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BY EMAIL TRANSMISSION:

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Reference: **Comments of Environmental Defense Fund on Notice of Intended Regulatory Action to Reduce and Cap Carbon Dioxide from Fossil Fuel Fired Electric Power Generating Facilities (Rev. C17) (VA.R. Doc. No. R17-5140)**

Dear Ms. Sabasteanski:

Environmental Defense Fund (EDF) respectfully submits the following comments in response to the June 26, 2017, Notice of Intended Regulatory Action for the Virginia State Air Pollution Control Board to develop a regulation to reduce carbon dioxide emissions from electric power plant facilities in accordance with Executive Directive 11 (May 16, 2017).¹

EDF supports Virginia’s important work to limit carbon pollution from the electric power sector, covering both new and existing sources, in order to mitigate the effects of climate change and grow the clean energy economy.

Timely and ambitious efforts to reduce greenhouse gas emissions including carbon dioxide are critical to avoid the worst impacts of climate change, protect public health, and facilitate the transition to cleaner energy resources, including for Virginia’s most vulnerable and under-resourced communities.

The impacts of climate change are real and pose a “potentially devastating risk” to Virginia, according to Gov. McAuliffe’s Executive Order 57 Work Group.² Rising sea levels and an

¹ 33:22 VA.R. 2423 (June 26, 2017), available at <http://register.dls.virginia.gov/vol33/iss22/v33i22.pdf>

² Gov. McAuliffe’s Executive Order 57 Work Group, *Report and Final Recommendations to the Governor*. May 12, 2017, available at <https://naturalresources.virginia.gov/media/9156/eo57-report-final-5-12-17.pdf>

increase in heavy storm surges threaten put millions of Virginians at risk,³ including in population centers such as Virginia Beach and Hampton Roads.⁴ Half of Virginia’s counties face higher risks of water shortages by mid-century under hotter, drier conditions, threatening agriculture in the state.⁵ Warmer temperatures also contribute to negative public health impacts from worsening air quality and an uptick in vector-borne diseases such as Lyme disease.⁶

At the same time, the transition to a clean energy economy in Virginia and across the United States is well underway. Between 2015 and 2016, Virginia’s solar job market grew more than 65 percent.⁷ More than 75,000 people in Virginia work in energy efficiency.⁸ The more than 1,800 megawatts of solar now installed or under development in Virginia echoes the rapid acceleration of clean energy deployment across the U.S. as well.⁹ Wind and solar comprised more than 60% (roughly 16.5 gigawatts) of new utility-scale generating capacity added in 2016.¹⁰ Last year, cleaner energy resources including wind, solar, and hydropower accounted for nearly 15% of U.S. electricity generation,¹¹ while in March 2017, electricity generated from wind and solar power alone exceeded 10% of the U.S. total for the first time.¹²

By proposing, finalizing, and implementing a strong regulatory framework to reduce total carbon pollution from the power sector under Executive Directive 11, Virginia will join states across the U.S. that are leading on efforts to reduce greenhouse gas emissions. In June, Virginia joined the U.S. Climate Alliance, a coalition of 13 states and Puerto Rico committed to achieving

³ Virginia Institute of Marine Science, *Recurrent Flooding Study for Tidewater Virginia*, Jan. 2013, available at http://ccrm.vims.edu/recurrent_flooding/Recurrent_Flooding_Study_web.pdf

⁴ Lynne M. Carter, et. al., “Ch. 17: Southeast and the Caribbean,” *Climate Change Impacts in the United States: The Third National Climate Assessment*, U.S. Global Change Research Program (2014): 396-417, available at http://s3.amazonaws.com/nca2014/low/NCA3_Full_Report_17_Southeast_LowRes.pdf.

Institute for Environmental Negotiation, University of Virginia, *Sea Level Rise in Hampton Roads*, City of Virginia Beach, March 2011, available at

<http://ien.arch.virginia.edu/sites/ien.virginia.edu/files/SLR%20HamptonRoads%20Final%20July2011.pdf>.

