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Attn: PSC Docket No. 19-0377

CRI COMMENTS ON PSC DOCKET 19-0377, IN THE MATTER OF THE DELAWARE PUBLIC SERVICE COMMISSION'S JURISDICTION OVER ELECTRIC VEHICLE CHARGING STATIONSAND SERVICE PROVIDERS

The Caesar Rodney Institute submits these comments as an intervenor in response to the Delaware Public Service Commission's ("Commission") request for comments.

Common sense would lead to the obvious conclusion the Commission should not be regulating entities involved in offering electric vehicle charging services. Regulated utilities have been granted a natural monopoly to avoid duplicating the massive distribution network needed to serve electric customers. To protect consumers from rapacious pricing, utility commission oversight was established to approve utility investment, and just and reasonable rates to recover costs. These regulated utilities have the right to be protected from unregulated providers competing for the electricity distribution up to the electric meter measuring use. The Commission establishes pricing, and has already established a lower time-of-use rate to encourage off peak electric vehicle charging (EV) for residential customers. The Commission should also consider higher time-of-use rates to discourage charging during peak times.

The opposite is true for public EV charging infrastructure where massive duplication is desirable, and in fact a robust competitive market already exists, and is expanding rapidly. The U.S. Department of Energy reports 52 charging stations in Delaware with 171 outlets[1] including Wawa locations in Claymont, Newark, New Castle, Dover, and Lewes, plus other locations around the state. ChargePoint reported 36 charging stations in Delaware in public comments in PSC Docket 17-1094[2] including Royal Farm locations in Smyrna, Dover, Milord, Georgetown, and Bridgeville. In the same report ChargePoint estimated there were 1173 electric vehicles registered in Delaware as of the third quarter of 2017, and EV Adoption estimated another 627 were added in 2018[3] for a total of about 1800 vehicles. Of those perhaps 30 percent were full Battery Electric Vehicles (BEV) most in need of charging. The U.S. Department of Energy provides a calculator[4] to estimate public charging needs based on the number of EVs in the state. The calculator suggests Delaware needs 85 outlets, about half the number already in place.

Charging services are being offered nationally, and in Delaware by for profit businesses', such as, gasoline filling stations, dedicated EV charging businesses, and EV vehicle dealers. DNREC has funded public chargers. Shopping centers, and other businesses offer charging to attract customers to their stores. Other companies offer charging to attract employees. There is clearly a robust competitive market for charging in Delaware. Delmarva Power receives the approved electric rate at the meter for those entities offering charging services, and is thus protected.

Unfortunately, Public Utility Regulation Title 26, Subchapter 1, does not provide clarity as to what entities are Public Utilities, or even Retail Electric Suppliers requiring certification by the Commission in this instance. I will leave it to others to delve into this further, but a common reading suggests the argument can be made EV charging companies might be either Public Utilities, or Retail Electric Suppliers and require Commission oversight.

That brings us to Subchapter II, Jurisdiction and Powers, § 201 General Jurisdiction and Powers. (d) (1), where the "Commission may, upon application or on its own motion, after notice and hearing, forbear from ("deregulate") in whole or in part, its supervision and regulation over some or all public utility products or services and over some or all public utilities where the Commission determines that a competitive market exists for such products and services and where the Commission finds that such deregulation will be in the public interest". As described above there is clearly a competitive market for charging infrastructure. With hundreds of thousands of EV's being sold annually, there are clearly customers who value the product. Besides high prices, a barrier to buyers is "range anxiety", the concern a charger will not be available, and so it is in the public interest to build more charging stations as the EV market grows. ChargePoint, in its public comments in PSC Docket 17-1094, states twenty states and the District of Columbia have determined charging stations are outside of regulatory commission jurisdiction[2].

The Commission should be wary of arguments the public interest is met by reductions in air pollution or carbon dioxide emissions. EVs are charged using whatever the systems mix of generators is at the time of charging which includes power from coal, oil, and natural gas–fired generators. The systems mix is magnified by transmission, distribution line losses, and charging losses from AC to DC conversion. These losses may be as high as 21.5 percent with 9.1 percent lost in transmission and distribution and over 12.4 percent lost in charging[5].

