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Date: May 10, 2019

To: The Honorable Jocelyn G. Boyd
Chief Clerk/Administrator
The Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210
Jocelyn.Boyd@psc.sc.gov

Dockets: Application of Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, **Docket No. 2018-321-E**
Application of Duke Energy Progress, LLC for Approval of Proposed Electric Transportation Pilot and An Accounting Order to Defer Capital and Operating Expenses, **Docket No. 2018-322-E**

Dear Ms. Boyd,

I. SUMMARY

Siemens appreciates the opportunity to provide these comments in the above-captioned docket. We respectfully urge the Commission to approve the Pilots as proposed in the Duke Energy Progress's ("Duke") amended applications filed April 1, 2019. The Pilots will provide financial, environmental, health, and economic development benefits to South Carolinians including EV owners, ratepayers, schools, and others. We refer the Commission to our support letters in these dockets, filed December 7, 2018, for further arguments in favor of approving the Pilots.

In these comments, we focus on the following two issues, with details provided below:

1. Cost-effectiveness and enabling a seamless consumer experience are two key reasons we support Duke's proposal to utilize a single EV charging network, which includes a competitive solicitation in which all market participants can compete openly and transparently.

2. Duke's proposed expanded public DCFC program element should be approved to alleviate range anxiety resulting from the significant shortage of public DCFC stations in South Carolina, a major barrier to EV adoption.

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Siemens respectfully urges the Commission to reject ChargePoint's recommendations to modify the Pilot programs on these two topics.[1]

II. SIEMENS OVERVIEW

Siemens is a global leader in eMobility® and considers eMobility to be a critical element in driving economic benefits from new investments and job opportunities. Siemens Plug to Grid™ eMobility product portfolio encompasses hardware, software and services which are currently deployed in 35 countries globally. We sell the EV chargers, make-ready, and grid connection equipment that we assemble/manufacture in the U.S. directly to consumers, workplaces, cities, government, utilities and other segments. The goal of our policy efforts is to promote public policies and global best practices that animate the EV market through lowering the Total Cost of Ownership (TCO).

Siemens operates through 12 locations in South Carolina generating over $200 million in in-state sales and employing over 600 South Carolinians.

III. DUKE'S PROPOSAL TO UTILIZE A SINGLE CHARGING NETWORK PROVIDER MINIMIZES PROGRAM COSTS, ENHANCES THE CONSUMER EXPERIENCE, AND IS NOT ANTI-COMPETITIVE

In its pilots, Duke proposes to allow consumers to choose chargers from different manufacturers. Those chargers will communicate back to Duke's information technology ("IT") systems via a wireless network and associated communications and data management software (together "Network Services"). Duke's plan is to undertake a competitive solicitation for Network Services and select a single provider whose network can interface with chargers provided by different manufacturers. This is made possible by using open technical standards for the communications link between the charger and the "cloud", the head-end IT system.

Duke's proposed approach has several compelling benefits. First, having a single Network Services provider dramatically reduces costs associated with integration with IT systems, the connecting of the Network Services IT system to Duke's IT system(s). Each such integration is complex and expensive, because each Network Services provider uses different data formats, collects different data, manages the data differently, utilizes different business processes for the data collection, and so on. It is not uncommon for each such integration to cost hundreds of thousands of dollars. Once the integration is completed, each resulting interface between the Network Services provider's IT system and Duke's IT system(s) must be separately managed and operated. Duke's proposed approach results in significant additional cost savings from not having to manage and operate multiple interfaces.

[1] Comments of ChargePoint, Inc., Docket Nos. 2018-321-E and 2018-322-E, April 23, 2019.

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The second benefit of Duke's approach is an enhanced consumer experience because of its simplicity. From the consumer's perspective, Network Services operate in the background, akin to cellular networks. Consumers are keen to choose their phones, but they have little interest in how their calls or data are transmitted through the networks. Duke's approach eliminates the need for customers to research and select from multiple Network Services providers.

