



April 6, 2018

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Submitted via DEQ email to: ghg@deq.virginia.gov and Karen.Sabasteanski@deq.virginia.gov

Re: Comments on Proposed 9VAC5 Chapter 40 Regulations for Emissions Trading Part VII CO₂ Budget Trading Program

Dear Policy Analyst Sabasteanski:

Veolia North America (“Veolia”) appreciates this opportunity to provide comments on 9VAC5 Chapter 40 Regulations for Emissions Trading, Part VII CO₂ Budget Trading Program (the “Regulations”) proposed by the Commonwealth of Virginia Department of Environmental Quality (“VADEQ”). As you are aware, the Regional Greenhouse Gas Initiative (“RGGI”) is the first market-based regulatory program in the United States to reduce greenhouse gas emissions. By requiring electricity generators with capacity greater than 25 MW to procure emissions allowances, the program has been effective in reducing emissions and has provided significant energy efficiency program funding.

We are writing to commend VADEQ for recognizing the unique nature of combined heat and power (“CHP”) units by granting certain industrial CHP units an exemption from the Regulations, and to offer suggestions on the Regulations that further recognize the multiple economic, energy efficiency and greenhouse gas reduction benefits that CHP facilities provide. More specifically, Veolia is providing two primary comments as follows. We recommend modifying the existing exemption in the Regulations for certain industrial CHP units to ensure that the exemption rightfully applies to **all** relevant industrial CHP units. In addition, we propose adding a useful thermal energy exemption to the Regulations that allows all other covered CHP facilities to deduct from their RGGI compliance obligation the amount of CO₂ emissions tied to the production of useful thermal energy (e.g. district heat, process steam, hot water).

About Veolia

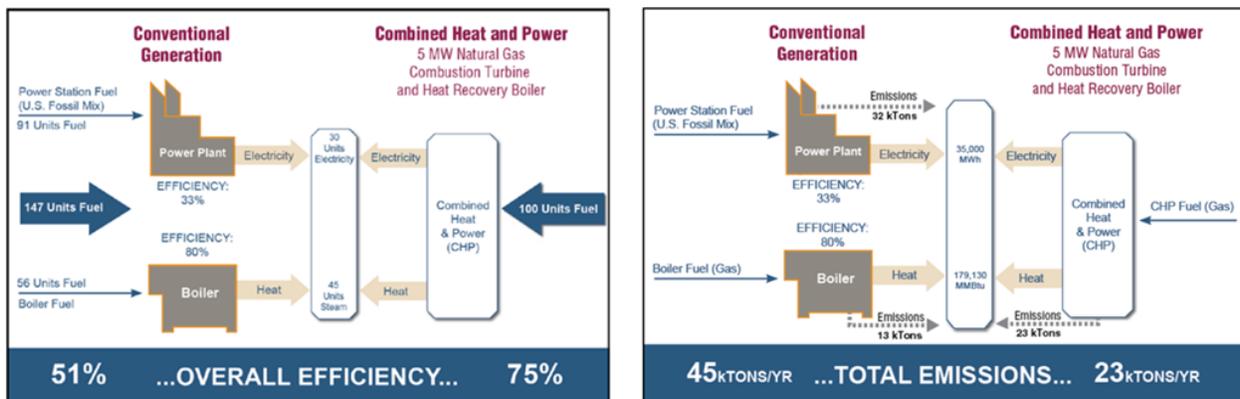
Veolia and its worldwide affiliates design and provide water, waste, and energy management solutions that contribute to the sustainable development of communities and industries. Through its three complementary business activities in energy, water and waste, Veolia helps to access,

preserve, and replenish vital resources. Through Veolia’s energy offerings, we develop and implement energy solutions designed to help our customers increase reliability, mitigate operational risk, decrease energy cost, and reduce their environmental impact. Over 80 percent of Veolia’s U.S. power generation capacity is CHP, and as an energy producer, Veolia is proud to supply its customers with efficient, reliable, and low-emitting electric and thermal energy.

Veolia’s North American business is headquartered in Boston, Massachusetts and more than 100 Veolia employees work throughout the Commonwealth of Virginia. We recently expanded our Virginia workforce as a result of a long-term agreement with DuPont to provide central utility services at the Spruance manufacturing facility in Richmond, Virginia. Veolia’s scope includes the operation and maintenance of the cogeneration facility that supplies the Spruance powerhouse on the manufacturing campus. In addition, Veolia plans to upgrade and invest in the utilities to be more efficient, and enhance performance and reliability, ultimately helping DuPont reduce utility costs.