⁵ Tom Steinfeldt, et. al., “Understanding Virginia’s Vulnerability to Climate Change,” Georgetown Climate Center, n.d., available at <http://www.georgetownclimate.org/files/report/understanding-virginias-vulnerability-to-climate-change.pdf>.

Sujoy B. Roy, et. al., *Evaluating Sustainability of Projected Water Demands Under Future Climate Change Scenarios*, Natural Resources Defense Council, July 2010, available at

http://rd.tetrattech.com/climatechange/projects/doc/Tetra_Tech_Climate_Report_2010_lowres.pdf.

⁶ “Reported cases of Lyme disease by state or locality, 2005-2015,” *U.S. Centers for Disease Control and Prevention*, Nov. 21, 2016, available at <https://www.cdc.gov/lyme/stats/tables.html>.

⁷ The Solar Foundation, “Appendix A: Solar Jobs by State,” *2016 National Solar Jobs Census*, 2016, available at <http://www.thesolarfoundation.org/wp-content/uploads/2017/02/National-Solar-Jobs-Census-2016-Appendix-A.pdf>.

⁸ U.S. Department of Energy, “Virginia Energy and Employment,” *U.S. Energy and Employment Report*, Jan. 2017, <https://energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report%20State%20Charts%200.pdf>.

⁹ Gov. McAuliffe’s EO 57 Working Group.

¹⁰ U.S. Energy Information Administration, “U.S. electric generating capacity increase in 2016 was largest net change since 2011,” *Today in Energy*, Feb. 27, 2017, available at <https://www.eia.gov/todayinenergy/detail.php?id=30112>.

¹¹ U.S. EIA, “What is U.S. electricity generation by energy source?,” *Frequently Asked Questions*, Apr. 18, 2017, available at <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>.

¹² U.S. EIA, “Wind and solar in March accounted for 10% of U.S. electricity generation for first time,” *Today in Energy*, June 14, 2017, available at <https://www.eia.gov/todayinenergy/detail.php?id=31632>.

the U.S. goal under the Paris Agreement of reducing emissions 26-28 percent from 2005 levels and meeting or exceeding the targets of the federal Clean Power Plan.¹³ By mid-century, the U.S. set a goal of achieving at least an 80 percent reduction in greenhouse gas emissions.¹⁴ Several states in the region, including states served by the PJM Regional Transmission Organization and members of the Regional Greenhouse Gas Initiative (RGGI), have also committed to additional near-term greenhouse gas reduction targets. These include Maryland (25% by 2020, below 2006 levels; 40% by 2030); New York (40% by 2030 below 1990 levels); Rhode Island (50% by 2035 below 1990 levels); and Vermont (50% by 2028 below 1990 levels), among others.¹⁵

A strong market-based mechanism for reducing carbon pollution from electric generating facilities will enable Virginia to achieve significant and cost-effective emission reductions.

Market-based mechanisms that enable compliance with sector or economy-wide limits on carbon dioxide emissions with tradable compliance instruments are a cost-effective approach to achieve carbon pollution reductions with flexibility for regulated entities to pursue the lowest-cost abatement opportunities. EDF encourages the Virginia Department of Environmental Quality (DEQ) to incorporate such a market-based mechanism into their regulatory proposal, setting a clear cap on carbon pollution from both new and existing units, issuing tradable allowances for every ton of carbon under the cap, and requiring owners of affected units to hold an allowance for every ton of carbon emitted.

In implementing such a mechanism, the regulation developed in accordance with Executive Directive 11 should cover all existing and new electric power facilities in Virginia that emit carbon dioxide. Further, although EDF acknowledges this regulation under Executive Directive 11 will apply only to electric power facilities in Virginia, EDF encourages DEQ to pursue a market-based program design with flexibility to accommodate economy-wide expansion, noting electric power facilities contributed 30% of Virginia’s carbon dioxide emissions in 2014.¹⁶

EDF looks forward to further discussions and opportunities for input as the DEQ crafts the regulatory proposal. At this time, EDF respectfully provides the following recommendations regarding key market-based program design features:

- **DEQ should set stringent carbon emission limits over a transparently determined baseline.** Emission limits (the “cap”) should result in concrete reductions in carbon

¹³ Office of New York Gov. Andrew Cuomo, “United States Climate Alliance Adds 10 New Members to Coalition Committed to Upholding the Paris Accord,” press release, June 5, 2017, available at <https://www.governor.ny.gov/news/united-states-climate-alliance-adds-10-new-members-coalition-committed-upholding-paris-accord>.