Third, Duke's approach enhances competition. The selection of the Network Services provider is through a transparent RFP process, open to all market participants and with the selection made according to fair and objective criteria. Duke's approach also enhances competition among charger providers, because Duke has committed to selecting Network Services that will work with any charger utilizing open technical standards. In doing so, Duke also eliminates vendor lock-in, where a consumer is forced into a combined offering of charger and Network Services provider, which is the business model of some market participants.

In many cases, the Network Services, over time, are more expensive than the charger itself. Duke's program results in lower Network Services costs, because Duke will buy in bulk rather than have individual consumers making one-by-one selections.

Finally, Duke's programs would stimulate *innovation, competition and customer choice* in EV charging and related infrastructure and services by promoting the overall growth of the EV market through reducing barriers to ownership and operation for EV owners. The Pilots would make progress toward the goal of universal, open access to charging and, therefore, animate the transportation electrification market by attracting more participants. Such growth stimulates innovation, competition, and customer choice, because a growing market attracts more participants. The alternative, not implementing the Pilots, would retard the market, in large part due to the continued widespread presence of proprietary business models for EV charging.

IV. DUKE'S PROPOSAL TO PROVIDE A LARGER QUANTITY OF PUBLIC DCFC IS ESSENTIAL TO PROMOTING EV ADOPTION AND IS NOT ANTI-COMPETITIVE

The lack of availability of public charging infrastructure is among the most important barriers to EV adoption. According to a 2019 consumer survey by the American Automobile Association:

> "**Adoption Barriers:** Six-in-ten Americans who are unlikely (or unsure) to buy an electric vehicle are concerned there are not enough places to charge (58%), they will run out of charge while driving (57%) or because the range is not suitable for long distance travel like road trips (57%).[2]" (Emphasis added.)

[2] - American Automobile Association, Fact Sheet: Consumer Attitudes – Electric Vehicles, April 2019. Available at: file:///C:/Users/king000c/Downloads/EV-Consumer-Survey-Fact-Sheet-FINAL-4-23-19.pdf

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The U.S. currently lags other countries by a significant margin in the availability of public charging infrastructure. Europe and the U.S. have a similar number of EVs on the road, but the U.S. has only half as many public chargers available.[3] This reality is consistent with the consumer perspective found in the AAA study – the lack of public chargers is a major problem. Honda emphasizes that EV sales are directly related to the availability of EV charging infrastructure (see figure).[4]

