

Hamre, John G.

From: Cate Pousson <cate@evtransportationalliance.org>
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Please see the attached comments regarding the North Dakota Public Service Commission's request for input regarding the Electrification of Transportation.

Best regards,

Cate Pousson
Executive Assistant and Office Manager
Alliance for Transportation Electrification
1402 Third Ave., Ste 1315
Seattle, WA 98101
cate@evtransportationalliance.org

Office: 206.453.4157
Mobile: 206.519.9757

Before the North Dakota Public Service Commission
In Re. “PSC Schedules Public Hearing to Gather Input Regarding the
Electrification of Transportation”

Written Comments of the Alliance for Transportation Electrification

On October 22, 2022, the North Dakota Public Service Commission (the “Commission”) issued a news release regarding its intention to hold a Public Hearing to gather information on transportation electrification in the State and what steps the Commission might want to take. In that notice, it also provided the opportunity to provide written comments by November 14, 2022 on a variety of issues specified in the Release. While the Alliance for Transportation Electrification (“ATE” or the “Alliance”) was unable to participate in the Public Hearing, it does wish to provide the comments herein regarding the issues for which the Commission seeks input.

ATE is a 501(c)(6) non-profit corporation established in early 2018 and is active in many state proceedings across the country. We engage with policymakers at the State and local government level 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 currently have about 60 members that include many electric utilities, auto and bus manufacturers, EV charging and service providers (EVSPs), and related trade associations and non-profit organizations.

The Notice of Public Hearing and the incorporated request for comment contains two parts: First, input is being gathered to respond to the requirement in President Biden’s Infrastructure Investment and Jobs Act (IIJA) that: “Each state shall consider measures to promote greater electrification of the transportation sector, including the establishment of rates that:

- Promote affordable and equitable electric vehicle charging options for residential, commercial, and public electric vehicle charging infrastructure.
- Improve the customer experience associated with electric vehicle charging, including by reducing charging times for light-, and heavy-duty vehicles.
- Accelerate third-party investment in electric vehicle charging for light-, medium-, and heavy-duty vehicles.
- Appropriately recover the marginal costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure.”

Second, the Commission listed additional issues for which it has identified particular interest, including:

- Whether ownership of electric vehicle charging stations should be permitted by regulated utilities. If permitted, under what conditions?
- What should the Commission consider regarding unfair competition between third-party charging entities and regulated utilities?
- Should the Commission consider special tariffs or rates for residential electric vehicle charging?
- Whether the Commission should consider pilot programs in anticipation of the electrification of transportation sector? If so, what pilot programs?

- What is the anticipated distribution system impact from residential and fleet charging?

The Alliance addresses each of these sets of issues in our comments below.

I. IIJA Issues: Rates should:

- Promote affordable and equitable electric vehicle charging options for residential, commercial, and public electric vehicle charging infrastructure.

The best way for the Commission to ensure that rates for electric vehicle charging are affordable and equitable is to continue to rely on cost of service ratemaking based on just and reasonable standards. Regulated utilities, per direction from the Commission, perform extensive CoS (cost of service) studies every few years, and these studies should provide the foundational data and analysis to set rates for EV charging. Moreover, rates can reflect the public policy priorities of the state by reflecting the need for encouraging charging during off-peak hours to the extent practicable and for commercial station charging customers, consider the need for relief from demand charges during the early years of EV market development when utilization of these stations may be very low. Rather than providing a detailed answer here, we refer the Commission to two white papers developed and published by ATE which discuss in detail the ratemaking issues with respect to EV charging and makes recommendations on ensuring the efficient development of charging infrastructure. In these papers, we argue that regulated utilities, with Commission approval, can provide affordable and equitable programs and rates for the transition to EVs, while at the same time being consistent with the traditional Bonbright principles. The first of these papers consists of an overview of both residential and commercial rates – “Electric Transportation Rate Design Principles for Regulated Utilities (July 2021) and is available at <https://evtransportationalliance.org/wp-content/uploads/2022/02/ATE-Rate-Design-Principles-Final-July-202194.pdf>. The second paper focuses in on commercial charging stations and the impact of demand charges – “Rate Design for EV Fast Charging: Demand Charges (May 2022) available at https://evtransportationalliance.org/wp-content/uploads/2022/06/Rate.Design.TF_.Demand-Charge-Paper-Final-5.25.22.pdf. These papers offer several alternatives to traditional rate design and demand charges, for commercial customers like EVSPs but argue that such rates should be sustainable and fair over time as well. The rate-setting process will depend heavily on the specific circumstances of the utility, its cost of service, its distribution grid, and the use case proposed either by the private developer or the utility. ATE stands ready to respond to any questions the Commission may have on these papers.

