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Proposed Regulation Agency Background Document

Agency name	State Air Pollution Control Board
Virginia Administrative Code (VAC) citation(s)	Part VII, 9VAC5-140
Regulation title(s)	Regulation for Emissions Trading
Action title	Establish a new regulation to reduce and cap carbon dioxide (CO ₂) from fossil fuel fired electric power generating facilities by means of an interstate trading program (Revision C17)

This information is required for executive branch review and the Virginia Registrar of Regulations, pursuant to the Virginia Administrative Process Act (APA), Executive Orders 17 (2014) and 58 (1999), and the *Virginia Register Form, Style, and Procedure Manual*.

Brief summary

Please provide a brief summary (preferably no more than 2 or 3 paragraphs) of the proposed new regulation, proposed amendments to the existing regulation, or the regulation proposed to be repealed. Alert the reader to all substantive matters or changes. If applicable, generally describe the existing regulation.

The purpose of the proposed new regulation is, in accordance with Executive Directive 11 (2017), "Reducing Carbon Dioxide Emissions from Electric Power Facilities and Growing Virginia's Clean Energy Economy," (i) ensure that Virginia is trading-ready to allow for the use of market-based mechanisms and the trading of carbon dioxide (CO₂) allowances through a multi-state trading program, and (ii) establish abatement mechanisms that provide for a corresponding level of stringency to CO₂ limits imposed in other states with such limits. 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.

Acronyms and Definitions

Please define all acronyms used in the Agency Background Document. Also, please define any technical terms that are used in the document that are not also defined in the "Definition" section of the regulations.

CO₂ - carbon dioxide
 CHP - combined heat and power
 CPP - Clean Power Plan

CSAPR - Cross-State Air Pollution Rule
 CT - combustion turbine
 DMME - Department of Mines, Minerals and Energy
 EGU - electric generating unit
 ED 11 - Executive Directive 11
 EPA - U.S. Environmental Protection Agency
 ETS - Emissions Trading System
 GHG - greenhouse gas
 IRP - Integrated Resource Plan
 MATS - Mercury and Air Toxics Standards
 MW - megawatt
 NGCC - natural gas-fired combined cycle
 NRC - U.S. Nuclear Regulatory Commission
 PEV - plug-in electric vehicle
 PJM - PJM Interconnection
 PSD - Prevention of Significant Deterioration
 RGGI - Regional Greenhouse Gas Initiative
 SCC - State Corporation Commission

Legal basis

Please identify the state and/or federal legal authority to promulgate this proposed regulation, including: 1) the most relevant citations to the Code of Virginia or General Assembly chapter number(s), if applicable; and 2) promulgating entity, i.e., agency, board, or person. Your citation should include a specific provision authorizing the promulgating entity to regulate this specific subject or program, as well as a reference to the agency/board/person's overall regulatory authority.

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. Written assurance from the Office of the Attorney General that the State Air Pollution Control Board possesses the statutory authority to promulgate the proposed regulation amendments is available upon request.

Promulgating Entity

The promulgating entity for this regulation is the State Air Pollution Control Board.

State Requirements

Executive Directive 11 (2017), "Reducing Carbon Dioxide Emissions from the Electric Power Sector and Growing Virginia's Clean Energy Economy," directs the Director of the Department of Environmental Quality, in coordination with the Secretary of Natural Resources, to take the following actions in accordance with the provisions and requirements of Virginia Code § 10.1-1300 et seq., and Virginia Code § 2.2-4000, et seq.:

1. Develop a proposed regulation for the State Air Pollution Control Board's consideration to abate, control, or limit CO₂ from electric power facilities that:
 - a. Includes provisions to ensure that Virginia's regulation is "trading-ready" to allow for the use of market-based mechanisms and the trading of CO₂ allowances through a multi-state trading program; and

b. Establishes abatement mechanisms providing for a corresponding level of stringency to limits on CO₂ emissions imposed in other states with such limits.

2. By no later than December 31, 2017, present the proposed regulation to the State Air Pollution Control Board for consideration for approval for public comment in accordance with the Board's authority pursuant to Virginia Code § 10.1-1308.

Purpose

Please explain the need for the new or amended regulation. Describe the rationale or justification of the proposed regulatory action. Describe the specific reasons the regulation is essential to protect the health, safety or welfare of citizens. Discuss the goals of the proposal and the problems the proposal is intended to solve.

The regulation is needed to control CO₂ emissions in order to protect the public's health and welfare. The proposed regulation is being developed in order to meet the direction of Governor McAuliffe's Executive Directive 11 (2017), "Reducing Carbon Dioxide Emissions from the Electric Power Sector and Growing Virginia's Clean Energy Economy," which states:

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. The number of solar jobs in Virginia has grown by 65 percent in the last year alone, and Virginia is now the ninth fastest growing solar jobs market in the country. Revenue for clean energy businesses in Virginia has increased from \$300 million in 2014 to \$1.5 billion in 2016. Through state leadership, Virginia can face the threats of climate change head on and do so in a way that makes clean energy a pillar of our future economic growth and a meaningful part of our energy portfolio.

With these considerations in mind, I issued Executive Order 57 (EO 57) on June 28, 2016. Under EO 57, I directed the Secretary of Natural Resources to convene a work group to study and recommend methods to reduce carbon dioxide emissions from electric power facilities and grow the clean energy economy within existing state authority. The group consisted of the Secretary of Natural Resources, the Secretary of Commerce and Trade, the Director of the Virginia Department of Environmental Quality, the Director of the Virginia Department of Mines, Minerals and Energy, and the Deputy Attorney General for Commerce, Environment, and Technology. This group facilitated extensive stakeholder engagement over the last year, including six in-person meetings and a ninety-day public comment period, before compiling its recommendations and submitting a final report to me on May 12, 2017.

Among the most significant recommendations from the group is the need to develop regulations limiting the total amount of carbon dioxide emitted from electric power facilities. Given the nature of the climate change threat and the promise of clean energy solutions, I agree with this recommendation.

Accordingly, pursuant to the authority vested in me as the Chief Executive Officer of the Commonwealth, and pursuant to Article V of the Constitution and the laws of Virginia, I hereby direct the Director of the Department of Environmental Quality, in coordination with the Secretary

of Natural Resources, to take the following actions in accordance with the provisions and requirements of Virginia Code § 10. 1-1300, et seq. and Virginia Code § 2.2-4000, et seq.:

1. Develop a proposed regulation for the State Air Pollution Control Board's consideration to abate, control, or limit carbon dioxide emissions from electric power facilities that:

- a. Includes provisions to ensure that Virginia's regulation is "trading-ready" to allow for the use of market-based mechanisms and the trading of carbon dioxide allowances through a multi-state trading program; and
- b. Establishes abatement mechanisms providing for a corresponding level of stringency to limits on carbon dioxide emissions imposed in other states with such limits.

2. By no later than December 31, 2017, present the proposed regulation to the State Air Pollution Control Board for consideration for approval for public comment in accordance with the Board's authority pursuant to Virginia Code § 10. 1-1308.

Additionally, Executive Order 57 Work Group's "Report and Final Recommendations to the Governor" states that:

The Work Group received a number of presentations and written comments from stakeholders advocating for a regulation to limit carbon dioxide from power plants. These comments included recommendations that the Commonwealth join or participate in the Regional Greenhouse Gas Initiative (RGGI) or another regional trading program, that a price be put on carbon, and that Virginia strive to reduce its greenhouse gases by 30 to 40 percent by the year 2030. . . . Although many stakeholders provided feedback focused on specific in-state targets (such as 30x30), the Work Group believes that it is important and necessary that Virginia work through a regional model, like the established and successful RGGI, in order to achieve lower compliance costs and address the interstate nature of the electric grid.

The Work Group recommends that the Governor consider taking action via a regulatory process to establish a "trading-ready" carbon emissions reduction program for fossil fuel fired electric generating facilities that will enable participation in a broader, multi-state carbon market.

Substance

Please briefly identify and explain the new substantive provisions, the substantive changes to existing sections, or both. A more detailed discussion is provided in the "Detail of changes" section below.

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, 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.
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.

Issues

Please identify the issues associated with the proposed regulatory action, including: 1) the primary advantages and disadvantages to the public, such as individual private citizens or businesses, of implementing the new or amended provisions; 2) the primary advantages and disadvantages to the agency or the Commonwealth; and 3) other pertinent matters of interest to the regulated community, government officials, and the public. If there are no disadvantages to the public or the Commonwealth, please indicate.

- 1. Public: The primary advantage to the public would be health and welfare benefits associated with controlling carbon pollution. The program is designed to avoid any significant economic impacts.
- 2. Department: No significant advantages or disadvantages to the department can be identified. There may be a minor impact in terms of administering a new program.

Requirements more restrictive than federal

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.

There are no applicable federal requirements.

Localities particularly affected

Please identify any locality particularly affected by the proposed regulation. Locality particularly affected means any locality which bears any identified disproportionate material impact which would not be experienced by other localities.

There is no locality that will bear any identified disproportionate material air quality impact due to the proposed regulation which would not be experienced by other localities. None of the affected sources is owned or operated by a locality, and it is the generation of electricity that is directly subject to the regulation, not its end users.

Public participation

Please include a statement that in addition to any other comments on the proposal, the agency is seeking comments on the costs and benefits of the proposal, the impacts of the regulated community and the impacts of the regulation on farm or forest land preservation.

In addition to any other comments, the board is seeking comment on whether the initial Virginia CO₂ Budget Trading Program base budget for 2020 should be 33 million tons or 34 million tons, and declining accordingly by 3% per year as shown in Article 5. After considering public comment, the board will make a final selection of either 33 million tons or 34 million tons.

Additionally, the board is seeking comment on whether 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 should be exempt from the requirements of this regulation.

The board is also seeking comment on the costs and benefits of the proposal, the potential impacts of this regulatory proposal and any impacts of the regulation on farm and forest land preservation. Also, the board is seeking information on impacts on small businesses as defined in § 2.2-4007.1 of the Code of Virginia. Information may include 1) projected reporting, recordkeeping and other administrative costs, 2) probable effect of the regulation on affected small businesses, and 3) description of less intrusive or costly alternative methods of achieving the purpose of the regulation.

Anyone wishing to submit written comments for the public comment file may do so by mail, email or fax to the agency contact: Karen G. Sabasteanski, Policy Analyst, Office of Regulatory Affairs, Department of Environmental Quality, P.O. Box 1105, Richmond, Virginia, 23218 (email karen.sabasteanski@deq.virginia.gov, fax 804-698-4510). Comments may also be submitted through the Public Forum feature of the Virginia Regulatory Town Hall web site at: <http://www.townhall.virginia.gov>. Written comments must include the name and address of the commenter. In order to be considered, comments must be received by 11:59 pm on the last day of the public comment period.

A public hearing will be held following the publication of this stage and notice of the hearing will be posted on the Virginia Regulatory Town Hall website (<http://www.townhall.virginia.gov>) and on the Commonwealth Calendar website (<https://www.virginia.gov/connect/commonwealth-calendar>). Both oral and written comments may be submitted at that time.

Economic impact

Please identify the anticipated economic impact of the proposed new regulations or amendments to the existing regulation. When describing a particular economic impact, please specify which new requirement or change in requirement creates the anticipated economic impact.

<p>Projected cost to the state to implement and enforce the proposed regulation, including: a) fund source / fund detail; and b) a delineation of one-time versus on-going expenditures</p>	<p>It is not expected that the regulation will result in any cost to the department beyond that currently in the budget. The sources of department funds to carry out this regulation are the general fund and the federal trust (grant money provided by EPA under § 105 of the federal Clean Air Act or permit fees charged to affected entities under the permit program). The activities are budgeted under the following programs (codes)/subprograms (codes): Air Protection Permitting (513025); Air Protection Compliance and Enforcement (513026); Air Protection Planning and Policy (513028); and Air Protection Monitoring and Assessment (513029). The costs are expected to be ongoing.</p>
<p>Projected cost of the new regulations or changes to existing regulations on localities.</p>	<p>The projected cost of the regulation on localities is not expected to be beyond that of other affected entities. Essentially, every individual and every organized entity--whether government or private--</p>

	<p>uses electricity, and it is the generation of that electricity that is directly subject to the regulation, not its end users. Furthermore, none of the affected sources is owned or operated by any locality.</p>
<p>Description of the individuals, businesses, or other entities likely to be affected by the new regulations or changes to existing regulations.</p>	<p>Electric power facilities with a capacity of >25 MW that operate on some form of fossil fuel (coal, natural gas) will be directly affected by the regulation.</p>
<p>Agency's best estimate of the number of such entities that will be affected. Please include an estimate of the number of small businesses affected. Small business means a business entity, including its affiliates, that: a) is independently owned and operated and; b) employs fewer than 500 full-time employees or has gross annual sales of less than \$6 million.</p>	<p>There are 32 electric power facilities with a capacity of >25 MW operated by 12 companies located throughout the state that will likely be directly affected by the regulation. None of these entities is a small business. There may be limited indirect impacts on small businesses in general as discussed in greater detail below.</p>
<p>All projected costs of the new regulations or changes to existing regulations for affected individuals, businesses, or other entities. Please be specific and include all costs including: a) the projected reporting, recordkeeping, and other administrative costs required for compliance by small businesses; and b) specify any costs related to the development of real estate for commercial or residential purposes that are a consequence of the proposed regulatory changes or new regulations.</p>	<p>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, which is an established emissions trading program. An allowance will be issued for each ton of carbon emitted by an electricity generating unit. It will then be up to the company to decide if it wants to reduce carbon emissions and sell its additional allowances, or if it will not reduce carbon emissions and make up the difference with purchased allowances. Because there will not be a significant change to the allowance values RGGI already has in place, adding Virginia to the equation will not change compliance costs.</p> <p>The cost of allowances will be administratively managed by means of a consignment auction. In general, auctions have been known to decrease costs because the process is transparent (costs and prices are known), and the secondary market is not involved. Consignment auctions are revenue neutral, so the only actual cost to a facility would be the administrative cost of managing its consignment auction activities. Based on department experience with emissions trading programs and traditional auctions in the past (for example, under 9VAC5-140 for the NO_x Trading Rule, and CAIR), it is expected that these costs will be minor, unless a facility generates enough allowances to sell and realizes a profit from that sale.</p> <p>Generally speaking, wholesale electricity costs may go up or down depending on the price of allowances. Any impacts to residential consumers will be very small because wholesale costs are only a very small portion of a residential consumer's bill. Rates for commercial users may</p>

