June 23, 2020

State Corporation Commission
1300 E Main St.
Richmond, VA

Re: Case Number PUR-2020-00051 – Order Establishing Proceeding Regarding Electric Vehicles

Thank you for the opportunity to comment on the Order Establishing Proceeding Regarding Electric Vehicles ("EV Proceeding") in Case Number PUR-2020-00051, in which the State Corporate Commission ("Commission") seeks comment on issues related to electric motor vehicles ("EV") deployment and the potential effects on electricity reliability and affordability. This document constitutes the comments of the Center for Climate and Energy Solutions ("C2ES") on the EV Proceeding. C2ES has substantial expertise and experience advising governments at all levels on best practices for EV deployment, charging infrastructure, and ancillary issues regarding transportation electrification.

For the record, let it be known that Dominion Energy is a funder of C2ES and a dues paying member of its Business Environmental Leadership Council ("BELC"). However, C2ES is an independent, nonprofit, nonpartisan organization dedicated to advancing practical and effective policies and actions to address our global climate change and energy challenges. As such, the views expressed here are those of C2ES alone and while informed by our conversations with Dominion Energy, and other business leaders, do not necessarily reflect the views of members of the C2ES BELC. C2ES is also separately filing comments with David Gardiner and Associates, those comments focus on deploying charging infrastructure for electric trucks and designing rate structures to support electric truck charging demand.

Key comments:

- EVs in Virginia are likely to increase in the next 5-10 years, following the national growth trend. This will be driven by decreasing battery costs, lower total cost of ownership (than traditional vehicles) and the commitment of automotive manufacturers to long-term electrification.
- Utilities can expand public infrastructure by deploying "make-ready" infrastructure programs (which may include transformer, service, meter, panels, conduit, and wire upgrades) and by offering charging station rebates to commercial and residential EV owners.

We appreciate the Commission's request for information on EVs, as vehicle electrification is an important solution to reducing emissions from the transportation sector. Transportation is the

largest greenhouse gas (GHG)-emitting sector in Virginia, accounting for 48 percent of emissions in 2017.[1] It is also the largest GHG-emitting sector in the U.S. economy, accounting for 28 percent of overall GHG emissions in 2018.[2] Addressing transportation's significant impact on the climate requires policies at the federal, state and local levels. Our responses to the questions posed by the Commission:

**Question 1: How many electric vehicles are currently deployed in Virginia and what is the expected growth over the next five, ten and twenty years?**

Recent market analyses have projected a wide range of EV passenger vehicle adoption worldwide by 2025, between 8.5 million and 80 million vehicles.[3] One U.S. analysis projects the EV stock in the United States will reach 18.7 million by 2030.[4] Although the pandemic has slowed vehicle sales in 2020, many automotive companies are still committed to long-term electrification. By 2022, there will be 500 models of EVs available for purchase worldwide.[5] Battery prices also continue to decrease, and sticker-price parity between EVs and internal combustion passenger vehicles is projected to occur this decade.[6] It is reasonable to assume Virginia will experience a growth rate similar to the national projections.

**Question 15: What is the proper role, if any, of utility investment in the deployment of public charging stations?**

First, utilities can play a significant role in deploying public charging infrastructure by investing in "make-ready" infrastructure and providing incentives to commercial and residential owners and operators of EVs. Utilities such as Pacific Gas and Electric (PG&E) and Southern California Edison (SCE) were approved by the California Public Utilities Commission to deploy make-ready

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[1] U.S. Energy Information Administration, Table 4, 2017 State energy-related carbon dioxide emissions by sector, https://www.eia.gov/environment/emissions/state/

[2] U.S. Environmental Protection Agency, Sources of Greenhouse Gas Emissions, https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

[3] Bloomberg New Energy Finance, Electric Vehicle Outlook 2020, https://about.bnef.com/electric-vehicle-outlook/, International Energy Association, Global EV Outlook 2019, https://www.iea.org/reports/global-ev-outlook-2019

[4] Edison Electric Institute, Electric Vehicle Sales Forecast and the Charging Infrastructure Required Through 2030, http://www.ehcar.net/library/rapport/rapport233.pdf

[5] Bloomberg New Energy Finance, Electric Vehicle Outlook 2020, https://about.bnef.com/electric-vehicle-outlook/

[6] The International Council on Clean Transportation, *Update on electric vehicle costs in the United States through 2030*, https://theicct.org/sites/default/files/publications/EV_cost_2020_2030_20190401.pdf

infrastructure programs of $236 million and $356 million, respectively. Under these programs, the utility takes responsibility for ensuring EV charging sites are prepared for charging infrastructure installation, which may include the installation of transformers, conduits and wires, as well as transformer, service, meter, panel, conduit, and wire upgrades. A third party is then responsible for installing the charging station at the site and connecting to the utility-upgraded infrastructure. There are often onerous costs for charging station developers which can deter them from installing charging infrastructure. Therefore, utilities that have access to capital should implement make-ready infrastructure programs which can catalyze projects and foster public charging station growth in Virginia.

Upfront costs of charging stations for commercial or residential use can be prohibitive for customers. To address this barrier and spur infrastructure adoption, utilities can provide cash rebates to commercial and residential customers for Level 2 and DC Fast Charging station installations. Several utilities offer rebates to customers for EV charger installations, including Sacramento Municipal Utilities District, Rocky Mountain Power, and Georgia Power.[7] These rebates can help reduce upfront charging station costs for customers and increase both private and public charging infrastructure.

In conclusion, we appreciate the efforts of the Commission to seek information on EVs and how the Commonwealth's power grid can support increased deployment of EVs across all weight classes. Thank you again for the opportunity to comment on this proceeding. We would be happy to offer assistance to the Commission throughout the process.

Sincerely,

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[7] Jessica Leung and Janet Peace, *Electric Vehicle Charging for Retailers,* Center for Climate and Energy Solutions, https://www.c2es.org/site/assets/uploads/2020/05/electric-vehicle-charging-for-retailers.pdf