- Improve the customer experience associated with electric vehicle charging, including by reducing charging times for light-, and heavy-duty vehicles.

The Commission can best meet this objective by creating an environment in which both non-utility and utility-owned DC fast charging (“DCFC”) sites (which are faster than public AC (Level 2) stations) can be developed and charge rates that reflect savings over the equivalent cost of gasoline. In these comments, we will refer to the actual charging station or port as “EVSE”, or electrical vehicle supply equipment, and the private company providing charging services both the hardware and the network/software as an “EVSP”, or EV service provider. As cited above, this may require adjusting demand charges for low-load factor customers such as DCFC charging stations or providing them commercial rates that don’t include demand charges on a temporary basis until utilization of these stations improves. North Dakota will get DCFC charging stations under IIJA funding through the National Electric Vehicle Infrastructure (NEVI) program, for which its plan has been approved, but the

Commission will be responsible for overseeing the electrical infrastructure (called make-ready investments) to the EVSE at certain sites as well as determining the proper rate design for utility sales to the host sites or EVSPs. In this context, the plan submitted by the North Dakota Department of Transportation (NDDOT) was approved in mid-August, with approved funding of about \$9.6 million for the first two years of this 5-year NEVI program.

North Dakota is in the very early stages of EV market development – unlike some other states that have had much greater consumer adoption (according to the latest study from the dashboard of the Auto Innovators, the number of registered EVs in North Dakota, both plug-in hybrids and full battery electric, are only about 850 today). But the number of EV's both registered in North Dakota and travelling along its highways is expected to increase rapidly in the near future. In addition, the pace of electrification for MHD (medium heavy duty) vehicles is quickening in a way that will directly impact fueling in the state with incremental electrical loads much greater than those for light-duty vehicles. This provides the state with the advantage of studying the lessons learned in other states and adopting best practices.

It is also important that rates for regulated utility sales to EV charging stations need to reflect the use case involved. One clear lesson we are learning is that consumers want to be able to charge their vehicles quickly while on the road. They do not want to wait for a lower-cost time period, so managed charging, for example, may not make sense for highway charging. But fleets have more flexibility for charging during off-peak times than do highway-located chargers, as they usually return to a fixed base between trips.

- Accelerate third-party investment in electric vehicle charging for light-, medium-, and heavy-duty vehicles.

The utility can help enable the transformation of electric transportation, as it has done with other technologies such as energy efficiency measures, in multiple ways working with private technologists and EVSPs. The Commission can best encourage the development of charging infrastructure investment through its ratemaking authority as discussed above, but also by encouraging and allowing utility investment where it's needed particularly to fill in gaps not being met by private investment. Also, it is important to recognize that a number of different business models have been adopted just by the private sector or EVSPs. Many EVSPs locate on property leased from site hosts. Some EVSPs own and operate the chargers with full responsibility for operations and maintenance (O&M) to ensure adequate uptime. Others provide equipment and networking but let the site host own and operate the EVSE. With respect to maintenance, some companies provide the service but some delegate this maintenance responsibility to other parties through service level agreements (SLAs), of which there is a mixed record. And finally, some of the EVSPs have developed capabilities to partner with regulated utilities (usually co-branded) on a turnkey basis, where the utility owns and operates the station but most of the development work and operations of the charging station is done by the EVSP.

The Alliance believes that multiple models should be allowed by the state and Commission, and that in these early days of market development, each model should develop until greater maturity. As stated above, each project will depend on unique factors and be very use-case specific. We discuss the topic of utility investment and ownership in detail below.

- “Appropriately recover the marginal costs of delivering electricity to electric vehicles and electric vehicle charging infrastructure.”