	<p>fluctuate more because wholesale costs are somewhat higher for commercial users, and industrial users, which pay rates close to wholesale, will experience the greatest of any potential impact.</p> <p>It is important to note that Virginia's energy market is regulated. This means that the Virginia SCC is responsible for monitoring electric rates such that Virginia's consumers (whether businesses, institutions or individuals) are protected from any dramatic changes to the electricity market. Regardless of what business decisions the affected utilities make in the future to comply with the carbon cap, Virginia's utility structure is designed to accommodate this type of pollution control program. The RGGI program is designed to avoid dramatic fluctuations in consumer costs. Thus far, electricity rates for RGGI customers have been stable over the life of the program, and this stability is expected to continue.</p>
<p>Beneficial impact the regulation is designed to produce.</p>	<p>To quote ED 11, "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. The number of solar jobs in Virginia has grown by 65 percent in the last year alone, and Virginia is now the ninth fastest growing solar jobs market in the country. Revenue for clean energy businesses in Virginia has increased from \$300 million in 2014 to \$1.5 billion in 2016. Through state leadership, Virginia can face the threats of climate change head on and do so in a way that makes clean energy a pillar of our future economic growth and a meaningful part of our energy portfolio." It is expected that the regulation will address the health and welfare impacts of climate change in an efficient, cost-effective manner. RGGI has successfully reduced carbon emissions with no negative economic impacts; see https://www.rggi.org/rggi_benefits. Emissions trading programs have proven to be very effective--with both traditional pollutants such as NO_x, and with more recently regulated pollutants such as CO₂--and an affiliation with RGGI will enable Virginia to quickly take advantage of a proven trading program.</p>

Alternatives

Please describe any viable alternatives to the proposal considered and the rationale used by the agency to select the least burdensome or intrusive alternative that meets the essential purpose of the action. Also, include discussion of less intrusive or less costly alternatives for small businesses, as defined in § 2.2-4007.1 of the Code of Virginia, of achieving the purpose of the regulation.

Alternatives to the proposal are being considered by the board. The board has tentatively determined that the first alternative is appropriate, as it is the least burdensome and least intrusive alternative that fully meets the purpose of the regulatory action. The alternatives being considered by the board, along with the reasoning by which the board has rejected any of the alternatives being considered, are discussed below.

1. Amend the regulations to satisfy the provisions of the law and associated regulations and policies. This option is being selected because it meets the stated purpose of the regulatory action: to develop a carbon trading regulation in accordance with ED 11 (2017).
2. Make alternative regulatory changes to those required by the provisions of the law and associated regulations and policies. This option is not being selected because it would not meet the specific requirements of ED 11.
3. Take no action to amend the regulations and continue to not control carbon emissions via a trading program. This option is not being selected because it would not meet the specific requirements of ED 11.

Regulatory flexibility analysis

Pursuant to § 2.2-4007.1B of the Code of Virginia, please describe the agency’s analysis of alternative regulatory methods, consistent with health, safety, environmental, and economic welfare, that will accomplish the objectives of applicable law while minimizing the adverse impact on small business. Alternative regulatory methods include, at a minimum: 1) the establishment of less stringent compliance or reporting requirements; 2) the establishment of less stringent schedules or deadlines for compliance or reporting requirements; 3) the consolidation or simplification of compliance or reporting requirements; 4) the establishment of performance standards for small businesses to replace design or operational standards required in the proposed regulation; and 5) the exemption of small businesses from all or any part of the requirements contained in the proposed regulation.

This regulation meets the requirements of Executive Directive 11. Any less stringent compliance requirements, any delays in adopting the standards, any different compliance or reporting requirements, any substitution of performance standards, and any exemption of small businesses from these requirements will not meet the minimum requirements of ED11. Any such changes would compromise the effectiveness of the regulation in protecting the health and welfare of the public.

Public comment

Please summarize all comments received during the public comment period following the publication of the NOIRA, and provide the agency response.

Commenter	Comment	Agency response
1. General support (92 commenters)	General support for the regulatory action was expressed.	Support for the regulatory action is appreciated.

<p>2. Advanced Energy Economy Institute (AEE Institute)</p>	<p>By implementing a carbon reduction policy with a flexible design that allows for a variety of technologies and services for that best suit the state, Virginia has the opportunity to modernize its electric grid for the benefit of consumers and the economy to accelerate a transition to a higher performing grid that is reliable, resilient, and affordable. To achieve those improvements, Virginia must continue to invest in 21st century electricity generation and grid technologies. Luckily, these same technologies will also lower carbon emissions. Forty such technologies are detailed in <i>Advanced Energy Technologies for Greenhouse Gas Reduction</i>.</p> <p>Renewable energy and energy efficiency are cost-effective mechanisms for carbon reduction but also expected to grow strictly on the basis of cost. The levelized cost of electricity for utility-scale wind and solar has declined such that these technologies are increasingly competitive. Renewable energy purchases that were once driven by state policies are increasingly made based on economics.</p> <p>Generation from zero- and low-carbon-emitting technologies can be used to meet baseload generation. These resources can integrate with variable renewable energy and also complement each other both technologically and economically, allowing the electricity system to provide reliable, low-carbon energy.</p> <p>High voltage direct current transmission can facilitate the integration of renewable energy technologies and reduce transmission line losses 30-50% compared to traditional alternating current systems. Demand response also provides grid benefits, including firm capacity reserves, system-wide peak shaving when demand is high, and ancillary services to facilitate the integration</p>	<p>DEQ agrees that renewable energy and energy efficiency are important elements in the reduction of carbon emissions. Although advanced energy programs as discussed by the commenter are recognized as important tools in the control of carbon emissions, they must be addressed in other, more appropriate venues. Electricity and energy policy in Virginia is primarily regulated and overseen by the Department of Mines, Minerals and Energy (DMME) and the State Corporation Commission (SCC).</p>
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	<p>of renewable resources in a low-carbon manner. Demand response can directly reduce CO₂ emissions by more than 1% through peak load reductions and provision of ancillary services, and that it can indirectly reduce CO₂ emissions by more than 1% through accelerating changes in the fuel mix and increasing renewable penetration. Demand response can strengthen reliability. It also provides cost-effective alternatives to meeting peak demand, both locally and at the wholesale level, and can improve reliability while reducing peak power costs.</p> <p>Neighboring states are reducing energy costs for their customers through the deployment of utility peak-shaving demand response programs. These programs boost the local economy, as the majority of program payments are given to participating local businesses and organizations (e.g. school districts).</p> <p>Distributed resources can also provide grid benefits such as reduced congestion and increased reliability. These resources include distributed generation such as residential/commercial solar and wind, CHP, waste energy recovery, and fuel cells. Similarly, energy efficiency reduces congestion and peak demand, and reduces the impacts of changes in the capacity associated with retiring EGUs. Advanced grid technologies can help integrate and manage the growing diversity of renewable, low-emitting and traditional fossil generation.</p> <p>Energy storage also helps integrate renewables and reduces the need for peaking power plants—leading to fewer emissions—and thermal units to provide ancillary services such as frequency regulation and spinning reserves, allowing these traditional units to operate at more efficient heat rate blocks leading to fewer emissions.</p>	
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	<p>Plug-in electric vehicles (PEVs) can be an important component to aid in GHG reduction and grid support as market penetration continues. PEVs both reduce emissions and provide grid energy storage.</p> <p>These advanced energy technologies can ensure that deployment of these technologies will have no significant adverse impacts on grid reliability and cost. In a recent report, AEE Institute described the grid benefits of the transforming energy sector. As the energy revolution sweeps the United States, greater fuel diversity has provided us with more options to meet our energy needs while maintaining, if not improving, reliability. <i>Changing the Power Grid for the Better</i> argues that incorporating more renewable energy, fast-ramping natural gas generation, a range of demand management techniques, and new resources like energy storage--rather than a return to a singular reliance on baseload resources--is the foundation of electric power system reliability.</p> <p>Advanced energy technologies and services will help Virginia balance cost, energy system performance, environmental, and public health considerations. These technologies are also well established in the U.S. and global marketplaces.</p>	
<p>3. AEE Institute</p>	<p>DEQ has discretion to distribute allowances in its state plan, either a) to Emitting Generating Units (EGUs); b) eligible resources; or c) both. Consider allocating allowances to all emission reduction measures, not just EGUs. This will ensure that the allowance allocation remains technology neutral and encourages competition among emission reduction measures, allowing for both existing future technologies to serve as compliance mechanisms.</p> <p>Although an auction method for</p>	<p>A consignment auction with updating output-based allocation has been selected as the mechanism for distributing and utilizing allowances. Consignment auctions are revenue neutral, and will enable Virginia to link to RGGI while recognizing its own energy distribution requirements.</p>

	<p>distributing allowances as currently employed by other carbon allowance systems including RGGI is not permissible under state law, a variation of allowance allocation that distributes to the load-serving entity or an updating output-based allocation could serve as a good alternative.</p>	
<p>4. American Council for an Energy-Efficient Economy (ACEEE)</p>	<p>Energy efficiency is an important strategy to reduce emissions. As it lowers electricity use, energy efficiency avoids emissions of CO₂ and other harmful pollutants, often at lowest cost. ACEEE estimates that if Virginia placed a cap on CO₂ emissions to reduce pollution 30% by 2030, Virginia could realize 100% of pollution reductions through energy efficiency policies and programs. As DEQ considers approaches to distributing allowances under a trading program, keep in mind that the selected approach will affect both CO₂ emissions and compliance costs during and after the compliance period. It is therefore essential for the success and long-term viability of the trading program that the method of allowance distribution drive lasting and cost-effective emission reductions.</p> <p>Energy efficiency is often the lowest-cost option to meet CO₂ reduction goals, and deployment should be encouraged under a CO₂ trading program. In an allowance trading program, CO₂ reductions from energy efficiency will help electric generating units (EGUs) meet the state's CO₂ emissions limit by reducing electricity production. However, this does not mean that energy efficiency deployment will increase - even when it is more cost-effective than other CO₂ reduction options. Current market and regulatory barriers to investment in energy efficiency can hinder its use as a compliance strategy in a trading program. DEQ should consider using methods for allowance distribution to help address these barriers to energy</p>	<p>DEQ agrees that energy efficiency is an important factor in the reduction of carbon emissions; energy efficiency efforts in the state are managed by the Department of Mines, Minerals and Energy (DMME).</p> <p>The RGGI states have proposed, as of this writing, a regional cap trajectory that will provide an additional 30% cap reduction by the year 2030, relative to 2020 levels. The proposed regional program changes include the addition of an Emissions Containment Reserve (ECR) wherein states can withhold allowances from auction if emission reduction costs are lower than projected. The proposed ECR is an innovative way to adaptively respond to supply and demand in the market. When this program is finalized, Virginia will align the regulation to meet any new requirements of RGGI states.</p>

	<p>efficiency deployment. We do not recommend a historical approach to allowance distribution, where allowances are given away to covered EGUs, as this is the least effective option. A historical approach does not promote the most cost-effective emission reduction measures in the state, such as energy efficiency.</p>	
<p>5. ACEEE</p>	<p>Auctions held by the state or another entity allow EGUs to purchase the allowances needed for compliance. The revenues from the sale of allowances can then be reinvested in activities that further reduce emissions, such as energy efficiency. RGGI has successfully distributed almost all allowances through regional auctions, with the largest portion of revenues reinvested in energy efficiency programs. According to RGGI, these investments are projected to save participants \$3.62 billion on energy bills and avoid 12.9 million short tons of CO₂ pollution. As DEQ develops provisions to trade allowances through a multi-state trading program, joining RGGI and adopting the approach of auctioning allowances and reinvesting proceeds into energy efficiency programs and other purposes should be strongly considered.</p> <p>While a revenue-raising auction provides many benefits, there are other approaches for allowance distribution that would incentivize lasting CO₂ reductions and engage the private sector to invest in energy efficiency.</p> <p>A consignment auction will influence market responses in a similar way as a revenue-raising auction. Allowances are allocated for free, and recipients are then required to sell those allowances and use the revenue to repurchase the amount needed for compliance. This approach could avoid the need for legislative approval, and provide a transparent price signal and promotes long-term, cost-effective</p>	<p>DEQ agrees that a revenue-neutral consignment auction is the best means of achieving compliance, and the regulation has been developed with this approach.</p>

	strategies to reduce CO ₂ emissions.	
6. ACEEE	An updating output-based allocation rewards measures that deliver lasting CO ₂ reductions. Allowances are distributed on the basis of electricity generated or demand avoided, relative to the amount of pollution emitted or fuel consumed. The allocation formula should be updated regularly to track generation and savings from efficiency, and reward future progress toward CO ₂ reductions. This approach fosters technology-neutral competition, allowing energy efficiency project developers or investors to earn allowances alongside covered EGUs. It provides a transparent and predictable price signal, and ensures the activities that reduce the most CO ₂ will receive the greatest number of allowances.	DEQ agrees that an updating output-based allocation approach will be the most effective means of reducing CO ₂ and have designed the new program accordingly.
7. ACEEE	Set-asides allow for a portion of allowances to be budgeted for certain programs, such as energy efficiency. The amount of available allowances is capped at a certain percentage of the total allowance pool, therefore if the cap is exceeded certain projects will not be fully compensated for their contributions. While set-asides provide an incentive for qualified energy efficiency projects, the total allowances available are likely too small to allow for significant investment.	DEQ agrees that energy efficiency is an important factor in the reduction of carbon emissions; energy efficiency efforts in the state are managed by the Department of Mines, Minerals and Energy (DMME).
8. Appalachian Power Company (APCo)	APCo has demonstrated leadership in making carbon reductions over the past decade and will continue to deploy clean energy sources over the coming decades. As such, we feel that it is not in the best interest of Virginia to develop incremental carbon policies to intervene in an already ongoing transformation of the electric sector. On May 1, APCo filed its annual IRP with the Virginia SCC. In addition to projected load changes, IRPs are updated at regular intervals for changing market conditions as well as other external factors, including achieving	APCo's carbon reduction efforts are recognized and appreciated. DEQ does not agree that linking Virginia's CO ₂ action to a broader CO ₂ trading program could result in less control over Virginia's emissions trajectory and economic well-being. Joining RGGI is administratively practical and transparent, while meeting the important goal of reducing carbon emissions that are already having a detrimental economic impact to the state. Acting in concert with a program proven to reduce carbon emissions cost effectively will enable Virginia to reduce emissions while protecting the state's economic interests. The commenter's concerns are well-taken, however, we believe that this is the best approach in moving forward with the most

