membership models allow payment through an app on a cell phone for members and payment by non-members through a phone call and credit card processing, some have a donation box, others use a key fob. While the Department expects that the industry will move towards a consistent billing method across the various providers, that is not currently the case. The owners and operators of EV charging stations will likely provide additional information regarding progress towards a universal billing system. Regardless, the Department recommends that at public electric vehicle charging stations that require payment (publicly funded), the owner and operator must ensure that multiple payment options are available and that such stations are equipped with a credit card reader to allow users to pay using credit cards and debit cards (magnetic stripe and chip reader) without incurring excessive fees, inconvenience or delays versus other payment methods.

***EV Charging Station Technology***

**8) What factors affect the charging speeds for different EVs?**

The Department believes that the Original Equipment Manufacturers (OEMs) participating in this proceeding are best suited to answer this question. Having said that, it is the Department's understanding that the following factors affect the charging speed for different EVs:

- Type of EV, i.e. whether the vehicle is a Plug-in Hybrid Electric Vehicle (PHEV) or an All Electric Vehicle (AEV).
- Size of the battery (which is generally a function of the type of vehicle with PHEV having smaller batteries than AEVs).
- The charging ports that are standard equipment on the EV (most AEVs come with a Level 2 port, but not necessarily a DCFC port, which can be offered as an additional option).

**9) How will a utility determine the electricity usage of a charging station connected to its distribution grid?**

The Department believes that the distribution utilities (DUs) are best suited to answer this question. However, utilities should, at a minimum, be able to measure kWh sold and the station's contribution to peak demand. For those stations that are installed using public funding, such as through the Agency of Natural Resources VW Settlement EVSE Grant Program, the collection and reporting of utilization data for Level II and DCFC stations should be required. Such data is important to facilitate effective planning and support for the future expansion of the charging station network.

**10) Would utilities prefer to install their own meters or rely on meters included in the EV charging stations?**

The Department believes that the distribution utilities (DUs) are best suited to answer this question. However, utilities should consider whether the accuracy of the meters that are built into charging stations is sufficient for end-use rates.

**11) If a utility relies on the meter in a charging station to measure electricity service to that charging station, will the utility be able to determine the time of sale for each kWh delivered to the charging station for the purpose of applying time-of-use-rates to the electricity delivered?**

The Department believes that the distribution utilities (DUs) and the owners and operators of EV charging stations are best suited to answer this question.

**12) Can EV charging stations be configured so that more than one vehicle can charge at a single station at the same time (e.g., multiple cables or automatic disconnect when one car is fully charged) to avoid the need for one car to move to a new parking space in order for the second car to charge?**

Yes, EV charging stations can be configured so that more than one vehicle can charge at the same time. The most common method of achieving this outcome is to install a charging station with two ports. The availability of two ports ensures that if one port malfunctions the station remains available as well as provides the ability for multiple vehicles to charge at the same time. The Department believes that it is best practice to install stations with two ports.

***Consumer Protection***

**13) Does any State of Vermont entity currently have the authority to verify the accuracy of the electricity meters in EV charging stations? If yes, which agency? Please describe an appropriate regulatory oversight structure for that role. If no, what agency is best positioned to take on that oversight role and why?**

As articulated in the Department's *Post Workshop Recommendations* dated October 15, the Department believes that the Agency of Agriculture, Food, and Markets is the appropriate state agency to verify the accuracy of the electricity meters in EV charging stations. As such, the Department has reached out to the Agency to request that they file a statement directly with the Commission addressing the question above.

**14) What recourse would consumers have for complaints arising from public EV charging station usage absent Department of Public Service and Commission jurisdiction?**

As articulated in the Department's *Post Workshop Recommendations* dated October 15, the Office of the Attorney General provides broad protection against fraud and other false claims and has existing authority to take action against owners and operators of EV charging stations engaged in unfair or misleading practices. However, the Department has reached out to the Office of the Attorney General and requested that they file a response to the question above directly with the Commission.

**15) What information should be available to the users of public EV charging stations at the time they are charging their vehicles (e.g., phone number for technical assistance from station operator, phone number for consumer protection assistance, etc. posted in plain view on the charging station)?**

The following information should be posted on all publicly available EV charging stations:

- Phone number for device malfunction and, if necessary, a separate phone number for questions related to billing and complaints.
- The complete details of the billing structure for usage of the station should be displayed prior to initiation of each sessions. The following information should be displayed: the unit of sale (kWh, time, etc.), the price per unit, and any additional fees including any fees for non-members, additional fees related to parking and dwell time, any differentiation in fees due to changes in demand, if a TOU rate is in use the on-peak/off-peak rates and when those will be charged, and if a managed charging scheme is in effect the amount of notice a consumer will receive.
- DCFC stations should display the power level of the station in kilowatts.

***Utility Participation***

**16) Do third-party charge providers compete directly with utilities in any other states?**

The Department believes that the distribution utilities (DUs) and the owners and operators of EV charging stations are best suited to answer this question. However, it is the Department's understanding that there is competition in other states. For example, both California and New York have charging stations owned and operated by both utilities as well as third-party providers. Having said that, there are also partnership models that exist, such as the "make-ready" approach where the utility owns the infrastructure up to the charging station and a third-party provider owns and operates the charging station.

**17) Do any Vermont utilities have an interest in offering their own charging facilities? If so, how would that arrangement be structured (e.g., facilities and services subject to traditional utility regulation or services provided by an affiliate subject to the same level of regulation applied to non-utility providers of charging services)?**

The Department believes that the distribution utilities (DUs) are best suited to answer this question.

**18) Are there states that treat charging stations owned by utilities differently than they treat charging stations owned by non-utilities? If so, please identify those states and describe the differences in treatment and the reasons therefor.**

The Department believes that the distribution utilities (DUs) and the owners and operators of EV charging stations are best suited to answer this question. However, it is the Department's understanding that other states regulate utility investment and ownership in EV charging stations, but do not regulate third-party investment and ownership in EV charging stations. For example, CA regulates utility investment in and ownership of EV charging stations but does not regulate third-party ownership.

**19) If a utility offers time-of-use rates to a residential customer for charging an EV at home, or to a business customer for charging employee EVs at work, would or should that utility also offer the same time-of-use rates to non-utility operator of a public EV charging station? What considerations would go into determining whether to tariff such an offering?**

It may not necessarily make sense to offer the same time-of-use rate to stand alone public EV charging stations as that offered to residential and business customers. Residences and businesses use electricity for other purposes which will cover some of the common charges. However, if the rate is end-use specific it may make sense to offer it to a non-utility operator. The availability and appetite for EV end-use specific rates should be part of this investigation.

**General**

**20) Are there other considerations that these questions do not reflect, and if so, what are they?**

The Department recommends the following additional considerations for inclusion at a later date:

- The effect of demand charges on the EV charging station business model;
- Appropriate uptime requirements (as part of AAFM's potential jurisdiction);
- The appropriate contribution to the Transportation Fund from Electric Vehicle owners;
- Future proofing of both EV charging stations and the infrastructure supporting those stations; and
- Compatibility of charging stations, i.e. ensuring both CHAdeMO and SAE combo ports are available.

Sincerely,

/s/ Sheila Grace

Sheila Grace

Special Counsel