While it is essential that rates for delivering power to EV charging infrastructure at a minimum recover marginal costs to preclude other customers from being harmed by such service, we do not think marginal cost-based rates are sufficient. Marginal cost pricing is a complex topic that involves many choices of whether to use short-run costs or long-run costs, and many other factors in a capital-intensive industry such as electric utilities. While their use may assist certain new technologies and help new market entrants, the Alliance does not necessarily believe that this is the right metric to use compared to embedded cost ratemaking. As is the case with all rates charged by regulated public utilities, traditional cost of service regulation which is utilized by most every state regulatory commission requires that all customers pay their fair share of the costs that utilities have incurred in providing safe, reliable service to customers at the lowest reasonable cost. EVs should not be exempt from paying their fair share of historically incurred costs without which they could not be served. This does not mean that some accommodations to traditional rate design are not appropriate to meet public policy objectives. For example, temporary mitigation of demand charges for the EVSPs may be appropriate to allow DC fast charging stations to be economically feasible during periods of low utilization or for a certain period. But under such rates, the EVSPs are still required to make a contribution to embedded costs of the utility system using the rate spread and cost allocation rules developed by the Commission.

II. Commission Issues

- Whether ownership of electric vehicle charging stations should be permitted by regulated utilities. If permitted, under what conditions?

The short answer is yes. ATE strongly believes that regulated utilities should be permitted and even encouraged to own and operate both the electrical infrastructure to the charging station (make-ready) as well as the actual EVSE according to the use case. And as long as the Commission oversees the rates that utility-owned stations charge for service to EVs, which it will, we do not see the need for any restrictions or limitations. This does not mean that utilities can or should be the only or predominant owner of charging stations or EVSE. Rather, utilities, particularly in these nascent stages of market development when public-facing stations are needed to reduce range anxiety of potential EV owners, should focus on filling gaps when the private non-utility charging market is not sufficient. It may be that sometime in the future when EVs are ubiquitous on North Dakota roads, public charging by private EVSPs will develop sufficient to meet all needs of the fueling needs of electric transportation. But that is certainly not the case today, and as regulated utilities with a general universal service obligation, the utility should play a key role in enabling this market, ensuring all communities are served, and that the equipment and networks are maintained.

We won't repeat here the many benefits of transportation electrification to both society and to drivers. Costs are coming down making EVs more affordable to all types of customers, and even fleets are beginning to adopt medium and heavy-duty EVs. But survey after survey suggests that customers still are concerned that EVs may not have enough range to meet their needs. To a large degree, range anxiety is a problem of perception and not of reality. For passenger vehicles, on average over 80 percent of charging is done at the driver's residence – usually within the garage of a single-family home. For the many consumers that have this option, there may be less need to charge at public stations

within their workplaces, neighborhoods, cities, rural areas and along highways, except perhaps when they take longer trips. But even for these consumers, having charging stations available in the community provides important feedback that it's there when they need it.

Thus, building charging infrastructure to meet both current and future demands is one of the greatest needs facing emerging EV markets and is vital to driving for the benefits that transportation electrification can provide. The IJA of 2021 provided a major boost to getting infrastructure built by authorizing the National Electric Vehicle Infrastructure (NEVI) program which provides \$7.5 billion dollars in funding to states for locating charging stations along certain Alternative Fuel Corridors. Additional funding was provided for electric school buses. In addition to stations that have already been installed around the country, this is a good start.

But it is only a start. The needs for public charging are immense. The International Council for Clean Transportation has estimated that to meet modest EV sales growth, we will need to increase the number of chargers in the U.S. from 216,000 chargers in 2020 to 2.4 million by 2030, including 1.3 million workplace, 900,000 public Level 2, and 180,000 direct current fast chargers. The costs would be about \$28 billion. Atlas Public Policy research shows that to achieve 100 percent passenger electric vehicle sales by 2035 and put the nation on the path to full electrification, over \$87 billion in investments in charging infrastructure will be needed over the next decade, including \$39 billion for public charging. While we don't know of any studies of needs in North Dakota specifically, there is no doubt that the state is significantly underinvested in charging infrastructure.

So how do we get infrastructure built in places like North Dakota? Federal funding through the Joint Office, FHWA, and EPA will certainly help but will prove to be insufficient to meet future demands. Given the magnitude of the need, we must rely on an all hands on deck approach. We need to rely on government, private EVSPs in the business of building, owning and operating charging stations, private employers, transit and bus companies, landlords, real estate developers, fleet owners and operators, and yes – utilities - have a vital role to play. The proper utility role has unfortunately become the subject of some controversy which we believe is not only unwarranted, but will be extremely counterproductive to seeing continued growth in the EV market and in ensuring that the development of the market takes into account the needs of all communities, including those traditionally underserved. Of course, slowing down EV market growth may be the point of some of these efforts to preclude utility involvement.