	<p>potential environmental requirements. Such long-term plans--beyond any near-term 'actionable period'--can and do shift as such conditions warrant.</p> <p>APCo is required to provide an IRP that encompasses a 15-year forecast period (in this filing, 2017-2031). This IRP has been developed using the Company's current long-term assumptions for: customer load requirements; commodity prices; supply-side alternative costs; and demand-side program costs and impacts.</p> <p>In addition, APCo considered the effect of environmental rules and guidelines, such as the CPP, which could add significant costs and challenges to operations. State plans to implement this uncertain rule may not be finalized, let alone approved, for years. In preparing the IRP, APCo analyzed multiple scenarios, with differing commodity pricing conditions, as well as multiple internal load conditions. APCo has also conducted analyses that address certain aspects of compliance with the CPP.</p> <p>The 2017 APCo IRP suggests that APCo will not be integrating any new fossil resources into its system over the next 15 years. All incremental load increases are assumed to be met through installation of cost-effective wind and large-scale solar, both of which would provide customers with emissions-free energy, as well as the prospect of additional demand side management measures. The IRP also suggests that APCo may retire its remaining fossil units within Virginia by 2026. At such point that these units would be retired APCo would be left with a Virginia-domiciled generating fleet that is 100% carbon emissions free.</p> <p>In light of the transition that APCo has made and will continue to make in its generating fleet with respect to</p>	<p>certainty and least risk.</p>
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	<p>emission reductions and generation diversification, APCo encourages DEQ and the board to recognize that planning practices already in place, such as the IRP process, can be appropriate means to establish a carbon reduction pathway.</p> <p>Given that the current Virginia regulatory process is robust and that CO₂ emissions have trended significantly downward, it not is in the state's best interest to take action on a small subset of emissions sources to address a concern that is global in nature. Linking Virginia's CO₂ action to a broader CO₂ trading program such as RGGI could ultimately result in Virginia having less control over its emissions trajectory and economic well-being. APCo is committed to working to ensure any regulatory action will be workable and equitable for APCo customers.</p>	
<p>9. Audubon Society of Northern Virginia</p>	<p>Climate change poses serious public health risks. In Northern Virginia, hotter summers make it more difficult to meet air quality standards. Our area is also vulnerable to vector-borne diseases, particularly Lyme Disease. We also face increased risks of flooding along the tidal Potomac and an increase in the number and intensity of extreme weather events. Extreme weather events also threaten our water and wastewater infrastructure, adding to the cost of public service.</p> <p>As shown by the shifting peak bloom date of the cherry trees in Washington, D.C., climate change is also disrupting ecosystems in Northern Virginia, putting pressure on migratory birds, whose reproduction is closely linked to the timing of spring. Climate change can cause a mismatch in the timing of food supplies and the birds and other wildlife that depend on them. The National Audubon Society's 2014 report concluded that global warming is the greatest threat to</p>	<p>The commenter's concerns are well taken. The purpose of this regulatory action is to meet the ED 11 requirement to control carbon emissions, and we believe that the proposal will meet that end.</p>

	<p>birds and other wildlife, that global warming's impacts could lead to the loss of 1/4 to 1/3 of all species on Earth, including many bird species.</p> <p>Carbon emissions from power plants will magnify these risks. We urge DEQ to draft stringent, science-based emission caps that move the state toward greater use of cleaner, renewable energy sources.</p>	
<p>10. CarbonShare.org</p>	<p>My comments focus on design elements of a carbon pricing system. The most comprehensive and easiest to administer point of regulation would be upstream. An upstream system would require only upstream companies to hold permits. They would be the buyers at the permit auction. An upstream system is the most comprehensive, and requires the least amount of administration from DEQ. An upstream system would also encompass transportation fuels, an important source of emissions.</p> <p>Because of the European Emissions Trading System (ETS) choice of administrative (free) allocations to emitters based on historic emissions instead of auctioning, the ETS had to figure out the change to the baseline to the aviation industry due to the volcano in Iceland. Virginia would have to recalculate free allocations to industry after every perturbation in the fuel and electricity markets. The ETS is overallocated, and the price of permits is low, yielding few emission reductions. By auctioning, Virginia could avoid subjecting DEQ to lobbying and political manipulation that free allocation entails. Administratively, it would be easier to just let companies figure out for themselves how many permits they need and let them buy them for themselves at auction.</p> <p>Auctioning is an important lesson from California's Cap & Trade program. The auction and price floor are primary factors</p>	<p>Linking to the successful, well-established RGGI program utilizing a revenue-neutral consignment auction has been selected as the most efficient and expeditious means of reducing carbon pollution in Virginia. Unlike the "nonregulated" RGGI states, Virginia is a "regulated" state and as such relies on the Virginia SCC to safeguard Virginia's electricity consumers. In other words, the distinct regulatory roles of DEQ and the SCC work in harmony such that pollution will be reduced from electric generating units while protecting the users of that electricity.</p>

	<p>contributing to the success the program has had thus far. The program would have had the disappointing results of the ETS without them. However, the California program is not perfect. It has missed opportunities to increase the amount of allowances auctioned, reducing the free allowances to industrial emitters, and returning more revenues collected back to households.</p> <p>Return carbon price revenues to households as a "climate dividend." The best way to return the value to consumers is through a dividend. The formula to do so is simple: auction allowances and return the funds to people.</p> <p>One problem with using funds on large infrastructure projects to reduce emissions is that the emission reductions may reduce the price of allowances, or change relative price of emissions between sectors, but result in no net emission reduction because the reductions achieved only create space for new emissions from other sectors under the cap. In other words, the space below the cap created by the infrastructure investment is simply filled up by emissions in other sectors. The goal of a carbon pricing program is not to build big capital projects. It is to provide an economic incentive to Virginians to change their economic behavior. Behavior change is better accomplished by returning the funds to Virginia households through a dividend. Spending revenues only on projects would neglect the regressive impacts of a carbon price on low-income families.</p> <p>Fossil fuel companies may use the sky, but we all own it together. It's a Commons. The equitable ownership of the commons should be a central theme in the design of a cap and trade system. The fossil fuel industry and other large</p>	
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	<p>emitters should pay to use the atmosphere. If the sky belongs to us all, but its use becomes limited, then companies who use the sky should compensate citizens for its use. As long as pollution is free and has no price, companies may externalize those costs onto society. In many areas of environmental policy, fees on companies are used to raise funds to pay for clean-up and also made less-polluting alternative technologies more cost-effective.</p> <p>Technology alone is insufficient – We need an escalating carbon price: 1) Price on carbon 2) Dividends returned to people 3) Political acceptability for higher price on carbon 4) Actually affecting economic choices across all sectors, giving incentives to companies to produce lower carbon products, and for people to buy them 5) New technologies, transform the economy.</p>	
<p>11. Ceres BICEP (Business for Innovative Climate and Energy Policy) Network</p>	<p>An emissions trading program should create policy certainty and be stringent enough to send a strong and clear market signal for the transition to a low-carbon economy. Businesses need strong market signals and policy certainty in order to make decisions and investments for the long run. The program must be strong enough to drive emissions reductions and incentivize the uptake of clean energy. In addition, the program’s design must be well thought-out and able to stand up to legal challenges in order to further foster certainty in the electricity market.</p> <p>A strong emissions reduction program would also encourage utilities to move in the direction their investors and customers increasingly want them to go. This year, an unprecedented size and scope of investors have engaged with investor-owned electric utilities, encouraging them to take climate change into account in their business decisions.</p>	<p>By linking to RGGI, Virginia will be taking part in a proven effective emissions reduction program that addresses the goals listed by the commenter.</p>

<p>12. Ceres</p>	<p>Linking emissions reduction programs with neighboring states would benefit Virginia ratepayers. A larger emissions trading market, as opposed to a one-state market, would create greater flexibility for compliance and more opportunities to achieve cost-effective emissions reductions.</p> <p>Interstate emissions trading markets have proven to be workable and economically feasible for participating states. RGGI, for example, is designed so that the participating states are able to maintain their autonomy and decide on their own whether to remain in the program and how to invest their RGGI auction revenues. RGGI states that have had the most economic and emissions-reduction success to-date are those that reinvest the largest portion of their auction revenues in clean energy projects and programs. Programs such as revolving loan funds, utility energy efficiency programs, and other innovative financing initiatives provide a smart option for reducing electricity bills while simultaneously helping states meet their carbon reduction goals. As early adopters of clean energy technologies, RGGI states have been able to unlock the economic benefits of the clean energy economy—innovation, investment, and jobs—very effectively. Virginia has an opportunity to reap the benefits of the clean energy economy as well.</p>	<p>DEQ agrees that interstate emissions trading markets are a workable and economically feasible means of reducing emissions. Joining RGGI will enable Virginia to use that market mechanism to reduce carbon emissions.</p>
<p>13. Ceres</p>	<p>An emissions reduction program should aim to maximize benefits to ratepayers through increased investments in renewable energy and energy efficiency. Virginia has an opportunity to seize the benefits of increasingly low-cost clean energy technologies and the investments, local jobs, and tax revenue that accompany the transition to a low-carbon economy. Clean energy can lower electricity costs and provide a valuable hedge against the volatility of fossil fuel prices. Meanwhile, energy</p>	<p>DEQ agrees that renewable energy and energy efficiency are important factors in the reduction of carbon emissions. Also noted elsewhere is the observation that Virginia is a "regulated" state and as such relies on the Virginia SCC to safeguard Virginia's consumers. The distinct regulatory roles of DEQ and the SCC work in harmony such that pollution will be reduced from electric generating units while protecting the users of that electricity.</p> <p>Renewable energy and energy efficiency projects are under the purview of the primary state agency for such projects, DMME.</p>

	<p>efficiency investments can provide quick paybacks, reduce overall demand for energy, and decrease energy bills.</p> <p>While auctioning emissions credits would provide an effective source of funding for reinvestments, if emissions credits are allocated, they should be allocated in a way that incentivizes investment in clean energy and the most cost-effective means of reducing emissions. Likewise, any value or revenue derived from the allocation or auctioning of credits should be used primarily to incentivize renewable energy and energy efficiency projects; such projects will best benefit ratepayers and the economy and will contribute to further emissions reductions in Virginia. An advisory board including legislators and key stakeholders would be prudent to determine the structure of allowance allocations.</p> <p>Furthermore, in order to protect Virginia’s forests and foster a truly sustainable low-carbon economy, qualifying renewable energy projects should not include forest biomass for electricity projects.</p>	
<p>14. Ceres</p>	<p>Virginia should simultaneously unlock policy barriers to clean energy deployment. Thanks to Governor McAuliffe, Virginia has made strides in renewable energy deployment in recent years—but there is still significant untapped potential for energy efficiency and renewable energy investments.</p> <p>The state should remove barriers to corporate procurement of renewable energy. BICEP Network members and other major companies are increasingly making sustainability commitments and using renewable energy to power their operations. Clean energy allows businesses to hedge against the volatility of fossil fuel prices, lock in fixed rates, and reduce energy bills. Today, more than 63% of the Fortune 100 and nearly half</p>	<p>The SCC manages Virginia's electric generating and distribution, and the Department of Mines, Minerals and Energy (DMME) manages energy efficiency and renewable energy projects.</p>

	<p>of Fortune 500 companies have made commitments to reduce GHG emissions, procure more renewable energy, or invest in energy efficiency.</p> <p>By allowing large customers to participate in power purchase agreements, community solar projects, direct arrangements, third-party solar leasing, commercial clean energy financing, and cost-competitive, utility-administered green tariff programs (among other options), Virginia can continue to attract corporate investments while simultaneously lowering emissions.</p> <p>Furthermore, Virginia ratepayers could enjoy lower electricity bills by unlocking barriers to utility-administered energy efficiency projects and programs. Energy efficiency is low-hanging fruit in Virginia. The state has substantial opportunities to reduce energy waste. While the largest 30 electric utilities in the U.S. are saving, on average, almost 1% of retail sales annually through utility energy efficiency programs, Virginia's largest electric utility, Dominion Energy, only helped customers save 0.1% of sales in 2014.⁶ As a result, Virginia's utility energy savings are among the lowest in the country, causing ratepayers and businesses to miss out on the cost savings associated with decreased energy use.</p>	
<p>15. Chesapeake Physicians for Social Responsibility (83 signatures)</p>	<p>A well-designed program to reduce CO₂ emissions from power plants will allow Virginia to realize economic, environmental and public health benefits. Such a program will lead to reductions in the emissions of a large array of hazardous pollutants from coal-fired power plants, providing immediate public health benefits. Evidence shows that a well-designed carbon reduction program will help reduce electricity bills, boost local economies, and create local jobs. Reducing carbon emissions will help slow the pace of climate</p>	<p>ED 11 directs the department to develop a regulation that is "trading-ready" to allow for the use of market-based mechanisms and the trading of CO₂ allowances through a multi-state trading program, and we believe that linking to RGGI is the most realistic and effective means to accomplish this.</p>

