TECHNICAL RESPONSE MEMORANDUM

To: Lisa Vest, Hearing Officer

Through: Valerie Gray *vag* 10/15/2018

From: Christian Wisniewski 10/15/2018

Re: Department's Response to Comments received on the proposed amendments to 7 DE Admin. Code 1147 – *CO_2 Budget Trading Program.*

You presided over a public hearing on Wednesday, August 29, 2018 beginning at 6:00 PM in the Auditorium at The Richardson and Robbins Building, 89 Kings Highway, Dover. The subject of the public hearing was a proposed revision to 7 DE Admin. Code 1147 – CO_2 Budget Trading Program. The Department received comments from the following:

Date Received	Name	Organization
8/24/2018	Jim Melville	Private Citizen
8/24/2018	Dr. Barbara Boyce	Private Citizen
8/24/2018	Barbara Walker	Private Citizen
8/24/2018	Deborah Pote	Private Citizen
8/24/2018	Frank Richards	Private Citizen
8/24/2018	Jay1228	Private Citizen
8/24/2018	Jerry Groll	Private Citizen
8/24/2018	Joanne Butler	Private Citizen
8/24/2018	Martin Shuey	Delaware Electric Cooperative
8/24/2018	Mary Yemc	Private Citizen
8/24/2018	Michael Hartmann	Private Citizen
8/24/2018	Michele Greene	Private Citizen
8/24/2018	Peter Righos	Private Citizen
8/24/2018	Shirley Wiley	Private Citizen
8/24/2018	Stacy Couch	Private Citizen
8/24/2018	Stanley Donovan	Private Citizen
8/24/2018	Stephen Quindlen	Private Citizen
8/24/2018	Suzanne Haschak	Private Citizen
8/24/2018	Teresa Loporto	Private Citizen
8/24/2018	Tom Hunter	Private Citizen
8/24/2018	Tom McGinley	Private Citizen
8/24/2018	Walt Curran	Private Citizen
8/24/2018	Wilhelmina Anderson	Private Citizen
8/25/2018	Barbara Cullis	Private Citizen
8/25/2018	Charles Talkowski	Private Citizen
8/25/2018	Colleen Magee	Private Citizen
8/25/2018	Kurt Doehla	Private Citizen
8/25/2018	Anna vonLindenburg	Private Citizen
8/24/2018	Beth Bryson	Private Citizen
8/24/2018	Bill Larsen	Private Citizen
8/26/2018	Carol Costante	Private Citizen
8/24/2018	Chris Adkins	Private Citizen
8/24/2018	Dennis McCabe	Private Citizen
8/25/2018	HW Smithson	Private Citizen

8/25/2018	J Dorovich	Private Citizen
8/24/2018	Joseph Caputo	Private Citizen
8/26/2018	John Dolan	Private Citizen
8/24/2018	John Gerber	Private Citizen
8/25/2018	J A Rudsky	Private Citizen
8/25/2018	Marilou Merrill	Private Citizen
8/26/2018	Mary McCrossan	Private Citizen
8/24/2018	Peter Rigby	Private Citizen
8/26/2018	Timothy Spong	Private Citizen
8/26/2018	Vince Brady	Private Citizen
8/27/2018	Anonymous	Private Citizen
8/27/2018	Joanne & Dwight Herow	Private Citizen
8/27/2018	Joseph LoPorto	Private Citizen
8/27/2018	Karen Yasik	Private Citizen
8/27/2018	Peggy Gerber	Private Citizen
8/28/2018	Richard Blackman	Private Citizen
8/28/2018	David Stevenson	Caesar Rodney Institute
8/28/2018	William Whipple	Secure America's Future Economy
8/29/2018	Barbara Bullock	Private Citizen
8/29/2018	Robert Kochen	Private Citizen
8/29/2018	Suzanne Cavanaugh	Private Citizen
8/29/2018	Duane	Private Citizen
8/30/2018	John Nichols	Private Citizen
9/28/2018	Joint comments	Sierra Club Natural Resources Defense Council Environment America Environment New Jersey Acadia Center
9/28/2018	Sierra Club Members (117)	Sierra Club
9/28/2018	Coralie Pryde	Sierra Club
9/28/2018	Daniel Short, et al.	Delaware House of Representatives
9/28/2018	J. William Andrew & D. Richard Beam	Delaware Electric Cooperative & Old Dominion Electric Cooperative
9/28/2018	Noah Bucon	Center for Resource Solutions

Comments Received at Public Hearing

8/29/2018	David Stevenson	Caesar Rodney Institute
8/29/2018	John Nichols	Private Citizen
8/29/2018	Beth Chajes	Sierra Club
8/29/2018	Coralie Pryde	Sierra Club

This memorandum provides a summary of the comments received and the Division of Air Quality (DAQ) response. Each comment received is included verbatim as an attachment. The comments and the public hearing transcript containing comments are available on the Regional Greenhouse Gas Initiative (RGGI) page of the Department website. Available:

http://www.dnrec.delaware.gov/Air/Pages/RegionalGreenhouseGasInitiative.aspx

I. General Comments

Comment 1

Many of the comments received from individuals stated that the State of Delaware has met its 2025 air quality goals for greenhouse gas emission reductions, which would make the proposed amendments to 7 DE Admin Code 1147 unnecessary.

