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**Comments of the Virginia Manufacturers Association
on proposed regulations to reduce and cap carbon dioxide
(CO₂) emissions from fossil fuel-fired electric generating facilities
9 VAC 5-140, Part VII, 34 Va. Reg. 924 (Jan. 8, 2018)**

I. Introduction

On behalf of its member companies, the Virginia Manufacturers Association (“VMA”) hereby submits the following comments on the proposal by the State Air Pollution Control Board (“the Board”) to adopt regulations to reduce and cap carbon dioxide (“CO₂”) emissions from fossil fuel-fired electric generating facilities. 9 VAC 5-140, Part VII, 34 Va. Reg. 924 (Jan. 8, 2018).

Since 1922 the Virginia Manufacturers Association has served as Industry’s Advocate.TM Our mission is to create the best business environment in the United States for world-class advanced technology businesses to manufacture and headquarter their companies for maximum productivity and profitability. VMA is committed to environmental excellence and submits these comments on behalf of its member companies, but several member companies intend to file separate comments on the proposed regulations. We urge the Virginia Department of Environmental Quality (“DEQ”) and the Board to carefully consider VMA's comments and the comments of our member companies on this critically important rulemaking.

At the outset, it should be noted that the proposed CO₂ emissions cap-and-trade program is not necessary to reduce the carbon footprint of Virginia. Virginia’s energy-related CO₂ emissions fell by 16.3 percent from 2000 to 2015 without such regulation.

II. Brief Synopsis of the Proposed Regulations

In the Agency Background Document published on the Virginia Town Hall Web site, DEQ summarized the proposed regulations as follows:

1. The primary purpose of the regulation is to implement a declining cap on carbon emissions. The administrative means of accomplishing this will be effected by linking Virginia to RGGI [“Regional Greenhouse Gas Initiative”], which is an established emissions trading program. An allowance will be issued for each ton of carbon emitted by an electricity generating facility. The company must then decide if it will reduce carbon emissions and sell the resulting additional allowances, or if it will not reduce carbon emissions and make up the difference with purchased allowances. The proposal includes two options on the base budgets, 33 million tons and 34 million tons, which will determine, based on a 3% annual reduction, the annual budgets and allocations for future years.¹
2. The mechanism for determining the cost of allowances will be a consignment auction.
3. A cost containment reserve allowance will be offered for sale at an auction for the purpose of containing the cost of CO₂ allowances in the event of higher than anticipated emission reduction costs. An emission containment reserve allowance will be withheld from sale at an auction for the purpose of additional emission reduction in the event of lower than anticipated emission reduction costs.
4. Monitoring, recording, and recordkeeping requirements will be implemented to track compliance.
5. Conditional allowances will be allocated to the Department of Mines, Minerals and Energy (DMME) in order to assist the department for the abatement and control of air pollution, specifically, CO₂.

The proposed regulations would establish a CO₂ emissions cap-and-trade program in Virginia. As described by DEQ, the regulations would set an initial state-wide cap for CO₂ emissions from electric generating facilities, allocate emission “allowances” to those facilities, and require those allowances to be consigned to the Regional Greenhouse Gas Initiative (“RGGI”) for auction. RGGI describes itself as follows:

The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont to cap and reduce power sector CO₂ emissions.²

¹ Although DEQ’s description speaks in terms of “carbon emissions,” the emissions cap will be in tons of carbon dioxide, not carbon.

² New Jersey participated as a RGGI member from 2009 to 2011.

RGGI is composed of individual CO₂ Budget Trading Programs in each participating state. Through independent regulations, based on the RGGI Model Rule, each state's CO₂ Budget Trading Program limits emissions of CO₂ from electric power plants, issues CO₂ allowances and establishes participation in regional CO₂ allowance auctions.

RGGI is the first mandatory, market-based CO₂ emissions reduction program in the United States. Within the RGGI states, fossil-fuel-fired electric power generators with a capacity of 25 megawatts (MW) or greater ("regulated sources") are required to hold allowances equal to their CO₂ emissions over a three-year control period.

A CO₂ allowance represents a limited authorization to emit one short ton of CO₂ from a regulated source, as issued by a participating state. Regulated power plants can use a CO₂ allowance issued by any participating state to demonstrate compliance in any state. They may acquire allowances by purchasing them at regional auctions, or through secondary markets.

III. General Comments on the Proposed Regulations

VMA has the following general comments on the proposed regulations. Comments on specific aspects of the proposed regulations follow.

A. Contrary to Virginia's historical approach, the proposed regulations are more stringent than federally required.

For years it has been the policy of the Commonwealth to eschew the imposition of regulatory requirements on its citizens and businesses "which are more restrictive than applicable federal requirements" unless a cogent showing of necessity supports a more stringent Virginia rule. This principle is codified in the Virginia Air Pollution Control Law. *See* Va. Code § 10.1-1308.A: ". . . a description of provisions of any proposed regulation which are more restrictive than applicable federal requirements, together with the reason why the more restrictive provisions are needed, shall be provided to the standing committee of each house of the General Assembly to which matters relating to the content of the regulation are most properly referable." Furthermore, the Virginia Administrative Process Act establishes a procedure whereby the General Assembly reviews regulations during the promulgation or final adoption process. Va. Code § 2.2-4014. For regulations that are more restrictive than applicable federal requirements, the General Assembly has the opportunity to judge whether such regulations are truly "necessary" in the Commonwealth. VMA believes the Board should adhere to this long-standing Virginia approach, eschew the regulation of carbon dioxide emissions as proposed, and leave any such regulation to the appropriate time and approach determined for the nation by Congress and the U.S. Environmental Protection Agency ("EPA").

