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VIA FEDERAL EXPRESS and
ELECTRONIC MAIL
EVStakeholder.Group@bpu.nj.gov

Office of the Secretary of the Board
Board of Public Utilities
44 South Clinton Avenue, 3rd Floor, Suite 314
P.O. Box 350
Trenton, New Jersey 08625-0350

Attention: Aida Camacho

RE: New Jersey Electric Vehicle ("EV") Infrastructure Stakeholder Group

In the Matter of the Regulatory Assistance Project Electric Vehicle Infrastructure Report – "Getting From Here to There: Regulatory Considerations for Transportation Electrification"
BPU Docket No. EO17070748

Dear Secretary:

Atlantic City Electric Company's ("ACE" or the "Company") provides below its responses to the third round of questions posed by Staff of the New Jersey Board of Public Utilities (the "Board" or "BPU") in the Electric Vehicle Infrastructure Stakeholder Work Group. ACE also joins in and supports the responses submitted by ChargEVC. As with its responses to Staff's earlier sets of questions in this proceeding, ACE reserves its right to supplement or modify the positions it takes below.

1. USDOE – AFDC Findings

1.1. "Are the analysis and findings of the USDOE AFDC and ANL accurate and supported by other independent analysis? Please cite why or why not."

ACE has not performed an independent analysis to support or contradict the findings of USDOE AFDC, ANL and others. It is recommended that the New Jersey Board of Public Utilities ("BPU") commission an independent study by an organization or educational institution in order to evaluate the question regarding fuel efficiencies for electric vehicles in New Jersey.

1.2. "Should the NJBPU run the ARL GREET model for several different types of EV, ICE vehicles and other alternate fuel vehicles under different New Jersey driving conditions for various New Jersey electric generation mixes? Or not?"

Please see the Company's response to Question 1.1.

1.3. "If the Rutgers LESS energy efficiency evaluation shows favorable results for PEVs under NJ driving conditions and a NJ energy mix, how should that information be leveraged by the BPU to accelerate the pace of EV adoption in NJ? If not what actions should be taken by BPU?"

Please see the Company's response to Question 1.1.

2. Energy Efficiency

2.1. "Would an EV fueled by electricity from the current New Jersey electric generation sources be more efficient, less efficient or the same level of energy efficiency than the EVs noted in the ANL analysis? If so why? If not why not?"

Please see the Company's response to Question 1.1.

2.2. "Would an EV fueled by a New Jersey electric generation mix meet the definition of conserving energy in the definition for energy efficiency as set forth at N.J.S.A. 48:3-98.1? If so why? If not why not?"

Please see the Company's response to Question 1.1.

2.3. "Would an EV fueled by a New Jersey electric generation mix meet the definition of using less electricity or natural gas in the definition for energy efficiency as set forth at N.J.S.A. 48:3-98.1? If so why? If not why not?"

Please see the Company's response to Question 1.1.

3. Electric Systems Impacts

3.1. "What could be the expected percentage increase in electric energy attributable to EVs result in by 2025, 2030 and 2050?"

The expected increase in energy attributed to electric vehicles is unknown at this point as it depends on several factors, but any increase can be mitigated.

3.2. "What could be the expected impacts and costs (positive and negative) on generation, transmission and distribution systems by the years 2025, 2030 and 2050?"

The expected cost is also unknown at this time. ACE believes that by managing vehicle charging via demand response programs, coupled with solid customer education, the impact and cost on the distribution system can be minimized.

4. Grid Integration, Demand Response and V2X (consisting of Vehicle to Grid (V2G), Vehicle to House (V2H), etc.

4.1. "What is the state of the technology that could allow the EV to be utilized as a demand response technology? What is the availability of the technology now and how/when will that availability evolve? What actions should NJBPU take to take advantage of the use of EVs as demand response technology? If not why not?"

The technology exists today to manage electric vehicle charging. Our team has experience implementing programs where vehicle demand response signals are sent to the vehicle charging stations during times of high demand and essentially decrease the amount of energy that a vehicle can take (as long as the customer does not opt out). In other words, Level 1 energy can be delivered to a Level 2 charger for the specific period of time when the energy is needed. This was illustrated in the Pepco Maryland Pilot, Case No. 9261. A report is available on the Maryland Public Service Commission website.

As EVSE (electric vehicle supply equipment or charging stations) technology evolves, the number of suppliers with "smart" EVSE offering several methodologies to move the data and messages is increasing. In a demand response situation, messages (demand signal) to curtail are not only sent to the individual EVSE but messages are also sent to the customers notifying them of the curtailment event (date, time and duration of the event). This provides the customer the option to accept (do nothing) or opt out of the event. Traditionally, demand response signals for electric vehicles have been sent via email or web portal or the customer can opt out locally at the EVSE.