Department Response

The State of Delaware has no established air quality goals for greenhouse gas emission reductions.

The comments are likely referring to the State of Delaware's commitment to reduce greenhouse gas emissions by 26-28% by 2025, which has not been met. This commitment was made when the state joined the U.S. Climate Alliance and pledged to uphold the goal of the Paris Accord[1]. By joining the U.S. Climate Alliance, Delaware committed to:

> "*Implement policies that advance the goals of the Paris Agreement, aiming to reduce greenhouse gas emission by at least 26-28 percent below 2005 levels by 2025.*" And "*[a]ccelerate new and existing policies to reduce carbon pollution and promote clean energy deployment at the state and federal level.*"

The target emission reduction is related to greenhouse gas emissions as a whole, not solely power sector emission reductions. The U.S. Climate Alliance commitment is the current goal for the State of Delaware that has yet to be achieved. The 2014 greenhouse gas emissions inventory for the State of Delaware shows that net CO_2 emissions decreased by 20.7% between 2005 and 2014. In order to reach the goal of a 26-28 percent reduction, an additional 0.94-1.3 million tons of CO_2 emissions must be avoided. With current policies and state energy profile, CO_2 emissions projections show that an increase in net CO_2 emissions is likely. By 2025, it is projected that net CO_2 emissions will increase by 10.3 percent from 2014. This will generate a significant gap of 2.4-2.8 million tons of CO_2 from the goal of the U.S. Climate Alliance. With current projections, the State of Delaware will only reach a 12.5 percent reduction in CO_2 emissions as compared to 2005, or less than half of what the State committed to.

Delaware's continuing participation in the RGGI program and amendments to the state's program are key components of the state's strategy to reduce greenhouse gas emissions.

[1] U.S. Climate Alliance. (2018). *Alliance Principles.* Retrieved from https://www.usclimatealliance.org/alliance-principles/

Comment 2

Many of the comments received stated that the RGGI program is not effective for the State of Delaware and the state should end its participation in the program.

Department Response

This rulemaking addresses and is limited to the regulatory amendments to 7 DE Admin Code 1147 to effectuate the 2016 Program Review modifications approved by the participating states. Nonetheless, Delaware's participation in the RGGI program has provided many economic and environmental benefits. Since the first allowance auction in 2009, proceeds to Delaware exceed $100 million for the state to achieve energy efficiency and renewable energy goals. Independent analyses for the proposed amendments show all additional positive benefits for the State of Delaware. While on track to further reduce CO_2 emissions of applicable electricity generating units, Delaware will realize increases in jobs, gross state domestic product, and personal income[2]. In addition, a customer bills analysis provided by the Analysis Group for the 2016 RGGI Program Review shows that electricity rates will be decreasing for residential, commercial, and industrial customers through 2030 in Delaware[3,4]. Independent studies also examined the health benefits of participation in the RGGI program. From 2009 to 2014, the results of the assessment showed that 12-26 deaths, 1,364 lost work days, and 274 upper respiratory symptoms have been avoided, among other health impacts, in Delaware[5]. The value of all avoided detrimental health effects was as much as $274 million.

Comment 3

Some of the comments received stated that the "trigger prices" (i.e. cost containment trigger reserve price and the emissions containment reserve trigger price) should not be altered. Furthermore, a comment was made that the emissions containment reserve not be adopted at this time.

Department Response

The changes in the cost containment reserve (CCR) trigger prices are necessary to continue to meet the goals of the RGGI program. The CCR feature of the CO_2 Budget Trading Program is intended to provide balanced cost control while maintaining the overall environmental integrity of the regional emissions cap. The proposed changes to the CCR trigger prices were determined based upon a series of iterative modeling runs. The CCR is an important feature of the CO_2 Budget Trading Program as it establishes an excess amount of allowances that can be available in the case of unforeseen market conditions. For example, in the event of a polar vortex, low temperatures cause an increase in electricity demand for heating applications. More demand requires power plants to generate more power and increase emissions. If

[2] ICF International. (2017, December). *RGGI Program Review: REMI Modeling Results.* Retrieved from http://www.dnrec.delaware.gov/Air/Documents/REMI_2017_12_19.pdf

[3] Analysis Group. (2017, September). *IPM Potential Scenario Customer Bill Analysis.* Retrieved from https://rggi.org/sites/default/files/Uploads/Program-Review/9-25-2017/Customer_Bills_Results_Overview_09_25_17.pdf