B. Neither the Board nor the DEQ has provided a rationale for the need for regulations that are more stringent than federally required.

In publishing its Agency Background Document for the proposed regulations, DEQ failed to meet the Virginia Town Hall requirement to identify and explain requirements more restrictive than federally required. The instructions in the Town Hall form for Agency Background Documents state:

Please identify and describe any requirement of the proposal which is more restrictive than applicable federal requirements. Include a rationale for the need for the more restrictive requirements. If there are no applicable federal requirements or no requirements that exceed applicable federal requirements, include a statement to that effect.

DEQ's response to this directive was the statement: "There are no applicable federal requirements." Since there are no applicable federal requirements, the proposed regulations are without question more stringent than federally required. Thus, DEQ (the Board) must provide a rationale for the *need*, not just the debatable social desirability, for the more stringent requirements in the proposed regulations. VMA submits that DEQ failed to provide a cogent need for the proposed regulations in the Agency Background Document (or elsewhere) because there is no such *need*, and the Board will be unable to provide the General Assembly "with the reason why the more restrictive provisions are needed" in Virginia as required by Va. Code § 10.1-1308.A.

C. The proposed regulations are not cost-effective.

Cost-effectiveness is a fundamental premise for good environmental regulation. When government burdens its citizens by regulation, the benefits from the regulation should outweigh the burdens. The Board's proposed CO₂ emissions cap-and-trade regulations fail this basic premise. The proposed regulations are not cost-effective. The cost burden far exceeds any purported benefits from the proposed regulations.

1. The purported benefits of the proposed regulations are unsubstantiated and illusory.

In his Executive Order 57 ("EO-57"), then-Governor McAuliffe stated:

Though our coastal communities may be the first to witness the effects of climate change, the risks presented by increasingly fierce storms, severe flooding, and other

extreme weather events are not confined to a single geographic area. Neither are their causes. The economic implications are significant, and we must do all we can to protect our critical military infrastructure, our ports, our homes, and our businesses. It is only by acting together with common purpose that the Commonwealth can effectively adapt and stave off the most severe consequences of climate change.

Again in his Executive Directive 11 (“ED-11”), then-Governor McAuliffe stated:

There is no denying the science and the real-world evidence that climate change threatens the Commonwealth of Virginia, from our homes and businesses to our critical military installations and ports. Rising storm surges and flooding could impact as many as 420,000 properties along Virginia’s coast that would require \$92 billion of reconstruction costs.

The challenges and costs of bolstering resilience and minimizing risk are too great for any locality to bear alone. While the impacts are significant, there are technologies in the clean energy sector that could help mitigate these impacts while simultaneously creating jobs in twenty-first century industries.

In discussing the purpose of the proposed regulations, both in the Agency Background Document and in the preamble to the proposed regulations, DEQ quotes then-Governor McAuliffe’s EO-57 and ED-11. In EO-57 and ED-11, then-Governor McAuliffe revealed the ulterior, *i.e.*, non-environmental, motive for mandating a CO₂ emissions cap-and-trade program in Virginia – “to grow the clean energy economy” and “to make clean energy a pillar of our future economic growth and a meaningful part of our energy portfolio.” ED-11 notes an increase in “the number of solar jobs in Virginia” and the increase in “revenue for energy efficiency businesses in Virginia.” While expanding jobs and increasing business revenues in Virginia are certainly laudable goals, it is a misuse of governmental authority to use environmental regulation for these non-environmental purposes. There are other, more appropriate governmental authorities and programs, *e.g.*, through economic development initiatives and programs, to accomplish these economic goals.

It appears from the statements in EO-57, ED-11, DEQ’s Agency Background Document, and the preamble to the proposed regulations that the environmental benefit envisioned from the regulation of CO₂ emissions from electric generating facilities in Virginia is the mitigation of the risks to Virginians from climate change, *e.g.*, “increasingly fierce storms, severe flooding, and other extreme weather events” and “rising storm surges and flooding” in Virginia’s coastal areas. The administrative record for the proposed rulemaking is devoid of the necessary scientific data or other information to support the conclusion that the proposed CO₂ emissions cap-and-trade program in Virginia would have any real, perceptible effect on the severity of storms, storm surges, or flooding in Virginia.

In the preamble to the proposed regulations, DEQ presented a chart of “Health Benefits of Incidental Reductions in SO₂ and NO_x.” The rationale is that regulating emissions of CO₂ would have the “incidental” benefit of reducing emissions of sulfur dioxide (“SO₂”) and nitrogen oxides (“NO_x”). However, there are numerous other air regulatory authorities and programs addressing emissions of SO₂ and NO_x, including their own cap-and-trade programs. Thus, if additional regulation of SO₂ or NO_x is deemed necessary, there are other, more appropriate regulatory programs to directly address this necessity. Virginia does not have to resort to CO₂ regulation to indirectly address concerns with SO₂ or NO_x emissions. More specifically, the Board cannot say the proposed regulations are needed to address emissions of SO₂ or NO_x. Incidental reductions in SO₂ and NO_x provide no rationale for imposing the proposed CO₂ emissions cap-and-trade program in Virginia.

