



September 17, 2018

Joel H. Peck, Clerk
Virginia State Corporation Commission
c/o Document Control Center
1300 East Main Street
Richmond, VA 23219

RE: Comments of the Alliance for Industrial Efficiency on Case No. PUR-2018-00065

Dear Mr. Peck:

The Alliance for Industrial Efficiency (the “Alliance”) appreciates the opportunity to offer this brief letter regarding Dominion Energy’s (“Dominion’s”) Integrated Resource Plan (“IRP”) for 2018 and the role of combined heat and power (“CHP”) and waste heat to power (“WHP”) in Dominion’s next IRP. We seek to encourage greater use of CHP in the Commonwealth and look forward to working with Dominion to achieve this goal. We also request that the Commission require Dominion to include CHP and WHP in its next IRP.

The Alliance is a diverse coalition headquartered in Arlington, Virginia, that includes representatives from the business, labor, contractor, and academic communities, including over 80 electrical and sheet metal contractors in Virginia alone. We are committed to enhancing manufacturing competitiveness and reducing emissions through industrial energy efficiency, particularly through the use of clean and efficient power generating systems, such as CHP and WHP.

The Grid Transformation and Security Act of 2018 (SB 966) directs Dominion Energy to consider deploying 200 MW of CHP and WHP, through either supply-side or demand-side incentives, over the next five years in its next integrated resource plan filed after July 1, 2018.¹

Since Dominion’s 2018 IRP was filed before the July 1, 2018 deadline outlined in SB 966, it is understandable that this document does not include a CHP target. Instead, the 2018 IRP acknowledges the Grid Transformation and Security Act mandate, stating the Act requires Dominion to, “Evaluate in future Plans: (i) electric grid transformation projects, (ii) energy efficiency measures, and (iii) combined heat and power or waste heat to power.” We appreciate Dominion’s recognition of this requirement and write now to express our anticipation of this goal in Dominion’s next IRP to be released in 2020.

¹ Virginia General Assembly, 2018, Grid Transformation and Security Act (SB 966), (<http://lis.virginia.gov/cgi-bin/legp604.exe?181+sum+SB966>).



By generating both heat and electricity from a single fuel source, CHP dramatically lowers emissions and increases overall fuel efficiency – allowing utilities and companies to effectively “get more with less.” CHP can operate using more than 70 percent of fuel inputs – compared to fossil-fueled power plants, which have an average efficiency of 33 percent.² As a consequence, CHP can produce electricity with one-quarter the emissions of an existing coal power plant.³ Due to its scale, a single CHP investment can achieve significant emissions reductions. WHP, which uses waste heat as its energy source to generate electricity and requires no additional fuel and generates no incremental emissions, provides similarly significant benefits. CHP and WHP can produce electricity while lowering costs for both host companies and all of Virginia’s utility customers.

Further, CHP enhances electric resiliency and reliability in two major ways.⁴ First, because CHP systems have the ability to operate independently of the grid, they can provide reliability during a power outage. Since 1953, there have been 64 disasters that have occurred in Virginia—including 17 severe storms, 15 floods, and 13 hurricanes.⁵ For example, in 2016, Hurricane Matthew left 320,000 Virginians without power and caused over \$3 million in damage to Virginia’s public utility systems.⁶ Additional outages are anticipated this week from Hurricane Florence. Critical infrastructure, such as hospitals or military installations, and manufacturing facilities with CHP have been able to keep the lights on during power outages that occurred during this disaster and others like it throughout the region.⁷ Second, CHP and WHP systems alleviate burdens on transmission and distribution lines because they depend on localized, on-site electricity generation. In this way, CHP and WHP can help avoid costs associated with investment in and construction of transmission infrastructure. Because of its resiliency and reliability benefits, CHP should be a key element of the Commonwealth’s broader efforts to modernize its electric grid and make it more reliable.