A comparison of the eight year, 100,000 mile life of a Chevrolet Bolt EV and a similar sized internal combustion engine (ICE) Honda Fit found the Bolt saved between -3.3 and 3.7 tons of carbon dioxide, or essentially zero, in the PJM region over its eight year life[6] when the extra emissions of building an EV are considered. The roughly $21,000 higher lifetime cost of the Bolt resulted in a $5.292/ton best case cost of the saved carbon dioxide emissions. For perspective, Regional Greenhouse Gas Initiative allowances sold for $5.20/ton at the most recent auction[7].

Two major vehicle air pollutants can impact health, oxides of nitrogen (NO_2) and fine particulate matter ($PM_{2.5}$). Health impact studies conducted by the EPA show 90 to 95 percent of the negative health impacts of these pollutants are related to fine particles. EPA Tier 3 tail pipe emission standards established in 2014 will limit fine particle pollution to 0.7 pounds over 100,000 miles of driving in vehicles built between 2019 and 2025. By comparison, The PJM system mix for 2019 year to date indicates an electric vehicle using about 28 megawatt-hours of electricity over 100,000 miles will emit about 20.7 pounds of sulphur dioxide. One study[8] suggests the sulphur dioxide emissions might convert to 1 to 1.9 pounds of fine particles, up to twice as much as the gasoline powered vehicle, plus the remaining sulphur dioxide is a health concern. Likewise, meeting the EPA emission standards will lead to average NOX emissions of about 11.3

pounds for gasoline powered vehicles compared to about 16.6 pounds for the EV using the PJM systems mix. In addition, on our worst days fine particle ambient air levels are running only about half of maximum national standards, and NO_2 is running about two-thirds of the standard, so no health impacts are expected for either $PM_{2.5}$, or NO_2.

Subchapter II has subsections with other requirements that must be met for the Commission to forbear regulation:

(2) A proposal to forbear must include an analysis to determine possible impacts on a regulated utilities customers. Delmarva Power stated in the rebuttal testimony of Peter Blazunas in PSC Docket 17-1094[9] that their pricing plan, "promotes the electrification of the transportation sector in Delaware and thereby helps increase overall electricity consumption while utilizing existing system capacity". This infers no capital investment will be required to meet the near term expectations of increased electric demand from free market based public charging infrastructure. In fact, Delmarva customers would actually benefit by "diluting the cost of the system for all ratepayers".

(3) The Commission must approve such forbearance within 180 days. The Hearing Examiner has established a schedule in this docket to meet this requirement.

(4) Delmarva Power is already successfully supplying power to independent chargers without negative consequences for its other customers. Electric demand for public chargers is currently very small, perhaps as small as 0.1 percent of electric demand in Delaware. The Commission retains the ability to approve modified electric rates to those meters in future dockets should the need arise.

(5) The Commission must determine a competitive market exists, and it clearly does. The Commission may consider whether safeguards are needed to protect regulated utility customer's service and rates, and this is met by the Commissions' ability to adjust rates at the meter. A consideration of un-bundling services does not apply in this case.

(5 c) The Commission may also consider whether some entities offering charging service have the option to remain under Commission jurisdiction. Delmarva Power may pursue this option. In PSC Docket 17-1094 Delmarva requested, and was approved, to install four public chargers; two at multi-family properties, and two for general public use. The investment and operating costs will be paid by all Delmarva electric customers for the benefit of a few EV owners. The application stated the purpose of the charger installations was to give Delmarva direct experience to learn charging habits, charging impacts on the grid, and how Delmarva can encourage the purchase of EVs[10]. Basically, the Commission approved an experiment, and set no precedent for wider participation by Delmarva in the public charging market.

In my initial and final comments in PSC Docket 17-1094 I expressed my concern the settlement fails to address the most fundamental question of whether a regulated utility should be using customer funding or investor funding for expansion into a new, competitive market. The concern is twofold. Should non-EV owning electric customers be paying for chargers for generally higher income EV owners? Delaware's Public Advocate testimony by Glenn Watkins showed 92 percent of EVs were purchased by people making

over $50,000 a year[11], about the state's average individual income. Ratepayers are also accepting the risk the investment will not be paid back as testimony in the docket showed charger use varied from only 1 to 30 percent[12], unlikely enough utilization to ensure a profit. Tesla, on its Supercharger service website, states the charging network is not a profit center[13].