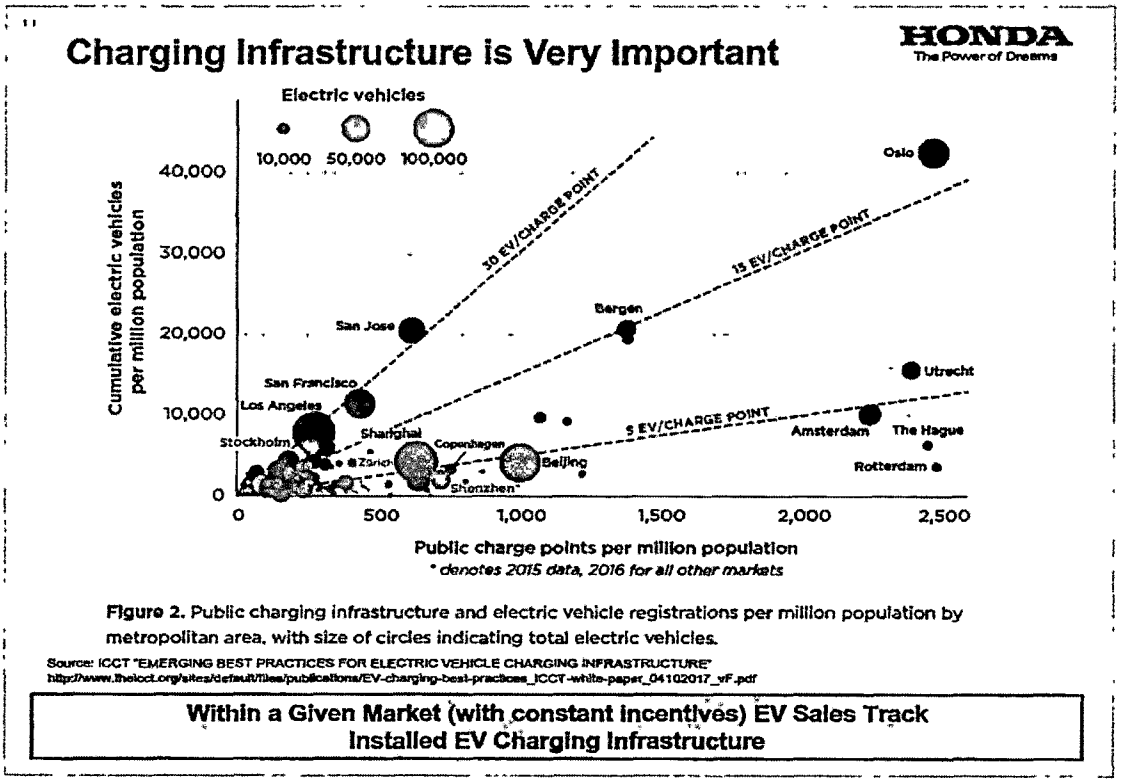

Figure 2. Public charging infrastructure and electric vehicle registrations per million population by metropolitan area, with size of circles indicating total electric vehicles.

Source: ICCT "EMERGING BEST PRACTICES FOR ELECTRIC VEHICLE CHARGING INFRASTRUCTURE" http://www.theicct.org/sites/default/files/publications/EV-charging-best-practices_ICCT-white-paper_04102017_vF.pdf

Within a Given Market (with constant incentives) EV Sales Track Installed EV Charging Infrastructure

At this nascent stage of the market, South Carolina needs all market-positive organizations to be able to participate in solving the public charger dilemma, including the utilities. Duke's participation would not be anti-competitive for the reasons discussed above, as well as the compelling fact that 60 DCFC proposed by Duke is a tiny fraction of what will be needed. Based on an analysis by the U.S. Department of Energy, South Carolina will need approximately 410 DCFC by 2030, making Duke's program less than 15 percent of the total.[5] ChargePoint notes that it already has over 145 public charging stations in South Carolina, two and a half times as many

[3] - GTM Research, EV Charging Infrastructure Development: EV and EV Infrastructure Market Sizing and Forecast, July 2018.
[4] - Honda Presentation, Ohio Power Forward Workshop, Ohio Public Utility Commission, December 6, 2018.
[5] - U.S. Department of Energy, National Plug-In Electric Vehicle Infrastructure Analysis, September 2017.

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as Duke is proposing.[6] With regard to ChargePoint's argument that Duke's modified proposal would "predetermine market outcomes", it is noteworthy that ChargePoint itself – in business parlance – would be described as being in a monopolistic position today, with its self-proclaimed "74+%" market share.[7]

V. CONCLUSION

Siemens has developed a model to calculate an estimate of the gross financial benefit of an electric vehicle to a utility's non-participating ratepayers. The model calculates the incremental transmission and distribution revenue from recharging the batteries of an EV over a 10-year life. The value of this calculation is estimated to be similar to the direct financial benefit to non-participating ratepayers. This calculation excludes all other benefits, most importantly fuel savings to EV owners, the health benefits of reduced air pollution and emissions, and the stimulus to economic development. Using average electricity rates across the U.S., the model calculates EV-related T&D revenues of $3,071 per EV for 10 years. Since EVs are entirely new loads, these revenues are all incremental. How these amounts flow to ratepayers, shareholders, tax collectors, or others is a matter for regulators and policymakers to determine. Also, these benefits are based on national averages, and the benefits to Duke's ratepayers could differ significantly, though directionally they would be expected to be substantial and positive.

Duke's proposed programs would constitute a modest but critical step in addressing the several barriers to EV adoption related to the lack of EV charging infrastructure and, therefore, capture these significant benefits for South Carolina.

In conclusion, Siemens respectfully encourages the Board to consider our arguments in reviewing and approving the Pilot.

Respectfully submitted,

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[6] - ChargePoint Comments at 2. ChargePoint does not specify how many of these stations are DCFC.
[7] - SDG&E Cross Exhibit, PEVC Member Meeting, March 10, 2015. ChargePoint presentation Slide #3.