Testimony of Advanced Energy United
Pennsylvania House of Representatives Consumer Protection, Technology, and Utilities Committee
Informational Meeting on Electric Vehicle Infrastructure
March 6, 2024

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On behalf of Advanced Energy United ('United'), I want to thank Chairman Matzie, Republican Chairman Marshall, members of the committee, and staff for inviting testimony on the issue of electric vehicle (EV) infrastructure. United is proud to support commonsense policy that would ensure Pennsylvania's utilities are developing transportation electrification plans and proactively planning for the transportation electrification transition. Such a policy would both strengthen the state's grid resilience as more EVs come online and protect Pennsylvania electric ratepayers.

United is a national business association, dedicated to educating and advocating for policies that empower our member companies to lead the transition towards a cleaner, reliable, and affordable energy economy. We represent over 100 businesses working across the energy sector, including large-scale and distributed renewables, geothermal, energy storage, energy efficiency and demand response providers, transmission developers, EV manufacturers, and charging infrastructure providers.

The transition to EVs is not a distant future scenario, but an ongoing reality here in Pennsylvania. Major automakers, including General Motors, Ford, Nissan, and Honda, have all committed to transitioning most or all of their vehicle offerings from gas-powered to electric within the next 20 years. By 2030, Pennsylvania is expected to have approximately 750,000 passenger light-duty EVs on the road. Currently, EV sales are increasing, with light-duty EVs constituting a record 12% of the market share in December 2023.

Unfortunately, Pennsylvania is still well behind the curve in preparing for transportation electrification. We've seen many of our neighbors prioritize the buildout of transportation electrification infrastructure, with New Jersey investing $265 million, Maryland investing upwards of $55 million, and Ohio investing over $11 million. In addition, numerous states across the country have enacted legislation to require electric utilities to submit transportation electrification plans, including Colorado, Illinois, Nevada, New Mexico, Oregon, and Washington. As a result of enacting legislation by these states, their electric grids will be more prepared for EV load growth and protect ratepayers through proactive planning for increased transportation electrification. Proactive planning through transportation electrification plans can put downward pressure on energy prices, leading to lower energy bills and a minimized impact on the average ratepayer. To date though, Pennsylvania has not passed any policy to ensure that utilities are submitting transportation electrification plans, and thus, we are falling behind other states in preparing for the inevitable.

As mentioned, United represents several companies directly involved with the transition to EVs. One concern that many companies involved in this transition have whether the electric grid will be ready to support the increased load needed for electrified transportation. To illustrate, for a company to electrify a truck depot that currently fuels up diesel trucks, with enough electricity to charge up multiple electric tractor trailer trucks, would be nearly the equivalent of putting a sports stadium's worth of electricity demand where that one depot used to be.

To make that work and ensure that electrified truck depot can get the power it needs on a timeline that works for their business and without causing unnecessary grid issues, electric utilities in Pennsylvania need to be proactively planning. This includes forecasting for EV adoption in their service territories and determining where charging stations are likely to be built in the near term. It also includes forecasting where their distribution systems will need upgrades to handle the increased load resulting from transportation electrification, as well as setting new rate plans for ratepayers that encourage EV drivers to charge at optimal times to help distribute that increased load.

Rep. Joe Webster introduced HB 1240 to ensure Pennsylvania is hitting on these goals of preparing the electric grid for the transition to electrified transportation and ensuring that ratepayers are not unduly burdened in the process. This legislation would

set up a transportation electrification planning framework, instructing the state's electric utilities to develop transportation electrification plans in conjunction with Pennsylvania state agencies and other interested stakeholders. These plans will evaluate the reliability and resiliency of the utility's transmission and distribution networks, analyze the rate structure for the utility's ratepayers, and ultimately provide solutions to prepare for the transition. Simply put, the legislation is not about the EV chargers or infrastructure themselves, but rather the electric grid behind the chargers, and ensuring that utilities plan for this transition properly to get the grid ready to power those chargers. Additionally, the goal of this legislation is not to incentivize or require electric utilities to own and operate their own EV charging stations.