	<p>change, which is a threat to public health and the economy of Virginia.</p> <p>This array of benefits has already been realized by the states that participate in RGGI, a program that has been reducing CO₂ emissions from power plants since 2009. RGGI has achieved an impressive reduction in pollution even as the economies of the member states grew. Between 2009-2014, RGGI states received \$1.79 billion from the quarterly auctions of pollution allowances and have invested \$1.37 billion. Most of these funds were spent to increase energy efficiency and support renewable energy, which created 30,000 job-years and produced additional economic benefits. Investments in energy efficiency programs have saved consumers \$618 million on their electricity bills, and will provide future benefits of over \$4.5 billion as the investments in energy efficiency continue to save power.</p> <p>By ensuring that the carbon regulation is trading-ready, Virginia will have the opportunity to join RGGI. One study estimates that by joining RGGI, Virginia could bring in \$2.8 billion of revenue by 2030. This would mean more resources to protect the coastline, stronger energy efficiency programs, an increase in the use of renewable energy, more jobs, and better health outcomes.</p>	
<p>16. Dominion</p>	<p>To the extent the state pursues the development of state-specific regulations to address CO₂ emissions from power plants by establishing a statewide emissions cap, we generally support the concept of designing a program that would allow for emissions averaging and trading and would position the program to be trading-ready with linkages to either existing or future multistate trading programs as put forth by ED 11. However, we do not believe the directive compels the state to join a particular multi-state program, such</p>	<p>ED 11 directs the department to develop a regulation that is "trading-ready" to allow for the use of market-based mechanisms and the trading of CO₂ allowances through a multi-state trading program, and we believe that linking to RGGI is the most realistic and effective means to accomplish this.</p>

	<p>as RGGI, and urge the state to proceed cautiously but thoroughly in evaluating whether direct participation in existing trading programs would meet state environmental and energy goals and ensure the continued diversity, reliability and affordability of electricity.</p>	
<p>17. Dominion</p>	<p>The baseline and targets must accommodate for the dynamics of power imported into Virginia. The baseline must reflect and account for the fact that Virginia is a net importer of energy from more carbon-intensive out-of-state resources. The emission targets must allow for reasonable expansion of lower-emitting cleaner generation in the state to address energy needs and reduce imports of electricity in accordance with state energy policy.</p> <p>Setting a stringent cap on already cleaner generation in Virginia absent a similar level of reductions from neighboring states would increase the cost burden to Virginia generators and would likely encourage lower cost electricity imports from out-of-state sources that are more carbon-intensive and not subject to a carbon cost adder. This could result in the unintended consequence of curtailing or limiting the dispatch of highly efficient and lower emitting NGCC facilities in Virginia and encouraging the dispatch of higher emitting resources in neighboring states. With federal regulations currently stayed and under administrative review, few states outside of the RGGI program and along the west coast have or are proceeding with definitive carbon regulations. This includes all of the remaining states that are part of the PJM Interconnection (except Maryland and Delaware which are part of RGGI), which is the regional transmission organization that operates the wholesale electric grid in the mid-Atlantic region. At a minimum, any consideration of</p>	<p>Recent data shows that there is a general trend away from energy imports. Regardless, an updating output system incentivizes in-state generation, thus also addressing leakage. Indeed, the RGGI program is designed to track and avoid leakage through routine program review. DEQ agrees that other state and federal actions are important, and these activities are closely monitored and tracked. There is nothing to be gained by ignoring activities and trends outside the state, the PJM Interconnection, RGGI, and elsewhere.</p> <p>The baseline year is currently set at 2020, which will ensure that the Brunswick and Greenville units will be accounted for.</p> <p>Market-based programs are technology-neutral: a cap is set, and affected units have the flexibility to use whatever means they prefer to meet that cap. The commenter may consider any emissions reduction opportunities.</p>

	<p>reduction targets for Virginia should include an evaluation of what surrounding states are doing in the absence of federal requirements and impacts that may have on power markets, trading opportunities, leakage and economic growth.</p> <p>The baseline must also account for emissions from new generation projects, such as Dominion's Brunswick and Greensville natural gas-fired combined cycle (NGCC) facilities that have already received air permits and either already commenced commercial operation or are under construction. These facilities, each with capacity in excess of 1,300 MW, will operate some of the most efficient NGCC units with the most stringent GHG limits in the country and will serve as base load facilities. These units are critical in transitioning to a cleaner and less-carbon intensive generating fleet in Virginia.</p> <p>Emission targets should be based on the deployment of existing, commercially available technologies. Dominion continues to analyze emissions reduction opportunities and finds that the following measures hold the potential for ongoing emission improvements:</p> <ul style="list-style-type: none"> • Heat rate efficiencies at existing coal-fired units; • Capacity improvements at existing NGCC units; • Maximize the dispatch from carbon-free nuclear and renewable sources first and then from lower-carbon NGCC units and other dispatchable resources; • Co-firing coal units with natural gas where economical at appropriate units with proximity to natural gas pipelines; <p>Efficiency improvements within the electric transmission and distribution system;</p> <ul style="list-style-type: none"> • Deployment of smart grid technologies such as voltage optimization software platforms. 	
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	<p>We are also evaluating pumped hydroelectric storage, to be powered at least in part by renewable energy, as an additional energy supply for the state.</p>	
<p>18. Dominion</p>	<p>Although the intent of the Governor's directive is to set Virginia on a path to regulating carbon in the absence of federal action and the apparent demise of EPA's CPP, it does not, nor should it compel the state to establish emission targets equivalent to levels that would have been imposed under the CPP. We believe that the mass-based carbon emissions target EPA established under the CPP underestimated potential future growth to meet energy demand and was the most costly compliance alternative identified in the company's IRP. This type of program, particularly if implemented without flexible program designs including interstate trading, would be constraining for a state like Virginia which forecasts economic growth and an electric capacity deficit. Although established at the state-level, the limits required under the CPP presumed and envisioned a robust nationwide emissions trading program. Virginia should not impose more stringent emission reduction requirements to address a global environmental issue while other surrounding states we compete with economically have no established emission reduction goals or requirements. To the extent the CPP-based emission caps are considered, the caps should not be more stringent than the levels that would have been imposed under the CPP.</p>	<p>The intent of the regulation is to enable Virginia to link to RGGI, which establishes CO₂ emission reduction targets independently of the CPP or any other federal programs.</p>
<p>19. Dominion</p>	<p>The program should allow for realistic timeframes to achieve emission reduction goals. This will provide needed time for the ramp-up of new renewables, energy efficiency programs, and infrastructure improvements in order to maintain the state's fuel diversity and its goal to become more energy independent.</p>	<p>DEQ has worked diligently to ensure that its proposed timeframes are realistic.</p>

	Reduction goals and implementation timelines must avoid premature retirement of remaining existing coal not otherwise shut down for compliance with other regulatory requirements.	
20. Dominion	<p>The program must also recognize the critical role of extending the operation of Virginia's existing fleet of carbon-free nuclear generation. U.S. Nuclear Regulatory Commission (NRC) licenses for Dominion's existing nuclear stations begin to expire in 2032. The loss of approximately 3,500 MW of existing zero-emitting nuclear would significantly complicate compliance with any carbon reduction program in the post-2030 timeframe. To achieve electric output compatible with Dominion's North Anna and Surry nuclear power stations would require over 98,000 acres of solar panels. In addition, generation from nuclear units provide a critical and stable source of electricity in all weather conditions and are increasingly needed to maintain the reliability of the electric grid. Dominion is working with the NRC on evaluating and applying the current regulations as the basis for nuclear units to apply for a subsequent license extension to operate beyond 60 years. These existing regulations will be supported with enhancements to existing license renewal tools and guidance documents, adding additional aging-related system reviews and associated upgrades. The continued operation of these zero-emitting resources will require significant financial investments that are comparable to building new combined cycle gas units, the only other large base load source of generation, yet with the associated carbon emissions</p>	As discussed elsewhere, the market-based cap-and-trade program is technology neutral. Although DEQ recognizes the value of all low- and zero-carbon generating sources, DEQ is specifically tasked with regulating fossil fuel generation.
21. Dominion	The state's reduction targets should not be based on a presumption that energy efficiency potential from policies in neighboring states can be repeated and achieved in Virginia.	Dominion's energy efficiency programs are recognized and appreciated.

	<p>Energy efficiency programs historically have been financed by utilities. Dominion continually works to achieve operating efficiencies in our existing generating units to get more output with fewer emissions. We also offer a number of end-use energy savings programs to our customers.</p> <p>We continue to build upon our best in class energy efficiency and energy assistance program facilitated by the Governor's 2015 amendments to Senate Bill 1349 requiring the establishment of an energy assistance and weatherization program to serve low-income, elderly, and disabled customers as well as veterans.</p> <p>There remains significant potential for energy savings from consumer-side energy efficiency program and we remain committed to expanding participation in the current programs and offering consumers more choices to achieve energy savings. However, the expansion and consumer use of these programs depends on state laws and regulations that allocate resources and approve of demand-side programs. In Virginia, energy efficiency and demand side management programs must be approved by the SCC based on cost-benefit studies and strict measurement and validation processes. The ultimate successes of energy efficiency programs are generally within the control of the customer, not the utility. While utilities offer a range of consumer-friendly energy efficiency programs, they must nevertheless be prepared to serve their native load should such programs not be as successful as hoped.</p> <p>Accordingly, the state target should be based on well thought out and reasonable expectations of achievable energy savings and the compliance timelines must provide adequate time for the development,</p>	
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	<p>approval and implementation of the energy efficiency programs required to achieve such objectives.</p>	
<p>22. Dominion</p>	<p>Renewable energy needs to be part of the solution and additional renewable generation sources of solar, on-shore and off-shore wind and pumped hydroelectric renewable energy with back-up generation support from our highly efficient natural gas units have a strong place in our future investment strategy. In 2013, Dominion had no generation from solar or on-shore wind sources. The company now has 423 MW of large-scale solar in Virginia either in operation, under construction, or under development, including power purchase contracts. All together, these facilities will produce enough electricity at peak output to power 105,000 homes. Our analysis shows that this rapid expansion of renewable energy, particularly highly cost effective solar energy, will continue to increase rapidly.</p> <p>Renewable energy, however, has some challenges. It requires a reliable source of backup for when it is not available. While we continue to see advancements with respect to battery storage technology, further innovation is needed to achieve both the scale and cost-effectiveness necessary for storing the vast amount of electricity that would be required for renewables to reliably power our economy.</p> <p>Natural gas is the lowest cost, cleanest and most reliable form of dispatchable generation to complement the integration of renewables to the electric grid. We will need our gas plants more and more to ramp up and down as Virginia grows its solar fleet. As noted previously, Virginia is home to some of the most efficient NGCC units with the most stringent GHG limits in the country. This technology will also serve to</p>	<p>Dominion's efforts to promote renewable energy are recognized and appreciated. There are indeed issues associated with renewable resources that, as discussed elsewhere, are more appropriately dealt with by other agencies (such as SCC and DMME) in a different context from this specific regulatory action.</p>

	<p>provide baseload generation to replace retiring coal plants.</p> <p>Another issue with renewables is the vast amount of land needed to produce sufficient power to meet energy needs. For example, 1 MW solar requires about 8 acres of real estate. In addition, significant grid improvements will be needed to accommodate growth in renewable energy. All of these challenges should be factored into assumptions regarding the expansion capability of renewable energy onto the electric grid in setting emission reduction targets.</p>	
<p>23. Dominion</p>	<p>The company is also examining the needed grid improvements to accommodate growth in renewable energy. Grid modernization is a national trend, and Dominion has taken an important first step with its strategic undergrounding program, an industry leading initiative to improve reliability which has received legislative support and approval from Governor McAuliffe in both 2014 and 2017 legislation. Building on these grid modernization efforts offers the opportunity to both better accommodate renewable energy and to improve customer reliability.</p>	<p>Dominion's grid improvement efforts are recognized and appreciated.</p>
<p>24. Dominion</p>	<p>In setting emission targets for the EGU sector, the state must recognize and account for the role and opportunity electrification of other sectors of the economy, such as transportation and cities, can play to reduce carbon emissions economy wide in the state. For example, Virginia intends to devote a significant amount of the environmental trust funds provided under the recent Volkswagen Consent Decree with EPA for promoting clean transportation technologies including the deployment of zero emission vehicle supply equipment, such as electric vehicle charging stations, as well as repowering large and medium-sized freight trucks, school and transit buses, port drayage trucks, locomotives, ferries and</p>	<p>DEQ agrees that the reduction of carbon must be approached holistically. The specific purpose of the regulatory proposal is to address one element of that goal.</p>

	<p>airport ground support and cargo handling equipment. Sale focus on the electric generation sector and establishing too stringent an emission cap on in-state generation could impact the ability of the state to holistically reduce carbon from other sectors of the economy.</p>	
<p>25. Dominion</p>	<p>In terms of affected EGUs subject to compliance obligations, the regulations should limit compliance applicability only to fossil fuel-fired EGUs that are greater than or equal to 25 MW. Small combustion turbines and boilers below this threshold should not be subject to compliance obligations under the program. This is consistent with many existing federal and state-level EGU-based emission reduction programs including EPA's Acid Rain program, CSAPR, MATS, and the northeast RGGI program.</p> <p>In addition, the program should not impose any compliance obligations upon units that burn biomass as their primary fuel. No emissions attributed to biomass firing should require allowances. This would be consistent with EPA's approach in developing the CPP which did not include biomass generation in establishing the baseline and state emission reduction targets and did not require biomass units to hold emission allowances or surrender emission rate credits under the proposed mass-based and rate-based model trading rules. This compliance exemption should also apply to the emissions apportioned to the burning of biomass for fossil fuel-fired units that co-fired with biomass.</p> <p>In 2013, Dominion made significant investments to converted three 51 MW units that used coal to 100% biomass, encouraged by EPA's prior determination that biomass was carbon neutral for PSD permitting. Close proximity to an ample supply of waste wood biomass as well as EPA's "carbon-neutral" policy for permitting under</p>	<p>The proposal limits compliance applicability only to fossil fuel-fired units that are greater than or equal to 25 MW, as is consistent with RGGI.</p> <p>Biomass-only units are not covered by this regulation, as it applies only to fossil fuel-fired generation. Fossil fuel-fired units that co-fire biomass must account for their CO₂ emissions and obtain allowances accordingly.</p>