There are three different types of potential utility infrastructure investment - utility distribution system upgrades, make-ready investments (equipment and wiring between the utility pole and the charger stub), and ownership and operation (O & O) of charging stations. Improvements to utility distribution to accommodate new charging stations is the least controversial of these. Most stakeholders agree it is appropriate that utilities, in the normal course of meeting forecasted load, should make investments in distribution to accommodate increased charging loads. But even here, there is some argument over whether all ratepayers should be charged for such investment, and what level of investment is needed. But the North Dakota Public Service Commission has regularly recognized the appropriateness of distribution investment to maintain reliability in the face of increased loads, based on integrated resource planning, assessing peak loads, and other forms of planning and coordination. These efforts will need to be enhanced and done on a more granular level in the future as loads increase through electrification.

Investing in (or offering incentives for the construction of) make-ready infrastructure has become a best practice for utilities in many jurisdictions and allowed by Commissions. These costs are usually deferred in a regulatory asset, allowed under FASB and cost accounting rules, and then reviewed in a future general rate case. Such make-ready programs are offered in a variety of ways both in front of the meter and behind the meter, depending on the use case. However, there are certain parties or organizations who may oppose such programs. Opponents of such investments can generally be placed in two classes: first, are groups who generally object to potential rate increases, and second are petroleum marketers, convenience stores and gas station owners who object to “subsidized competition” from other charging station owners – and many simply oppose any actions that will lead to more EVs on the road and lower gasoline sales. EVSPs and potential host sites, on the other hand, generally support make ready investments as it reduces their upfront capital costs in land acquisition, development, and procurement and can help accelerate the pace of deployments. The arguments for make-ready investments by utilities are really the same as those for O&O investments and are discussed below.

Utility O&O is the most controversial of the potential utility investment options. The primary opponents of utility ownership are third-party EVSE developers, convenience store and gas station operators, and gasoline wholesalers and marketers. Their primary argument is that utility O&O amounts to unfair competition – that being able to place costs in rate base gives utilities an economic advantage in building charging stations and the ability to undercut the prices that may be charged by non-utility EVSE owners. They suggest that they will not invest in chargers as long as even the threat of utility competition exists and thus, they seek regulatory or legislative prohibitions on utility ownership of charging stations (and sometimes prohibitions on make-ready investments). Moreover, as stated above, the utility often partners with an EVSP under this option to develop a site on a turnkey basis. Their arguments are usually couched in free market principles– that competition among private “unsubsidized” entities will provide needed levels of charging stations at the lowest cost to consumers.

Unfortunately, the arguments made by these stakeholders sound like they are opposing or preventing potential bad actions by the local utilities. And their arguments might have some heft if these groups were meeting the needs of consumers by deploying EV infrastructure in a timely way. Utilities would be more than happy to let private entities develop the market if they were actually doing so. The real benefit to utilities (and their customers) is from development of the EV market, not ownership of charging stations. But as noted earlier, the needs for charging station development over the next decade are so significant relative to current levels that greater action is needed now. And there are potentially many use cases – such as rural areas, underserved communities, multi-unit dwellings, and others where private investment is difficult, and utilities can step in to fill the void. And perhaps most importantly a situation where early utility investment can help kickstart the market leading to more EVs on the road and better economics for private investment. In other words, we believe that a rising tide lifts all boats.

The arguments by opponents of utility O&O are also wrong and misleading on many levels and represent a basic misunderstanding of how utility investment works and the protections in place to ensure that utilities can’t take anti-competitive actions.

- First, while utilities do place the costs of make-ready or charger investments in rate base once approved by commissions, customers do receive substantial benefits in return. The Alliance believes that, while there may be a cost shift in the short run to enable the market, over time

these investments will be “normalized” as part of the electrical infrastructure or plant assets, and should provide system benefits to all customers of the regulated utility. Utilities cannot give away charging service for free. In fact, they are required by long-standing regulatory practices to recover the cost of service from such investments. So, when utilities charge EV drivers for charging at utility-owned stations, those revenues go to offset the costs that utilities have invested on behalf of ratepayers. Over the long term, customer costs are reduced by the amount of utility revenues at a level equal to or greater than the original investment. With greater overall revenue, there should be downward pressure on rates over time that can be addressed in a general rate case;

- Utilities can and should make every effort to ensure that the bulk of EV charging takes place in off-peak hours when there is excess capacity in the distribution system. Increased revenues from such sales will be greater than any incremental costs, meaning average rates for all customers will see downward pressure. While most of this effect occurs from home charging, where over 80 percent of light duty EV charging occurs, again the presence of significant public charging is necessary for consumers to be willing to buy EVs in the first place. So, if utility investment in public charging leads to more EVs on the road and a subsequent increase in off-peak charging, rates to all customers can be reduced.
- There are other substantial benefits to the development of the EV market which can be driven in part by utility investment. These benefits include environmental, economic and national security benefits (less reliance on energy imports).