If HB 1240 is enacted, electric utilities in Pennsylvania will have one year to develop their plans. In the development of transportation electrification plans, utilities must consult with key stakeholders who understand the energy and transportation landscapes of the region, including the Pennsylvania Department of Transportation (PennDOT), the Pennsylvania Department of Environmental Protection (DEP), local transit agencies, and metro or rural planning organizations. Under this legislation, the plan would be updated after five years to account for new changes in the state of transportation electrification and Pennsylvania's energy landscape. Finally, the entire process by which utilities are developing plans will be overseen, reviewed, and approved by the Pennsylvania Public Utility Commission (PUC), with the goals of ensuring grid reliability, adequate charging infrastructure for Pennsylvania's EV drivers, and consumer protection through the mitigation of increasing rates.

According to a report by Synapse Energy Economics, nearly 1 in 10 vehicles in Pennsylvania will be electric by 2030 – just six years away. This of course represents a near-term and rapid increase in the electric demand that will be needed to power these vehicles. Unfortunately, Pennsylvania's electric utilities have not been building out their grid infrastructure and evaluating their rates at the pace at which this transition will require. While some utilities in the state have implemented pilot programs, there is a lack of significant transportation electrification planning at any of the state's utilities. To achieve the level of grid reliability that Pennsylvania will need as a result of increased transportation electrification, the Pennsylvania General Assembly must pass legislation to authorize the PUC to ensure utilities are conducting this proactive planning.

The study evaluated the expected increase in annual transmission, distribution, and generation capacity costs without alternative rate designs for each utility in Pennsylvania. As shown in the table below, without proper planning and rate evaluation as more Pennsylvanians make the transition, the total price tag increase sits at just over $85 million.

Utility	Transmission Capacity	Distribution Capacity	Generation Capacity	Total Capacity Costs
Duquesne Light	$1,640,000	$850,000	$1,850,000	**$4,340,000**
Met-Ed	$1,840,000	$5,130,000	$2,230,000	**$9,200,000**
Penelec	$1,760,000	$2,670,000	$2,210,000	**$6,640,000**
PPL[54]	--	$20,230,000	$5,650,000	**$25,880,000**
PECO	$5,270,000	$22,350,000	$7,030,000	**$34,650,000**
West Penn Power	$17,000	$2,270,000	$2,260,000	**$4,547,000**
Total	**$10,527,000**	**$53,500,000**	**$21,230,000**	**$85,257,000**

Source: https://www.puc.pa.gov/media/2338/synapse_energy_economics_study_report maximizing_benefits_of_transportation_electrification_in_pa032423.pdf

The good news is that we can prevent these rate increases and potential grid reliability issues with effective and proactive planning by the PUC and the state's utilities. United and our members want to see Pennsylvania take a smart, efficient, and effective approach to the state's transition to electrified transportation.

For the reasons listed in this testimony, United encourages this committee and the General Assembly to explore a common-sense approach for the Commonwealth that will put the Keystone State in line with its neighbors in effectively planning for the future. If you should have any questions or concerns, please do not hesitate to contact me at nbibby@advancedenergyunited.org or 717-331-9348.

Before the Consumer Protection, Technology, and Utilities Committee Pennsylvania House of Representatives

Hearing on Electric Vehicle Infrastructure

Testimony of Eric McCrum, Energy & Sustainability Manager, Sheetz, Inc.

Good afternoon, Chairman Matzie, Chairman Marshall and members of the Consumer Protection, Technology, & Utilities Committee. Thank you for the opportunity to appear before you regarding this important informational hearing on electric vehicle infrastructure. My name is Eric McCrum and I am the Energy & Sustainability Manager for Sheetz, Inc.

Sheetz operates over 700 stores located throughout Pennsylvania, West Virginia, Maryland, Ohio, Virginia, and North Carolina. Our company installed our first EV charger in 2012 and currently offers EV charging to customers at 106 of our locations. Within the Commonwealth, Sheetz operates 250+ retail convenience stores and 30 of those locations currently offer EV charging solutions. Sheetz is actively undergoing multiple projects to install more EV charging stations this year. Some of those projects include funding from both the National Electric Vehicle Infrastructure (NEVI) Formula Program and Driving PA Forward.