The Virginia Department of Budget and Planning (“DPB”) provided an Economic Impact Analysis of the proposed regulations. In discussing the purported benefits of reducing CO₂ emissions, DPB stated:

The U.S. Environmental Protection Agency (EPA) and other federal agencies use estimates of the social cost of carbon (SC-CO₂) to value the climate impacts of regulatory rulemakings. The SC-CO₂ is a measure, in dollars, of the long-term damage done by a ton of CO₂ emissions in a given year. This dollar figure also represents the value of damages avoided for a reduction of a ton of CO₂ emissions in a given year (i.e. the benefit of a CO₂ reduction). It should be noted that the federal model estimates of the social cost of carbon are for the world overall. Thus it is not possible to quantify the Virginia-specific benefits. (Footnotes omitted.)

There is a fundamental reason why any such “value of damages avoided” in Virginia is impossible to quantify. The effect, if any, of reducing CO₂ emissions from Virginia’s electric power sector on the severity of storms, storm surges, or flooding in Virginia would be negligible at best.³ The proposed regulations would provide no measurable environmental benefit to the citizens of Virginia. In short, Virginians would receive no real benefit from the proposed regulations.

2. In response to higher costs and reduced electricity generation, Virginia will likely import electricity from out-of-state fossil fuel-fired generating facilities.

³ The Congressional Research Service reached a similar conclusion regarding CO₂ emission reductions from the RGGI states: “RGGI’s aggregate emissions rank in the top 20 among all nations. But from a practical standpoint, the RGGI program’s contribution to *directly* reducing the global accumulation of GHG emissions in the atmosphere is arguably negligible.” CRS, “The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress,” May 16, 2017, Summary and p. 17.

When the proposed CO₂ emissions cap-and-trade program raises the cost of electricity generated by facilities within the Commonwealth, Virginia's electric utilities may well find it economical to buy power on the grid generated from out-of-state facilities unburdened by cap-and-trade regulation. This creates the problem of "emissions leakage." Virginia is a member of the PJM regional transmission organization ("RTO"). PJM serves all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, West Virginia, and the District of Columbia. (Maryland and Delaware are the only RGGI states in the PJM RTO.) This collection of states in PJM gives Virginia's utilities ready access to electricity generated by fossil fuel-fired units that are not limited by a CO₂ emissions cap-and-trade program. RGGI states buy large amounts of power generated out-of-state.⁴

The analysis conducted by ICF⁵ supports the conclusion that the proposed CO₂ emissions cap-and-trade program would significantly increase the import of electricity into Virginia from out of state facilities. Using the DEQ's assumptions, ICF predicts that from 2023 to 2030 electricity usage in Virginia will increase from approximately 130 TWh (terawatt hours) to approximately 145 TWh. All of this increase will be imported electricity under the proposed CO₂ emissions cap-and-trade program whereas less than half of this increase would be imports without such a program.⁶

It is clear that CO₂ emissions "leakage" would easily compensate for the mandated reductions in CO₂ emissions within Virginia. While Virginians would pay higher energy costs, overall CO₂ emissions would not be reduced by Virginia's cap-and-trade restrictions.

3. The increasing CO₂ concentration in the atmosphere is a global phenomenon that requires a global approach.⁷

If reducing the global concentration of atmospheric CO₂ is the goal, the entire world must participate in the effort. Virginia could reduce emissions of CO₂ from its fossil fuel-fired electric generating facilities, but any such reduction would be swamped by the massive amount of CO₂ emissions from China alone. In 2015, China generated over 11 billion tons of CO₂ from fossil fuel combustion for electricity and industrial power generation. For comparison, the Board's proposed cap-and-trade regulations would reduce CO₂ emissions from Virginia by approximately 10-11 million tons/year in 2030. While coal-fired electricity generation in China, the world's largest coal consumer, is expected to remain flat through 2040, natural gas-fired energy generation is projected to increase substantially. In fact, worldwide energy-related CO₂ emissions, approximately 38 billion tons in 2017, are projected to grow an average 0.6%/year

⁴ RGGI member states experienced a 34% increase in imported electricity after RGGI was established. CRS, "The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress," May 16, 2017, p. 14.

⁵ ICF is a contractor hired by the Georgetown Climate Center to analyze the potential impacts of Virginia's participation in RGGI.

⁶ ICF, Virginia Reference and Policy Scenario Overview, Webinar presentation, Oct. 20, 2017, p. 18.

⁷ Information presented in this section of VMA's comments is derived primarily from the U.S. Energy Information Administration's "International Energy Outlook 2017."

until 2040. Thus, while the proposed regulations would reduce CO₂ emissions from Virginia's fossil fuel-fired electric generating facilities by roughly 10-11 million tons/year in 2030, worldwide CO₂ emissions will have increased by over 2 billion tons/year.

Reducing the global concentration of atmospheric CO₂ would take a concerted effort by the United States, China, and the rest of the world's nations. Climate change and reduction of greenhouse gas emissions are global issues. Climate change is not a local phenomenon and to the extent man can craft a "solution" to climate change by reducing carbon dioxide emissions, that solution cannot be accomplished by disjointed state and local approaches. VMA believes that if any regulation of carbon dioxide emissions in the United States is deemed necessary and prudent to address climate change, that regulation must be undertaken and applied uniformly throughout the country, not state by state or locality by locality.