Second, at this early stage of market development, the potential utilization of public charging stations may simply not be sufficient to provide a potential return to private investors, particularly for DC fast charging with high up-front costs. This is especially true in areas that may not currently have much EV market penetration such as North Dakota. Utilities can bring benefits simply owing to quite different time horizons for capital investments in EVSE as a grid-edge asset: namely, while third parties often take a shorter term (less than five years) to achieve the return on investment demanded by their equity investors, the regulated utility takes a much longer view toward investments in utility assets in the distribution grid (often in the 10 to 40 year timeframe). And many investments in chargers by private EVSPs— particularly DC Fast Chargers - will take longer than five years to recoup costs. In most of the cases where utility investment has been approved around the country, there is a strong component of investment in areas that otherwise would not see much charging capacity because of the long time frame needed for cost recovery.

Third, proposed utility investments are so small relative to the total need that any arguments that utility investment will overwhelm the market or push out competition reflects a disregard for market-based realities, or a tendency by vendors and certain advocates to want to “lock in” certain business models, including proprietary systems. There are numerous examples around the country where even a proposal to build 10, 20 or 30 new charging stations receives opposition from private companies when the identified needs are in the thousands or hundreds of thousands of chargers. In these cases, the argument made that utilities will crowd out private investment are absurd on their face, but these arguments are still made. Regulated utilities necessarily take a long-term view of both planning and deploying infrastructure, and adequate access to the capital markets to ensure that these investments can be made to catalyze the overall market.

Fourth, 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. One way to jump start the market 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. Utility involvement may not be as critical further down the road as the market reaches maturity, but still may be needed where the private sector does not venture, such as in multifamily communities, low and moderate income neighborhoods, rural areas and for publicly accessible DC fast charging in some locations.

Finally, the Alliance emphasizes that there are a wide variety of ownership, or joint venture, possibilities that are currently being explored in EV infrastructure where a private EVSP can bring technology, software and network management experience to the table, while the utility can bring its scale, engineering experience and detailed knowledge of the grid. The utility may want to put its brand on certain charging stations it rolls out, and a vendor may be fine supplying the solutions on a turnkey basis including all back-office and network management systems. The point is that a variety of business structures are possible in order to develop the EVSE market, and the particular solution will differ from state to state, utility to utility, and case to case. That is why we support a portfolio approach where all options for expanding infrastructure are examined and deployed where investment is feasible.

There are other advantages of utility investment in the market that should be considered. These include:

- Increasing the pace and scale of infrastructure development by opening the market to utility capital, expertise, and other resources;
- Maintaining reliability and minimizing grid impacts and required distribution and transmission system upgrades by coordinating with existing utility investment and planning processes;
- Lowering the cost of infrastructure development through coordination with the distribution grid and building on utility experience with infrastructure development;
- Experience in working with fleets, transit systems, and school buses in assessing their energy/transportation needs – these are called fleet advisory services and have become a best practice for utilities in many jurisdictions;
- Improving ability to communicate with customers through existing channels and creating incentives to promote vehicle charging at times that provide grid benefits—including load balancing and integration of renewable energy sources; and
- Due to its universal service obligation, providing more equitable access to charging infrastructure for all ratepayers and communities, and increasing mobility for all through utility partnerships with transportation programs focused on serving disadvantaged communities.

Utility investment and proposed TE programs of course must be (and will be) carefully considered by the Commission to ensure that the benefits to customers outweigh the costs, that competition in the market will not be significantly affected, and that rates associated with utility programs are just and reasonable. Utility TE investments have been proposed in many states around the country and in all states where it has been considered, either make ready or utility own and operate investments or both

have been approved. To date, according to Atlas Public Policy, there has been over \$3.5 billion in utility TE investments approved in 34 different states. Clearly, state commissions have recognized that utilities have an important role to play in developing the EV markets through strategic and beneficial infrastructure investments.

