



Alliance for
Transportation
Electrification

September 21, 2018

Kathleen H. Burgess, Secretary
New York State Public Service Commission
Empire State Plaza, Agency Building 3
Albany, NY 12223-1350
Via email: secretary@dps.ny.gov

Subject: Case No. 18-E-0138, Proceeding on Motion of the Commission Regarding
Electric Vehicle Supply Equipment and Infrastructure

Dear Secretary Burgess:

Enclosed for filing in the above-referenced matter please find Post Conference Comments of the Alliance for Transportation Electrification in response to the questions presented by the Commission on August 16, 2018 in connection with the technical conference convened on July 18-19, 2018.

Respectfully submitted,

Michael I. Krauthamer

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Enclosure

Introduction

The Alliance for Transportation Electrification (the Alliance) was established in November, 2017, at the time of the NARUC meeting in Baltimore, Maryland, as a non-profit corporation, and is led by utilities, electric vehicle (EV) infrastructure firms, auto OEMs (original equipment manufacturers), and affiliated trade associations. We started with 20 organizations at the launch just 10 months ago, and have grown rapidly over the past year to include about 40 members today.

We advocate primarily before State Commissions and other state agencies, preferably prior to litigation, in which we promote policies that remove barriers to EV adoption and accelerate the deployment of EVSE (electrical vehicle supply equipment) in suitable locations in a state. We encourage a collaborative approach in addressing these issues at Commissions and state agencies through processes similar to the “big tent” approach that you are developing now in New York. Our responses to your questions follow.

1. What role should the utility play in supporting Electric Vehicle Supply Equipment (EVSE) deployment? Please address this question from the perspective of utility ratepayers, Electric Vehicle (EV) suppliers, and providers of EVSE. How should utility investment costs, if any, be compensated or recovered? Should utilities have the opportunity for earnings adjustment mechanisms related to successful EVSE deployment?

Deployment of electric vehicle supply equipment (EVSE) across the state depends on complementary efforts between utilities and non-utility stakeholders. The overarching goals are to: (1) lay the groundwork for a statewide EV charging ecosystem, (2) empower customers to manage their load, (3) introduce capabilities to improve the grid, (4) increase grid utilization, (5) facilitate distributed resources, and (6) lower costs to all customers over time. There is no one-size-fits-all solution. The non-utility, third party service providers play an important role in the marketplace and the EVSE market will develop in hybrid and multiple ways. Some scenarios, however, present economics that are highly challenging for the private sector to

adopt the necessary long-term timeframe for measuring the return on capital investments, which regulated utilities are able to do.

One fact that is common to every EVSE use-case (i.e., single family, multifamily, workplace, retail and direct current (DC) fast charging within and in between cities), is that deployment of EVSE in the state is very, very, far behind the volume that will be required for the number of plug-in vehicles that will be here soon. Without an aggressive rollout of infrastructure, customers will not purchase fully electric vehicles and plug-in hybrids will miss out on the opportunity to utilize their electric capabilities. In short, the need for bold and swift action is urgent.

The Alliance supports a robust role for regulated utilities to plan EVSE investment and make reasonable investments, with a return, in planned and targeted infrastructure in the distribution grid. We encourage utilities to file programs with the Commission using a portfolio approach, and for the Commission to develop transparent guidelines (or guidance) that provide the “rules of the road” for such investments, and how these complement the role of investments of the non-utility third party sector. Regarding cost recovery issues, we will not provide many details here since these issues will be decided on a case-specific and utility-specific basis. But, in general, the Alliance believes that such EVSE costs should be recovered in the same manner as other capital investments in the distribution grid. If the utility deploys infrastructure, there is simply no logical distinction between EV and non-EV investments. And to the extent there is a difference, the difference would be that EV infrastructure offers *greater* value, for example in the form of increased utilization during off-peak hours, opportunities for distributed energy resources, load management, and grid optimization. Therefore, utilities should be at least fully compensated for EVSE-related infrastructure, if not rewarded.

