

BY ELECTRONIC MAIL

March 31, 2023

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RE: Constellation Energy Corporation's Comments on Virginia's Proposed "Regulation for Emissions Trading Programs"

Constellation appreciates the opportunity to submit comments on the Proposed Rule to Repeal Virginia's Participation in the Regional Greenhouse Gas Initiative. The Regional Greenhouse Gas Initiative (RGGI) is a successful, cost-effective program for reducing emissions and combatting climate change. RGGI has been operating for fourteen years and has a proven track record of lowering greenhouse gas emissions and generating state revenue without increasing customer costs or slowing economic growth for participating states. The proposed rule rests on the flawed premise that RGGI has resulted in increased costs for Virginia customers without corresponding benefits to the Commonwealth. Concerns expressed about ratepayer costs are more effectively addressed through actions other than exiting RGGI. Finally, Virginia cannot use rulemaking to terminate its participation in RGGI because the legislature initiated the program and did not create an administrative vehicle to end it.

I. Our Company

Constellation is the nation's largest producer of carbon-free energy and a leading supplier of energy products and services to businesses, homes, community aggregations, and public sector customers across the continental United States, including three-fourths of Fortune 100 companies. Our generation fleet of nuclear, hydro, wind, natural gas, and solar generation facilities has the generating capacity to power the equivalent of 15 million homes, producing 11 percent of the carbon-free energy in the United States. Constellation's fleet is helping to accelerate the nation's transition to a carbon-free future with more than 32,400 megawatts of capacity and an annual output that is nearly 90 percent carbon-free.

¹ "9VAC5-140. Regulation for Emissions Trading Programs (adding 9VAC5-140-6445; repealing 9VAC5-140-6010 through 9VAC5-140-6440)," (Proposed Rule) published on Jan. 30, 2023 in the

Virginia Registrar, available at http://register.dls.virginia.gov/vol39/iss12/v39i12.pdf.

Constellation has power generation assets in several RGGI states and has been participating in the program by buying and trading allowances since the program began.² For example, Constellation has 2,571 MW of fossil generation capacity in Massachusetts and Maryland that is subject to the RGGI program and another 1,755 MW of fossil generation in Pennsylvania that will be subject to the RGGI program when the state commences participation. Constellation is a licensed competitive service provider ("CSP") in Virginia, currently serving numerous commercial customers in Dominion's service territory.³ Nearly all of Constellation's customers take service under § 56-577 A 5, which allowed customers in the Dominion service territory to purchase 100% renewable energy from competitive suppliers until July 2020, when Dominion's own renewable energy tariff was approved.

II. RGGI Has Successfully Reduced Power Sector Emissions for Over a Decade

RGGI is a signature success in the fight against climate change. The first RGGI compliance period began on January 1, 2009, and the program has been in continuous operation since that date. The program is a model of effective interstate collaboration and innovative policy design. Over the last fourteen years, fossil fuel generators have seamlessly incorporated allowance costs into daily operations while preserving efficient and reliable market operations, and states have raised billions of dollars in revenues used to provide bill assistance and support myriad energy efficiency and other climate-forward programs. Climate change "represents a serious threat to Virginia's public health and welfare," as Virginia Department of Environmental Quality (DEQ) recognizes, and controlling greenhouse gas emissions from the power sector will be increasingly important as electricity demand is projected to grow. RGGI provides a proven, cost-effective means of reducing Virginia's emissions, generating funding to mitigate the impacts of climate change, and improving air quality within the state's borders.

A. Trading Programs Have a Proven Track Record of Reducing Emissions Cost-Effectively

Market-based compliance mechanisms including trading programs allow the regulated community to achieve emission reductions in the least-cost manner. In a cap-and-trade program like RGGI, regulated entities may reduce or eliminate emissions in conventional ways (e.g., pollution control technology), but they are provided an additional compliance option. They can purchase rights to emit each ton of pollutant in the form of an "allowance."

