June 5, 2023

Honorable Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223-1350

Via email: secretary@dps.ny.gov

Subject: Case No. 23-E-0070 - Proceeding on Motion of the Commission to Address Barriers to Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure.

Dear Secretary Phillips:

Enclosed for filing please find Comments of the Alliance for Transportation Electrification in response to the order instituting proceeding and soliciting comments in the above-captioned proceeding, dated April 20, 2023.

Respectfully submitted,

Michael I. Krauthamer

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Senior Advisor
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Enclosure

NEW YORK STATE
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Address Barriers to Medium- and Heavy-Duty Electric Vehicle Charging Infrastructure	**Case 23-E-0070**

COMMENTS OF THE ALLIANCE FOR TRANSPORTATION ELECTRIFICATION

The Alliance for Transportation Electrification (ATE) hereby submits these comments in response to the Commission's Order Instituting Proceeding and Soliciting Comments on the subject of addressing barriers to medium and heavy-duty electric vehicle charging infrastructure.

ATE is a 501(c)(6) non-profit corporation; the organization engages with regulators and policymakers at the State and local government levels to remove barriers to EV adoption and to encourage the acceleration of EV infrastructure deployment with a particular emphasis on open standards and interoperability. We consist of nearly 60 industry members that include electric utilities, auto and bus manufacturers, EV charging infrastructure providers, and related trade associations and other non-governmental organizations. We have been actively engaged in each of the Commission's various EV charging proceedings since their inception. Our comments on the questions presented follow.

Medium- and Heavy-Duty Vehicles

1. What are the specific challenges to developing charging infrastructure for medium- and heavy-duty (MHD) vehicles?

Challenges to developing charging infrastructure for medium and heavy-duty vehicles generally revolve around the fact that there are so many unknowns. Examples of these unknowns include the number of vehicles that will need to charge, the amount of energy they will need, and the power level they will be able to charge at. Charging infrastructure continues to evolve depending on the use case, including with regard to fundamental factors such as type of power (AC or DC), power levels, power sharing and open standards or protocols for plug/connectors and software. The lack of historical load data makes planning for growth challenging, although given the indisputable progress

elsewhere it is clear that the right incentives and regulatory framework will compel fleet operators to electrify.

Fleet charging, particularly for MHD vehicles, is highly concentrated geographically in certain warehousing and industrial districts in New York. This high concentration will necessitate bringing massive electrical capacity, which is a timely and costly undertaking; that said, concentration of charging also offers certain economies of scale. For this reason, ATE supports an expedited process and performance incentives to complete new service requests in areas such as Industrial Business Zones which are identified as strategically critical.

One notable challenge that the medium and heavy-duty market is not expected to experience, and which has plagued public light-duty DC fast charging in particular, is a low load factor. In other words, the economics for MHD customers should be better due to different load profiles, which should also be easier to reliably model based on data from the OEMs and the fleets, along with a common understanding of fleet scheduling and miles travelled.

a. How do these challenges differ between electric utility service territories?

Many of the challenges described above are consistent between electric utility service territories, although one distinguishing factor is likely to be the rate of growth, which may vary greatly based on where MHD vehicles drive and park. For the most part we anticipate growth being in urban cores, near industrial facilities such as airports (airside and landside, including concessions such as rental cars), seaports, freight transfer locations, logistics hubs, and along interstate highways.

2. How do charging needs differ for school buses, transit buses, delivery trucks, garbage trucks, box trucks, stake trucks, transport refrigeration units, and other specialized equipment?

Charging needs will vary greatly based not on the type of vehicle, but on the way in which individual vehicles are utilized. In other words, the charging needs of the fleets will be very use-case specific and will incorporate the location and factors in the total cost of ownership (TCO) calculation. For example, and as is widely known, vehicles with fixed routes can be served more easily than vehicles with variable routes, particularly

when distances traveled are inconsistent. This is the case not only because the vehicles return to the same location on a regular basis, but also because the amount of energy they will need in a given period of time is predictable. Vehicles with variable routes and distances traveled, regardless of the vehicle type, on the other hand, are more difficult to electrify at least today while charging infrastructure is only thinly deployed.

a. What other types of MHD vehicles, if any, should be considered in this proceeding?