2. What are the most significant changes the Commission can make in order to enhance the utilities’ roles in supporting EVSE deployment? What are the benefits and problems with utility ownership of EVSE?

The benefits to utility ownership of EVSE in the numerous cases where there is

no viable business case for the private sector are many. As Sidney Z. Mitchell, one of the earliest utility industry executives, explained “Money has always been the greatest problem in the electrical industry where an unusually high investment is required to produce one dollar’s worth of sales. This ratio has varied between \$4 and \$8 of investment for each \$1 of gross sales.”¹ Today, as in the early days of our electrical grid development, sufficient EVSE cannot be built from retained earnings; instead, debt or equity is required. The capital markets simply require paybacks that are not compatible with much of the costly infrastructure required at this early stage.

Most DC fast charging is a particularly challenging undertaking for the private sector due to high capital costs, high operating costs, generally low utilization in the early phase, and the fact that private operators generally have to purchase electricity at retail. That said, DC fast chargers are essential for EV drivers to be able to drive long distances, and they are a safety net for drivers on local trips. DC fast chargers also are expected to serve as primary chargers for ridesharing services (many of whose drivers are low and moderate income) and customers who lack access to a private charger due to living in a multifamily community or do not possess control of off-street parking. Furthermore, as autonomous vehicles take hold probably faster than we think, most analysts believe that ride-sharing EVs may become a primary means of transportation in dense urban areas, which will also create a need for clusters of DC fast chargers.

For the next few years, though, DC fast chargers are an absolute necessity to customers purchasing EVs even though usage is generally lower than expected. Because this “infrastructure heavy” model is relatively undesirable for most of the private sector at this early stage, air pollution from the transportation sector will remain high and transportation electrification will be threatened. This scenario is a textbook example of the need for action by a regulated public utility that is well capitalized, can take a long-term and holistic view of the entire service territory, and

¹ Hausman, William J; Neufeld, John L. *The Journal of Economic History; Santa Clara Vol. 62, Iss. 4, (Dec 2002): 1050-1073 at 1052.*

is an expert in installing, operating, and maintaining electrical equipment.

3. What role should the utility play in encouraging EV adoption? Should the role of the utility extend beyond customer education and awareness? Please address this question from the perspective of utility ratepayers, EV suppliers, and providers of EVSE. How should utility costs, if any, be compensated or recovered?

Education and awareness is a necessary but not sufficient role for utilities. An important factor is that most customers of the utilities view the utility as a trusted partner and source of information, and from its perspective the utilities have thousands or millions of customers, or electric ratepayers, with whom they can communicate the essentials of EVs and EVSE through web portals, bill inserts, and other means of communication. As discussed above, for the use cases where the private sector is unable to step in, there is an important role for utilities and their role includes appropriate ownership of infrastructure.

From the utility ratepayer perspective, increased utilization of the grid will put downward pressure on prices for all customers. Studies have been conducted in many states including New York, and they consistently show that customers overall benefit from lower rates over time in most cases.

EV suppliers generally are quite supportive of investment by any and all parties, including utilities. While some EV suppliers, most notably Tesla, Nissan, and now Volkswagen/Audi via Electrify America, are investing substantial sums in EVSE, the charging business is a very different business from auto makers' core competencies of design, manufacturing, distribution, and after-sales service. Because charging is such a specific business, the vast majority of auto manufacturers are overwhelmingly hesitant about getting into an entirely new line of business. Moreover, these companies have already invested billions in research and development of electric vehicles.

From the EVSE providers' perspective, utilities make excellent partners. In some cases utility make-readies² prime the pump for private investment, while in other cases utility investment from end to end is necessary. Also keep in mind that not all EVSE providers are the same. Some are hardware manufacturers, other offer cloud services, others offer a hybrid. From a revenue perspective, too, different companies are adopting different strategies. In short, the range of business models across the industry is quite diverse and continues to evolve, and, while some models are more dependent on utility support than others, all can benefit in one way or another from utility involvement.