- What should the Commission consider regarding unfair competition between third-party charging entities and regulated utilities?

We believe that all market models, including the regulated utility O&O model, can fairly co-exist in this nascent stage of market development. The primary competitive argument made by opponents of utility O&O is that utilities, because they are able to recover costs of investments from ratepayers, will be able to price charging service in a manner that will undercut the price of charging services by non-utilities. This represents a total misunderstanding of the utility ownership model – whether intentional or not. Utility retail service – including charging services provided at utility-owned charging stations – will be fully regulated by the Commission (unlike prices charged by non-regulated entities). Under all states' current regulatory practices, utilities recover their costs of service from their investments and must charge on that basis. This includes both the direct costs of investment plus the costs of associated debt and equity. Unless third parties are charging far in excess of their costs, then their prices should be in line with the cost of service-based regulated utility price. But in many states, because the cost of service for charging stations is not very well known at this time, state commissions are using an average of market prices as the price at which utilities are allowed to charge – resulting in a market-based price which is in line with prices charged by non-utilities. In any event it is simply not possible for a utility to undercut the price of non-utility charging stations, without intervention by the Commission. And in any event, those worried about unfair competition may intervene in utility rate proceedings where prices are set for charging services. Thus, the Commission can and should use its ratemaking authority to prevent unfair competition. And, while the Commission does not regulate the prices charged by private EVSPs, the Commission and other state agencies have general responsibilities to protect consumers from unfair pricing and potential discrimination.

- Should the Commission consider special tariffs or rates for residential electric vehicle charging?

Yes. The Alliance discusses appropriate rates for residential EV charging in the first of our White Papers referenced above. Generally, residential EV rates should be cost-based, using a CoS study, and utilize either TOU or dynamic rates, or should encourage the use of managed charging technologies, to ensure that charging loads are moved off-peak. But there are many issues that revolve around the general principle, such as whether a separate meter should be used to measure EV electricity use. These issues are also covered in our White Paper where we discuss the pros and cons of using whole-home TOU rates, compared to an EV-specific rate. While some utilities have proposed to use a separate class or rate for certain commercial vehicles, most have not done so. In addition, technology is moving rapidly and some utilities are beginning to use data from smart chargers or OEM telematics data in their billing systems to provide for TOU pricing and load management without the need for separate meters.

- Whether the Commission should consider pilot programs in anticipation of the electrification of transportation sector? If so, what pilot programs?

We believe this question is best answered by the jurisdictional utilities in North Dakota who will have the responsibility of developing EV programs for consideration by the Commission. But as a general

matter, we think that except for programs breaking new ground the time for pilots may be behind us. We believe that North Dakota can benefit from the lessons learned from pilot programs, especially in other Midwestern states, and assess which best practices can work. Pilots of various types have been conducted for years around the country and we think utilities and the Commission can use lessons learned from those pilots to develop its own programs.

- What is the anticipated distribution system impact from residential and fleet charging

We believe that especially if the Commission adopts time of use rates as we recommend, most residential and fleet charging will take place during off-peak hours which, particular in these early years, will preclude the need for any substantial investment needs on the utility distribution system. Any improvements needed are well within the capability of utilities to provide in their normal course of business. At this nascent stage of development in North Dakota, however, the Alliance believes that the utilities and Commissions should start planning proactively to incorporate these technologies and loads in their planning, either through a traditional IRP or a separate "TE Plan" that have been developed in many jurisdictions. While there are no significant impacts today especially for light-duty vehicles, this situation could change given the rapid growth (hockey stick type growth) expected over the next three to ten years. This will especially be true for the rapid growth of trucks and buses (MHD vehicles) in fleets, and the expected need for distribution infrastructure, depending on the location. Supply chain issues have extended some of the delays in distribution upgrades since much equipment such as transformers, panels, and switch gear has been procured overseas as well as domestically. It generally takes several years (4 or 5 years) to site and develop a new substation with adequate feeders for large, incremental loads. Accordingly, we urge the utilities and Commission to sharpen their focus on incorporating these loads in the planning process and utilizing the traditional strength of regulated utilities to build and meet loads reliably on a long-term basis.

Respectfully submitted this fourteenth day of November, 2022,

Philip B. Jones

Philip B. Jones, Executive Director
Alliance for Transportation Electrification (ATE)
1402 Third Avenue, Suite 1315
Seattle, WA 98101
Email: phil@evtransportationalliance.org