Sheetz has a proven track record of deploying EV chargers at our retail locations and intends to continue to make that investment as the market develops. Proper EV rate design and the assurance of a competitive marketplace are key factors for convenience store retailers when making this consideration in the future.

Sheetz recently participated in a joint working group in collaboration with the Pennsylvania Petroleum Association and other fuel retailers[1] to provide feedback regarding the PUC's Proposed Policy Statement on Electric Utility Rate Design for Electric Vehicle Charging in Pennsylvania. The following testimony draws from sections of this shared position by Sheetz and other fuel retailers who are evaluating similar dynamics when making an investment consideration for electric vehicle infrastructure.

I. Rate Design for Direct Current Fast Charging Stations

Electric utilities should consider rates for EV charging stations, specifically public direct current fast charging (DCFC). The lack of a rate or set of rates that are specifically developed for public DCFC transactions is a key structural challenge discouraging the private market from investing in public fast charging stations.

Public DCFC requires high levels of capacity to deliver a large amount of electricity in a short period of time. This typically subjects EV charging stations to costly demand charges, which are fees imposed by electric utilities that are based on the highest level of electricity used during a billing period. Demand

[1] Joint Fuel Retailers public comment on PUC's Proposed Policy Statement regarding Electric Utility Rate Design for Electric Vehicle Charging in Pennsylvania https://www.puc.pa.gov/pcdocs/1813355.pdf

charges were created to compensate utilities to meet the demands of energy intensive industries such as manufacturing. Unfortunately EV charging load is also being saddled with these demand charges, which challenge the economics of the EV charging stations and are difficult for businesses to pass onto customers because they are not based on the actual units of energy delivered to the customer. To further compound the issue, station operators are not aware of what the additional demand charge will be until the end of the billing cycle – meaning it is impossible for the station operator to appropriately pass along any costs associated with that charge to the end-user as is done in nearly every other wholesale-to-retail transaction. This discourages private investments by making it impossible for private businesses to accurately and efficiently recover their costs.

II. Strategy to Promote Competition & Prevent Cross-Subsidization

A key challenge for private businesses seeking to enter or expand their investment within the EV charging market is the threat of electric utilities using ratepayer funds to own and operate chargers. An electric utility's ability to rate base EV chargers comes with insurmountable competitive advantages and limited incentives for innovation and improvements (such as faster charging stations). Against this backdrop, private businesses that would otherwise be eager to invest in charging stations will not consider the stations to be an attractive investment.

More importantly, ratepayers that may never own an EV should not subsidize investments for their associated infrastructure. Additionally, if electric utilities were able to impose demand charges on privately owned charging stations, but not on their own chargers it increases the potential of cross subsidization due to the utility not having to directly recover the costs associated with that specific transaction. This depresses private investment to the detriment of consumers who have come to rely on competitive, transparent pricing for transportation energy.

Rate design for public DC fast charging stations should incentivize private investment while also ensuring that the EV charging market develops in a manner that does not unfairly burden ratepayers, who may not own an EV. Ratepayer funding should not be used to subsidize utility owned investments in EV charging stations when private businesses are eager to invest their own private capital.

Convenience store operators and fuel retailers are eager to work with electric utilities as Pennsylvania prepares for increased EV adoption. We firmly believe that the most efficient way to build out Pennsylvania's EV charging infrastructure is for fuel retailers and electric companies alike to focus on their core competencies. With utilities focusing on preparing the electric grid for increased investments in public fast charging stations and fuel retailers focusing on delivering a positive customer experience for EV drivers.

III. Conclusion

Convenience stores offer some of the best possible existing real estate locations for scalable EV charger deployment and are well positioned to play a pivotal role in building infrastructure to help EV drivers overcome range anxiety. Liquid motor fuel is one of the most competitive products available in the marketplace. A successful blueprint for EV charging infrastructure is to mirror the competitive dynamic

that currently exists within the transportation fuel sector. Sheetz stands ready to continue to invest and innovate within this space. Thank you again for the opportunity to provide testimony on this important topic. I will be happy to answer any questions from the committee.