[4] Department of Natural Resources and Environmental Control. (2018, August). *Amendment to 7 DE Admin Code 1147 - CO2 Budget Trading Program Technical Support Document.* Retrieved from http://www.dnrec.delaware.gov/Air/Documents/08-29-18_Technical%20support%20doc%20Reg1147.pdf

[5] Abt Associates. (2017, January). *Analysis of the Public Health Impacts of the Regional Greenhouse Gas Initiative.* Retrieved from https://www.abtassociates.com/insights/publications/report/analysis-of-the-public-health-impacts-of-the-regional-greenhouse-gas

allowance prices rise above the CCR trigger price in this situation, additional allowances can be released into auction at the trigger price to accommodate the increased emissions.

The CCR was triggered twice: in 2014, providing 5 million additional allowances, and in 2015, providing 10 million additional allowances. The 2016 Program Review revealed that the CCR was triggered at times when a significant bank of allowances (i.e. allowances in excess of the quantity needed to surrender for compliance) already existed. The CCR was triggered because of an increase in investor participation in the auction who were speculating the effects of the Clean Power Plan. Thus, the CCR trigger prices established were too low and did not adequately serve the purpose of releasing additional allowances in the event of increased emissions, such as a polar vortex. The proposed changes to the CCR trigger prices are necessary to ensure CCR allowances are available in the case of actual emissions increases.

The emissions containment reserve (ECR) is a new design feature of the CO_2 Budget Trading Program that is proposed. Thus, there is no change to the ECR. Nonetheless, the ECR is a means of additional containment of CO_2 emissions in the event of lower than anticipated emissions reduction costs. The proposed size and trigger prices of the ECR were determined based on a series of iterative modeling runs. Implementation of the ECR will provide price stability in the CO_2 allowance market. The creation and use of the ECR will respond to supply and demand of the market if emission reduction costs are lower than projected. The Department believes that the ECR is an important design mechanism to complement the CCR to help achieve the goals of the CO_2 Budget Trading Program. Thus, the Department proposes to adopt the ECR as proposed in the amendments to the CO_2 Budget Trading Program.

Comment 4

One commenter stated that the Regulatory Flexibility Analysis (RFA) and Regulatory Impact Statement (RIS) as required by the Regulatory Transparency and Accountability Acts were not thorough enough. In addition, the comment stated that the RFA did not include alternatives to meet emission reduction goals without raising electric rates for individuals or small businesses.

Department Response

The Department agrees with the commenter that the RFA and RIS are required. The Department believes that the proposed amendments to the CO_2 Budget Trading Program are not subjected to the requirements of Delaware Code Title 29, Chapter 104 because they do not apply to small businesses or individuals at all. Thus, the Department believes the proposed amendments are exempted from such requirements. Nonetheless, the Department provided reasoning in the RFA and RIS for this notion.

In the submitted RFA, the Department stated that:

> "*This regulation affects large fossil-fuel fired power generators and industrial units with a nameplate generating capacity greater than 25 MW. The Department would reasonably expect that electric generating facilities would be considered as individuals or business enterprises with annual gross receipts greater than $4 million that provide personal services. It is unlikely that any given facility employs less than*

20 persons though it is possible that the smaller municipalities operating electric generating units employ less than 20 persons."

The Department does not intend to alter its perspective and stands with this reasoning for exemption from RFA. Alternative methods for achieving emission reduction goals were provided in the RIS and are described below.

In the submitted RIS, the Department described the purpose and anticipated benefits of the proposed regulation. The purpose being to amend the CO_2 Budget Trading Program in Delaware to reflect the revisions to the RGGI program as agreed upon by the participating states. Delaware's participation in the program generated over $100 million in auctions since the start of the program. Proceeds were reinvested in consumer benefit programs (as stipulated by the authorizing statute). As a result of the reinvestments, the 2016 Program Review bills analysis for the proposed amendments project no negative impact, but a small positive impact for consumers. The Department also reiterated that the amendments do not subject individuals and/or small businesses to compliance. Nonetheless, the Department provided a good-faith estimate of potential costs for individuals and/or small businesses. Independent studies contracted by the RGGI participating states showed very small, but generally positive economic impacts for Delaware and the other participating states[6,7,8].

The RIS included potential alternative methods to achieve the goals of the CO_2 Budget Trading Program. These include establishing a carbon tax, establishing a performance standard (such as an emission limitation), or requiring expensive heat rate improvements. The Department concluded that a cap and trade program is the most cost-effective policy for reducing CO_2 emissions from affected Delaware power plants. The cap and trade approach to limiting emissions is the most cost-effective policy because emission allowances migrate to the highest-valued uses, which cover the emissions that are the most costly to reduce. Therefore, emission reductions that are undertaken are those that are least costly to achieve. The uniform market price of allowances creates incentives for all covered sources to reduce emissions, and do so cost-effectively. Thus, there is no negative impact on electricity rates of individuals or small businesses, and in fact there is a positive impact as shown in independent modeling studies.