4. Any adverse effects of climate change in Virginia would be better addressed through comprehensive resiliency planning and implementation.

In 2014, then-Governor McAuliffe established the Governor's Climate Change and Resiliency Update Commission. This Commission was directed to develop up to five actionable recommendations and submit those recommendations in a report to the Governor. The Commission conducted its last meeting in August 2015 and generated a report summarizing its deliberations and presenting its recommendations to the Governor. From a broader list of recommendations the Commission's workgroups narrowed the recommendations down to a total of thirteen that were presented to the full Commission and subsequently voted on by the membership. The top five recommendations resulting from the voting are as follows:

1. Establish a Climate Change and Resilience Resource Center and/or Clearinghouse;
2. Create a New Virginia Bank for Energy and Resilience;
3. Set a Renewable Energy Procurement Target for Commonwealth Agencies;
4. Adopt a Zero Emission Vehicle Program; and
5. Leverage Federal Funding to Make Coastal Communities, Southside, and Southwest Models of Resilience.⁸

VMA believes this is the type of effort Virginia should be undertaking to address any concerns with the effects of climate change in Virginia. Rather than impose burdensome and costly CO₂ emissions cap-and-trade requirements, Virginia should develop and implement direct, cost-effective programs to address the perceived effects of climate change in Virginia. The costs of a CO₂ emissions cap-and-trade program imposed on Virginia's citizens and businesses would be much better spent directly on resiliency programs and initiatives that will have a tangible impact in communities in the Commonwealth.

⁸ Notably, the Commission's recommendations did not include a CO₂ emissions cap-and-trade program.

- 5. The costs of the proposed CO₂ emissions cap-and-trade regulations outweigh any purported benefits.**
- a. Virginia's citizens and businesses will experience a significant increase in electricity costs as a result of the proposed cap-and-trade program.**

In its Economic Impact Analysis, DPB notes that the proposed regulations likely would increase electricity costs for Virginia's citizens and businesses by no more than 1.1 percent (\$2015) by 2031, the year after the maximum CO₂ emission reduction has been achieved.⁹ However, a recent study by the Cato Institute showed that electricity costs in the RGGI states rose by 4.6 percent between 2007 (pre-RGGI) and 2015. This increase was 64 percent higher than the increase in electricity costs in a sampling of five non-RGGI states.¹⁰ As the data from the RGGI states show, adoption of the proposed CO₂ emissions cap-and-trade program will add millions of dollars per year to the electric bills of the citizens and business of Virginia.

- b. The proposed cap-and-trade program will have a significant adverse effect on manufacturing in Virginia.**

Virginia has a robust \$43 billion manufacturing sector. The Commonwealth is ranked as the fourth most competitive state in overall manufacturing competitiveness in the nation, trailing only Minnesota, Utah, and Iowa.¹¹ Moreover, Virginia is ranked the most competitive southern state for manufacturing. However, this preeminent competitive position would be severely jeopardized by increasing energy costs in the Commonwealth.

The Cato Institute study (cited above) found that from 2007 (pre-RGGI) to 2014 the economies of the five non-RGGI comparison states grew 2.5 times faster than the RGGI states. That study noted that data from the U.S. Bureau of Economic Analysis show that during the same period the RGGI states lost 35 percent of energy intensive businesses (primary metals, food processing, paper products, petroleum refining, and chemicals), whereas the five non-RGGI comparison states only lost 4 percent.¹² While the non-RGGI comparison states' overall goods production grew by over 15 percent, the RGGI states lost 13 percent of overall goods production. This decline is reflected in industrial electricity demand with the RGGI states falling 17 percent

⁹ DPB relied on conclusions developed by ICF, a contractor hired by the Georgetown Climate Center to analyze the potential impacts of Virginia's participation in RGGI. DPB states it did not conduct an independent analysis to verify ICF's conclusions.

¹⁰ Cato Institute Working Paper: A Review of the Regional Greenhouse Gas Initiative, Aug. 10, 2017, pp. 6-7. The non-RGGI comparison states were Illinois, Ohio, Oregon, Pennsylvania and Texas, all of which, like the RGGI states, have deregulated their electric power sector.

¹¹ Virginia Industry Foundation: A Virginia Vision for a More Competitive Manufacturing Future, October 2017. The study evaluated five weighted metrics: Business Climate (30%), Workforce (25%), Infrastructure (20%), Innovation (15%), and Economic Strength (10%).

¹² Cato Institute Working Paper: A Review of the Regional Greenhouse Gas Initiative, Aug. 10, 2017, pp. 8-10.

while non-RGGI comparison states only fell 3 percent. The greater decline in energy demand in the RGGI states cannot be attributed to greater energy efficiency in those states. In fact, the RGGI states improved by 9.6 percent, while the non-RGGI comparison states improved by 11.5 percent. Rather it is clear that even as the economy was recovering from the recession of 2008, industry was leaving the RGGI states.

If the proposed CO₂ emissions cap-and-trade program is enacted in Virginia, electricity costs for the Commonwealth's manufacturing facilities will undoubtedly increase, by as much as 4-5 percent by 2031.¹³ This increased cost of operation will diminish Virginia's advantage over the Southeastern and Midwestern states against which the Commonwealth competes for new and expanded industry. If Virginia participates in RGGI, we can expect the same fate for our industry that the RGGI states have experienced – industry, especially energy intensive industry, will go elsewhere where the costs of energy are lower.