¹⁴ U.S. White House, *United States Mid-Century Strategy for Deep Decarbonization*, Nov. 2016, available at http://unfccc.int/files/focus/long-term_strategies/application/pdf/mid_century_strategy_report-final_red.pdf.

¹⁵ “Greenhouse Gas Emissions Targets,” *Center for Climate and Energy Solutions*, Sep. 2016, available at <https://www.c2es.org/us-states-regions/policy-maps/emissions-targets>.

¹⁶ U.S. EIA, “Virginia,” *2014 State Carbon Dioxide Emissions*, released Nov. 3, 2016, available at <https://www.eia.gov/environment/emissions/state/>.

dioxide emissions from the electric power sector below a Business-as-Usual (BAU) baseline over the course of the program. DEQ should work transparently with stakeholders to incorporate robust and reliable assumptions into a credible energy and economic modeling framework to establish a BAU emissions baseline and to analyze the impacts of the policy in comparison to the baseline. The cap should ensure meaningful reductions in carbon pollution that safeguard public health and mitigate the impacts of climate change.

- **Data on prices, carbon emissions, and compliance behavior should be transparent and easily accessible to the public.** Transparent market design and implementation is important to assure fairness and certainty, and reduce transaction costs for market participants. Stakeholders, evaluators, and members of the public should be able to assess the program’s progress towards achieving real emission reductions over time, along with other metrics of the program’s success. For example, RGGI posts the results of its quarterly auctions, secondary markets, and yearly emissions data at <http://rggi.org/market> and California posts a variety of market information about its program at <https://www.arb.ca.gov/cc/capandtrade/auction/auction.htm>.
- **DEQ should evaluate program features that will mitigate leakage of emissions to surrounding states,** including engaging with other states in the same market region on robust and aligned program design. Emissions leakage, or increases in carbon emissions in surrounding states due to shifting of facilities or other factors, would weaken effectiveness of the program in achieving real emission reductions. EDF encourages DEQ to pursue options to address leakage to ensure integrity of the emissions cap.
- **EDF also encourages DEQ to explore program design features that can facilitate efficiencies through linkages with other market-based carbon reduction programs,** including but not limited to RGGI. Virginia could develop a regulatory proposal aligned with the RGGI model rule and seek to formally join the RGGI program as a full participant, or could instead explore “linkage” opportunities where Virginia is not a full participant but DEQ accepts RGGI allowances for compliance with the Virginia program. EDF encourages Virginia to evaluate both options, as well as to evaluate opportunities to align a carbon regulatory framework in Virginia with carbon reduction efforts in additional states, particularly those states that are part of the PJM energy market. Virginia should also explore the potential to integrate with or use existing trading platforms.

DEQ should engage with and address concerns of environmental justice and disadvantaged communities throughout development and implementation of the program.

EDF urges DEQ to meaningfully engage with disadvantaged communities — including communities situated near fossil fuel-fired power plants and communities with higher concentrations of low-income people, people of color, and otherwise vulnerable groups —

throughout the process, by providing ample and accessible opportunities for public comment and other means of participation. DEQ should take steps to analyze impacts of the program on these communities and incorporate their recommendations to ensure the program does not impose disproportionate burdens on communities already vulnerable to the impacts of air pollution, climate change, and other factors.

Virginia's efforts to reduce carbon dioxide emissions from the electric power sector are critical and timely.

EDF encourages DEQ to implement a market-based program that achieves meaningful carbon emission reductions, that envisions expansion of the program to other sectors, and that allows for linkage with other state and regional market-based programs. EDF looks forward to continued engagement with DEQ towards creation and implementation of a carbon reduction regulation that will help Virginia take a significant step forward in mitigating climate change and securing a robust clean energy economy.

Respectfully submitted,

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