² On February 1, 2022, Exelon Corporation separated its competitive generation and customer-facing energy businesses, conducted through Exelon Generation Company, LLC and its subsidiaries, into an independent, publicly traded company known as Constellation.

³ License No. E-11A, Case No. PUE-2001-00584

⁴ Proposed Regulation Agency Background Document, pg. 9, *available at* https://townhall.virginia.gov/L/GetFile.cfm?File=1\6082\9879\AgencyStatement_DEQ_9879_v1.pdf. ⁵ Elizabeth McGowan, "In Virginia, carbon emissions drop as data centers boom, thanks to RGGI pact," Energy Network News (Jan. 16, 2023), https://energynews.us/2023/01/16/in-virginia-carbon-emissions-drop-as-data-centers-boom-thanks-to-rggi-pact/

In many cases, this latter option will be less expensive. Each regulated entity retains the flexibility to choose the most cost-effective approach.

Trading programs have a long history of success. The 1990 Clean Air Act Amendments created a cap-and-trade program governing sulfur dioxide and nitrogen oxide emissions from electric generating units in order to control acid rain. This program delivered significant pollution reductions and human health benefits at costs that were far lower than expected.⁶ EPA has since developed numerous successful trading programs, typically implemented by the states, to reduce air pollution including the NOx SIP Call, the Clear Air Interstate Rule, and the Cross-State Air Pollution Rule.⁷

Since the start of the RGGI program, several states in other parts of the country have also created trading programs to reduce their greenhouse gas emissions. California has implemented an economy-wide cap-and-trade program since 2013, under which one allowance represents one metric ton of carbon dioxide equivalent. Massachusetts introduced a state-specific cap-and-trade program to supplement the RGGI program in 2018. In 2021, the Washington Legislature established a market-based program that caps CO2 emissions in the state, which kicked off in January 2023.

B. RGGI Has Successfully Reduced Pollution in Participating States

RGGI reduces electric sector CO2 emissions through implementation of allowance cap-and-trade systems in participating states. RGGI is designed to work in concert with pre-existing wholesale market mechanisms to shift electric generation from highly polluting power plants to those with lower emissions. The data shows that RGGI has been successful. The Virginia DEQ agreed in its report to the Governor that "the RGGI region has a long track record of emission reductions since the beginning of the program," providing a graph showing that "CO2 emissions have decreased in the RGGI participating states by 59% from 2005 to 2020." Independent external analyses of emission data have found that RGGI has contributed to a larger reduction in electric sector emissions for participating states compared to neighboring states that have not participated in RGGI. In the first ten years of the program,

⁶ https://www.epa.gov/acidrain/acid-rain-program-results

⁷ Finding of Significant Contribution and Rulemaking for Certain States in the Ozone Transport Assessment Group Region for Purposes of Reducing Regional Transport of Ozone, 63 Fed. Reg. 57,356 (Oct. 27, 1998); Rule to Reduce Interstate Transport of Fine Particulate Matter and Ozone (Clean Air Interstate Rule); Revisions to Acid Rain Program; Revisions to the NOx SIP Call, 70 Fed. Reg. 25,162 (May 12, 2005); Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208 (Aug. 8, 2011).

⁸ https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program

⁹ https://www.mass.gov/doc/frequently-asked-questions-310-cmr-774/download

¹⁰ https://ecology.wa.gov/Air-Climate/Climate-Commitment-Act/Cap-and-invest

¹¹ Virginia Carbon Trading Rule and Regional Greenhouse Gas Initiative (RGGI) Participation Costs and Benefits, Department of Environmental Quality in Coordination with the Secretary of Natural and Historic Resources (March 2022) ("DEQ Report to Governor"), at pg. 5, available at https://www.deq.virginia.gov/home/showpublisheddocument/13813/637829669069026180.

from 2008 to 2018, RGGI states' emissions fell 90% faster than the rest of the country. ¹² During that same time, the RGGI states grew 31% faster economically, compared to the rest of the United States. Furthermore, electricity prices fell by almost 6% in RGGI states while increasing by almost 9% outside of RGGI. ¹³

Because RGGI is a multistate program, it provides compliance flexibilities that allow pollution reduction at lower cost than either a command-and-control approach or an intrastate trading program. Regulated sources can use a CO2 allowance issued by any participating state to demonstrate compliance and may acquire allowances by purchasing them at regional auctions or through secondary markets. The structure of the program ensures that overall emissions remain below the sum of the budgets for all states participating in RGGI.