[6] ICF International, RGGI, Inc. (2017, September). *Draft 2017 Model Rule Policy Scenario Overview.* Retrieved from https://www.rggi.org/sites/default/files/Uploads/Program-Review/9-25-2017/Draft_IPM_Model_Rule_Results_Overview_09_25_17.pdf
[7] Id 3, 4.
[8] Hibbard, P. J., Tierney, S. F., Darling, P. G., & Cullinan, S. (2018). *The Economic Impacts of the Regional Greenhouse Gas Initiative on Nine Northeast and Mid-Atlantic States.*

Comment 5

A few comments stated that power plant emissions are not the leading source of CO_2 emissions in the State of Delaware. The comments stated that CO_2 emissions from the transportation and industrial sector are both higher than those of the power sector.

Department Response

The Department acknowledges that transportation and industrial sector CO_2 emissions are greater than those of the power sector. This rulemaking is limited to the amendments to the CO_2 Budget Trading Program. Nonetheless, according to 2014 greenhouse gas emissions inventory data, the power, transportation, and industrial sector greenhouse gas emissions were 23%, 28%, and 29%, respectively, of Delaware's total greenhouse gas emissions. Reducing emissions from any of these top three emitting sectors is important for achieving the goals that Delaware agreed upon in the U.S. Climate Alliance.

Comment 6

A comment was submitted that Delaware should follow the EPA's promulgation of the Affordable Clean Energy (ACE) Rule, the replacement to the Clean Power Plan, and adopt a flexible plan to achieve further emissions in a cost-neutral manner across all sectors.

Department Response

The Department believes that participating in the RGGI program is a more effective and cost efficient method of reducing greenhouse gas emissions in the State of Delaware. By participating in the RGGI program, a mass-based approach is used to achieve a target emissions amount. The Department believes that the ACE rule will not provide sufficient reductions in greenhouse gas emissions needed to mitigate the effects of climate change and to meet Delaware's committed reduction goals in the U.S. Climate Alliance.

II. Comments regarding economics of the program

Comment 7

Many of the comments received stated that the residents of Delaware are paying for the costs of RGGI allowances because electricity generating units are "passing on the fees" to the ratepayers. The comments continued to state that this effect caused an increase in the consumer rate for electricity.

Department Response

Delaware's participation in the RGGI program has not caused an increase in the consumer rates for electricity in the state. According to the Delmarva Integrated Resource Plan (IRP), the residential customer supply price declined by approximately 33% since 2009 (beginning of the RGGI program)[9]. Thus, Delaware's participation in the RGGI program has not been shown to cause an increase in Delaware consumer electricity supply prices.

Furthermore, an independent study by the Analysis Group for RGGI, Inc. shows that with the proposed amendments, the average monthly electricity bill for Delaware residential, commercial, and industrial customers will decrease on average by 5.0%, 1.8%, and 2.9%,

[9] Delmarva Power & Light Company. (2016, November). *2016 Integrated Resource Plan*. Retrieved from https://depsc.delaware.gov/wp-content/uploads/sites/54/2017/03/DPL-Public-IRP-113016.pdf

respectively, between the years 2017-2031[10]. Delaware electricity supply prices decreased since the state began participation in the RGGI program and are expected to continue to decrease with the proposed amendments.

Electricity generating units with a capacity equal to or greater than 25 MW are subject to the requirements of the regulation – namely, purchasing CO_2 allowances. Electricity generating units offer a specified amount of energy to the grid market. Delaware electricity generating units are a part of the PJM Interconnection. Within the PJM Interconnection, there are thousands of generating units – some in RGGI and some in non-RGGI states – that can offer energy to the wholesale market. Electricity is offered competitively in the wholesale market to be called upon for dispatch. The grid operators, PJM, dispatch power plants to the grid based on their offer prices. Meaning, the most competitive offer prices (i.e. most cost-effective) are selected to supply electricity to the grid. The offer price of the last generator called upon is the clearing price that is paid to all power plants that were called upon for dispatch. Offer prices can vary according to a number of factors; for example, the amount of demand at a given time or the current price of a given fuel. High, or peak, demands cause offer prices to rise while lower demands cause a drop.

Of the thousands of electricity generating units in the PJM Interconnection, twenty-six are located in Delaware and regulated by the CO_2 Budget Trading Program. It is extremely difficult to connect the costs of the RGGI program from wholesale electricity prices to Delaware residential electricity bills. No such direct connection has been shown for which Delaware electricity rate payers realize the costs of RGGI allowances on their electric bills. This has been shown in the Superior Court decision in the case of *Stevenson, et al. v. Delaware DNREC, et al.* (2018)[11]. The testimony of expert witness Dr. Susan Tierney explains that the cause and effect connection between CO_2 allowances and impacts on a customer's electricity bill could not be known because of "so many disconnections between the wholesale price formation and electricity rate-making for individual customers.[12]" There is no one-to-one relationship of electricity prices in the wholesale market and residential electricity bills because of the way the wholesale market operates, as described above.