About CHP

CHP is a sustainable and efficient energy solution that uses heat that would otherwise be wasted from power generation and converts it into useful thermal energy. The simultaneous production of power and thermal energy consumes less fuel than if produced separately. CHP units can exceed 80 percent efficiency compared to traditional power plants which average 33 percent efficiency. The graphics below from the EPA Combined Heat and Power Partnership provide an example of the benefits of CHP.¹



¹ EPA Combined Heat and Power Partnership: “Fuel and Carbon Dioxide Emissions Savings Calculation Methodology for Combined Heat and Power Systems” February 2015

Some of CHP's many benefits include:

- ***Environmental and economic advantages:*** Greenhouse gas emissions and other air pollutants are reduced significantly when less fuel is combusted. Burning less fuel also generates costs savings.
- ***Mission-critical reliability and grid resiliency:*** CHP meets the mission-critical energy requirements of a wide variety of sectors (e.g., hospitals, universities, manufacturing). CHP provides enhanced resiliency to the power grid and can provide end-users with uninterrupted power, heat, and hot water during natural disasters.
- ***Reduces stress to the power grid:*** By locating power production on site, CHP can reduce the need for costly transmission upgrades and reduces electricity line losses.

CHP plays an important role in delivering the Commonwealth's clean energy and resilience goals and merits additional support through revisions to the Regulations details below.

Specific Comments on the Regulations

1. Clarifying and Modifying the Industrial Exemption within the Regulations

As mentioned above, we support VADEQ's recognition of the unique nature of CHP units by granting certain industrial CHP units an exemption from the Regulations at 9VAC5-140-6060 (B) (the "Industrial Exemption"). These units deserve special treatment as they have been designed or modified in a way to optimize the efficient production of heat and power for industrial facilities. The Industrial Exemption states:

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

While the Industrial Exemption, as proposed, sets a positive policy direction on CHP, we believe this provision needs to be modified to ensure that the exemption rightfully applies to **all** relevant industrial CHP units. As such, we offer the suggested revisions set forth below for consideration by VADEQ concerning ownership and primary use of CHP facilities.

a. Ownership Structure

The proposed Industrial Exemption only contemplates the CHP unit being owned by the industrial end user rather than by a third party. This proposed language is counter to the trend of more industrial end users moving to outsource ownership, operation and maintenance of their central utilities. In this model, the industrial company can focus on executing its core business

while relying on an experienced and specialized third party whose core business is owning, operating and maintaining industrial utilities on a safe, cost effective and reliable basis. As such, the ownership status of the CHP unit is not relevant to the key issue, which is: Does the CHP exist to primarily provide service to the industrial end user?

Relying on “primary use” intent, rather than regulating CHP ownership, would better focus the Regulations on greenhouse gas reduction while also allowing the industrial and manufacturing sector in the Commonwealth greater flexibility to achieve this regulatory purpose. To focus on emissions reductions without regulating CHP ownership structure, we respectfully suggest that VADEQ remove the phrase “owned by an individual facility and” from the Industrial Exemption.

b. Primary Use Intent of the CHP Unit

To qualify for the Industrial Exemption the useful energy output (thermal and electric) of a CHP needs to be “for the primary use of operation of the facility”; however, “primary use” is not clearly defined. We urge DEQ to clarify the meaning of “primary use” by considering the magnitude of a CHP’s generation of useful thermal energy relative to useful electrical energy and by the application of an appropriate CHP efficiency standard.

One of CHP’s key benefits is that it can produce both useful thermal energy and electricity from a single fuel source. It is not uncommon for a host to have a high need for thermal energy and a low need for electricity. In order to efficiently service an industrial facility’s steam load, a CHP unit may need to be designed in a way that requires a substantial portion of its electric power to be exported to the grid. The need to export to the grid is important in circumstances where utility franchise rights prevent third party CHP facilities from delivering power to industrial sites. The integrity of the Industrial Exemption will be maintained if the focus is on how much useful thermal energy is generated and used.

We believe that the proposed Industrial Exemption can be strengthened by adding an efficiency requirement to the applicability guidelines. This will provide CHP units incentive to maximize greenhouse gas savings by operating in a manner that is primarily designed to meet the thermal requirements of its host rather than a manner that maximizes exports to the electrical grid.

The Virginia legislature recognized the need to encourage efficient CHP systems in the Grid Transformation and Security Act, which requires that the total efficiency, including the use of thermal energy, for eligible CHP facilities meet or exceed 65 percent (Lower Heating Value) annually. Adopting a similar requirement for the Industrial Exemption would ensure consistency across Virginia policies.