In conclusion, the proposed CO₂ emissions cap-and-trade program will impose significant costs on Virginia's economy, especially its manufacturing sector, but the proposed program would provide no real benefit to Virginians. Accordingly, the proposed regulations lack any semblance of cost-effectiveness. VMA believes principles of good governance compel the rejection of this proposal.

D. The proposed regulations impose a “carbon tax” and cede this tax authority to RGGI.

The proposed regulations envision a process whereby “conditional allowances” (one allowance equals one ton of CO₂ emissions) are allocated by DEQ to regulated sources. Then those regulated sources are compelled to consign the conditional allowances to RGGI for auction. Regulated sources throughout Virginia and the RGGI states can bid on the allowances. Historically, RGGI states have taken the auction revenue and used it for a variety of purposes, one of which is not related at all to the goal of reducing CO₂ emissions. RGGI states (in aggregate) allocated auction revenues as follows:

- 42% for energy efficiency;
- 11% for electricity bill assistance;
- 9% for GHG abatement;
- 8% for clean and renewable energy;
- 8% for state budget reduction;
- 4% for administration; and
- 1% for RGGI, Inc.¹⁴

¹³ *Id.*, pp. 6-7.

¹⁴ CRS, “The Regional Greenhouse Gas Initiative: Lessons Learned and Issues for Congress,” May 16, 2017, p. 12.

Note that 8 percent of the revenue was used “for state budget reduction.” That money was used just like any other tax revenue that goes into the state’s general coffers.

The proposed CO₂ emissions cap-and-trade program in Virginia is supposed to operate somewhat differently. Revenue generated by the auction of conditional allowances consigned by a regulated Virginia source is supposed to be returned to that source owner, less RGGI’s administrative fees. DEQ has indicated the revenue received by owners of regulated electric utilities will “flow to rate payers pursuant to State Corporation Commission (SCC) requirements.”¹⁵ However, at this juncture we have no idea that will actually happen or to what purposes the revenue would be put.

The provisions in the proposed regulations governing the allocation and auction of CO₂ emission allowances, whether conducted by DEQ (under the Board’s authority) or RGGI, are designed to produce revenue to fund energy efficiency programs, resiliency infrastructure, and other state and local government purposes. The overlay of the additional cost imposed by the proposed auction of CO₂ emission allowances constitutes in essence an additional tax on the citizens and businesses of Virginia. And the magnitude of that tax will not be set by Virginia; it will be set by RGGI, an extra-territorial, non-governmental entity.

The Virginia General Assembly may by special act delegate the power of taxation to any county, city, town, or regional government. See Va. Const. art. VII, § 2. However, the General Assembly cannot constitutionally delegate its taxing power to an unelected entity, whether the Board, DEQ or RGGI.

The Virginia Constitution and case law are quite clear on these matters. In *Marshall v. Northern Virginia Transp. Authority*, 275 Va. 419, 657 S.E. 2d 71 (2008), the Virginia Supreme Court affirmed that taxes must be imposed only by a majority of the elected representatives of a legislative body, with the votes cast by the elected representatives being duly recorded. The court noted that the Constitutional constraints which the citizens of Virginia have placed upon the General Assembly regarding the imposition of taxes would be rendered meaningless if the General Assembly were permitted to avoid compliance with these constraints by delegating the decisional authority whether to impose taxes. Further, although the Constitution does not explicitly prohibit the delegation of such decisional authority concerning the imposition of taxes, that delegation is prohibited by necessary implication, and the General Assembly may not delegate its taxing power to a non-elected body. Thus, the Virginia Constitution prohibits ceding tax power to the Board, DEQ or RGGI.

E. The proposed CO₂ emissions cap-and-trade program is unnecessary. CO₂ emissions from Virginia sources are declining rapidly anyway.

¹⁵ DEQ presentation to the Board, Nov. 16, 2017.

1. CO₂ emissions in Virginia are dropping because citizens and businesses are becoming more energy efficient.¹⁶

Virginia's per capita energy use fell from a recent peak of 346 million BTUs per person in 2005 to 292 million BTUs in 2013 and 2014. There have been some fluctuations along the way, including drops caused by decreased economic activity during the years of the Great Recession (2007-2009), as well as minor ticks upward in both 2010 and 2013. Virginia's 2014 rate is lower than the national average of 309 million BTUs and ranked Virginia 21st among US states for energy consumption. Another way of gauging energy consumption is to compare usage rates to annual state GDP. Virginia's consumption rates have dropped from 6.6 thousand BTUs per GDP dollar in 2005 to 5.7 thousand BTUs in 2014. This amount was lower than the national average of 6.2 thousand BTUs per GDP dollar, as well as peer states Tennessee (8.1 thousand BTUs) and North Carolina (5.8 thousand BTUs), and ranked the Commonwealth 18th best in the country.

2. Virginia is already among the nation's leaders in reducing CO₂ emissions.

The decrease in energy consumption translates into a pronounced decrease in CO₂ emission from the Commonwealth. Virginia's energy related CO₂ emissions fell by 16.3 percent from 2000 to 2015. For comparison, the RGGI states averaged a 17.1 percent decrease and the entire nation experienced a 10.3 drop in CO₂ emissions.¹⁷ Virginia already generates a relatively low amount of energy-related greenhouse gases per capita from electrical power generation, transportation, heating/cooling, and industrial processes. Virginia's CO₂ emissions decreased from 15.9 metric tons per person in 2005 to 12.5 metric tons in 2014.¹⁸ This level was substantially better than the national average of 17.0 metric tons per capita and ranked 13th best in the country. It's clear that Virginia is reducing its carbon footprint at a rate much better than the nation as a whole and comparable to the RGGI states even without a costly CO₂ emissions cap-and-trade program.