The testimony of Dr. Tierney provides an explanation as to why consumer rates may have decreased while Delaware has been participating in the RGGI program[13]. Funds generated from the auctions of CO_2 allowances have been invested in energy efficiency programs. Such programs result in a decrease in demand and provide potential decreases in electricity prices.

[10] Id 3, 4.
[11] Stevenson et al. v. Delaware Dept. of Nat. Resources & Environmental Control, et al., S13C-12-025 RFS (Superior Court of the State of Delaware June 26, 2018) (Decision after Trial – Mem. Op.).
[12] Stevenson et al. v. Delaware Dept. of Nat. Resources & Environmental Control, et al., S13C-12-025 RFS (Superior Court of the State of Delaware December 4, 2017).
[13] Id 12.

Comment 8

Many of the comments received expressed that the revenue generated from the RGGI program should be allocated differently. Some comments stated that the revenue should be rebated back to residential electricity ratepayers. Other comments suggested that the revenue generated should be placed in the State of Delaware General Fund. One comment suggested that the revenue be rebated to electricity providers for them to decide how to rebate the consumers. One more commenter suggested that revenue could be set aside for Delaware residents in assistance for home solar panels.

Department Response

The allocation of RGGI proceeds is outside the scope of this regulatory amendment. Delaware law sets out the uses for any RGGI auction proceed, and the Department is bound by those directives. The statute is listed in §6046 of Delaware Code Title 7, Chapter 60, subchapter II-A. §6046 (c) directs that:

"*(c) The Secretary shall direct auction proceeds to the following uses:*

(1) Sixty-five percent of the CO2 allowance proceeds shall be directed to the Sustainable Energy Utility (SEU), established in § 8059 of Title 29. The SEU shall apply these funds to further the goals and activities of the SEU including, but not limited to, the promotion of energy conservation, energy efficiency, renewable energy, and energy financing pursuant to § 8059(f)(3) of Title 29.

(2) A total of 15% of the CO2 allowance proceeds shall be directed to low-income consumers, of which 10% shall be directed to the federally funded and state-administered Weatherization Assistance Program (WAP), and up to 5% shall be directed to the federally funded and state-administered fuel assistance (Low Income Home Energy Assistance Program or LIHEAP) programs. Participants in the LIHEAP program funded pursuant to this section shall also participate in the WAP program within 2 years of receiving assistance through LIHEAP, subject to funding availability. These programs are administered by the Division for State Service Centers in the Delaware Department of Health and Social Services.

(3) Percentage allocations of funds to the SEU and low-income consumers may be reviewed and adjusted annually by a committee comprised of the Secretary of the Department of Natural Resources and Environmental Control (DNREC), who shall serve as committee chair, the Chair of the Board of the SEU, and the program managers of the state WAP and LIHEAP.

(4) Ten percent of CO2 allowance proceeds shall be directed to Greenhouse Gas Reduction Projects, selected by the Secretary following a periodic competitive proposal process. The Secretary shall utilize an advisory body composed of electric generators, environmental advocates, legislators and such others as the Secretary may find useful in developing guidelines for the proposal process and in soliciting and ranking of projects. Projects must result in quantifiable and verifiable reductions in Greenhouse gas emissions in

Delaware not otherwise required by federal or state law and not receiving funding from any other state sources.

(5) The Secretary shall use up to 10% of CO2 allowance proceeds as detailed in subsection (d) of this section. Expenses for running the RGGI program shall be met first, prior to distribution of funds as outlined above."

Comment 9

Many of the comments received expressed that a more thorough economic assessment of the use of the revenue generated from the RGGI program be provided.

Department Response

Thorough economic assessments have been conducted and are available. Please see Comment 8 above, detailing the statute that stipulates and directs how Delaware will invest the RGGI auction proceeds.

An annual proceeds report is issued by RGGI, Inc. detailing the proceeds and their uses by each of the RGGI states[14]. Furthermore, the allocations of Delaware's proceeds are defined per §6046 (c). Sixty-five percent of the proceeds is directed to the Sustainable Energy Utility (SEU) for the promotion of energy conservation, energy efficiency, renewable energy, energy financing, and more. Further information on the SEU can be found on its website, including annual reports and financial reports[15,16]. A total of fifteen percent of the proceeds is directed to low income residents, of which ten percent is directed to Weatherization Assistance Program (WAP) and five percent to the Low Income Home Energy Assistance Program (LIHEAP).