	<p>the PSD effective at that time were key economic drivers for these projects. Given Dominion's significant investment in renewable wood waste and forest residuals biomass, it is important for our customers that biomass emissions be considered carbon neutral.</p>	
<p>26. Dominion</p>	<p>The state program should provide for maximum compliance flexibility including the following:</p> <ul style="list-style-type: none"> • Use of emission trading with unlimited banking of allowances. The state should explore trading opportunities with other states and, where feasible, allow for linkages with other state programs to maximize market-based trading options. • Allow for multiple-year averaging to demonstrate compliance with any interim and final target. This concept was allowed in the final CPP and the RGGI programs allow for a tiered surrender of allowances over a three-year period. • Allow flexible resource options for use in demonstrating compliance with emission reduction requirements. These options should include: co-firing coal with natural gas or biomass; uprates at existing nuclear units; demand side and supply-side energy efficiency improvement programs, including voltage optimization and other electricity transmission and distribution efficiency improvements; generation from pumped storage. 	<p>Linking to RGGI will allow for these compliance flexibility goals.</p>
<p>27. Dominion</p>	<p>Although we have experience with RGGI through current and former assets in New England, we have serious concerns about potentially implementing the RGGI program in Virginia.</p> <ul style="list-style-type: none"> • Although RGGI states have reduced carbon, the level of reductions achieved that can be attributed to RGGI itself is questionable. Emission reductions nationwide, including in Virginia, have been comparable to the reductions achieved in the RGGI states and have been primarily driven by fuel economics (low gas 	<p>As discussed elsewhere, linking to RGGI--a well-established, effective program--is the best means of quickly addressing carbon pollution in the most efficient way possible. ED 11 specifically tasks DEQ with controlling carbon generation by linking to an established state trading program, and the only such reasonably available and operating trading program is RGGI.</p> <p>One of RGGI's attractive features is that it is committed to ensuring a stable price structure, and utilizes routine program reviews to identify and improve means of accomplishing this goal.</p>

	<p>prices) and the corresponding shift from coal to natural gas as well as lower load growth due to the 2008 recession.</p> <ul style="list-style-type: none"> • Although allowance prices in RGGI are currently around \$3.50/ton CO₂, the program is under an ongoing review and the RGGI states are exploring mechanisms that would set a trigger price, below which a certain amount of allowances would be held back from the auction in an effort to reduce amount of the allowance bank, increase the price and force more emission reductions. • RGGI is considering increasing the stringency of the regional emissions cap post-2020, reducing the cap by as much as 3.5 to 5% per year. Currently, the cap is reduced by 2.5% per year. • We have concerns about leakage if Virginia were to join RGGI and that our generating resources may not get dispatched if they are priced higher than other assets. As noted previously, we sell and buy our power into the PJM market which, with the exception of Maryland, consists of states that, to date, are not considering and have not developed or implemented carbon regulations. Accordingly, most other generators in the PJM market would not be subject to a carbon cost adder that generating units in Virginia would incur. This could result in curtailing or limiting the dispatch of lower emitting NGCC facilities in Virginia and encouraging the dispatch of higher emitting resources in neighboring states. 	<p>The commenter correctly states that RGGI is currently undergoing program review and the cap is being reconsidered. As of this writing, a regional cap trajectory that will provide an additional 30% cap reduction by the year 2030, relative to 2020 levels; the cap is expected to be, at this point, 3.5%. The proposed changes also include the addition of an Emissions Containment Reserve (ECR) wherein states can withhold allowances from auction if emission reduction costs are lower than projected.</p> <p>DEQ agrees that leakage is a concern; however, RGGI is structured such that leakage is monitored for and the program is adjusted as needed. As discussed elsewhere, an updating output system incentivizes in-state generation, thus also addressing leakage.</p> <p>RGGI is also designed to minimize economic impacts and keep compliance costs low, and DEQ believes that the market-based trading mechanisms in the proposal will accomplish the same. Routine program review will identify and correct problems should they occur.</p>
<p>28. Environmental Defense Fund (EDF)</p>	<p>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 CO₂ emissions with tradable compliance instruments are a cost-effective approach to achieve carbon pollution reductions</p>	<p>The proposal will enable the implementation of a strong, market-based mechanism for controlling carbon, i.e., linking to RGGI and establishing a consignment auction. The benefits of such an approach, as discussed by the commenter, are recognized.</p> <p>DEQ agrees that the reduction of carbon must be approached holistically. The specific purpose of the regulation is to address one element of that goal.</p>

	<p>with flexibility for regulated entities to pursue the lowest-cost abatement opportunities. EDF encourages 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.</p> <p>The regulation should cover all existing and new electric power facilities in Virginia that emit CO₂. Further, although this regulation 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 CO₂ emissions in 2014.</p> <ul style="list-style-type: none"> • DEQ should set stringent carbon emission limits over a transparently determined baseline. Emission limits (the cap) should result in concrete reductions in CO₂ emissions from the electric power sector below a business-as-usual baseline over the course of the program. DEQ should work with stakeholders to incorporate robust and reliable assumptions into a credible energy and economic modeling framework to establish a business-as-usual 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 accessible. Transparent market design and implementation is important to assure fairness and certainty, and reduce transaction costs for market participants. Stakeholders, 	<p>As discussed elsewhere, leakage is an issue that is addressed by the updating output approach, which incentivizes in-state generation. RGGI also monitors for leakage via its regular program review process. Other market-based programs may become attractive in the future and will be considered at the appropriate time; at this stage, linking with RGGI is the most secure and reasonable approach.</p>
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	<p>evaluators, and members of the public should be able to assess the progress toward 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, and California posts a variety of market information about its program.</p> <ul style="list-style-type: none"> • 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 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. Virginia should 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. 	
<p>29. EDF</p>	<p>DEQ should engage with and address concerns of environmental justice and disadvantaged communities throughout development and implementation of the program. EDF urges DEQ to</p>	<p>DEQ will, as provided in the Public Participation Guidelines, provide opportunity for public comment on the impacts of the proposal.</p> <p>It is important to note that CO₂ is not a criteria</p>

	<p>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 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.</p>	<p>pollutant and is thus not subject to a health-based standard. Unlike a conventional criteria pollutant such as NO_x or SO₂, CO₂ disperses quickly and does not create "hot spots" or localized problems. Fossil fuel-fired units are also subject to a host of other regulatory and permitting requirements that control emissions of criteria pollutants. Ultimately, the control of CO₂ will reduce global warming impacts and concomitant welfare impacts on disadvantaged communities.</p> <p>Also note that Virginia is a "regulated" state and as such relies on the Virginia SCC to safeguard Virginia's electricity consumers.</p>
<p>30. Lena Lewis</p>	<p>The cap must be set to reduce carbon emissions significantly. Virginia is a part of the Climate Alliance of States that have pledged to uphold the Paris Climate agreement, under which the U.S.'s was to reduce GHG by 26% of 2005 levels by 2025. This level of reduction puts Virginia on a path toward an 80% reduction. This pledge should determine the setting of the Virginia's carbon cap. Given that no other regulation has been put forward yet to reduce carbon emissions or other GHG emissions from other sectors of Virginia's economy, the majority of emissions cuts must come from the electricity sector. Some business-as-usual projections indicate that power sector carbon emissions will drop even without regulation. However, decreasing the rate of yearly emissions will not avert climate change if the emissions per year exceed the capacity to remove CO₂ from the atmosphere. The purpose of the cap is to put downward pressure on carbon emissions. The cap should decrease predictably and annually so that utilities can make long-term plans to reduce carbon. Reliable data is essential to setting the cap and allocating emission allowances effectively. Data must be sourced and</p>	<p>The cap will be set to reduce carbon emissions significantly, as consistent with the RGGI program. The updating output approach as well as the RGGI program review process will ensure that Virginia's carbon reductions are monitored and demonstrate continual effectiveness.</p>

	<p>analyzed by an independent, objective entity.</p>	
<p>31. Lena Lewis</p>	<p>Allowances should be distributed so that new generators, especially those that do not emit CO₂, are able to enter the market on a level playing field with incumbent generators. Locking in allowance distribution based on historic emissions rates of incumbent generators would fail to shift Virginia’s power sector to lower carbon emissions in a fair, effective, or economically efficient manner.</p> <p>Distributing allowances based on updated energy output rather than on historic carbon emissions would create the incentive to lower carbon emissions. Each year, an energy generator would receive carbon allowances proportional to the previous year’s energy output, while decreasing over time as the cap is lowered. Generators that generate a lot of low-carbon energy would receive more allowances than they would need, and could earn revenue by selling allowances to generators that emit more carbon. As the cap is lowered and allowances become more expensive, high-carbon generators will have the financial incentive to find a less carbon-intensive method of electricity generation.</p> <p>Energy output should be measured based on electricity consumed by customers, rather than all electricity generated by the supplier. This encourages generators to burn only enough fuel to meet consumer demand, while discouraging them from burning excess fuel for the purpose of increasing the next year’s allocation of allowances. Generators receiving free allowances from the government must be required to sell all of their allowances, and then buy back their needed allowances.</p> <p>Linking with a preexisting carbon market would minimize emissions leakage and reduce costs to</p>	<p>Consistent with RGGI, the proposal is based on an updating output distribution approach, not historical. The benefits of an updating output approach are discussed elsewhere. Generally, Virginia’s program will align with RGGI and its 3-year program review in order for the programs to operate in sync and, therefore, efficiently and effectively.</p> <p>Conditional allowances will be distributed to CO₂ budget units and DMME. These conditional allowances will then be consigned into auction, after which the conditional allowance becomes an allowance to be used for compliance purposes.</p> <p>DEQ agrees with the commenter that linking with RGGI will minimize leakage and stabilize costs. Linking to a market will increase the number of allowance trades, which will lead to price discovery of the true value of an allowance and increase economic efficiency; this is also true of the proposed consignment auction for the distribution of allowances.</p>

	<p>ratepayers, assuming that revenue is used to benefit ratepayers. Linking to a market will increase the number of allowance trades, which will lead to price discovery of the true value of an allowance and increase economic efficiency.</p>	
<p>32. Lena Lewis</p>	<p>The size of one carbon allowance, the timing of allocation distribution, the 3-year period in which power plants have to retire their allowances, a price floor, a program review, and other characteristics should synch with RGGI's schedule and parameters. Virginia must work with RGGI states to ensure that linking with their carbon market does not adversely affect their own emissions reductions or economies. Program review at regular intervals is needed to ensure that the cap is at an effective level to apply pressure to reduce carbon emissions and to improve program design.</p>	<p>By linking to RGGI, Virginia is committing to meet RGGI's overall structure and goals, including program review.</p>
<p>33. Lena Lewis; SELC</p>	<p>Allocation of tradable carbon allowances should be designed to lower carbon emissions in an economically efficient manner while also protecting residents from increased energy costs.</p> <p>Investor-owned utilities need to use revenues from allowance sales to keep rates low for customers, rather than add to their profits. Co-ops can use their allowance revenues to the benefit of their member-owners.</p> <p>The creation of a new market means the creation of new revenue. In no way should this revenue be permitted to increase investor-owned utility profits at the expense of ratepayers. Allowance recipients must consign all of their allowances to an auction. Allowances can be granted to generators based on the previous year's electricity output (not carbon emissions), and generators would be required to sell all of their allowances. Generators that use carbon-intensive sources would have to buy back allowances from the market. Generators with lower-carbon or zero-carbon</p>	<p>As discussed elsewhere, the energy market is regulated in Virginia by the SCC.</p> <p>The EO 57 Work Group recommended that the Governor convene an Environmental Justice Advisory Council (EJAC); see the response to comment 29.</p>

	<p>sources would not have to buy back so many allowances from the market, lowering their costs and increasing their revenue.</p> <p>Utilities must be required to report revenue from the carbon market to the SCC, and then apply that revenue toward offsetting the costs of buying allowances, thus keeping electricity rates as low as possible.</p> <p>Some of the revenue from allowance sales may need to be designated to offset the disproportionate effect of higher electricity rates on low-income customers. Any utility company claiming that carbon allowances are causing their electricity rates to increase must use carbon-market revenue to create utility-funded programs paying for energy efficiency improvements for low-income customers. Should electricity rates pass a certain threshold, utility companies should be required to provide direct assistance on electricity bills of low-income customers.</p> <p>Positive or neutral Impact on frontline communities is essential. As the cap for carbon emissions is lowered, it will create additional benefits of reducing associated co-pollutants that cause health problems in communities close to their source. DEQ needs to listen to and address the concerns of environmental justice advocates.</p>	
<p>34. Lena Lewis</p>	<p>Allowances should be fully bankable. Once generators have sold their allocated allowances, allowance owners should be permitted to save their allowances to use or sell when the price increases. Reducing emissions today will have the biggest environmental impact. CO₂ stays in the atmosphere a long time, and GHGs create an ever-accelerating greenhouse effect. If an owner of an allowance banks it, that is one unit of CO₂ not released today, which is more beneficial than a unit</p>	<p>The benefits described by the commenter will be realized in Virginia through linkage with RGGI.</p>

	<p>of CO₂ not released in the future.</p> <p>Virginia must have a reliable long-term market so that generators, utilities, residents and traders on the secondary market can make long-term plans to reduce carbon. Faith in continued existence of carbon cap-and-trade will reduce price volatility, encourage banking, and encourage investment in long-term in emissions reduction strategies .</p> <p>Transparency of prices, emissions, and compliance behavior will protect residents and build trust in the efficacy of the system. Buyers, sellers, and interested observers need to know prices on both the primary and secondary markets. The public needs proof that the program is working to lower emissions over time. For example, RGGI posts the results of its quarterly auctions, secondary markets, and yearly emissions data.</p>	
35. Lena Lewis	<p>Allowances should be fully tradable between power plants and any public or private entity, including individuals, both in-state and out-of-state. More trading leads to price discovery and a more economically efficient use of allowances.</p>	<p>A consignment auction has been determined to be the best method of dealing with allowances in Virginia.</p>
36. Lena Lewis	<p>Units that co-fire eligible biomass should be required to purchase allowances for all CO₂ emitted. The climate will react the same way to increased concentrations of CO₂, irrespective of its source. Likewise, waste-to-energy units that burn otherwise recyclable trash should fall under the same regulations.</p>	<p>Units that co-fire eligible biomass will be required to purchase allowances for all CO₂ emitted. Waste-to-energy units are not addressed in the RGGI model rule, and DEQ believes it is not appropriate to cover them in this rule at this time.</p>
37. Lena Lewis	<p>Carbon offsets are needed in addition to emissions reductions, not in place of them.</p>	<p>Although carbon offsets are allowed for, they have never been used in RGGI. Offsets were therefore not considered for the Virginia program.</p>
38. LoudounPACE	<p>Create rules that require reduction of use of all energy from Virginia's carbon producing power plants and reduces carbon pollution from those plants. Address disproportionate environmental and financial effects experienced by vulnerable communities by developing and promoting residential PACE</p>	<p>Linking to RGGI will effect carbon pollution reductions from Virginia's power plants. Other suggestions offered by the commenter are not directly germane to the goal of meeting ED 11 and linking with RGGI. Because RGGI is a market-based cap-and-trade program, the commenter's other suggestions are best addressed via the SCC and DMME. Additionally, consumer concerns are also</p>