Secondly, a major barrier to entry into the charging market is a large initial capital outlay. Delmarva would have an unfair advantage of, essentially, unlimited capital with a guaranteed high rate of return, with its customers assuming the cost and risk of the investment. Delmarva argued non-EV owning electric customers would see cost reductions from spreading costs over more off peak usage by EV owners, but did not have the confidence in their argument to offer guaranteed electric price reductions as charging increased. In response to my concern the Commission Chairman stated competitive supplier and intervenor "ChargePoint", did not challenge this advantage. Perhaps the Chairman was unaware "ChargePoint" has an entire division devoted to offering utilities services from consulting on the startup of installing chargers to running the entire charging program as subcontractors[14].

Delmarva has the option to enter the unregulated competitive charging market using investor funds. The Commission should not allow Delmarva to enter the market as a regulated utility using electric customer funds. This question can be settled in this docket.

(6), (7) The Commission has the right to review, examine, and audit the books, accounts, and records of the deregulated utilities, and to require a report to be filed within 30 months of deregulation for the first 24 months of operation. That wording in the code suggests the Commission may waive this right. Considering public EV charging is already a proven competitive market, and auditing proliferating entities would present an unmanageable burden to the Commission, this right should be waived.

In summary,

- It is unclear the Commission has the authority to declare charging entities are neither a Public Utility, or a Retail Electric Supplier
- Competitive charging companies do meet the criteria for the Commission to forebear regulation, and the right to audit such companies
- Delmarva Power should not be granted the ability to offer charging as a regulated utility

Respectfully submitted,

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Notes:

1) U.S. Department of Energy, Alternative Fuel Station Locator, https://afdc.energy.gov/stations/#/find/nearest?location=Delaware&fuel=ELEC
2) ChargePoint Public Comments PSC Docket 17-1094, file:///C:/Users/dtste/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/ChargePoint%20Comments%20-%20Docket%2017-1094%20(Delmarva%20PIV)%20final%20(1).pdf
3) EV Adopter, "EV Sales by state 2918", https://evadoption.com/ev-market-share/ev-market-share-state/
4) U.S. Department of Energy, Alternative Fuels Data Center, "Electric Vehicle Infrastructure Projection Tool", https://afdc.energy.gov/evi-pro-lite?platform=hootsuite
5) PJM Interconnection, LLC, Marginal Losses Implementation Training, 2007, 9.1 % transmission loss at 50 miles, https://www.pjm.com/~/media/training/new-initiatives/ip-ml/marginal-losses-implementation-training.ashx , University of Delaware, "Measurement of power loss during electric vehicle charging and discharging", Elpiniki Apostolaki-Iosifidou, 3/15/17, 12.4% loss at 40 amap, https://www.sciencedirect.com/science/article/pii/S0360544217303730#!
6) Caesar Rodney Institute, Electric Vehicles v Internal Combustion Engines, https://www.caesarrodney.org/pdfs/EV_v_ICE_(2).pdf
7) RGGI, Inc., Auction 45 results, https://www.rggi.org/auctions/auction-results
8) Journal of Engineering and Environmental Science, May, 2008, "Characterization of PM2.5 and conversion of sulphur dioxide in inland areas of Taiwan", https://www.researchgate.net/publication/233517158_Characterization_of_PM25_and_conversion_rate_of_sulfur_dioxide_to_sulfate_in_inland_areas_of_Taiwan
9) Delmarva Power rebuttal testimony of Peter Blazunas in PSC Docket 17-1094, page 6, file:///C:/Users/dtste/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/17-1094%20Rebuttal%20Testimony%20090718%20(1).pdf
10) Delmarva Power Application in PSC Docket 17-1094, file:///C:/Users/dtste/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/DE%20EV%20Application%20-%20as%20filed%20101917%20(1).pdf
11) DPA testimony by Glen Watkins in PSC Docket 17-1094, file:///C:/Users/dtste/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/Watkins%20PIV%20Direct%20Testimony%20and%20Schedules%205.18.18%20(1).pdf
12) DPA testimony by Andrew Slater in PSC Docket 17-1094, file:///C:/Users/dtste/AppData/Local/Packages/Microsoft.MicrosoftEdge_8wekyb3d8bbwe/TempState/Downloads/Slater%20PIV%20Direct%20Testimony%205.18.18%20(1).pdf
13) Tesla Supercharger network cost, https://www.tesla.com/support/supercharging?redirect=no
14) ChargePoint Utilities Division, https://www.chargepoint.com/solutions/utilities/