In offering this suggested revision, Veolia recognizes, during the VADEQ stakeholder process, the concept of tying the Industrial Exemption to a unit “voluntarily restricting its electrical output to the grid (through permit condition) to less than or equal to 10% of the units annual gross generation of the unit.”² We believe this approach too narrowly restricts what industrial facilities can do with electric generation and conflicts with the broader intent of “primary use” established in the Industrial Exemption within the Regulations.

Recognizing that not all CHP units will qualify for the Industrial Exemption, but acknowledging that these CHP units still deliver valuable greenhouse gas reductions we recommend a useful thermal energy exemption as detailed below.

2. Include a Useful Thermal Exemption in the Regulations

Veolia also respectfully recommends that VADEQ include a useful thermal energy (“UTE”) exemption for all CHP units in the Regulations. As currently drafted, the Regulations have unintended consequences for CHP. CHP units over 25 MW that do not qualify for the Industrial Exemption, must procure CO₂ emissions allowances for **all** emissions, including those associated with useful thermal energy (i.e. microgrid, district energy, process steam, hot water). Absent production at a CHP unit, the useful thermal energy would be produced by conventional methods, such as standalone boilers. These conventional methods of generating useful thermal energy are not subject to the Regulations, and thermal generation-only unit owners are not required to procure CO₂ emissions allowances.

Consequently, if CHP units over 25 MW are required to procure CO₂ emissions allowances for all emissions, including those associated with useful thermal energy, it will create a counter incentive and potentially increase greenhouse gas emissions in the Commonwealth of Virginia. To avoid this counter incentive, the Regulations should exclude CO₂ emissions associated with useful thermal energy from a CHP unit. When determining the RGGI emissions allowance compliance obligation for a CHP unit, emissions associated with useful thermal energy of that unit should be deducted from the unit’s total emissions.

a. Useful Thermal Energy Exemption Available in Other Jurisdictions

There is precedent for adopting a UTE exemption in the Regulations based on existing UTEs in federal and state agency carbon trading programs. At the Federal level, the EPA’s Clean Power Plan (“CPP”) included a UTE exemption for CHPs that recognized the efficiency and emissions reduction contribution of CHP. Under the CPP’s rate-based compliance plan, the emissions rates of CHP units would be calculated by dividing CO₂ emissions by electrical output plus 100% of

² Regulatory Advisory Panel Meeting Notes August 31, 2017 page 4
<http://www.deq.virginia.gov/Portals/0/DEQ/Air/GHG/C17-RP02-minutes.pdf?ver=2017-09-05-123507-667>

useful thermal output.³ This has the effect of excluding emissions associated with useful thermal energy from a CHP's compliance obligation.

The RGGI Model Rule provides the states flexibility in implementing their own regulations. Several states including Massachusetts, Connecticut, Maine and New Jersey (prior to its withdrawal from RGGI), have recognized the unique value of CHP and have adopted an UTE exemption in different forms.

The Commonwealth of Massachusetts has an exemption for any CHP CO₂ budget source that allows the CHP unit to subtract from its total CO₂ emissions the amount of CO₂ emissions attributable to the production of useful net thermal energy, as long as it complies with all other provisions of the regulations.⁴ The Massachusetts regulation acknowledges that, absent production in a cogeneration unit, useful thermal energy would be produced in a stand alone boiler. As VADEQ is aware, these boilers do not have a compliance obligation under any RGGI program, and, as a result, have no mandated efficiency targets. With this UTE exemption structure, a generation unit has an incentive to maximize useful outlets for its waste heat (process, chilling, heating, district energy, etc).

Connecticut has a CHP Useful Thermal Energy Set Aside Account which awards CHP units allowances to meet their compliance obligations.⁵ Maine has an Integrated Manufacturing Facility pre-retirement account that awards allowances to CHP units and is intended to “promote and reward the operation of CO₂ budget units that are CHP units at Integrated Manufacturing Facilities by using CO₂ allowances to offset the behind-the-meter CO₂ emissions”.⁶ The former New Jersey CO₂ Budget Trading Program regulations included a provision for the Department to allocate CO₂ allowances to CO₂ budget units that are CHPs.⁷

In California, which is not a RGGI state, but is one of the nation's leaders in clean energy and sustainability with its own CO₂ trading program, there is an exemption for emissions associated with useful thermal energy from CHP and district energy heating facilities.⁸

Other RGGI states have utilized the flexibility of the Model Rule to support sound energy and economic objectives by granting compliance exemptions for specific types of facilities. In Delaware, petroleum refineries are not required to include emissions associated with electricity

³ EPA is proposing to repeal the CPP and rescind the accompanying legal memorandum. In a separate but related action, EPA issued an Advance Notice of Proposed Rulemaking seeking information from the public about a potential future rulemaking to limit greenhouse gas emissions from existing electric utility generating units.