	<p>programs to dramatically reduce energy consumption, thus lowering carbon footprints and energy costs. Grow the economy and reduce carbon pollution by maximizing investments in energy efficiency. Delete requirements for RECs and replace them with cost indexed carbon credits. Low cost per credit carbon reduction should sell for highest prices, preferably solar and wind. Work toward a Virginia carbon tax and dividend plan as put forward by the Citizens Climate Lobby.</p>	<p>discussed in greater detail in the response to comment 29.</p>
<p>39. Joy Loving</p>	<p>Monies derived from the cap must not go to the utilities, but should be distributed to all Virginians, with the following exceptions: A. Specify that the funds be designated for programs through which utilities will provide direct fuel assistance to those in need. B. Require utilities to establish and maintain effective energy efficiency programs enabling customers to cost-effectively reduce their energy usage; such programs should provide on-bill financing for such customers and should provide to those in need no/low cost energy efficiency upgrades. C. Require utilities to establish programs to offer options for renewable energy, including customer-owned community solar and other distributed renewable energy methods. Authorize utilities to facilitate customer participation through such mechanisms as on-bill financing. D. Require utilities to fund resilience programs to enable vulnerable communities to prepare for and ameliorate the worst effects of severe weather and other consequences of climate disruption. E. Require utilities to establish re-training to employees displaced by the transition from fossil fuel to renewable programs, by sponsoring and funding educational opportunities in affected communities, working through the Virginia colleges and universities.</p> <p>The regulations must provide that</p>	<p>A consignment auction is revenue neutral, which is why it was selected for the Virginia program. Utility programs as described by the commenter are directly managed by the SCC and DMME.</p>

	<p>utilities cannot charge customers who participate in any of these programs extra fees such as standby charges, net metering caps, or similar disincentives. If monies from the cap don't flow to utilities, then the state of Virginia should establish the programs described above.</p>	
40. Joy Loving	<p>Examine all available models for regional and state cap and trade or fee and dividend programs to identify strengths and weaknesses. Such programs include RGGI, the Western Climate Initiative, Southwest Climate Change initiative, etc. Work to find the best design from all models. Consult with PJM and representatives of all of its utilities, including municipals and co-ops.</p>	<p>It has been determined that linking to RGGI will be the most expeditious, practical, and effective means of reducing carbon emissions via a trading program. Although future participation in other programs is not ruled out and may occur at some later date when conditions warrant, ED 11 currently requires that Virginia link to RGGI.</p>
41. Natural Resources Defense Council (NRDC)	<p>The emissions limit must reduce emissions significantly below business-as-usual over the course of the program. To determine business-as-usual emissions and annual reduction levels, reliable, non-biased data and projections must be used to establish a baseline that is not artificially high, and to set a cap and meaningful annual reductions that protect human health. DEQ should rely on transparent estimations of least-cost estimates of what Virginia's business-as-usual emissions will likely be in year 1 of the program. Similarly, DEQ should avoid biased emissions projections that appear to be set unrealistically high.</p>	<p>Virginia is linking to RGGI, which, at this time, has proposed a regional cap trajectory that will provide an additional 30% cap reduction by the year 2030, relative to 2020 levels.</p>
42. NRDC	<p>Ensure the economic efficiency of the program by directing allowance value to consumer benefit, rather than toward utility or generator profit. Avoid imposing costs on ratepayers by awarding allowances directly to emitting generators for free. Doing so would allow the ultimate price of those allowances to flow to ratepayers in the form of higher wholesale electricity costs, while providing an unreasonable windfall profit to generators. To ensure economic efficiency and a transparent, undistorted allowance price that levels the playing field for</p>	<p>Virginia's consignment auction is revenue neutral. Also note that Virginia is a "regulated" state and as such relies on the Virginia SCC to safeguard Virginia's consumers. The distinct regulatory roles of DEQ and the SCC work in harmony such that pollution will be reduced from electricity generating units while protecting the users of that electricity.</p>

	<p>all generators, and to achieve maximum economic efficiency for citizens through allowance allocation, a standing Clean Energy Virginia Stakeholder Advisory Group should be established. The group's purpose would be to ensure the overall program and use of revenue is functioning transparently, efficiently, and effectively.</p>	
<p>43. NRDC</p>	<p>Maximize the environmental and climate change benefits of the program while avoiding market distortions and program inefficiency by including carbon emissions from forest-derived biomass generation within the carbon program and related emissions budgets.</p> <p>When establishing the statewide limits on CO₂, ensure that emissions from the combustion of forest-derived biomass to produce electricity - either through cofiring or in stand-alone plants - fall under the statewide emissions cap. EGUs that burn forest-derived biomass must hold allowances equal to stack emissions from that combustion, for several reasons. Forest-derived biomass is not a carbon neutral fuel and its emissions cannot be discounted based on anticipated future mitigation through forest regrowth or avoided decay. In addition, forest sustainability certification schemes or other standards offer little information about carbon emissions from biomass burning and are in no way a proxy for carbon neutrality. Moreover, interstate trading of allowances with RGGI states does not prevent Virginia from including biomass under its own carbon emissions limit.</p>	<p>Consistent with RGGI, biomass-only generating units are not covered by this rule. Fossil fuel-fired units that co-fire biomass must account for their CO₂ emissions and obtain allowances accordingly.</p>
<p>44. NRDC</p>	<p>Ensure integrity of the program is not eroded by emissions leakage by designing an economically efficient program with minimal market distortions; that maximizes consumer benefits through efficiency investments; and drives significant levels of in-state renewable energy development.</p>	<p>As discussed elsewhere, the output updating approach will encourage in-state power development, thus reducing the possibility of leakage; RGGI's program is review is also designed to detect and address leakage issues.</p>

	<p>These will deliver least-cost carbon reductions and lessen the impact of carbon prices on carbon-based power flows across state lines. Leakage can be minimized through development of Virginia’s untapped, clean resources like solar and energy efficiency. As indicated in NRDC’s modeling, imports of electricity decrease under a carbon limit, rather than increase, largely due to a buildout of native energy resources, rather than more costly electricity imports. Achieving this energy independence helps prevent leakage by obviating the need for electricity from outside the state. To ensure the program does not inadvertently lead to increased fossil-based electricity imports from out-of-state, DEQ should establish an annual program review process for the duration of the program, to assess whether interstate power flows are shifting as a result of the carbon price. This work could be incorporated into the Clean Energy Virginia SAG.</p>	
<p>45. NRDC</p>	<p>Allowances should comport with and be fully tradable on RGGI’s pre-existing platform, which has low administrative costs and robust cybersecurity.</p>	<p>RGGI’s platform does have low administrative costs and robust security, which is one of RGGI’s several attractive features.</p>
<p>46. NRDC</p>	<p>Climate change is a fundamental environmental justice issue, as coastal communities and low-income communities ultimately bear the worst brunt of its impact. Therefore, the program should make significant cuts to CO₂ and ensure the consumer and energy efficiency benefits flow to the low-income citizens most impacted by climate change and energy costs.</p> <p>Additionally, because CO₂ is not harmful in locally higher concentrations, and there do not appear to be specific Virginia plants in proximity to at-risk communities whose capacity factors would increase under a carbon program, a carbon market in Virginia appears unlikely to create hot spots in frontline communities. As the cap for carbon emissions is lowered, it</p>	<p>As discussed in the response to comment 29, the EO 57 Work Group recommended that the Governor convene an Environmental Justice Advisory Council (EJAC). Also note that CO₂ standards are not a health-based, and that CO₂ does not create localized pollution problems; rather, control of CO₂ will help control global warming and its impacts on disadvantaged communities. The commenter correctly asserts that CO₂ is not harmful in locally higher concentrations.</p> <p>Additionally, routine program reviews provide the opportunity for any affected communities to bring attention to any potential issues.</p>

	<p>can also create additional benefits of further reducing associated co-pollutants in communities close to their source.</p> <p>The regular program review must incorporate an environmental justice review, to confirm that local co-pollutants are being reduced as predicted and that the program is not imposing an impact on any local community.</p>	
47. NRDC	<p>Any new market will need to be adjusted to ensure it is functioning efficiently and is driving significant and additional carbon pollution reductions. Program reviews can ensure that the cap is set at the correct level to reduce carbon emissions well beyond business as usual, while maximizing the development of a clean energy economy in the state. Virginia's program should undergo internal review on a regular basis, consistent with RGGI.</p>	<p>Virginia's program will undergo internal review on a regular basis, compatible and consistent with RGGI's program review process.</p>
48. NRDC	<p>NRDC retained ICF International to conduct NRDC's analysis of a RGGI-linked Virginia carbon cap and subsequent reductions, by utilizing ICF's Integrated Planning Model. NRDC's modelling indicates that capping carbon in Virginia with a well-designed program will significantly reduce carbon emissions, and at the same time drive significant economic benefits for families and ratepayers; promote energy diversity and independence; and improve public health by lowering total co-pollutants across the state.</p>	<p>These objectives will be achieved via linkage with RGGI.</p>
49. NRDC	<p>The program should be assessed by the consumer benefit delivered from such a plan: all emissions allowances have a dollar value as "discovered" in the marketplace. In a freely-transferrable market, a dollar value for emissions allowances will develop without government intervention.</p> <p>After allowance allocation, buyers and sellers, often with the help of emissions brokers, set a market price. The market then leaves plant</p>	<p>Virginia's participation in RGGI is posited on a revenue-neutral consignment auction. Also note that Virginia is a "regulated" state and as such relies on the Virginia SCC to safeguard Virginia's electricity consumers.</p>

	<p>owners with 2 options: (1) maintain emissions levels and purchase allowances or (2) reduce emissions levels and sell allowances to other plant operators for whom it is more cost effective to purchase allowances. In this market-based approach, the emissions reductions occur where cost-effective, and the allowances flow to the plants that will use them in a way that minimizes overall costs, while ensuring flexibility and reliability.</p> <p>Regardless of how the allowance was procured, the dollar value of each held allowance must be included by generators in their wholesale market bids to PJM. The value of allowances utilized by carbon emitters are then recouped by the generator when the electricity is sold. If DEQ does not design a carbon regulation and allocation method that ultimately delivers that allowance value back to the consumer, such a giveaway would serve as a publicly-subsidized windfall to generators, while consumers are saddled with higher costs. The program should be judged by the standard of whether or not the inherent full market value of allowances can be recovered from the generator that receives the electricity payment, and then reinvested in rebates, renewable energy, energy efficiency, and other investments that minimize compliance costs and maximize benefits to Virginia families. Conversely, the program should not allow the market value of allowances to accrue directly to generators as windfall profit, with no benefit to consumers to offset the higher wholesale electricity cost.</p>	
<p>50. NRDC</p>	<p>DEQ must decide in advance how it will initially allocate allowances. DEQ should ensure the inherent market value of the allowances accrues to Virginians and the Virginia economy, rather than result in a windfall to generators by distributing them to polluters for free; such an outcome would</p>	<p>Conditional allowances in the Virginia program will be allocated to fossil fuel-fired units as they are the regulated entity in the program. Consumer protections and energy efficiency efforts are under the purview of the SCC and DMME.</p>

	<p>equate to customers in Virginia transferring millions of dollars from their pockets to the balance sheets of generators. For example, according to the projected carbon allowance price of \$3.90 in 2030, the value of Virginia's allocated 23.5 million allowances in 2030 would be over \$90 million in that year. Generators will likely claim that they need allowances to fund their investments in equipment to reduce emissions, but because they are reimbursed for the allowance cost in the wholesale market, free allocation would result in "double payment," at the expense of the consumer.</p>	
<p>51. NRDC</p>	<p>DEQ could allocate allowance value on a pro rata basis to consumers via a consignment auction on behalf of electric distribution companies. Allowances would be distributed based on each company's percentage of total state load. In this approach, the dollar value of the allowances (as determined in the consignment auction) can return to electric billpayers via their distribution company, under the oversight of state regulators and other oversight bodies. The allowances are allocated on a pro rata basis to consumers via the distribution companies, based on each company's percentage of total state load. How those allowances are utilized would be overseen by the SCC, in consultation with DEQ, utilities, efficiency providers, DMME, consumer advocates, and other stakeholders. Given the range of generator types and ownership structures, allowances should be sold in a transparent and open manner, with regulated monopoly generators competing in an open, transparent market with merchants. Sale and transfer of money from any one regulated monopoly affiliate to another should be supervised by the SCC.</p> <p>The SCC would ensure that revenues from any allowances sold accrue to utility bill payers' benefit.</p>	<p>The SCC, as the commenter correctly asserts, monitors generation and related consumer issues.</p>