We are seeing an increase in the number of equipment and network providers that are adopting open standards such as OCPP 1.6 so demand response can be executed more efficiently. Several EVSE brands can be integrated in the same network regardless of the charging level: 1, 2 or a DC Fast Charger (DCFC). It is also important to mention that open standards will facilitate the integration of renewable energy and the combination of energy storage with DCFC.

ACE strongly supports demand management for electric vehicle charging, particularly for residential customers, and recommends that the BPU strongly consider demand response as a means to save energy and mitigate potential future impacts on the distribution system.

4.2. "V2X: Is the two way communication of the EV to the grid a commercially available technology or not? If so why? If not why not? What is the availability of the technology now and how/when will that availability evolve? What actions should NJBPU take and when to take advantage of the use of EVs in V2X technology?"

Today, to our knowledge, only V2G (frequency response controls) for demonstration purposes have been implemented by educational institutions such as the University of Delaware and by the U.S. Department of Defense. Our team representing Delmarva Power was an initial contributor to the University of Delaware's efforts and a few years ago, worked with the Department of Defense, PJM and others to implement V2G in Pepco's service territory.

V2G to our knowledge is not commercially available today. While it provides some opportunity to evaluate the overall benefits to the customer, to the grid, and to society, a commercial program will have to consider the vehicle's capability of responding to V2G as most vehicles today are built to accept one-way power flow (charging), where V2G requires the vehicle to discharge to the grid or two-way power flow. Each vehicle will have to be part of an aggregator that will bid and schedule each vehicle into the market. This adds to the complexity of the logistics from a commercial perspective, as the aggregator will have to meet all the requirements of PJM (which most utilities do), and in addition most commercially available EVSE deliver one way (power to the vehicle) power flow.

We believe that V2G can be done in a proactive way as part of a utility's demonstration program in the future, but we are not sure that all the elements are aligned in the marketplace today for an individual customer to find these services.

The BPU can support utilities that offer to implement V2G in the State of New Jersey as a demonstration program leading the way to a proactive future in this technology.

4.3. "Could the EV electric customer access the energy markets directly, through an aggregator or Network Operations Center (NOC), through the electric utility or blockchain?"

Please see the Company's response to Question 4.2.

4.4. "If the EV could be utilized as a demand response technology in a two way communication with the grid, distribution and/or transmission, would the EV meet the definition of demand side management in N.J.S.A. 48:3-51? If so why? If not why not?"

A demand response signal can be sent by the utility directly to the smart EVSE capable of receiving such signal (via a network with OCCP 1.6 or using OpenADR). Demand response is a one-way signal sent by the utility on those occasions where the demand is such that energy reduction is needed. This is considered managed EV charging and we do believe that demand response for electric vehicle charging is part of a Demand Management program similar to air conditioning summer demand reductions performed by the utility.

4.5. "What are the types and level of benefits to the grid of EVs in a demand response program and what would be the overall costs to develop and implement this program?"

There are many benefits in implementing a Demand Management program for vehicle charging, for instance: energy is reduced during peak time by given incentives towards charging during off-peak hours, mitigating outages, improving reliability, educating the customer as to when to charge and how to charge smart, providing incentives towards the purchase and installation of smart EVSE, etc. The cost of the program depends on the elements of such program.

4.6. "If the EV could be utilized as a demand response technology, should the BPU consider changes to demand charges? If so why? If not why not?"

Not all EVSEs can conduct a demand response. Most smart level 2 chargers are capable of performing this function; however, most of the level 2 chargers are located in residential areas where demand charges may not be applicable. Demand charges apply in most cases, to high level charging such as DCFC, where the infrastructure needs to be built to accommodate such demands.

The BPU can take into consideration (if it deems appropriate) changes to demand charging; however, those changes should also consider alternatives for utility recovery of the cost for such demand services.

4.7. "Should the BPU consider the use of telematics (such as Con Edison's SmartCharge New York program) in any demand response program and to address changes to demand charges. If so why? If not why not?"

This technology used by the Con Edison program appears to be promising and should be considered. It is our understanding that this technology does not allow for demand response events to take place, but can be used to provide incentives if the customer charges at home during off-peak hours.

4.8. "If the EV is not using less electricity or natural gas per the definition for energy efficiency as set forth at N.J.S.A. 48:3-98.1 and the EV could be utilized as demand response for the EV to meet the definition of demand side management in N.J.S.A. 48:3-51, what could be the expected impacts on the grid for increased generation capacity by 2025, 2030 and 2050? What could be the level of costs and over what timeframe?"

Please see ACE's response to Questions 4.4 and 4.5.

4.9. "If there is an increase in electric energy usage from the increase in EV but not a generation capacity increase because of demand response of EV what would the increase efficiency of the grid be in 2025, 2030 and 2050? If not why not?"

We do not have the information necessary to respond to this question. We recommend that the BPU conduct an independent study that will provide such a forecast.