3. Renewable energy generation is rapidly expanding in Virginia even without the proposed CO₂ emissions cap-and-trade program.

Virginia's electric utilities are strongly committed to expanding the role of renewable energy in power generation. For example, Dominion Energy currently has solar facilities capable of producing approximately 744 MW of power either operational or under development

¹⁶ Information presented in this section is derived from Virginia Performs, <http://vaperforms.virginia.gov/indicators/naturalResources/energy.php>.

¹⁷ U.S. Energy Information Administration: Energy-Related Carbon Dioxide Emissions by State, 2000-2015, Jan. 22, 2018, Table 1.

¹⁸ Virginia Performs, <http://vaperforms.virginia.gov/indicators/naturalResources/energy.php>.

in Virginia. These facilities will provide enough energy at peak solar output to power more than 186,000 homes. This represents tremendous growth over the company's Virginia solar capacity at the end of 2014, when only four small facilities with total output of just 1.18 MW were operational.¹⁹ Old Dominion Electric Cooperative ("ODEC") currently has approximately 300MW of renewable energy generation capacity. ODEC plans to add 70 MW of solar generation in the next five years.²⁰

As the cost of solar photovoltaic technology continues to decrease, solar-powered electric generation is growing rapidly in Virginia. According to data from the Solar Energy Industries Association ("SEIA"), Virginia's total solar capacity of 619.5 MW at the end of 2017 ranked 17th among the states. The Commonwealth's total solar capacity greatly exceeded that of many nearby states, including South Carolina (510.5 MW), Tennessee (247.2 MW), Kentucky (31.9 MW) and West Virginia (6.5 MW). Additionally, SEIA data indicate that Virginia's solar generation fleet grew by 381.3 MW in 2017 alone. Virginia ranked 10th among the nation last year in adding solar capacity.²¹

Dominion Energy's 2017 Integrated Resource Plan ("IRP") for meeting the long-term energy needs of its customers indicates this massive expansion of solar capacity will continue. All of the scenarios presented in the 2017 IRP call for the addition of at least 3,200 MW of additional solar capacity to the company's generating fleet serving Virginia customers by 2032 and at least 5,280 MW of additional solar capacity by the conclusion of a longer, 25-year study period concluding in 2042. Dominion Energy's IRP notes that "solar energy will play a major role in meeting the energy needs of (the company's) customers in the future. Solar technology is now cost-competitive with other more traditional forms of generation."²²

Dominion Energy is also moving forward with a test-bed project that could help pave the way for more extensive development of offshore wind energy as a generating resource. The project will consist of two 6-MW turbines and will become the mid-Atlantic's first offshore wind project in a federal lease area. The facility will provide critical information that could help achieve the cost reductions and technology improvements needed for more extensive wind development off Virginia's Atlantic coast. Larger-scale deployment of turbines in an adjacent 112,800-acre site leased by Dominion Energy from the federal Bureau of Ocean Energy Management could potentially produce up to 2,000 MW of electricity – enough to power a half-million homes.²³

Senate Bill 966, enacted by the 2018 session of the Virginia General Assembly and signed into law by Governor Northam, states that construction or purchase by Virginia electric utilities of solar and wind-powered facilities capable of producing up to 5,000 MW of electricity at maximum output is "in the public interest." The provisions of this legislation are to be

¹⁹ See <https://sites.wp.odu.edu/virginiasolarpathways/wp-content/uploads/sites/3538/2017/12/Virginia-Solar-Pathways-Project-Report-2017.pdf>.

²⁰ See <http://www.odec.com/3dissue/ODECSustainabilityReport2017/html5/index.html?page=1&noflash>.

²¹ See <https://seia.org/states-map> and individual SEIA state fact sheets.

²² See <https://www.dominionenergy.com/library/domcom/pdfs/corporate/2017-irp-cover-letter-va.pdf>.

²³ See <https://www.dominionenergy.com/about-us/making-energy/renewables/wind/coastal-virginia-offshore-wind>.

liberally construed by the Virginia State Corporation Commission (“SCC”) when reviewing applications for construction of such facilities.

In sum, it is clear that Virginia’s electric utilities are moving rapidly to greatly expand generation from renewable resources. Virginia is already among the nation’s leading states in this regard. A costly program capping CO₂ emissions is unnecessary to promote the continued rapid growth of renewable energy generation in the Commonwealth.

F. Forcing owner/operators of electric generating units in Virginia to consign their allowances to RGGI for general auction constitutes an illegal “taking.”

Virginia’s electric utilities have billions of dollars invested in assets that serve the public good and generate returns for investors. If the Board adopts the proposed CO₂ cap-and-trade program and fails to allocate allowances necessary for those facilities to generate electricity, that failure would deprive those entities of their ability to operate. In essence the government would be taking the value of those electric generating assets from Virginia’s utilities without compelling public need and just compensation.

Similarly, if the Board allocates sufficient allowances for Virginia’s utilities to operate but then forces them to consign those allowances to RGGI for potential purchase by someone else, the Board again would be in essence taking valuable allowances away from these companies without compelling public need and just compensation. Such “takings” are prohibited by the U.S and Virginia Constitutions.