⁴ <https://www.mass.gov/files/documents/2018/01/05/310cmr7.pdf> (see page 310 CMR 7.70(1)(h) p. 501)

⁵ <http://www.ct.gov/deep/lib/deep/air/regulations/mainregs/22a-174-31.pdf> (see page 31-22 section(f) (4) (B))

⁶ www.maine.gov/sos/cec/rules/06/096/096c156.doc (see page 20 section (2) F)

⁷ http://www.nj.gov/dep/rules/adoptions/adopt_081117a.pdf (N.J.A.C 7:27C-5.2(d) see page 110)

⁸ http://www.arb.ca.gov/cc/capandtrade/capandtrade/unofficial_c&t_012015.pdf (see page 115)

generated and used at the refinery in their emissions allowance compliance obligation.⁹ Only emissions associated with any electricity sold to the electric grid from a refinery's power plant are subject to a compliance obligation. Maryland provides a RGGI exemption for generating units that sell less than 10% of generated electricity to the electric grid.¹⁰

b. Specific Recommendations for a UTE Exemption

After a review of other state RGGI regulations and our experience in other jurisdictions, we believe that the UTE exemption in the Massachusetts regulations provides the most effective and straightforward approach, and we encourage VADEQ to review and adopt a similar exemption. Under this approach, emissions associated with UTE are calculated on a formulaic basis (e.g. [UTE MMBtu / .80 Boiler Efficiency x 122 lbs. CO₂ per MMBtu] /2000 lbs. per ton) and are subtracted from a CHP's compliance obligation.

First, it is important to note that the recommended UTE exemption is only for emissions associated with useful thermal energy. CHP units that fall under RGGI will still be required to procure allowances for any emissions not associated with useful thermal energy. However, with the UTE exemption, CHP will be on equal footing with conventional generators whose only output is electricity.

By reducing a unit's environmental compliance costs and thereby improving the project economics and the business case for CHP, the UTE exemption removes a potential barrier for investment in CHP. The ability for a CHP unit to exclude emissions from useful thermal energy from its compliance obligation will become even more important in the future. With the RGGI emissions cap declining each year, it is likely that RGGI allowance prices will continue to increase. Under the Regulations, as RGGI allowance prices increase, they will drive up compliance costs and increase the economic disincentive faced by CHP units.

Without adopting a UTE exemption to the Regulations, there will be a similar adverse effect on existing facilities that have the option of using CHP to generate useful thermal energy or using stand-alone boilers (i.e. microgrid, district energy networks and manufacturing facilities). As the costs of CHP rise due to higher RGGI compliance costs, the dispatch of equipment may change resulting in more standalone generation of UTE and higher regional carbon emissions.

Conclusion

Veolia appreciates the opportunity to comment on the Regulations and commends VADEQ for granting certain industrial CHP units an exemption from the Regulations. It is critical that the

⁹ <http://regulations.delaware.gov/AdminCode/title7/1000/1100/1147.pdf> (see page 2 section 1.2.3)

¹⁰ <http://www.dsd.state.md.us/comar/comarhtml/26/26.09.02.06.htm>

Regulations recognize the unique nature of CHPs and the valuable environmental and resilience benefits they deliver.

To that end, we encourage VADEQ to further recognize the multiple economic, energy efficiency and greenhouse gas reduction benefits provided by CHP facilities by taking two actions on the Regulations. We recommend modifying the Industrial Exemption to ensure that it applies to all relevant industrial CHP units. We also suggest adding a UTE exemption to the Regulations that allows all covered CHP facilities to deduct from their RGGI compliance obligation the amount of CO₂ emissions tied to the production of UTE (e.g. heat, process steam, hot water). We believe that the UTE exemption in the Massachusetts regulations provides the most effective and straightforward approach and encourage VADEQ to review and adopt a similar exemption. In sum, enhancing the Industrial Exemption and adding the UTE exemption will provide the right policy incentives and will support greenhouse gas reduction and energy efficiency goals with the least economic burden on the covered entities in the Commonwealth of Virginia.

Thank you again for the opportunity to comment on the Regulations. Please contact me at ned.bartlett@veolia.com or (617)849-6674 or Chris Mullen, Director of Energy Commodities and Contracts at christopher.mullen@veolia.com or (617)502-4440 with any questions about these comments or if we can be of further assistance with this or other matters.

Sincerely,

Ned Bartlett

Ned Bartlett
Vice President, Government Markets
Veolia North America