Generally speaking, and assuming Commission approval and appropriate supervision of utility costs related to EVSE, such costs should be able to be recovered ("above the line"), subject to terms and conditions imposed by the Commission, if it is part of a comprehensive transportation electrification plan that passes muster with the Commission.

4. What is the best way for utilities, charging station providers, and site hosts to work together to locate charging stations where they best meet electric system, customer, and community needs? What data is needed to further this collaboration?

Practically speaking, public, general use electric vehicle charging (assuming DC fast charging for this question and excluding residential, workplace, and fleets) is, first, a retail and real estate business. EV charging's relationship to the grid is secondary. For example, an analysis of a local grid that is strictly electrical and financial in nature may indicate that a charging station should be installed behind (not in front of) a shopping center, in an industrial area, near retail that is not appealing, or on a property that is being otherwise utilized or whose landlord does

² "Make ready" is commonly understood to be the electrical infrastructure leading up to, but not including, the charger itself. The make-ready is the most labor and capital intensive portion of EV charging and has the longest payback period.

not want EV charging.

Data that will advance the build-out of public infrastructure include existing uses at a location, sufficient parking (a rare commodity) and space for supporting infrastructure such as transformers, economical access to power, and economical conditions for construction.

5. Are there any communities or customer groups that require special consideration in the placement of EVSE facilities? What role should the utility play in encouraging or facilitating increased EV usage by low- to moderate-income households?

Experience over the past few years has shown that involvement by expert and trusted utilities as a complement to the private sector is important because the electric vehicle charging landscape is complex and challenging to the vast majority of the population, and especially for a new EV owner as the market moves in to an “early majority” phase. While certain residential consumers and commercial landlords invest the time and resources to learn and execute on the options, unfortunately a more common outcome is the “do nothing” approach. This is particularly so in situations where EV drivers do not control their own parking (i.e., on-street, shared parking lots, rental buildings, co-ops, and sometime condominiums). Another market that is challenging for private sector players is low and moderate income communities.

One way to jump-start the market for groups requiring special consideration is for the utility to offer to shoulder the burden in this early phase of market development by providing, installing, operating, and maintaining infrastructure, both public and private, where the need is urgent yet the business case is challenging. A clear example is multifamily communities,³ particularly those classified as low and

³ Multifamily communities are also referred to as “multi-unit dwellings” (MUDs) and “multi-dwelling units” (MDUs), and include rental apartment buildings, condominiums, cooperatives, townhomes, and more generally communities with

moderate income, and much of the public DC fast charging. There likely will be a variety of models, including limited utility-owned EV charging hardware as well as make ready installations.

The Alliance believes it is urgent to address the state's EVSE infrastructure gap, namely the large and growing gap between the expected introduction of a large number of light duty passenger EVs in the next several years and the very inadequate infrastructure for charging in New York that is deployed, reliable, and well known to vehicle owners.

Based on the evidence in this proceeding in New York as well as learnings in other jurisdictions, we believe it is indisputable that charging hardware is being installed too slowly in relation to the imminent introduction of a wide array of electric vehicles.⁴ For this reason, and because utilities are well suited to complementing the private market by addressing multiple examples of market challenges in a "portfolio approach," the Alliance fully supports utility involvement with infrastructure, including limited ownership while at the same time remaining vigilant to allow space for the private sector as the market evolves.

6. What rules, requirements, and standards are needed to enable EVs and EVSE to operate as a source of grid services and system value, including possible data and instrumentation needs?

shared-use / communal parking or parking facilities in which the EV driver may require access to power controlled by a third party and/or not possess the legal right to install charging equipment due to not having exclusive control over the site.