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March 6, 2024

Consumer Protection, Technology, and Utilities Committee
Pennsylvania House of Representatives

Submitted via email

Re: SWTCH comments for Informational Meeting on Electric Vehicle Infrastructure

Dear Majority Chair Matzie, Minority Chair Marshall, and Members of the Committee:

SWTCH appreciates the Committee's interest in electric vehicle (EV) infrastructure and is pleased to share these comments.

The topic of EV infrastructure is a broad one that implicates a range of stakeholders, from EV charging providers like SWTCH, to the electric distribution companies (EDCs) that deliver the power, to the legislators and utility commissioners who establish the policy and regulatory frameworks that govern the investment and operation of the chargers. SWTCH offers the following three general comments to inform this broader conversation:

1. Certain sectors such as multifamily properties warrant special attention.
2. Load management has an important role to play and should be incentivized.
3. Open communication standards should be encouraged and harmonized across jurisdictions.

About SWTCH

SWTCH is a leading provider of electric vehicle (EV) charging and energy management solutions for multi-tenant properties across North America, with a focus on multifamily condominium and apartment buildings. SWTCH's end-to-end solution optimizes EV charging usage and manages load to benefit drivers, property owners, and the grid. SWTCH's platform is built using open communication standards to support interoperability, scalability, and cross-platform integrations.

Comments

1. Certain sectors such as multifamily charging warrant special attention.

The multifamily sector is uniquely challenging when it comes to EV charging, and as a result, is underserved. There are a number of reasons for this. The multifamily property sector is diverse, with ownership structures ranging from rental apartments to condominiums to co-operatives. Considerations about who pays, who benefits, and who has access, are much more complicated than for a single-family house. Decision-making rarely rests with one person and is instead spread out among resident associations, property management firms, and/or the property ownership. Even within a category of one particular ownership model – such as condominiums – levels of interest and concerns about EV charging can vary greatly from one condo association to another. These different internal dynamics, combined with electrical constraints unique to each property, all

contribute to a market environment in which the preferred approach for deploying chargers at one multifamily property may be different at another.

From a public policy standpoint this matters because one in five Pennsylvania households is in a multifamily property.[1] Renters comprise a disproportionately high percentage of multifamily households, as do low- and moderate-income (LMI) households. So to enable charging for renters and LMI households in multifamily properties – and the associated transportation cost savings that come from driving electric – intentional policy attention is warranted.

To ensure that multifamily households can fully benefit from EV adoption, they need access to at-home charging. It's insufficient for multifamily residents to only have access to publicly available charging, such as nearby curbside charging or charging in public lots or garages. While such public charging plays an important role in the ecosystem, it does not allow drivers to enjoy either the significant or convenience savings associated with charging one's vehicle overnight at home. Charging is about more than access; it is also about affordability and convenience.

One of the challenges associated with incentivizing chargers at multifamily properties is that the properties are not publicly accessible. Government funding incentives such as the federal government's National EV Infrastructure (NEVI) Formula Program often condition their funding upon a public access requirement. This eliminates these funding programs as a tool to incentivize multifamily charging. The Commonwealth and its EDCs have the ability to step in and address this funding gap.

SWTCH believes a variety of approaches can and should be taken to enable customers to install electric vehicle charging. Both utility-owned and privately owned charging programs are valuable tools in the proverbial toolbox for expanding charging access at multifamily properties. Indeed, utility-owned infrastructure can serve as an effective complement to privately deployed charging infrastructure in many markets.

2. <u>Load management has an important role to play in mitigating grid impacts, and it should be incentivized</u>.

Intelligent load management is often an undervalued solution that can reduce expenses both at the facility level and also system-wide on the grid. SWTCH Control® is SWTCH's proprietary automated load management system (ALMS) that can help property owners avoid the need for costly upgrades to the master panel and/or service to the property while still dispensing the full amount of energy a vehicle needs during its charging session. SWTCH Control® does this by dynamically managing charging load, not just within the constraints of a residential dwelling unit's load or even of a dedicated sub-panel for EV chargers, but for a property's overall load.