G. By compelling owner/operators of electric generating units in Virginia to consign allowances issued to them to RGGI for auction under RGGI’s sole control, the Board would be attempting to enter into an interstate compact without authorization by the Virginia General Assembly and the U.S. Congress.

Article I, Section 10 of the U.S. Constitution states, in relevant part: “No state shall, without the consent of Congress . . . enter into any agreement or compact with another state” Linking a Virginia CO₂ cap-and-trade program to RGGI for the general auction of allowances would make Virginia a party to a multi-state compact without confirmation by the Virginia General Assembly and approval by the U.S. Congress. Virginia is a member of numerous interstate and regional compacts.²⁴ An essential feature of every one of these interstate compacts is specific authorization by the U.S. Congress and confirmation by the Virginia General Assembly. “Linking” to RGGI by compelling the consignment of allowances

²⁴ For a listing of all of the interstate compacts to which Virginia is a party see <https://law.lis.virginia.gov/compacts/compilation-of-compacts-and-related-records-and-reports/>.

to RGGI for general auction would constitute an unauthorized compact with the RGGI states. Attempting to do so would exceed the authority of the Board.²⁵

IV. Comments on Specific Aspects of the Proposed Regulations

A. If the Board adopts the proposed regulations, it should retain the proposed applicability provisions.

The applicability provisions of the proposed regulations, 9 VAC 5-140-6040, specify those CO₂ emission sources that would become subject to the cap-and-trade program:

A. Any fossil fuel-fired unit that serves an electricity generator with a nameplate capacity equal to or greater than 25 MWe shall be a CO₂ budget unit, and any source that includes one or more such units shall be a CO₂ budget source, subject to the requirements of this part.

B. Exempt from the requirements of this part is any fossil fuel power generating unit owned by an individual facility and located at that individual facility that generates electricity and heat from fossil fuel for the primary use of operation of the facility.

If the Board adopts the proposed regulations, VMA urges the Board to retain these applicability provisions with some additional clarification.

1. Fossil fuel-fired units that serve electrical generators smaller than 25 MWe should not be subject to the regulations.

A critical aspect of subsection A above is the word “an.” In order for a fossil fuel-fired unit, *e.g.*, a boiler, to be subject to the regulations, it must provide energy to, *i.e.*, “serve,” “an electricity generator with a nameplate capacity equal to or greater than 25 MWe.”²⁶ As VMA understands it, this means that a facility with a boiler that “serves” multiple electrical generators, none of which has a nameplate capacity of 25 MWe or greater, would not be subject to the regulations even if the combined electrical output of the generators exceeds 25 MWe. This is important to Virginia manufacturers that have multiple, smaller generators at their facilities. The VMA believes this important aspect of the applicability provision in subsection A must be retained should the Board decide to adopt the proposed regulations.

²⁵ When states want to cooperate on environmental matters, they can enter into a multi-state compact to do so, but only through authorization by the U.S. Congress. For example, the Interstate Environmental Commission, a compact of New York, New Jersey and Connecticut, was formed in 1936 with the consent of Congress. See <http://www.iec-nynjct.org/about.who.htm>.

²⁶ “MWe” is electrical output in megawatts.

2. Industrial facilities should not be included in the proposed CO₂ emissions cap-and-trade program.

Subsection B quoted above clearly exempts from the regulations any “facility that generates electricity and heat from fossil fuel for the primary use of operation of the facility.” If the Board adopts the proposed regulations, VMA urges the Board to retain the industrial facility exemption in subsection B.

a. Expanding the reach of the CO₂ emissions cap-and-trade program beyond the electric power generation sector would exceed the Governor’s mandate to the Board.

Executive Directive 11 speaks in terms of “electric power facilities.” Executive Order 57, leading directly to ED-11, speaks in terms of “power plants,” “the electric sector,” “electric companies,” and “electric utilities.” This makes it clear that the mandate from then-Governor McAuliffe was for the Board to propose a CO₂ emissions cap-and-trade program tied to RGGI that would apply to units and facilities whose primary, if not exclusive, purpose is the generation of electricity for sale ultimately to the public. These “power plants” are owned and operated by “electric companies” in “the electric sector” of Virginia’s economy. Industrial facilities, like those owned and operated by members of the VMA, are not “power plants” owned by “electric companies” and operating in “the electric sector.” In short, industrial facilities lay clearly outside the scope and intent of EO-57 and ED-11. Accordingly, the Board should retain the current approach to exclude industrial facilities from the reach of the proposed CO₂ emissions cap-and-trade program.

b. Virginia’s industrial facilities and electric utilities are not similarly situated to comply with CO₂ emissions cap-and-trade requirements.

Many industrial facilities in Virginia do not have multiple locations with different energy generating capacities to provide flexibility in meeting a mandated CO₂ emissions cap. They have only one facility and are not able to shift emissions allocations between facilities and between generating technologies. Virginia’s electric utilities have multiple units and multiple generating technologies which allow them to find the least expensive means to reduce CO₂ emissions.

Utility power producers are in the business of building alternative power generation sources while manufacturers are not. It is much easier for utility power producers to shift their mix of generation to renewable power sources. In many cases, sites with renewable power generation are already developed. Electric utilities have economies of scale and may purchase

larger and a greater number of alternative generation units. The power needs of Virginia's manufacturers are generally much smaller.