⁴ The private sector has generally not provided adequate solutions because of investor demands for a rapid return on capital investment, particularly in certain types of charging such as multifamily Level 2 charging and public DC fast charging. Utilities, on the other hand, can take the long view and use their strong balance sheets, low cost of credit, and expertise to make strategic investments that will, over time, benefit all ratepayers. There is no one-size-fits-all approach, but appropriate utility roles can include ownership of the make-ready portion of EVSE installations, ownership of EVSE itself in cases where the private sector will not invest, cost-effective rebates for EVSE infrastructure, as well as outreach and education to potential EV owners and automobile dealers.

The Alliance strongly urges the Commission to mitigate the risk of vendor lock of chargers (Level 2 or DC fast) paid for in whole or in part with utility funds by allowing the procurement of only hardware that is both technically and contractually capable of operating on multiple networks. The term “open standards” is most certainly an important principle, but the phrase lacks the specificity necessary to ensure that charging hardware can feasibly operate on more than one network. In this regard, the Commission may wish to look to the experiences of other utilities who have selected network-specific hardware, as well as seek to ensure that final contract language provides suitable protection.

One widely-held best practice is that charging hardware meet the open standards of Open Charge Point Protocol,⁵ or OCPP version 2.0, which Electrify America did in its National ZEV (Zero Emission Vehicle) Investment Plan. An extension of this interoperability threshold is to set forth with specificity the terms and conditions that would take effect should the utility, Commission, or other user of hardware procured under a utility-funded program elect to move hardware to an alternative network.

7. What are the barriers to treating EVs and EVSE as Distributed Energy Resources (DERs)? How does rate design affect the ability of EVs and EVSE to provide this value? How does rate design affect the extent to which the value

⁵ Open Charge Point Protocol is developed by the Open Charge Alliance, a global consortium of public and private EV infrastructure stakeholders that have come together to promote open standards. With more than 40,000 installations in 49 different countries, OCPP has become the de facto open standard for open charger to network communications, and it is not related to any charging companies with similar-sounding names. Hardware that is technically and contractually capable of utilizing OCPP can connect to any central system, regardless of the vendor. Vendors that wish to provide software and equipment that meet this open protocol are required to self-certify compliance with OCPP generally, as well as the overall cybersecurity of these network management systems. Utilities and host sites should ensure that such certifications are being performed with due diligence.

provided by EVs and EVSE (including environmental and economic benefits) is compensated?

The potential to use EVs and EVSE as distributed energy resources is an exciting concept that appears to hold great promise. The Alliance encourages the Commission to strongly consider the rationale behind various rules and regulations such as metering and rate design with an eye toward revising regulations that were developed in a prior era and which may warrant updating based on new technological capabilities while maintaining the necessary protections.

8. Should EVs and EVSE be treated as DERs? If so, what factors need to be addressed to include EVs and EVSE within the DER market and compensation structure for DERs?

The Alliance fully supports the Commission's consideration of maximizing the value of EVs and EVSE, encourages the Commission to explore a wide range of technologies and capabilities, and recommends that the Commission be descriptive rather than prescriptive in order to be able to take advantage of new developments and advances without requiring unnecessarily excessive administrative procedure.

Another consideration is that vehicle charging is different than many other electrical uses, and that traditional price signals and demand response may not dovetail with the manner in which at least some customers will need to charge their vehicle. For example, the vast majority of customers can curtail air conditioning during peak events; for those who cannot, for example for health reasons, there are exemptions. Similarly, while the type of price signals for EV charging that are enabled through widespread technology could be of great value to some customers, they could also be quite punitive to others who lack flexibility in when to charge their vehicle.

9. What considerations should be taken into account in designing rates for charging stations? For example, should a typical three-part tariff (customer, demand and energy charge) be applied? Should the rate design be different for

residential versus commercial use? Should the rate design be expected to change over time as EV penetration increases? Should time-of-use rates be required for EV charging? Should utility residential EV charging tariffs (filed in Case 18-E-0206) be modified? Please address these questions from the perspective of utility ratepayers, EV owners, and EVSE suppliers.