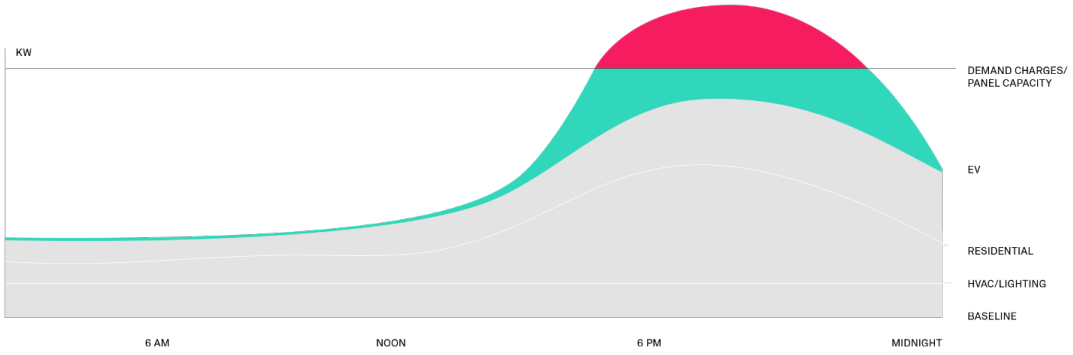
The two graphics below illustrate how a SWTCH Control®-type of ALMS can manage load for a typical multifamily apartment or condominium building. The X axis represents 24

1 United States Census Bureau. American Community Survey. S2504. Physical Housing Characteristics for Occupied Housing Units. https://data.census.gov/table?q=Housing&g=040XX00US08&y=2019&tid=ACSST1Y2019.S2504

hours in a weekday from midnight to midnight. The Y axis represents the building's overall load.

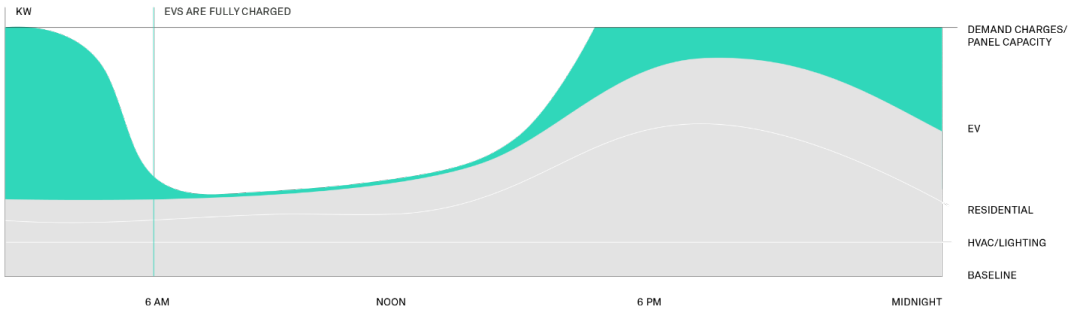
In the Unmanaged Charging Scenario below, the gray load curves represent the non-EV charging load. This includes the building's baseline load, its HVAC and lighting load, and its residential load. As people return home after work and school, this residential load of electric stove tops, clothes dryers, vacuums, and other appliances and devices has an evening peak. The load shown in green is the EV charging load. Similar to residential load, when drivers return home from work and plug in, the EV charging load adds to the evening peak. If left unmanaged, the combined load can exceed the building's overall electrical capacity for its master panel and utility service to the property. This excess load is shown in red.

EV Charging Scenario: Unmanaged Charging



In the Managed Charging Scenario below, an ALMS senses when the building's overall load risks exceeding its panel capacity. The ALMS automatically throttles down the EV charging load and shifts it to overnight hours when the building's residential and other loads diminish, thereby making capacity available once again to charge the EVs.