5. Electric Vehicle Supply Equipment (EV Charging Station) State of the Competitive Market

5.1. "Is vehicle charging a fully competitive market across all market sectors (e.g. residential, public L2, public DCFC, low income communities and Multi Unit Dwellings)? If not which market sectors are not competitive and why not? Which market sectors are competitive? What is the business case for the EVSE industry and where does the business case fail?"

There is competition among the EVSE suppliers. Presently, there are more suppliers of L2 than DCFC. We as an electric utility have the privilege and obligation to serve all of our customers. We provide solutions and programs that include residential, multi-dwelling units (MDU), single families, and commercial entities, and the public at large regardless of social status or income level. ACE will serve all of its customers based on a price per kWh as approved by the BPU. We cannot comment on the business model of EVSE suppliers and network providers or their hosts.

We believe competition is good for our customers and the economy in New Jersey. As a utility, ACE competitively seeks proposals from the market and selects the best value for our customers. We bring expertise and value to the process and advocate for our customers. Other states (in the past) excluded the utilities from participating in the EV infrastructure build-out and the results were not positive. Those same states are now reversing their previous decisions and asking the utilities to present programs to meet the ongoing demand for EV Infrastructure.

In addition, we strongly believe that the utility has a leadership role to play. We are the energy providers, delivering the electricity to people's homes, businesses, cities and municipalities. Serving the EV load is an extension of what we do. The vehicle is a major investment in our customers' world and we, after all the sales people from independent charging companies have left New Jersey, are the company they will call for help.

Further, we also want to educate our customers, improve reliability, and mitigate any potential impacts to the local distribution system. We have demonstrated our knowledge and skill in the successful implementation of demand management programs (*See* Maryland Public Service Commission Case No. 9261).

It is our recommendation that the BPU consider the utilities as a partner in building a robust and efficient electric vehicle infrastructure and allow utilities full participation in this market.

5.2. "If the charging market sections are not competitive should the utilities be allowed to develop managed charging programs for the non-competitive charging market sections? If not why not?"

Please see ACE's response to Question 5.1.

5.3. "If the charging market sections are competitive should the utilities be allowed to develop managed charging programs for the competitive charging market sections? If not why not?"

Please see the Company's response to Question 5.1.

5.4. "If the utilities are allowed to develop managed charging programs is there a time limit or other criterion that should be imposed on this participation? If so what timeframe? Should any utility managed charging program have a sunset date?"

Please see ACE's response to Question 5.1.

5.5. "If the utilities are allowed to develop managed charging programs what guidelines should be developed for this participation? If not why not?"

Please see the Company's response to Question 5.1.

6. Utility Role in "Charge Ready"

6.1. "Should electric utilities engage in rate-based "Charge Ready" programs? What additional measures beyond Charge Ready are appropriate in non-competitive markets? Should utilities offer rebates on EV chargers or own/operate EV chargers in non-competitive markets?"

The BPU can evaluate programs offered by other utilities and determine what would be in the best interest of all customers in New Jersey. ACE recommends that a comprehensive program with several elements would be more beneficial to all interested participants.

7. Advanced Metering Infrastructure (AMI) – Smart Grid / Smart Meters

7.1. "What policies should the Board establish to take advantage of AMI, Smart Grid / Smart Meters with respect to the EV market?"

Investment in AMI has multiple customer benefits from outage detection to cost reductions, among others. It also provides a solid foundation for EV Charging data collection, comparison, billing, vehicle charging profile, and overall energy usage. In the absence of AMI, other technologies will be used to reach the EVSE and achieve the program's goals, but the data from the mechanical meter would not be as readily available as it is with AMI meters.

ACE supports the deployment of AMI in our service territory and can work with the BPU in any capacity to make this a reality not just for EV customers but for all of our customers.

7.2. "Would a utility managed charging program support and supplement any smart grid (SG) or automatic meter initiatives (AMI)? If not why not and what programs should be developed instead of AMI? If so what would be the level and value of the benefit

to and from the AMI programs. If not describe why not and what would be the level of value in any other program?"

Please see the Company's response to Question 7.1.

On behalf of Atlantic City Electric Company ("ACE"), following for your review, consideration and posting are ACE's responses to the four questions posed by Staff regarding the New Jersey EV Infrastructure Stakeholder Group. We look forward to reading the comments posted by interested parties on the Board's website in the very near future.

An original and ten copies of this correspondence and its attachment will follow by overnight courier. Kindly return one date and time-stamped "filed" copy to the undersigned in the self-addressed, postage-prepaid envelope provided.

ACE looks forward to its continued active participation in this proceeding.

Thank you for your cooperation and courtesies. Feel free to contact me with any questions or if I can be of further assistance.

Respectfully submitted,

/jpr

Philip J. Passanante
An Attorney at Law of the
State of New Jersey

Enclosure

cc: Michael Winka, BPU (Electronic Mail)
Michael Hornsby, BPU (Electronic Mail)