	<p>The SCC likely has sufficient authority to decide directly how the allowance revenues are utilized, to ensure maximum ratepayer benefit. Such benefits could take the form of cost-effective energy efficiency investment to lower customer bills (as well as further reduce carbon emissions from that distribution company); direct bill crediting; or investment in the most cost-effective zero-emissions resources to further reduce emissions and thus free up additional allowances. In RGGI, there have been significant benefits delivered to consumers as a result of investments of allowance proceeds. In the event Dominion or APCo must purchase allowances to meet the permitting obligations of one of their generators, SCC oversight can assure that such a decision to comply was the least-cost means available to the utility for meeting its generator's emissions obligations.</p> <p>Municipal boards and co-op boards would serve in a similar capacity, ensuring that any revenues or costs associated with allowances serve the best interests of their bill payers. Merchant generators would be assured access to allowances through sale of allowances by the distributions companies and the subsequent open allowance market.</p> <p>This approach is preferred for its efficiency. Administratively, DEQ already has experience with a similar NO_x allowance allocation and auction. Oversight bodies (the SCC and muni and co-op boards) are in place to ensure that allowance costs and related generation and compliance decisions are prudently incurred, and that any revenues are re-invested in such a way that serves the bill payers' best interests.</p>	
<p>52. NRDC</p>	<p>Another approach to maximize economic value of allowances is to allocate them to all generators of electricity or electric savings,</p>	<p>In order to meet the requirements of ED 11 and to link with RGGI, only fossil fuel generators are subject to the rule. Consumer protection is the purview of the SCC, not</p>

	<p>including fossil generators, non-emitting generators, and verifiable energy efficiency providers. The marketplace would determine the allowance prices, with additional revenue through allowance trading and the energy markets flowing from higher carbon emitters to zero-emitting resources. In that way, the value of the allowances flows indirectly to the consumer, through the lower energy costs of additional zero-emitting resources and additional energy efficiency. However, electricity customers would not directly receive the benefit of allowance-related revenue, nor receive the benefit of oversight of the disposition of such revenues.</p>	<p>DEQ. Note that no new source set-aside is being proposed. This will ensure a level playing field for renewable energy projects when they enter the market.</p>
<p>53. NRDC</p>	<p>Allocation of allowances directly to fossil emitters would allocate allowances directly to fossil generators, based on each generator's share of total emissions. This is the least economical method, because neither the state nor the bill payers recover any value; that value remains a windfall to generators and utilities. While the value of allowances would be included in PJM wholesale bids, no mechanism exists to ensure that recouped value is returned to the final electricity customer. This windfall would create transfer payments from customers to generators. If DEQ pursues this approach, it should be acknowledged that the state has made a direct decision to transfer the potential \$90 million value of allowances in 2030 from the businesses and families of the state directly to the pockets of the power plant owners.</p>	<p>As discussed elsewhere, Virginia's consignment auction will be revenue neutral and no windfalls of any kind are expected. It is the role of the SCC role is to ensure that electricity customers are protected.</p>
<p>54. Southern Environmental Law Center (SELC) and the Virginia League of Conservation Voters</p>	<p>The regulation should cover any electric power facility that emits CO₂, regardless of fuel type, size, or date of construction and operation. EO 11 clearly states that the proposed regulation should "abate, control, or limit CO₂ emissions from electric power facilities." The only way to meaningfully achieve reductions in</p>	<p>As required by ED 11 and RGGI, fossil fuel-fired electric generation is the only type of generation covered by the rule; however, also note that there is no new source set-aside.</p> <p>By linking to RGGI, all fossil fuel-fired carbon-emitting electric generating units above 25 MW will be required to comply with the cap. Fossil fuel-fired units that co-fire biomass must account for their CO₂ emissions and</p>

	<p>total statewide carbon emissions is to cover all sources of carbon emission. If the regulation covers only currently-operating power plants, it will create a market perversion that incentivizes shifting generation to new power plants that the regulation does not cover. Not only will this shift undercut the fundamental purpose of reducing total emissions, it will also impose wholly unnecessary construction costs on Virginia electric customers as power generators invest billions of dollars of capital in otherwise redundant power plants.</p> <p>Likewise, the regulation should be blind to fuel type. To ensure complete reductions, the regulation should apply with equal force to any power plant that emits carbon.</p> <p>Finally, the regulation’s scope should apply more broadly than the federal CPP. As can be seen from Dominion’s 2017 IRP, it now proposes to build between 1,374 MW and 2,290 MW of new gas-powered combustion turbines (CTs). CTs are far less efficient than state-of-the art natural gas combined cycle plants, but because the now-defunct CPP did not apply to CTs, there existed a perverse incentive to build less-efficient power plants solely because they fell outside the CPP’s orbit. DEQ should not allow this regulation to create similar market distortions and should cover all substantial carbon-emitting power plants. For instance, DEQ could follow RGGI and require all carbon-emitting power plants above 25 MWs to comply with the cap.</p>	<p>obtain allowances accordingly.</p>
<p>55. Sierra Club</p>	<p>The rule should apply to both new and existing sources and implement a declining mass-based cap that reduces CO₂ emissions from covered electric generation.</p>	<p>In order to link to RGGI, the proposal meets these criteria.</p>
<p>56. Sierra Club</p>	<p>The cap should decline steadily from the beginning of the program, and early CO₂ reductions should be incentivized. The aggregate cap should reduce emissions by the</p>	<p>The RGGI states have proposed, as of this writing, a regional cap trajectory that will provide an additional 30% cap reduction by the year 2030, relative to 2020 levels. The proposed regional program changes include</p>

	<p>greater of (a) 33-40% from 2015 levels by 2030 or (b) the level required to join a trading regime. The rule should require continued steady reductions through 2050 (to 80-95% of 2015 levels) subject to the possibility that the rate of reduction may be adjusted based upon experience new scientific evidence. An annual reduction of the cap for new and existing generation by approximately 1MM tons from a starting point based on 2015 emissions from covered sources illustrates a reasonable reduction path for interim (2030) and long-term (2050) purposes. Long-term investments (40-60 years for much generation) need long-term guidance.</p>	<p>the addition of an Emissions Containment Reserve (ECR) wherein states can withhold allowances from auction if emission reduction costs are lower than projected. The proposed ECR is an innovative way to adaptively respond to supply and demand in the market. When this program is finalized, Virginia will align the regulation to meet any new requirements of RGGI states.</p>
<p>57. Sierra Club</p>	<p>The basic elements of the proposed rule should be compatible with the operations and standards of RGGI. This would include the definitions of allowances (one short ton of CO₂), retirements matching emissions, adoption of key elements of RGGI's tracking and accounting system, etc. This would enable Virginia generators to trade within the state from the start (whether or not we join or link to RGGI), and within RGGI if a linkage or membership agreement is reached. Creating an incompatible program would be costly and not trading ready.</p>	<p>The commenter is correct that linking to RGGI is desirable, and that has been selected as the optimal path forward.</p>
<p>58. Sierra Club</p>	<p>Allowances can be allocated in several possible ways. We recommend that allowances be auctioned to all generators, with revenues being allocated among utilities or others in a manner that helps to achieve the rule's objectives. Some allowances should be held in reserve for possible distribution in order to stabilize markets or address other emergencies.</p>	<p>Conditional allowances will be allocated to the covered units via an update output approach. As discussed elsewhere, RGGI has built various protections into the program, such as the ECR, to ensure a stable market. Conditional allowances will be distributed to CO₂ budget units and DMME for consignment an auction, after which the conditional allowance becomes an allowance that can be used to demonstrate compliance.</p>
<p>59. Sierra Club</p>	<p>Program progress must be closely monitored and reported. This includes, for example, for results (prices, transfers, banks, and emissions), procedures and unintended consequences (e.g., pollution hot spots, market manipulation, emergencies, etc.).</p>	<p>DEQ agrees that program progress must be closely monitored and reported. RGGI's review process is robust and transparent, which is one of the reasons linking to RGGI is desirable.</p>

	There should be periodic evaluations and, if needed, amendments should be made to reflect market experience and to improve outcomes.	
60. Sierra Club	Efforts should be made to join or link to a mass-based trading market, such as RGGI. A larger market will lower the costs and provide greater flexibility for market participants. There is no merit to the suggestion that RGGI is problematic because its members retail rates are higher than Virginia's. If anything, their higher energy prices will put downward pressure on CO ₂ prices that markets will tolerate and that would benefit a lower cost state such as Virginia. Nor would there be loss of control as RGGI is a voluntary, collaborative organization.	Linking to RGGI has been determined to be the best path forward for effectively controlling carbon emissions.
61. Sierra Club	The final rule should be completed in 2018 and implemented in 2019.	The regulation is being developed as expeditiously as possible under the requirements of the Administrative Process Act.
62. Sierra Club	Issues pertaining to leakage – growth in GHG emissions incentivized but not covered by the rule – should be addressed in separate proceedings.	As discussed elsewhere, there are several safeguards built into the proposal and consistent with RGGI that will limit leakage.
63. Sierra Club (1,269 sponsored emails)	I am glad to see Virginia taking steps to cut carbon pollution to combat climate change, despite Trump's continued attacks on environmental protections. I am eager to see the state produce a strong, equitable, and scientifically sound plan to reduce greenhouse gas emissions. I request that DEQ use its authority to: Create a rule based on the strongest available science that significantly reduces carbon pollution from Virginia's power plants; ensure that Virginia residents benefit from any profits from carbon standards, especially front-line communities; address the disproportionate environmental burdens experienced by vulnerable communities; grow the clean energy economy by maximizing investments in zero-carbon wind, solar, and energy efficiency; and provide accessible public hearing opportunities in the evenings in	Support for the regulatory action is appreciated.

	<p>multiple parts of the state to ensure all Virginians can fully participate in the rule-making process.</p>	
<p>64. 350 Central Virginia</p>	<p>Support limiting carbon pollution of power plants via a cap and trade program. The rule should use the best science available, and set up a capping system that will reduce carbon emissions over time as stringently as RGGI does, after a short lead-in period, in order to be effective. A rule that mandates that allowances received must be traded rather than directly used would be preferable. Apportionment of allowances should be based on amount of power supplied to ratepayers the previous year, not on emissions, and non-fossil fuel plants should receive allowances equally with fossil fuel plants. If possible, the rule should mandate that the net financial benefits of trading allowances be returned to the ratepayers.</p>	<p>Virginia is linking to RGGI, which is a well-established, effective cap-and-trade program. As discussed elsewhere, conditional allowances will undergo a consignment auction in order to become an allowance that can be used to demonstrate compliance.</p>
<p>65. University of Virginia Environmental and Regulatory Law Clinic</p>	<p>The Clinic presented to the Governor's EO 57 Work Group on "Opportunities to Address Carbon Pollution Under Existing State Law." The Clinic followed its presentation by submitting written comments to the Work Group. State law establishes a process for the adoption of regulations that are more stringent than applicable federal requirements. See Va. Code § 10.1-1308 A. Correspondingly, the federal Clean Air Act contains a states' rights savings clause, which allows states to promulgate their own, more stringent, air pollution regulations. See 42 USC 7416. The Act's citizen suit provision, 42 USC 7604(e), confirms that federal law does not restrict any right to enforce state standards.</p> <p>The Clinic's comments, however, also caution that establishing a multi-state trading program might present challenges, especially if the program were directly regulating out-of-state sources in a manner that conflicted with the law of the source state. In North Carolina, the Fourth Circuit found that regulated</p>	<p>Virginia will not be regulating out-of-state electric generating units.</p>

	<p>sources covered by a state-specific program must be within the state's boundaries: "only source state law ... could impose more stringent emission rates than those required by federal law on plants located in those ... jurisdictions." The court relied, in part, on International Paper Company v. Ouellette, which held that the Clean Water Act "precludes a court from applying the law of an affected State against an out-of-state source. ... If a New York source were liable for violations of Vermont law, that law could effectively override both the permit requirements and the policy choices made by the source State."</p> <p>The state would need to consider the impact of this case law as it evaluates options for developing a trading-ready program that accounts for CO₂e allowances in a multi-state trading program. Dominion's Mount Storm Power Station in West Virginia, for example, might need to be excluded from such a program.</p>	
<p>66. Virginia Conservation Network (551 sponsored emails)</p>	<p>As Virginians, we appreciate the initiative taken by Governor McAuliffe/support Governor McAuliffe's leadership in the fight against climate change, but we know our work does not stop here. We request that DEQ use its authority to: Create a rule--based on the strongest available science--that significantly reduces carbon pollution from Virginia's power plants; ensure that Virginians--not utilities--benefit from any profits from carbon regulations; address the disproportionate environmental effects experienced by our most vulnerable communities; and reduce carbon pollution by incentivizing investments in zero-carbon solar, wind and energy efficiency.</p>	<p>Support for the regulatory action is appreciated.</p>
<p>67. Virginia Conservation Network (349 sponsored emails)</p>	<p>I am glad to see Virginia taking steps to cut carbon pollution in an effort to comply with the Paris Climate Accord. I am very excited for the state to create a plan that provides an equitable and just cap</p>	<p>Support for the regulatory action is appreciated.</p>

	<p>that will significantly reduce greenhouse gas emissions. To ensure that the policy best benefit Virginians, DEQ should: create a rule based on the strongest available science that significantly reduces carbon pollution from Virginia's new and existing power plants; ensure that Virginians--not utilities--benefit from any profits from carbon regulations especially our frontline communities; address the disproportionate environmental effects experienced by our most vulnerable communities; grow the economy and reduce carbon pollution by maximizing investments in zero-carbon wind, solar, and energy efficiency; and provide a transparent and accessible public process where all concerned Virginians can fully participate in the rulemaking process.</p>	
<p>68. Virginia League of Conservation Voters (214 sponsored emails)</p>	<p>I'm writing today to voice my support of a regulation in Virginia that cuts carbon pollution from power plants and allows us to trade carbon allowances with other states. With no help coming from the federal level in addressing climate change, it's up to states like Virginia to act. By cutting carbon emissions in Virginia, we have the opportunity to protect public health and safety while also creating jobs in the carbon-neutral renewable energy and energy efficiency sectors. And because we're joining up with a coalition of other states with carbon caps, action we take here in Virginia is greater than the sum of its parts. Carbon trading also creates the opportunity to bring revenue back to the state to aid in clean energy deployment and resiliency, money we shouldn't leave on the table or gift to our utilities. I urge you to proceed with a strong regulation that shows Virginia is a leader in addressing climate change and takes its responsibility seriously.</p>	<p>Support for the regulatory action is appreciated.</p>
<p>69. Virginia Poverty Law Center (VPLC)</p>	<p>The VPLC is glad there will be more opportunities for jobs and growth moving forward. We hope that low-income Virginians will benefit from</p>	<p>The consignment auction under which allocations will be traded is designed to be revenue neutral. In other words, utilities will be allocated a share of conditional allowances</p>