C. RGGI Provides Significant Climate and Air Quality Benefits to Participating States

Virginia's proposed rule fails to appropriately weigh the benefits of RGGI participation. Initially, the proposal makes several conclusory and non-substantiated statements, such as "The benefits of RGGI have not materialized" and "There are no disadvantages to the public or the Commonwealth associated with this regulatory change." Then, the proposal goes on to note that exiting RGGI could result in foregone benefits but does not weigh those benefits against the identified costs in either a quantitative or qualitative manner. For example, the proposal acknowledges that Virginia's power sector emissions declined during its first year of participation in RGGI. In referencing the social cost of carbon, the proposal also alludes to the damage that climate change can cause, including "changes in net agricultural productivity, human health, property damages from increased flood risk, and the value of ecosystem services." However, the proposal does not attempt to analyze how RGGI participation contributed to the reduction in Virginia power sector CO2 emissions from 32.8 million tons in 2020 to 28.5 million tons in 2021. Instead, it simply notes that "DPB does not have any specific information with which to assess the factors that may have contributed to this reduction." The proposed rule lacks robust analysis and a thorough record supporting the policy decision to leave RGGI.

In contrast, numerous comments received on the Notice of Intended Regulatory Action (NOIRA) point to specific studies evaluating the public health benefits attributable to RGGI for participating states, including reductions of other air pollutants that have localized impacts. For example, a 2017 analysis by Abt Associates found that from 2009-2014, reductions in air pollution from RGGI provided \$5.7 billion in quantifiable health benefits

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¹² Acadia Center, *The Regional Greenhouse Gas Initiative: 10 Years in Review* (2019), pgs. 2 & 7, *available at* https://acadiacenter.wpenginepowered.com/wp-content/uploads/2019/09/Acadia-Center RGGI 10-Years-in-Review 2019 101122 update R2.pdf.

¹³ *Id*. at 7-8.

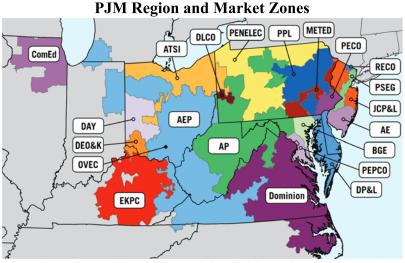
¹⁴ Proposed Rule, *supra* note 1.

including lives saved and serious health impacts avoided.¹⁵ Similarly, an analysis specific to children's health co-benefits during that period estimated \$191-350 million in avoided public health costs.¹⁶ Virginia's proposed rule focuses on its modeled costs for RGGI, while ignoring the benefits of reducing greenhouse gases and other pollutants, and the value of the funding generated from RGGI allowances.

III. Any Deficiencies in Virginia's Implementation of RGGI Can Be Addressed by Directing Generation Owners to Make Prudent Use of Ratepayer Funds

Emissions regulation accomplished by market-based emissions trading programs such as RGGI is widely acknowledged to be one of the most cost-effective means of achieving emissions reductions.¹⁷ RGGI, as well as any other cap-and-invest program, can effectively function under any retail and wholesale energy market structure provided the generating units subject to the regulations are dispatched according to basic economic principles.

Most of the regulated electric generating units (EGUs) in Virginia are part of the wholesale electricity market overseen by the PJM Interconnection (PJM), which is a regional transmission organization managing the bulk power system in all or part of thirteen states and the District of Columbia.