In accordance with the 2016 Program Review, macroeconomic modeling was conducted by REMI to determine the effects of the proposed changes to the RGGI Model rule, and thus the proposed amendments[17]. The results of the analysis show that there is a small, but positive impact on three economic indicators: total employment, gross state product, and disposable personal income. Over the years 2017 through 2031, each on these indicators are predicted to show an increase. The model shows that the breakdown of allowance proceeds spending generates overall positive flows of money for the state. Specifically, spending on electric energy efficiency programs results in favorable energy savings for consumers through 2030. Furthermore, such investments also correspond to decreased production costs for commercial and industrial entities. Thus, the Department would refer commenters to the economic models and financial reports that are available for the revenue generated by RGGI allowance auctions.

[14] RGGI, Inc. (2018, September). *Investment of Proceeds*. Retrieved from https://www.rggi.org/investments/proceeds-investments
[15] Delaware Sustainable Energy Utility. (2018). *Sustainable Energy*. Retrieved from https://www.energizedelaware.org/sustainable-energy
[16] Delaware Sustainable Energy Utility. (2018). *Reports*. Retrieved from https://www.energizedelaware.org/reports
[17] Id 2.

Comment 10

Several comments expressed concern that Delaware's participation in the RGGI program caused a tax increase for the citizens of Delaware.

Department Response

The Department does not agree. The CO_2 Budget Trading Program is not a tax, but a market based approach to reducing CO_2 emissions in the power sector and is similar to the existing cap and trade programs for SO_2 and NO_x. Although there are costs associated with compliance for electricity generating units, the purpose of the program is to stabilize and reduce CO_2 emissions at the lowest possible cost to compliance entities. The program does not result in taxes or fees for electricity ratepayers and, as stated above, has not increased electricity rates.

Comment 11

Some of the comments received raised the question as to the Department's authority to reduce the amount of allowances available. Comments stated that this artificially raises the price of allowances.

Department Response

The Department has the authority amend the program by 7 Delaware Code, Chapter 60, §6043 (a) (9), which states *"... [t]he cap and Delaware's allocation may be adjusted in the future.*" As consistent with Secretary's Order No. 2013-A-0054 for approval for the 2013 amendments to the CO_2 Budget Trading Program, the Department believes that the statute grants the DNREC Secretary the authority to further reduce the emissions cap to comply with the emissions reduction goal.

In addition, §6044 (a) authorizes the Secretary of the Department to implement and participate in the RGGI program. §6044 (c) authorizes the Secretary of the Department to promulgate regulations to implement the RGGI cap and trade program consistent with the RGGI Memorandum of Understanding, as amended.

Comment 12

Some of the comments received stated the cost for electricity in Delaware is higher than most other states.

Department Response

This rule-making is limited to the proposed amendments to the Delaware CO_2 Budget Trading Program. The Department believes this comment is beyond this scope but reiterates that the electricity supply costs are largely affected by the price of electricity in the wholesale market. Wholesale electricity prices can vary according to many factors, including peak and seasonal demand and costs of fuel.

Comment 13

Some of the comments received stated that revenue from CO_2 allowance auctions was nearly $10 million per year and that this could increase to $30-60 million in 2030. Commenters indicated this will be an expense for power generating sources.

Department Response

The Department agrees that the annual revenue of the allowance auctions was nearly $10 million in 2017. While it is expected that increases in allowance prices will occur, the REMI economic modeling assessment shows that there will be economic benefits to the State of Delaware that are associated with the proposed amendments[18]. The reinvestments of auction proceeds in energy efficiency and renewable energy reduce overall electricity demand – resulting in reduced need to purchase electricity. From the REMI modeling, between 2017 and 2031, it is projected there will be an increase in total employment by 5,000 job-years. Using a 3% discount rate, the gross state product is projected to increase by $280 million, while disposable personal income is slated to increase by $230 million. The proposed amendments to the CO_2 Budget Trading Program are crucial to achieving the projected economic benefits for Delaware.

Comment 14

A comment was submitted that median household income in Delaware dropped by over $5,000 a year, while nationally, income increased by almost $1,000 per year between 2007 and 2015. The commenter said this was caused by a loss in jobs related to energy intensive businesses.

Department Response

The Department believes this comment is beyond the scope of the proposed amendments. Nonetheless, the Department offers insight to the content of the comment.

The Department reiterates that findings in the independent REMI economic modeling show that the proposed amendments increase the number of jobs in the state. Furthermore, the modeling shows that income is also projected to increase in Delaware.

According to the Small Area Income and Poverty Estimates (SAIPE) tool, provided by the U.S. Census Bureau, median household income in the U.S. and Delaware decreased from 2007 to 2015, after adjusting for inflation[19]. The data were adjusted using Consumer Price Index inflation factors, provided by the U.S. Department of Labor[20]. From 2007 to 2015, U.S. median household income dropped 2.7%, while median household income fell at a similar rate of 3% in Delaware. The data are shown in Figure 1. The median household income for both the U.S. and Delaware have not recovered to levels above economic recession of 2008. However, median household income is currently trending upwards nationally and in the State of Delaware. The drop in median household income cannot be directed to costs of CO_2 allowances, but is better attributed to stronger market factors.