Further, according to a technical potential study from the Department of Energy, Virginia is in the top third for technical potential in the country (4,308 MW identified at 7,291 sites) with 1,703

² U.S. EPA, Mar. 21, 2016, “CHP Benefits” (<https://www.epa.gov/chp/chp-benefits>).

³ Natural Resources Defense Council (NRDC), Apr. 2013, “Combined Heat and Power Systems: Improving the Energy Efficiency of Our Manufacturing Plants, Building, and Other Facilities” (<http://www.nrdc.org/energy/files/combined-heat-power-ip.pdf>); David Gardiner & Associates and Institute for Industrial Productivity, Jul. 2015, “Combined Heat and Power as a Compliance Option under the CPP” (reporting incremental emissions of natural gas CHP of 450 to 600 lbs/MWh, compared to 2000 to 2200 lbs/MWh for coal) (<http://www.dgardiner.com/wp-content/uploads/2015/08/CHP-Pathway-Final-Report-8-18-15.pdf>).

⁴ Alliance for Industrial Efficiency, 2018, “CHP Response in Natural Disaster Mitigation: Delivering Reliability, Saving Lives” (<https://bit.ly/2mTDsmk>).

⁵ Federal Emergency Management Agency, “Data Visualization: Disaster Declarations for States and Counties” (<https://www.fema.gov/data-visualization-disaster-declarations-states-and-counties>).

⁶ Virginia Department of Emergency Management, “Hurricane Matthew – Virginia Impacts” (<http://dls.virginia.gov/groups/flooding/impacts101716.pdf>).

⁷ U.S. Department of Energy, U.S. Department of Housing and Urban Development, and U.S. Environmental Protection Agency, Sep. 2013, “Guide to Using Combined Heat and Power for Enhancing Reliability and Resiliency in Buildings” (https://www.hud.gov/sites/documents/ENERGY_CHP_FOR_RC.PDF).



MW of remaining onsite technical potential in the industrial sector alone.⁸ Yet, deployment lags far behind this potential. To date, Virginia has deployed less than half (37 percent) of its technical potential for CHP. Currently, the state has 50 CHP sites, generating 1,608 MW of clean and efficient power⁹ and two WHP sites generating 0.2 MW.¹⁰ A 2016 report from the Alliance for Industrial Efficiency found that if an economically viable portion of the state's CHP and WHP was deployed,¹¹ Virginia's industrial sector customers would save \$1.8 billion on electricity costs from 2016 to 2030,¹² demonstrating the importance of CHP to increasing manufacturing competitiveness.

While the 2018 IRP does not include CHP, we anticipate that subsequent plans will consider CHP as either a demand-side energy efficiency measure or a supply-side generation alternative in accordance with the Grid Transformation and Security Act. Doing so will offer benefits to Dominion Energy, its customers, and the environment.

We look forward to continuing the conversation. Thank you for the opportunity to comment.

Sincerely,

Executive Director
Alliance for Industrial Efficiency

⁸ U.S. Department of Energy, Mar. 2016, "Combined Heat and Power (CHP) Technical Potential in the United States," Table 2 (<https://bit.ly/2N7QfN0>).

⁹ U.S. DOE Combined Heat and Power Installation Database (<https://doe.icfwebsiteservices.com/chpdb/state/VA>).

¹⁰ Oak Ridge National Laboratory (ORNL), Mar. 2015, "Waste Heat to Power Market Assessment" (<https://info.ornl.gov/sites/publications/files/Pub52953.pdf>).

¹¹ Percentage of the state's technical potential for CHP with less than 10-year payback period.

¹² The Alliance for Industrial Efficiency, Sep. 2016, "State Ranking of Potential Carbon Dioxide Emission Reductions through Industrial Energy Efficiency" (http://alliance4industrialefficiency.org/wp-content/uploads/2016/09/FINAL-AIE-State-Industrial-Efficiency-Ranking-Report_9_15_16.pdf). Unpublished data on results from CHP and WHP deployment alone.