Source: https://www.pjm.com/library/~/media/about-pjm/pjm-zones.ashx

One of PJM's primary responsibilities is to determine the least-cost dispatch of available generators necessary to meet the demand during every five-minute interval of the year,

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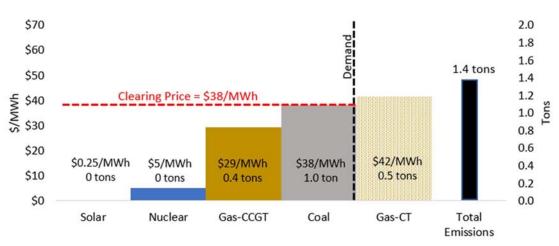
¹⁵ Michelle Manion et al., "Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative," Abt Associates (2017), *available at* https://www.abtassociates.com/insights/publications/report/analysis-of-the-public-health-impacts-of-the-regional-greenhouse-gas.

¹⁶ Frederica Perera et al., "Co-Benefits to Children's Health of the U.S. Regional Greenhouse Gas Initiative," *Environmental Health Perspectives* (2020), *available at* https://doi.org/10.1289/EHP6706.
¹⁷ www.epa.gov/environmental-economics/economic-incentives

subject to transmission and other operational constraints. This market mechanism is referred to as security constrained economic dispatch. In simplified form, each EGU submits an offer price based on its variable operating and maintenance costs. PJM's market-clearing algorithm rank orders each EGU offer by ascending price and selects the total quantity of offers necessary to meet demand during each interval. The rank-ordered collection of units, including the prices and quantities offered, is typically referred to as the "dispatch stack." The clearing price in an interval is determined by the highest of the selected offers. EGUs that are selected by PJM will operate during the interval, with all selected EGUs receiving a single clearing price.

Below is an illustrative dispatch stack. Though the PJM market clears at five-minute intervals, the example below depicts five-minute intervals aggregated into an hour.

Illustrative Dispatch Stack



In this example, each illustrative plant offers 1 MWh of generation. Total demand is depicted as 4 MWh. The solar, nuclear, combined cycle gas turbine (CCGT), and coal units are selected. The gas combustion turbine (CT) is not selected and does not operate. Also shown are the emissions associated with each plant's dispatch. Total emissions from the collection of plants that do dispatch is 1.4 tons of CO₂.

The Virginia DEQ concludes that "[t]he RGGI fails to achieve its goal as a carbon 'cap-and-trade' system because it lacks any incentive for power-generators to actually reduce carbon-intensive gas emissions." Since the advent of the EPA Acid Rain Program in the mid-1990s, power plant operators have been required to surrender allowances associated with the emissions of various pollutants, including CO₂ under RGGI. The PJM Operating Agreement, which is the agreement that governs the activities of market participants, explicitly allows for the incorporation of "[e]mission allowances/adders" into costs for "energy supplied to or from the PJM Region." The illustrative dispatch stack below demonstrates that DEQ's

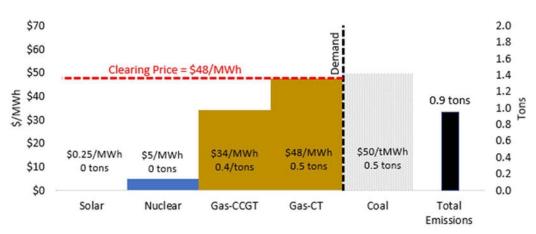
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¹⁸ DEQ Report to Governor, *supra* note 11.

¹⁹ PJM Interconnection. (2022). *Operating Agreement of PJM Interconnection, L.L.C.* Retrieved from https://www.pjm.com/directory/merged-tariffs/oa.pdf.

conclusion cannot be true if all costs, including emissions allowance costs, are properly included in the unit offers incorporated into security constrained economic dispatch.