[18] Id 3, 4.
[19] U.S. Census Bureau. (2017, November). *Small Area Income and Poverty Estimates Program.* Retrieved from https://www.census.gov/programs-surveys/saipe.html
[20] U.S. Department of Labor. (2018). *Bureau of Labor Statistics - Consumer Price Index.* Retrieved from https://data.bls.gov/pdq/SurveyOutputServlet

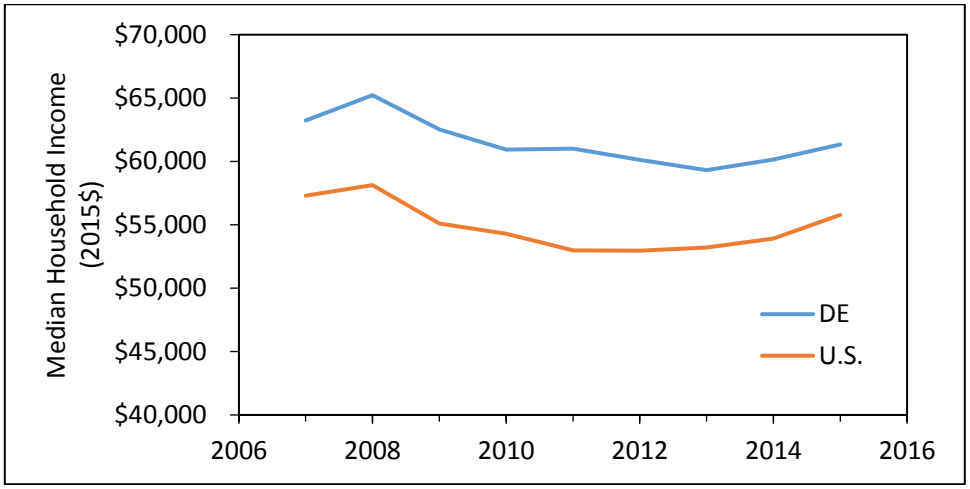

Figure 1. Comparison of the median household income of Delaware and the U.S., adjusted for inflation

III. Comments regarding electricity in Delaware

Comment 15

Some commenters stated that the participation of Delaware in the RGGI program caused Delaware electricity providers to import more electricity from out-of-state generation sources than from in-state generation sources. Similar comments stated that allowance costs caused electricity generated from Delaware sources to be less competitive in the wholesale market for electricity. Furthermore, one comment included data which stated that electricity imports increased in the RGGI region from the period of 2007 to 2015.

Department Response

Delaware in-state electricity generation was 8.73 million MWh in 2016 according to the Energy Information Administration (EIA)[21]. This value is the highest amount of in-state generation over the past 20 years. Furthermore, the increases in generation from natural gas fired sources offset and exceed the losses in coal fired generation capacity. Generation from natural gas fired units increased from 1.90 million MWh in 2007 to 7.79 million MWh in 2016 – which is a fourfold increase. Thus, electricity generation has increased in-state, signifying that electricity generated in the State of Delaware is continuing to be competitive in the wholesale market.

The Department reiterates that this rulemaking only pertains to Delaware's CO_2 Budget Trading Program. Therefore the Department is limited to responding to only aspects that apply to the State, not the RGGI region. According to EIA data, Delaware electricity imports in 2007 were 28.1% of the total State demand (shown in Figure 2 below)[22]. It is true that imports increased in 2015, compared to 2007; however, the increase was not large as imports totaled 32.1% of the electricity demand in 2015. Since 2007, the only years the electricity imports

[21] U.S. Energy Information Administration. (2018, January). *Delaware Electricity Profile 2016*. Retrieved from https://www.eia.gov/electricity/state/Delaware/
[22] U.S. Energy Information Administration. (2017, November). *Detailed State Data*. Retrieved from https://www.eia.gov/electricity/data/state/

were greater than in-state generation were 2009 and 2010. The likely cause of this was the economic recession of 2008. Since then, electricity imports declined through 2012. Imports increased a small amount in 2013 and remained fairly constant through 2015. In 2016, however, electricity imports to Delaware were at their lowest in the analyzed time period, while in-state generation was at its highest. Electricity imports dropped to only 22.4% of the total State of Delaware electricity demand. Thus, in-state generation of electricity has not decreased, and the reliance on out-of-state generation has not increased.