EV Charging Scenario: Managed Charging



Note that in both scenarios, the total amount of energy dispensed to the EVs is the same, and all EVs are fully charged and ready to go in the morning. The difference is in how the

ALMS system enables the facility owner to shift the EVs' evening peak load (shown in red in the unmanaged charging scenario) to periods of ample supply during the late-night and early morning hours (shown in green in the managed charging scenario).

These two scenarios illustrate the value afforded by a dynamic ALMS-based EV charging solution. By dynamically managing load in the manner illustrated above, an ALMS solution can enable a property owner to install higher-powered chargers on shared circuits. This can unlock significant cost savings while still enabling installation of a full complement of EV chargers by reducing the number of circuits needed to serve the chargers, and also by mitigating the need to pay for often costly utility-side service upgrades. These savings are not just theoretical; SWTCH delivers these cost savings regularly to customers.

At a more macro level, one can see how ALMS also provides value to the grid more broadly and its ratepayers. By managing when and how EVs charge at scale, they can shift and shape load on the system, charging when electricity is more plentiful and cheap, and enabling utilities to spread out their often-significant fixed system costs over a greater volume of kilowatt hours sold. This in turn applies downward pressure on rates to benefit all ratepayers. (Indeed, SWTCH is currently participating in a utility-scale demand response pilot that leverages the volume of EV charging energy <u>not</u> dispensed during a demand response event at scale to provide value to the grid.) Other states' experience has conclusively demonstrated the value of such managed EV charging on the grid.[2]

Utilities in other jurisdictions have recognized the importance of a wide range of load management tools. In New York, for example, utilities recently launched a Load Management Technology Incentive Program that offers incentives for energy storage as well as advanced load management software and energy management systems.[3] The program also provides flexibility for other technologies that can effectively manage load to participate. Since the New York incentive is structured as a percentage of technology costs, it pushes participants toward lower-cost solutions that can achieve similar outcomes.

3. <u>Open communication standards should be encouraged and harmonized across jurisdictions</u>.

Open communication standards future-proof investments in infrastructure, avoid stranded assets, and ensure maximum customer choice. Open Charge Point Protocol (OCPP) serves as the intermediary between charging hardware and network management software, enabling station operators to leverage a single network provider to manage multiple hardware options. This level of flexibility is crucial to effectively deploy EV charging, particularly in the multi-unit dwelling contexts that SWTCH supports. Building owners often install charging equipment sequentially over time to meet growing demand from their residents. OCPP can ensure interoperability across providers and over time to

[2] *See, e.g.* Fitch, T., Frost, J., and Whited, W., (2022, December). *Electric Vehicles Are Driving Electric Rates Down. December 2022 California Update.* Synapse Energy Economics. https://www.synapse-energy.com/sites/default/files/EV%20Impacts%20December%202022.pdf.
[3] State of New York Public Service Commission. Case 22-E-0236. Proceeding to Establish Alternatives to Traditional Demand-Based Rate Structures for Commercial Electric Vehicles. Joint Utilities' Electric Vehicle Load Management Technology Incentive Program.

reduce the risk of stranded charging assets. Additionally, OCPP supports continued innovation and competition even after initial purchase and installation, because as customers will not be locked into one hardware or software provider.

SWTCH is also believes it is important that the industry as a whole shift toward use of the ISO 15118 standard. Ensuring that EVs can effectively communicate with the grid will be critical to maintain reliability in light of the anticipated growth of EV charging load on the grid.

At a more macro level, as the legislature, the Public Utility Commission, and other agencies consider what standards are warranted for any taxpayer or ratepayer-funded investments, SWTCH encourages harmonization of standards across jurisdictions. Many states have a shared interest in promoting a consistent and reliable charging experience for drivers and have instituted proceedings and working groups to consider various standards. Harmonization of standards can help enable the industry and its supply chain to provide equipment, software, and services in a cost-effective and timely way.

In Closing

SWTCH appreciates the Committee's longstanding interest in transportation electrification. SWTCH looks forward to continuing to collaborate and inform the Committee's deliberations.

Thank you for your consideration of these comments. If you have questions or if I can provide more information, please contact me at josh.cohen@swtchenergy.com or 202.998.7758.