The Alliance requests the right to comment on this important issue at later stages of the discussion.

10. How should the cost of recovering distribution network upgrades for EVSE be recovered if not through the demand charges?

The Alliance requests the right to comment on this important issue at later stages of the discussion.

11. In designing EV and EVSE programs, how can the Commission ensure compatibility with ongoing regional initiatives, programs offered in other states, and potential private investment?

On the subject of ongoing regional initiatives, we recommend sustained and dedicated involvement with organizations such the Mid-Atlantic Conference of Regulatory Utility Commissioners (MACRUC), the Northeast States for Coordinated Air Use Management (NESCAUM), the Regional Greenhouse Gas Initiative (RGGI), and potentially the Mid Atlantic Demand Response Initiative (MADRI).

With regard to the important question of utility versus private investment, we refer you to the California Public Utilities Commission's four-step test for the same question:

1. The nature of the proposed utility program and its elements; for example, whether the utility proposes to own or provide charging infrastructure, billing services, metering, or customer information and education.
2. Examination of the degree to which the market into which the utility program would enter is competitive, and in what level of concentration.

3. Identification of potential unfair utility advantages, if any.
4. If the potential for the utility to unfairly compete is identified, the commission will determine if rules, conditions or regulatory protections are needed to effectively mitigate the anticompetitive impacts or unfair advantages held by the utility.

12. Should the Commission address electrifying light-duty passenger vehicles, and medium and heavy-duty vehicles within this Case?

The Alliance believes that the tipping point from the internal combustion engine (ICE) to plug-in, including fully electric, vehicles for the automotive industry is soon going to be reached. While some analysts have predicted the 2022-2024 timeframe as being the tipping point for upfront capital costs between the two types of vehicles, the Alliance believes we have already reached that point for certain vehicles and that in fact there is a global trend toward EVs across all vehicle types including medium and heavy duty vehicles. In each use case, there is a need for charging infrastructure so that New Yorkers can reap the full benefits of fuel savings and clean air, as well as the convenience and lifestyle benefits of electric vehicles.

Light duty vehicles are certainly an important area of focus, but so too are medium and heavy duty vehicles. Medium and heavy duty vehicles emit far more pollution per mile driven than light duty vehicles. While the economics of medium and heavy duty trucks going electric are more compelling than light duty vehicles, the infrastructure required to operate even small fleets (i.e., 10 to 50 vehicles) is substantial (sometimes in the 1 to 3 MW electric load, depending on the number of medium/heavy duty vehicles to be served, cycling times for the vehicles, and the

configuration of the infrastructure) and offers a textbook example of where utility investment in backbone and make-ready infrastructure, including behind the meter, is essential.

Fleets also face rate design situations that may be insurmountable, particularly in the form of demand charges if based on overnight peaks that exceed daytime peaks. In other words, the economics for charging vehicles works best when their peak comes in at or below the peak that would occur in the absence of the vehicles.

13. How should Staff structure future stakeholder engagement in this proceeding? Should additional issue-specific working groups be held prior to Staff issuing recommendations?

The Alliance commends this Commission for pursuing an inclusive process, and encourages more of the same. A model to consider following is Maryland's highly inclusive stakeholder process led by Commission staff in Docket No. PC44. The consensus report that the stakeholders produced has been essentially transferred to a legislative-style hearing in which the Commissioners have sat, *en banc*, and heard testimony over four days with opportunities for written comments. That case number is 9478. We encourage this Commission to follow a similarly inclusive proceeding, with the goal being a consensus among as many stakeholders as possible while taking care that the process move forward at a reasonable and continuous pace.

14. Any other issues that stakeholders wish to raise.

The Alliance greatly appreciates the opportunity to participate in this proceeding.