Electric utilities are better able to pass their costs on to their customers than Virginia's manufacturers. Virginia's manufacturers do not have a captive customer base. They compete worldwide for business from customers who are acutely price sensitive. Large capital expenditures for alternative energy generation technologies would increase the price of their products and damage their market position. Electric utility revenues are not affected by these global market demands.

c. There is no basis for expanding the scope of the proposed CO₂ emissions cap-and-trade program to include industrial facilities.

Emissions from industrial sources comprise only 11.3 percent of Virginia's CO₂ emissions.²⁷ Thus, expanding a cap-and-trade program to Virginia's manufacturing sector would impose significant costs but result in only a small reduction in Virginia's CO₂ emissions. The Board should avoid the significant adverse effects on Virginia's businesses when it would yield only insignificant additional CO₂ emission reductions. In any event, should the Board decide to expand the scope of the CO₂ cap-and-trade program to include industrial facilities, the Board would have to rewrite and re-propose a new set of regulations. Simple revisions to the current proposed regulations would not suffice.

d. The regulations should specify that in order to qualify for the industrial facility exemption, no more than one third of the electricity and heat generated on site can be exported off site.

The proposed regulations do not contain a definition of the term "primary use" in Subsection B of 9 VAC 5-140-6040. The dictionary sense of "primary" would allow a facility to "export" just under 50 percent of the electricity and heat generated from fossil fuels on site and still qualify for the industrial facility exemption in subsection B. The reality of manufacturing operations in Virginia is that no manufacturing facility comes anywhere close to exporting 50 percent of the energy generated on site. However, VMA believes the regulations should provide Virginia's manufacturing facilities an ample margin of flexibility to export valuable energy when it is not all needed on site. Thus, VMA recommends that "primary use" be defined to mean that in order to qualify for the industrial facility exemption, no more than one third of the power generated on site, in the form of electricity and heat, can be exported off site. This approach is based on the cogeneration exclusion in Virginia's former CAIR rules. For example, 9 VAC 5-140-1040.B.1.a(2) (repealed) excludes cogeneration units provided they do not supply more than

²⁷ U.S. Energy Information Administration: Energy-Related Carbon Dioxide Emissions by State, 2000-2015, Jan, 22, 2018, Table 4.

one third of the unit's potential electrical output capacity to any utility power distribution system for sale. Accordingly, VMA advocates defining primary use on site to mean that no more than one third of the industrial unit's power output (in the form of electricity and heat) can be exported off site.

B. The proposed regulations should exclude CO₂ emissions from the combustion of biomass.

The proposed regulations are intended to reduce CO₂ from fossil fuel-fired electric generating units. The proposed regulations define “fossil fuel” as “natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.” 9 VAC 5-140-6020.C. This definition does not include biomass because biomass is not a “fossil” fuel.²⁸ Accordingly, the proposed CO₂ cap-and-trade program should not include CO₂ emissions generated from the combustion of biomass.

The proposed CO₂ emissions cap-and-trade program would apply to “any fossil fuel-fired unit that serves an electricity generator with a nameplate capacity equal to or greater than 25 MWe.” 9 VAC 5-80-6040.A. “Fossil fuel-fired” is defined to mean “the combustion of fossil fuel, alone or in combination with any other fuel, where the fossil fuel combusted comprises, or is projected to comprise, more than 10% of the annual heat input on a Btu basis during any year.” 9 VAC 5-140-6020.C. This means a combustion unit that burns 89 percent biomass and 11 percent fossil fuel could be subject to the proposed CO₂ emissions cap-and-trade program. But that is inappropriate since in such a case, approximately 89 percent of the CO₂ emissions from the unit would be from the combustion of biomass, not a fossil fuel. VMA believes the proposed definition of “fossil fuel-fired” should be revised to clearly exclude CO₂ emissions from the combustion of any biomass based fuel. This approach would be consistent with the RGGI program’s approach to biomass CO₂ emissions.²⁹

C. The Board should not adopt a CO₂ emissions cap-and-trade program that entails a direct auction of allowances by the DEQ.

If the Board adopts a CO₂ cap-and-trade program in Virginia, emission allowances should be allocated as proposed. Allowances should be distributed without cost to the owner/operators of the electric generating units that will be constrained by the emissions cap. Direct auction of the allowances by DEQ with the revenue collected by the state would constitute

²⁸ According to the American Forest & Paper Association, biomass combustion is “CO₂ neutral.” Thus, overall, biomass combustion does not contribute to an increase in the global atmospheric CO₂ concentration. For a fuller explanation of biomass CO₂ neutrality, see <http://www.afandpa.org/issues/issues-group/carbon-neutrality-of-biomass>.

²⁹ “CO₂ emissions from eligible biomass reduce the total CO₂ allowance compliance obligation of the emitting unit. Emissions from eligible biomass should be deducted from the regional total of CO₂ emissions for purposes of calculating emissions from CO₂ budget sources subject to RGGI CO₂ allowance compliance obligations.” See <https://www.rggi.org/allowance-tracking/emissions>.

a tax that is not authorized by the Virginia General Assembly. Moreover, such a direct auction would greatly increase the cost of the program to the citizens and businesses of the Commonwealth. VMA believes the imposition of the costs of a direct auction of allowances by DEQ would severely jeopardize the competitiveness of manufacturers and other businesses in the Commonwealth.