Respectfully,

Josh Cohen
Head of Policy

Pennsylvania Food Merchants Association

Advocating the views of convenience stores, supermarkets, independent grocers, wholesalers and consumer product vendors

March 4, 2024

Re: Electric Vehicle Infrastructure

Chairman Matzie, Chairman Marshall and members of the Consumer Protection, Technology, & Utilities Committee,

My name is Alex Baloga and I am president and CEO of the Pennsylvania Food Merchants Association. PFMA is a statewide trade association advocating the views of convenience stores, supermarkets, independent grocers, wholesalers and consumer product vendors operating in Pennsylvania. We represent more than 500 corporate members who operate more than 3,000 retail food stores and employ more than 300,000 Pennsylvanians.

Thank you for the opportunity to share some thoughts on electric vehicle infrastructure on behalf of our membership. Our retail members, whose locations you drive by every day, are the specialists when it comes to providing quick, safe and convenient fueling options. Some have been doing it for close to a century, so it is with a high level of expertise that they are approaching the new paradigm of EV charging. Many have already embraced – and invested in - this new technology and offer charging stations at locations throughout the commonwealth.

The chief priority as we discuss how the roles of the state, utilities, and private businesses will fit together in this developing marketplace is maintaining a level playing field for all participants. A concern of the private sector is not simply the possibility of utility companies entering the retail marketplace, but leveraging ratepayer funds to deploy, operate and maintain charging stations across the state's roads and highways. This would represent an enormous competitive advantage for certain actors in the marketplace, at the expense of others, with no clear benefit to customers and several obvious drawbacks.

Chief among these drawbacks would be the involuntary subsidization of ratepayers who may not own or use an electric vehicle to benefit those who do. A hallmark of retail fueling is the concept of paying for what you get. Gasoline and diesel are fungible commodities, just like electricity, and their sale is highly regulated. Pricing is dynamic and extremely competitive among retailers, who all have to go through the same general processes to get their product to market. There is no equivalent of a utility company leveraging ratepayer money to subsidize the development and sale of traditional retail fuel, and for good reason.

The concept of specialization is also important to consider. Utility companies are the experts when it comes to maintaining and building out electric grids and making sure customers have reliable power to go about their day. You would not expect – or presumably want - your local convenience store chain to one day appear on the letterhead of your electric bill. By the same logic the idea of your electric company embarking on a series of retail charging stations – totally outside their core competency – makes just as little sense.

Of course there is also the fact that fuel retailers in business today are, indeed, already in business. Customers know where they are, what to look for, and trust them to provide a safe and reliable product. They are located conveniently and have all the other amenities that drivers have come to expect when they refuel.

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Our association members appreciate the extent to which the state has contemplated the role of the private sector thus far in its development of EV charging policy. PennDOT staff should be credited for their efforts to communicate and accept feedback as they have moved forward with the National Electric Vehicle Infrastructure Formula Program, and other work surrounding EV chargers. So too should members of this committee and others in the legislature who are planning ahead for a future with ever more electric vehicles on the road. We look forward to working with you and other stakeholders to make sure a robust and accessible charging network awaits them.

Regards,

Alex Baloga
President and CEO, PFMA

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March 1, 2024

The Honorable, Chair Robert Matzie
The Honorable, Chair Jim Marshall
Members of the House Consumer Protection, Technologies & Utilities Committee

RE: Testimony on eMobility: Shaping a Sustainable Future for Pennsylvania's Transportation Infrastructure

To the esteemed members of the Consumer Protection, Technologies & Utilities Committee,

I am honored to present this testimony on behalf of S&B USA eMobility, addressing the crucial need for proactive measures in shaping the future of transportation infrastructure in Pennsylvania. As the state grapples with the challenges and opportunities presented by the rapid expansion of electric vehicles (EVs), it is imperative that we adopt innovative strategies to ensure a sustainable and efficient transition to eMobility.

The electrification of transportation represents a pivotal moment in our collective efforts to combat climate change and create a cleaner, more sustainable future for generations to come. With EVs increasingly becoming a preferred choice for consumers, it is incumbent upon us to facilitate the widespread adoption of electric vehicles by investing in robust charging infrastructure and fostering an environment conducive to eMobility innovation.