Illustrative Dispatch Stack Including CO2 Allowance Cost



In this example, the coal, gas-CCGT, and gas-CT units incorporate the costs of carbon emissions allowances priced at \$12/ton. Coal plants, with a typical emissions intensity of 1 ton of CO2/MWh, would incur a dispatch cost of \$12/MWh; the gas-CCGT plant, with an emissions intensity of 0.4 tons/MWh, would incur a cost of roughly \$5/MWh (0.4 x 12); and the gas-CT plant, with an intensity of 0.5 tons/MWh, incurs a cost of \$6/MWh (0.5 x12). Relative to the previous example, total emissions fall from 1.4 tons to 0.9 tons of CO₂

The impact of the allowance cost on the total dispatch cost for each plant depends on the efficiency of the power plant and the carbon content of the fuel. The effect of incorporating these allowance costs is to re-order the dispatch stack, such that the lower-emitting units are selected, and total emissions fall. This is a simplified example of market dynamics that have been playing out every hour of every day, in PJM and every other power market in the United States, for decades.

The Virginia DEQ asserts that "[c]urrent law allows power generators...to pass on all their costs, essentially bearing no cost for the carbon credits," but that does not mean the carbon credits (allowances) are free. The DEQ therefore appears to be basing its proposed action on a belief that generators in the state are incurring costs to purchase RGGI allowances and then passing them on directly to customers without seeking potential recovery of those costs through the PJM market by including them in their offer prices. Failure to include the full cost of allowances in offers distorts the security constrained economic dispatch process and leads to inefficient plant dispatch, unnecessarily inflated costs for consumers, and muted emissions benefits. Plant operators that pass along the full costs of the allowances to ratepayers while dispatching without reflecting those costs are not making prudent use of ratepayer funds. In other words, if RGGI has not been effective in changing the dispatch of Virginia fossil plants, it is because the owners and operators of these plants have been behaving in a manner inconsistent with the letter and spirit of the program, imprudently

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 $^{^{20}}$ DEQ Report to Governor, *supra* note 11.

charging ratepayers for allowance costs, and denying Virginians the full benefit of RGGI participation.

IV. RGGI Gives States Flexibility to Fund Valuable Priorities and Mitigate Customer Cost Impacts

RGGI's structure affords states the ability and flexibility to generate revenue for valuable programs that implement state priorities. Virginia's legislation designated RGGI funds to be allocated to flood relief and energy efficiency programs. These programs are important to climate change mitigation and resiliency, and Virginia's legislation helps make these initiatives affordable for low-income households and communities. As the proposed rule acknowledges:

"in 2021 and 2022 close to \$500 million dollars raised through participation in RGGI was designated for: 1) the purpose of assisting localities and their residents affected by recurrent flooding, sea level rise, and flooding from severe weather events and 2) supporting low-income energy efficiency programs, including programs for eligible housing developments. To the extent that this funding is not replaced from other funding sources, the benefits from the programs would be lost if this regulation were to be repealed and Virginia leaves RGGI."

While these are sensible and prudent investments, Virginia could amend its program design to return some of the proceeds to ratepayers in light of the articulated concerns about cost increases for customers. A review of RGGI's investment proceeds in 2020 showed that direct bill assistance makes up 19% of RGGI investments, and that such programs have provided \$37 million in credits or assistance to customers in RGGI states. Many states are also allocating funding to other energy programs similar to Virginia's current approach: energy efficiency represents 35% of total RGGI investments. Virginia could adopt a similar diversified approach that provides direct ratepayer relief in addition to funding other important programs that benefit Virginians.

V. Enabling Competition Can Provide Incentives That Drive Down Consumer Costs

As discussed in Section III, RGGI should work effectively even in Virginia's current market structure. However, restructuring Virginia's energy market to further incentivize retail competition would be more effective in resolving the concern that utilities can simply pass on the full cost of allowances to their customers without any incentive to lower emissions. In a competitive market structure, utilities respond more directly to market signals and customers benefit from choices.

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²¹ The Investment of RGGI Proceeds in 2020 (May 2022), pg. 3, *available at* https://www.rggi.org/sites/default/files/Uploads/Proceeds/RGGI Proceeds Report 2020.pdf.