No comments at this time.

3. What segments of MHD vehicles are likely to have broad electric model availability in the near-term and which segments are likely to electrify on a longer timeline?

The market is likely to evolve based on which vehicles deliver the best financial return. One factor in determining that return is the cost of charging infrastructure and electricity. To the extent New York can reduce these costs, the market will respond. And if New York's purpose for encouraging electric vehicles is to reduce greenhouse gas emissions and other air pollution, those goals will be best achieved by electrifying heavy duty vehicles. For this reason, the Commission should target charging infrastructure at heavy duty vehicle fleets, particularly those with a large number of diesel vehicles which operate for long durations while idling or in extreme congestion such as long queues at loading facilities.

Anecdotal evidence strongly suggests that commercial electric vehicles are going primarily to large national fleets where state and regional incentives are offered. Yet there is ample evidence that many small-medium sized fleets are seriously considering electrification as well. For that reason, we encourage incentives to be spread broadly, including a minimum percentage of funds for small-medium fleets.

4. What locations or types of locations should be considered as potential hubs for MHD vehicle charging?

No comments at this time.

a. What criteria should be considered when selecting locations for potential hubs upstate and downstate?

In these early days of the industry, an important priority in selecting locations is to mitigate risk that infrastructure is underutilized. For that reason, criteria should

include proximity to locations where medium and heavy-duty vehicles congregate, and where electrical service to the chargers can be provided economically.

5. **What considerations should Staff take regarding incentivizing infrastructure siting and MHD charging to mitigate impacts in Disadvantaged Communities overburdened by truck and bus traffic and pollution?**

One consideration that Staff should take to mitigate impacts on disadvantaged communities is the opportunity to relocate medium and heavy-duty vehicles to areas that are farther from such disadvantaged residential communities. Commercial vehicle operators are highly sensitive to the cost per mile of driving a vehicle, and if operating costs can be realized by charging vehicles at a different location, all else being equal they are likely to do so.

6. **What considerations are important for stakeholder engagement concerning MHD electrification? Describe effective strategies to engage that can meet the needs of fleets with 6 vehicles or less.**

One important consideration for stakeholder engagement concerning MHD electrification is to engage with a broad spectrum of vehicle operators so that the Commission's policy can be informed by real world situations. There is a saying in the industry that "when you've met one fleet, you've met one fleet." This is particularly crucial because vehicle operators do not have a long history of utilizing electricity as a fuel, learning about electricity rates, or dealing with electric utilities to the degree now required.

Another essential community to involve is people who are affected by vehicle emissions and heavy vehicle traffic; these are typically people who are black, indigenous, and people of color who historically have been left out of these important societal decisions and suffer disproportionately from the tailpipe emissions (e.g., NO_x and soot or $PM_{2.5}$) caused by vehicles.

We also recommend that the Commission engage more directly with vehicle manufacturers (both auto and truck OEMs) to get a sense of where vehicles are being deployed, as well as charging considerations such as battery sizes and the maximum power level at which upcoming vehicles will be able charge. Utilities and EV service

providers are knowledgeable about trends and technologies of the OEMs, but a direct path of communication between vehicle OEMs and the Commissions would add to this base of knowledge and actual experience with vehicles and fleets.

With regard to fleets with six vehicles or less, these present an excellent opportunity for electrification. The reason is that a small number of vehicles requires, all else being equal, a lower amount of power. Therefore, the infrastructure to charge these vehicles will often be available at a lower cost per kilowatt. For example, and HVAC or plumbing shop may have a 200 amp service which can easily support charging 4 to 6 medium heavy duty trucks requiring 100 to 120 kilowatt hours per night.

7. **Identify barriers that exist in the current MHD Make-Ready Pilot Program that could be modified in a successor to the pilot.**

No comments at this time.

   a. **Provide comments on how to address the barriers to building publicly accessible charging that serves MHD vehicles (e.g., highway truck stops).**

      No comments at this time.

   b. **Provide comments on how to address the barriers to building private or limited access charging that serves MHD vehicles (e.g., depots, warehouses, and distribution centers).**

      No comments at this time.