S&B USA eMobility is committed to leading the charge in this transformative journey, leveraging nearly a century of expertise in project delivery to spearhead groundbreaking initiatives across the nation. Our comprehensive approach to eMobility encompasses Charging as a Service, Energy as a Service, and Fleet as a Service business models, designed to reduce upfront capital costs for municipalities, government agencies, and private businesses alike. By embracing eMobility, we not only mitigate carbon emissions but also enhance our quality of life by reducing noise pollution and eliminating harmful exhaust fumes.

Pennsylvania stands at a critical juncture in its pursuit of sustainable transportation solutions. While neighboring states like Ohio and New York have made significant strides in green infrastructure development, it is imperative that Pennsylvania remains at the forefront of the eMobility revolution. Through strategic partnerships and innovative financing mechanisms, we can ensure that the Commonwealth remains competitive in an increasingly electrified transportation landscape.

One of the key pillars of our approach to eMobility is the establishment of centralized and public fleet charging hubs, accessible to investors and everyday EV users alike. By investing in infrastructure such as charging hubs, Pennsylvania can position itself as an attractive destination for businesses seeking to capitalize on the benefits of EVs while providing essential support for everyday commuters.

Furthermore, our collaboration with partners like Francis Energy underscores our commitment to leveraging federal funding opportunities, such as the National Electric Vehicle Initiative (NEVI), to deploy fast charging stations along Pennsylvania's major transportation corridors. This proactive approach not only addresses range anxiety but also facilitates long-distance travel throughout the state, laying the groundwork for a comprehensive EV charging network.

In addition to addressing range anxiety, we must also consider the broader implications of EV adoption, including fleet electrification opportunities. Vehicles such as school buses and city transit buses represent prime candidates for electrification, offering significant economic and environmental benefits for communities across Pennsylvania. By embracing a visionary mindset and exploring innovative solutions, we can ensure that Pennsylvania remains at the forefront of the sustainable transportation revolution.

A prime illustration of this lies in the significant deal struck by the Montgomery County Public School District (MCPS) in Maryland to electrify hundreds of school buses within its fleet over the next four years. This landmark agreement, given the operational nature involving a limited number of depots housing dozens of buses, facilitated a Public-Private Partnership (P3) arrangement. Under this arrangement, a private developer shoulders all equipment costs (including buses and charging infrastructure) and energy expenses for MCPS for a sixteen-year term. In return, the developer receives a monthly fee for providing this service while assuming the associated technological and market risks. Notably, despite the higher upfront cost of electric buses compared to traditional Internal Combustion Engine (ICE) counterparts, the price paid by MCPS under this deal is on par with their current costs for owning and operating ICE buses, even in the absence of government subsidies. This cost parity was made possible by the economies of scale inherent in this transaction. [Unfortunately, most school districts in Pennsylvania are substantially smaller than MCPS (165,000 students, 14th largest in the US), necessitating legislative and policy interventions to aggregate resources and achieve economies of scale conducive to similar opportunities within the state.]

In conclusion, the transition to eMobility presents Pennsylvania with a unique opportunity to shape the future of transportation infrastructure in a manner that is both environmentally responsible and economically advantageous. By embracing innovative ideas, investing in robust charging infrastructure, and fostering collaboration between public and private entities, we can create a sustainable and prosperous future for generations to come. However, it's essential to acknowledge the challenges posed by diversified charging solutions deployed by multiple developers. Such solutions, scattered across major highways and on-street locations, often struggle to achieve utilization and are not economically viable without significant subsidies. Moreover, the lack of consistency in user experience further hinders their effectiveness. We believe that large fleet electrification initiatives and centralized charging locations offer a much more promising approach and are the way to go for ensuring the success and scalability of Pennsylvania's eMobility infrastructure.

Thank you for your attention to this critical issue, and I look forward to working together to realize Pennsylvania's full potential in the era of eMobility.

Sincerely,

Haggai Dror
SVP, Chief Commercial Officer and eMobility Lead
S&B USA