The DEQ's March 2022 RGGI Cost Benefit Report, delivered to Governor Youngkin in accordance with Executive Order 9, confirmed that customers would be better served in a competitive market. The report found that, "RGGI in effect operates as a direct tax on households and businesses because all fees paid to the RGGI Board are passed through to utility-captive ratepayers" and that "[c]onsumers are unable to avoid the pass through of these costs because they do not have the opportunity to switch electric providers." 22

Additional competition and customer choice within the market would change the incentives for utilities. In a competitive market, generators face more direct market signals and appropriately change their bidding behavior accordingly. Rather than just passing through costs associated with purchasing allowances, a utility should be reflecting these costs in its PJM offers which would create incentives to make the costs as low as possible by evaluating whether to purchase allowances at auction or secure allowances on the secondary market.

Notably, expanding competitive choice is also consistent with the Governor's Energy Plan. Virginia should explore additional ways to expand the currently limited ability to switch electric providers and lift barriers for customers who want to exercise energy choice. Doing so would allow customers to avoid ratepayer surcharges, among other charges embedded in the utility's supply costs. Energy choice fosters competition that can drive down costs and attract businesses interested in bringing competitive energy supply and innovative products and services to the State.

VI. Virginia's Attempt to Exit RGGI Is Procedurally Flawed

Virginia cannot exit RGGI merely by repealing an agency rulemaking. The General Assembly mandated that Virginia participate in RGGI through legislation, and that legislation does not provide the requisite discretion or authorize any administrative process for leaving the program. The DEQ identifies its statutory authority in the Legal Basis section of the Agency Background document, stating that "Section 10.1-1308 of the Virginia Air Pollution Control Law (Title 10.1, Chapter 13 of the Code of Virginia) authorizes the State Air Pollution Control Board to promulgate regulations abating, controlling and prohibiting air pollution in order to protect public health and welfare." However, there are two deficiencies with this assertion of legal authority.

First, the 2020 Clean Energy and Community Flood Preparedness Act mandated Virginia's participation in RGGI. Notably, that legislation complements the Virginia Clean Economy Act, also passed by the General Assembly in 2020, which sets forth a pathway for a carbon-free electricity sector in Virginia by 2050. The proposed rule suggests that the legislation merely authorized Virginia's participation in RGGI but provided the executive branch with discretion about whether to implement the program. This conclusion is based solely on the

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²² DEO Report to Governor, supra note 11

²³ https://townhall.virginia.gov/L/GetFile.cfm?File=1\6082\9879\AgencyStatement DEQ 9879 v1.pdf

use of the word "authorized" in one section of the statute: "The Director is hereby authorized to establish, implement, and manage an auction program to sell allowances into a market-based trading program consistent with the RGGI program and this article." Va. Code Ann. § 10.1-1330(B). However, the next sentence directs that DEQ implement this authority, mandating that the Director sell all of the allowances in RGGI auctions: "The Director shall seek to sell 100 percent of all allowances issued each year through the allowance auction." When read in full context, rather than by cherry-picking individual words, the legislation does not provide discretion for the DEQ Director to decline to participate in RGGI, and the use of the rulemaking process to implement DEQ's decision does not make it any more legally defensible. This straightforward interpretation of the statute is also supported by sixty-one legislators who voted on the Clean Energy and Community Flood Preparedness Act and subsequently submitted a letter to the State Air Pollution Control Board to "articulate the reality that Virginia's participation in RGGI is mandated by law. Therefore, ultimately only a change in the law that passes both chambers of the General Assembly and is signed by the Governor can remove Virginia's participation." 24

Second, even if the State Air Pollution Control Board arguably had discretion to decline to enter RGGI when the legislation was first passed, the legislation does not provide any authority for the Board to subsequently exit RGGI. The proposed rule does not cite any statutory provision in the Clean Energy and Community Flood Preparedness Act that provides the authority, process, or substantive criteria under which DEQ or the State Air Pollution Control Board can exit RGGI. Hence, Virginia has not identified a legal basis for its rulemaking to repeal RGGI, and its rulemaking is invalid absent further legislative action.

Thank you for your consideration of these comments.

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²⁴ https://energynews.us/wp-content/uploads/2022/09/631a52aa51d22.pdf (Sept. 8, 2022).