8. **Through the Make-Ready program, utilities offer fleet assessment services to help prepare for the transition to electric vehicles. What additional technical assistance is needed to support the transition to mass MHD electrification?**

Given the importance and complexity of infrastructure decisions, technical assistance from utilities offers customers a valuable benefit. And since we expect the volume of requests for technical assistance (alternatively referred to as fleet advisory services, or FAS) to grow rapidly, we encourage the Commission to authorize resources based on serving a certain percentage of the projected commercial EV market. From a benefits-cost analysis, we recognize that MHD vehicles offer the largest reduction in greenhouse gasses and other pollutants on a per-mile basis, but there are also many light-duty commercial vehicle operators who would benefit from FAS and they should be included in this program. The Alliance has a task force (called the Education & Outreach

Task Force) that has been focused on fleet electrification; together with the Electrification Coalition, we recently published an Issues Brief on the best practices in FAS of certain utilities across the country.[1]

With regard to the scope of services provided, core utility functions will need to be supplemented by additional specialized capabilities. Examples include choosing vehicles and battery sizes, designing charging infrastructure including the number and kW rating of chargers, assessing sites from a convenience as well as engineering perspective, assisting with the permitting and utility interconnection process, and assisting with grant writing and accessing state and local government incentives. NYSERDA has a flex tech program (https://www.nyserda.ny.gov/All-Programs/FlexTech-Program) that provides this to some, but not all, customers, and is a good example of services for which the Commission could provide funding.

ATE therefore supports a fleet advisory model where the Commission provides funding for third parties to supplement utilities with a menu of optional services which would vary based on the customers' needs. One approach the Commission may consider with this type of incentive is a cost-share with customers to increase the likelihood that customers take action based on the work product, which some informally refer to as "having skin in the game."

Proactive EV Infrastructure Planning and Investment

9. Discuss how proactive EV infrastructure planning differs for light-duty and MHD vehicle market segments?

For purposes of this question, we assume that references to light duty are meant to apply to passenger vehicles used by consumers for personal use. The difference, then, is not as much between light duty as compared to medium and heavy-duty, but between vehicles used for personal use versus commercial use. Because commercial vehicle operators are far more attuned and sensitive to the cost of driving per mile, and because

[1] Fleet Advisory Services (FAS) for Fleet Electrification: Meet Customer Needs and Provide Grid Benefits. Alliance for Transportation Electrification (2023), available at https://evtransportationalliance.org/wp-content/uploads/2023/02/PRESS-ATE-EC-White-Paper.pdf.

commercial vehicles are generally not as susceptible to variability as consumer vehicles, planning for commercial vehicle charging is easier.

In addition to the logistical differences between personal and commercial vehicles, it is generally easier to achieve scale when targeting the commercial market. For example, favorable economics of a charger will require a certain minimum load factor, and this can be achieved with commercial vehicles on a regular schedule with predictability. Consumer light-duty vehicles, by contrast, cannot as easily be aggregated nor generally counted on for consistent usage (personal vehicles tend to rely on so-called "opportunistic charging" rather than charging at the same place at the same time routinely).

We also note that, at least for publicly accessible charging, it is not obvious as to how to limit a charging facility to certain types of vehicles. Design features can be included which visually deter small vehicles, or which physically deter large vehicles, but when all vehicles utilize the same plug type it is challenging and not necessarily desirable to be overly selective in which types of vehicles can use chargers. That said, if a charging station operator desires to appeal to a particular market or use case, such as vehicles capable of charging at a high-power level or by subscription, that should not be prohibited.

In short, rather than focus on the type of vehicles to be charged, we encourage the Commission to focus instead on the more fundamental question of planning for load growth regardless of what types of vehicles come first. This includes an approach which relies on load forecasts based on reasonable projections, and which considers the small degree of uncertainty with the very large risk of not being able to serve the load when it shows up. We believe the load forecasting models need to change to accommodate more granular analysis, beyond the substation and feeder banks, down to the customer-specific (address level where possible) locations. Without such analysis, the utilities and the Commission cannot know with a degree of certainty about the "where" and "when" of fleet electrification at the ground level. The California Public Utilities Commission recently commissioned an Electrification Impacts Study[2] which took a bottoms-up

[2] Available at https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M508/K423/508423247.PDF.

approach to determine infrastructure needs based on various circumstances; New York may find such an approach instructive as it develops its own programs, incentives, and budgets.