	<p>the jobs and opportunities, not be left behind in the new energy economy. This is an opportunity to help those struggling to find well-paying jobs to secure a brighter future. We will not comment on how to allocate carbon credits or the levels or limits on those allocations. Our comments focus on what happens if and when there are excess credits when Virginia participates in a regional CO₂ trading system. We are not experts in energy, but from our analysis, there may be a day when Virginia utility monopolies have an excess of credits which when sold, would generate revenue. If funds are generated from the sale of such credits, any regulation should contemplate how those funds are used. What happens to the funds generated is of keen interest to us. Regulations should ensure such proceeds should not be ceded to the utility monopolies for distribution to their shareholders, rather, any proceeds should be returned to the electricity consumers, particularly low-income rate-payers. Whether by programs that help with energy efficiency, or direct rebates on bills, the regulations should return any excess profits go to the consumer. As energy costs are expected to increase over time, the VPLC has been working to ensure more programs are in place to help weatherize and make homes of low-income families more energy efficient to help stabilize utility costs. We believe that either programs that help with energy efficiency, or direct rebates to consumers, should be the focus of any funds generated by trading.</p>	<p>that they must sell into the auction, and auction revenue is returned to the consignee. The consignment auction helps set the price of an allowance, not realize profits. While DEQ agrees that protecting electricity customers is important, that role properly belongs to the SCC.</p>
<p>70. Virginia Clinicians for Climate Action</p>	<p>A warming world poses significant risks to human health: extreme weather events; heat illness; air pollution; allergies; food and water contamination and infectious diseases. These effects are felt disproportionately in vulnerable populations, including children, the elderly and the disadvantaged. Federal Agencies have issued</p>	<p>The commenter's concerns are well taken. EO 57 and ED 11 are a direct result of concern around these issues, which is why DEQ has begun the process of preparing a regulation that will control carbon pollution in Virginia via linkage to RGGI. Support for the regulatory action is appreciated.</p>

	<p>reports and programs that address the health threats posed to humans by a changing climate. Leading national medical organizations including the American College of Physicians, American Academy of Pediatrics, American Public Health Association, and others have published statements and resolutions recognizing the threat that the changing climate poses to human health and promoting physician engagement.</p> <p>Health systems and hospitals in Virginia are vulnerable to extreme weather events and storm surges, which can significantly compromise patient safety and access to care. Regions of coastal Virginia, some of which are sites of major military installations, are at high risk to sea level rise and storm surge associated with climate change.</p> <p>Climate change is likely affecting plant and animal species in Virginia. Reported cases of several vector-borne diseases increased by 2-14 fold between 2006-2015 in Virginia. Changes in the natural world ultimately affect the health, prosperity and quality of life.</p> <p>Summer heat is becoming more oppressive in Virginia and heat-related injury is a cause of illness and death in Virginians, with young athletes, outdoor workers and the elderly at particularly elevated risk.</p> <p>For these reasons, Virginia Clinicians for Climate Action, a coalition of over 100 clinicians across the state, supports the Governor's plan as protective of public health.</p>	
<p>71. Jon Ward</p>	<p>I encourage Virginia to implement a CO₂ cap-and-trade system that includes an Emissions Containment Reserve, such as that being discussed among the RGGI states, to reduce the allotment of CO₂ allowances if their price falls to a specified level, incentivizing the market to reduce emissions below</p>	<p>The RGGI states have proposed, as of this writing, a regional cap trajectory that will provide an additional 30% cap reduction by the year 2030, relative to 2020 levels. The proposed regional program changes include the addition of an Emissions Containment Reserve (ECR) wherein states can withhold allowances from auction if emission reduction costs are lower than projected. The proposed</p>

	<p>the cap if market conditions allow. In working with other states in setting the cap's aggressiveness, recognizes the particular vulnerability of Virginia's tourist, fishing, military, and agricultural industries to worsening climate change and sea-level rise.</p> <p>Follow and regularly adapt to guidance from global climate-science experts as to the level of emissions reduction needed to restrict GHG concentrations to internationally agreed upon targets.</p> <p>Consider well-to-plant methane leakage in the calculation of GHG emissions attributable to power plants.</p> <p>Direct proceeds of CO₂ allowance sales to energy-efficiency projects and fossil-industry-worker retraining, and not to electric utilities. Utilities earn a return on equity to cover risks such as regulatory changes, and Virginia utilities have continued to build gas and coal plants in the face of climate consensus and clear likelihood of future federal and state regulations.</p>	<p>ECR is an innovative way to adaptively respond to supply and demand in the market. When this program is finalized, Virginia will align the regulation to meet any new requirements of RGGI states.</p> <p>This proposal is a CO₂ rule, not a greenhouse gas rule, and as such methane will not be addressed in this rulemaking. Methane may be addressed in other venues in the future as appropriate.</p> <p>Energy efficiency projects are managed and evaluated by DMME. Utilities are governed by the SCC.</p>
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Family impact

Please assess the impact of this regulatory action on the institution of the family and family stability including to what extent the regulatory action will: 1) strengthen or erode the authority and rights of parents in the education, nurturing, and supervision of their children; 2) encourage or discourage economic self-sufficiency, self-pride, and the assumption of responsibility for oneself, one's spouse, and one's children and/or elderly parents; 3) strengthen or erode the marital commitment; and 4) increase or decrease disposable family income.

It is not anticipated that the proposal will have a direct impact on families.

Detail of changes

Please list all changes that are being proposed and the consequences of the proposed changes; explain the new requirements and what they mean rather than merely quoting the proposed text of the regulation. If the proposed regulation is a new chapter, describe the intent of the language and the expected impact. Please describe the difference between existing regulation(s) and/or agency practice(s) and what is being proposed in this regulatory action. If the proposed regulation is intended to replace an emergency

regulation, please list separately: (1) all differences between the pre-emergency regulation and this proposed regulation; and 2) only changes made since the publication of the emergency regulation.

Section number	Proposed requirements	Other regulations and law that apply	Intent and likely impact of proposed requirements
Article 1 - CO ₂ Budget Trading Program General Provisions.			
9VAC5-140-6010	Purpose	None.	Establishment of the Virginia component of the CO ₂ Budget Trading Program. Needed to provide clarity.
9VAC5-140-6020	Definitions	None.	Terms defined. Needed to assure that the regulation is understood and will operate properly.
9VAC5-140-6030	Measurements, abbreviations and acronyms.	None.	Needed to assure that the regulation is understood and will operate properly.
9VAC5-140-6040	Applicability		Defines sources to which the regulation applies. Needed in order that the regulation apply to certain affected sources. Implementation of this regulation will have an impact on those sources that are directly subject to the requirements of the rule. Note that the board is seeking comment on whether 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 should be exempt from the requirements of this regulation (subsection B).
9VAC5-140-6050	Standard requirements	None.	General requirements for permits, monitoring, holding and management of CO ₂ allowances, excess emissions, recordkeeping and reporting, and liability. Needed in order for the program to operate properly.
9VAC5-140-6060	Computation of time	None.	How to define the beginning and ending of an activity. Needed in order for the program to operate properly.
9VAC5-140-6070	Severability	None.	Clarifies that the remainder of rule is not rendered invalid by the invalidity of another part of the rule. Needed in order for the program to operate properly.
Article 2 - CO ₂ Authorized Account Representative for CO ₂ Budget Sources.			
9VAC5-140-6080	Authorization and	None.	Details how this individual is

	responsibilities of the CO ₂ authorized account representative		selected and authorized, and their key roles. Needed in order for the program to operate properly.
9VAC5-140-6090	Alternate CO ₂ authorized account representative	None.	Details how this individual is selected and authorized, and their key roles. Needed in order for the program to operate properly.
9VAC5-140-6100	Changing the CO ₂ authorized account representatives and the alternate CO ₂ authorized account representative; changes in the owners and operators	None.	How changes are made to account representatives, and owners and operators. Needed in order for the program to operate properly.
9VAC5-140-6110	Account certificate of representation	None.	How account representatives are to be certified. Needed in order for the program to operate properly.
9VAC5-140-6120	Objections concerning the CO ₂ authorized account representative	None.	How to deal with any disputes relevant to the account representative. Needed in order for the program to operate properly.
9VAC5-140-6130	Delegation by CO ₂ authorized account representative and alternate CO ₂ authorized account representative	None.	Enables the account representatives to delegate their authority to other persons. Needed in order for the program to operate properly.
Article 3 - Permits.			
9VAC5-140-6140	General CO ₂ budget permit requirements	None.	References pertinent permitting regulations. Needed to assure that existing permitting requirements are met.
9VAC5-140-6150	Submission of CO ₂ budget permit applications	None.	Requires a budget permit application by a certain date. Needed in order for the program to operate properly.
9VAC5-140-6160	Information requirements for CO ₂ budget permit applications	None.	Lists elements concerning the CO ₂ budget source for which the application is submitted. Needed in order for the program to operate properly.
Article 4 - Compliance Certification.			
9VAC5-140-6170	Compliance certification report	None.	Requires the source to certify whether each CO ₂ budget unit was operated in compliance with the requirements of the CO ₂ Budget Trading Program. Needed in order for the program to operate properly.
9VAC5-140-6180	Action on compliance certifications	None.	Explains how the compliance certification is reviewed. Needed in order for the program to

			operate properly.
<p>Article 5 - CO₂ Allowance Allocations Note that two versions of 9VAC5-140-6190 and 9VAC5-140-6210 are provided for comment. The board seeks comment on whether the base budget should be 33 million tons or 34 million tons, with corresponding 3% per year reductions. The first version represents a 33 million ton base budget, and the second version represents the 34 million ton base budget.</p>			
9VAC5-140-6190	Base budgets	None.	Base budgets are established from 2020 onward. The board is seeking comment on whether the initial Virginia CO ₂ Budget Trading Program base budget for 2020 should be 33 million tons or 34 million tons, and declining accordingly by 3% per year. Needed to effect the carbon pollution reduction that ED 11 require of this regulation.
9VAC5-140-6200	Undistributed and unsold CO ₂ allowances	None.	Explains how the department may retire undistributed and unsold allowances. Needed for the program to operate properly.
9VAC5-140-6210	CO ₂ allowance allocations	None.	Describes how the department will allocate allowances. CCR and ECR allowances as described in Tables 140-5A and B are tied to the 2020 base budget and as such the board is seeking comment as to whether these numbers should be tied to a base budget of 33 million tons or 34 million tons. Needed to effect the carbon pollution reduction that ED 11 requires of this regulation.
9VAC5-140-6215	CO ₂ allocation methodology		Describes the methodology for allocating allowances using net electric output. Needed for the program to operate properly.
<p>Article 6 - CO₂ Allowance Tracking System</p>			
9VAC5-140-6220	CO ₂ Allowance Tracking System accounts	None.	Establishes a system in order for tracking compliance accounts. Needed in order for the program to operate properly.
9VAC5-140-6230	Establishment of accounts	None.	Explains how compliance accounts are established and managed. Needed in order for the program to operate properly.
9VAC5-140-6240	CO ₂ Allowance Tracking System responsibilities of CO ₂ authorized account representative.	None.	Requires that all submissions pertaining to the account are made only by the authorized account representative. Needed in order for the program to operate properly.
9VAC5-140-6250	Recordation of CO ₂ allowance allocations	None.	Describes how the department records allowances. Needed in

			order for the program to operate properly.
9VAC5-140-6260	Compliance	None.	CO ₂ allowances that meet certain criteria are available to be deducted in order for a source to comply with the CO ₂ requirements for a control period. Needed in order for the program to operate properly.
9VAC5-140-6270	Banking	None.	Requires that CO ₂ allowances remain in account until deducted or transferred. Needed in order for the program to operate properly.
9VAC5-140-6280	Account error	None.	Allows corrections to be made. Needed in order for the program to operate properly.
9VAC5-140-6290	Closing of general accounts	None.	Describes how to close an account. Needed in order for the program to operate properly.
Article 7 - CO ₂ Allowance Transfers			
9VAC5-140-6300	Submission of CO ₂ allowance transfers	None.	Specifies how to submit transfers. Needed in order for the program to operate properly.
9VAC5-140-6310	Recordation	None.	Describes the recordation of transfers. Needed in order for the program to operate properly.
9VAC5-140-6320	Notification	None.	Explains notification of transfers to each party. Needed in order for the program to operate properly.
Article 8 - Monitoring and Reporting			
9VAC5-140-6330	General requirements	None.	Generally requires a source to comply with monitoring, recordkeeping and reporting requirements as provided in this regulation and 40 CFR Part 75. Needed to assure that all pertinent state and federal requirements are met.
9VAC5-140-6340	Initial certification and recertification procedures	None.	Facilities may be exempt under certain circumstances. Needed in order for the program to operate properly.
9VAC5-140-6350	Out-of-control periods	None.	What to do when a monitoring system fails to meet QA/QC or other requirements. Needed to assure compliance.
9VAC5-140-6360	Notifications	None.	Notification requirement. Needed in order for the program to operate properly.
9VAC5-140-6370	Recordkeeping and reporting	None.	Monitoring plan recordkeeping and reporting requirements. Needed to assure compliance.
9VAC5-140-6380	Petitions	None.	How to request approval for an

			alternative to any requirement of 40 CFR Part 75. Needed to assure compliance.
9VAC5-140-6390	Reserved	None.	
9VAC5-140-6400	Additional requirements to provide output data	None.	Additional steps to be taken when determining output. Needed in order for the program to operate properly.
Article 9 - Auction of CO ₂ CCR and ECR allowances			
9VAC5-140-6410	Purpose	None.	General purpose of the article. Needed to provide clarity.
9VAC5-140-6420	General requirements	None.	Describes information required in the auction notice, rules for sale of allowances, information on the reserve price, and withholding ECR allowances from an auction. Needed in order for the auction to operate.
9VAC5-140-6430	Consignment auction	None.	How conditional allowances are auctioned at consignment and converted to allowances used for compliance. Needed in order for the auction to operate.

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