10. **How should proactive planning consider concurrent policy goals to reduce personal vehicle usage and increase the use of shared modes (including public transit)?**

No comments at this time.

11. **Discuss how battery energy storage systems and other distributed energy resources can be implemented in both short-term and long-term planning for electric vehicle charging needs across vehicle classes.**

Battery energy storage systems and other distributed energy resources which have the potential to charge slowly when not in use and dispense stored energy at a higher power level when needed can provide charging capacity at times such as overnight or rush hour that is above and beyond the capacity which could be obtained directly from the grid. To the extent this capability is economical, it should be permitted but not required.

a. **Is vehicle-grid integration technology at a sufficient level of maturity to impact short-term planning considerations? If so, describe how; if not describe why not.**

ATE is encouraged by early signs of vehicle grid integration capabilities, and this proceeding presents an excellent opportunity to explore how such capabilities might benefit New York. We recommend that the Commission permit pilot programs to encourage and evaluate emerging technologies.

12. **How can managed charging programs reduce upfront infrastructure needs?**

Utilities are dealing with more sophisticated commercial customers with fleets who need high levels of reliability, predictability, and least-cost solutions based on the TCO analysis. Hence, we do not believe that formal managed charging programs are necessarily required beyond including EVs in existing demand response (DR) programs for commercial customers, if appropriate. Instead of dictating to customers when to charge, customers should be provided with rates which are just and reasonable, reflective of grid conditions, and consistent over time, so that they can plan and act accordingly.

Customers should also be free to take advantage of various generic load management services, whether offered through utilities or third-party aggregators, but we

believe it is too soon to predict the degree to which, or the conditions under which, vehicles will respond to demand response events. Overall, the consumer market for light-duty vehicles is more likely to take advantage of DR programs developed by utilities, EVSPs, and also by the OEMs working in partnership with utilities.

13. What strategies can reduce the risk of future-proofed sites from becoming stranded assets if a fleet or other baseload user changes their operations or moves to a different site?

The Commission should be cognizant of certain best practices utilized by recipients of utility and state incentives such as infrastructure which operates in accordance with open standards and interoperability, as the Commission has directed in the light duty proceeding. The intention is not to dictate to the market which standards to use, but to leverage the existence of open standards in software to mitigate the risk that an operator will select a closed standard and then be unable to utilize the infrastructure which benefitted from incentives. We are also aware of the emergence of multiple plug types, but because cords and dispensers can be replaced relatively inexpensively, we do not believe this should slow the Commission's progress.

a. In the Northeast, climate change is expected to increase the frequency and intensity of storms, especially extreme precipitation and extreme heat, and lead to more frequent high tide flooding. Should the impact of current and future climate vulnerabilities be addressed in the infrastructure planning process (e.g., sites that are in or are projected to be in the floodplain)? If so, how?

Climate events such as flooding are certainly important, and they are already well-addressed through the building permit process and need not be addressed by the Commission (other than by requiring chargers receiving incentives to obtain the necessary permits, as is already done with light-duty incentives).

14. What types of site locations and use cases should be prioritized for proactive future-proofing, and why?

Future proofing is not unique to electric vehicle charging; indeed, it is a common consideration in new construction generally. As it applies to EV charging, best practices include oversizing conduit, installing extra conduit, sizing conductor so that additional

conductor can be pulled through the same conduit in the future, and installing pull boxes at strategic locations. A common feature of each of these is that they add relatively little to the initial cost, save significant cost if utilized, and do not result in significant stranded assets if never utilized. This is the test that we recommend the Commission use for purposes of approving futureproofing.

15. **What considerations should be taken into account when addressing future-proofing sites in disadvantaged communities?**

Locations in disadvantaged communities should be subject to the same future proofing policies as other locations.

16. **Are there alternative financing models for bringing new electric service to sites with additional capacity for future-proofing? Please describe.**

No comments at this time.

Conclusion

We appreciate the thoughtful questions and the chance to engage with the Commission and stakeholders on these vital issues and we look forward to continuing to be involved in this important proceeding.

Respectfully submitted,

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