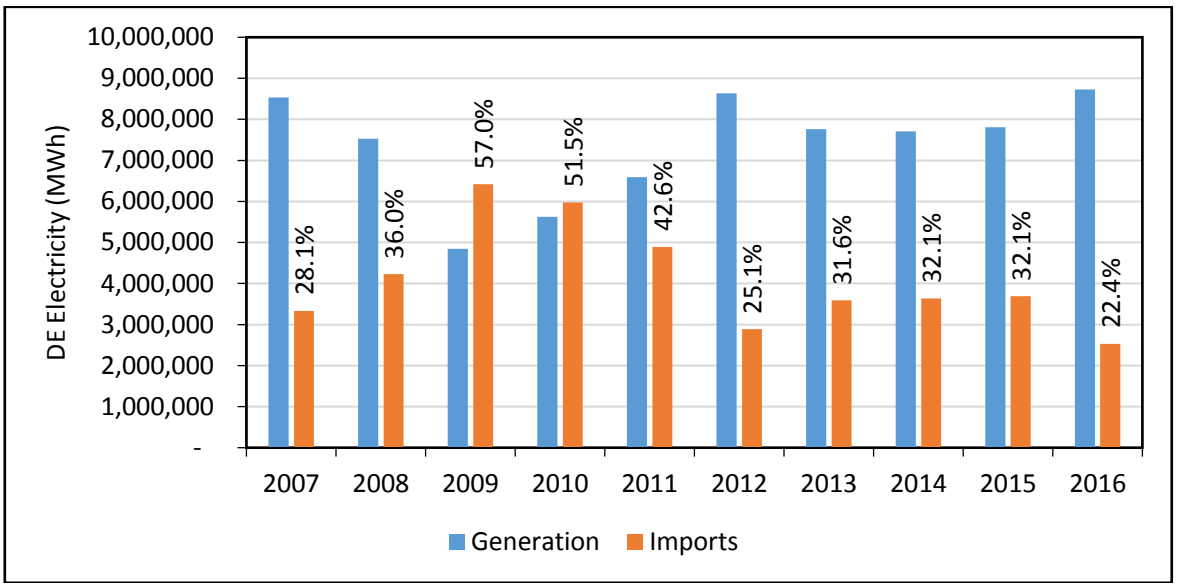

Figure 2. Delaware electricity demand by in-state generation and out-of-state imports from 2007-2016; percentages shown are the amount of electricity imported in the total state demand

Comment 16

A comment stated that a decreased amount of in-state power generation may reduce electric grid reliability in Delaware.

Department Response

Delaware's participation in the RGGI program has not decreased in-state electricity generation, nor is it expected to result in decreases in the future. Please see Comment 15 above. Furthermore, according to the 2016 Delmarva IRP, grid reliability requirements will be sufficiently met for the PJM region through the year 2026, using the combination of generation resources in the PJM Delmarva Power and Light (DPL) Zone and capability of the transmission system to import electricity into the DPL Zone. Thus, the generation sources in the DPL zone (e.g. Delaware in-state generation sources), will maintain generation to ensure grid reliability. There is no detrimental effect of the RGGI program in Delaware on in-state generation, and, thus grid reliability.

Comment 17

One commenter provided analysis using energy intensity – the amount of gross domestic product for each unit of energy – as a metric. The comment suggested that states with a greater rate of increase in GDP per unit (MWh) of energy produced between two nominal years have greater energy intensity. The units of energy intensity used in the comment were MWh/million $, and the comment stated "*energy intensity improves when it goes down.*" The comment said that RGGI states had a lower rate of energy intensity increase compared to select comparison states.

Department Response

The proposed amendments are limited to the Delaware CO_2 Budget Trading Program. Thus, the Department's response only addresses the "energy intensity" as it pertains to the State of Delaware, not the RGGI region. The commenter used the years 2007 and 2015 as the nominal years. 2007 was selected since it was the year before the first RGGI auction. Table 1 below shows the data provided by the commenter, as well as Delaware data (all sourced from the EIA and Bureau of Economic Analysis)[23,24].

Table 1. Energy Intensity of Delaware, comparison states, and the U.S.*

	Demand (million MWh)		Gross State/Domestic Product (billion 2009 dollars)		Energy Intensity (MWh/million $)		Percent Change
	2007	2015	2007	2015	2007	2015	
Delaware	11.9	11.5	57.8	61.2	205	188	-8.4%
Comparison States *	851.9	873.8	3,049.5	3,535.9	279	247	-11.5%
U.S. Total	3,764.6	3,759.0	14,798.4	16,089.0	254	234	-8.2%

* Comparison states were IL, OH, OR, PA, and TX

It can be seen that the comparison states do in fact have a greater percent decrease in energy intensity. However, the comparison states have a higher overall energy intensity, suggesting that energy generation has a more significant role in the economics of those states. Texas, Pennsylvania, and Illinois are ranked in the top five for electricity generation in the country in 2007 and 2015. In fact, in 2015 Texas generated more electricity than Pennsylvania and Illinois combined and accounted for 11% of the national total[25]. Furthermore, it can be seen that the demand for electricity decreased in Delaware while the gross state product increased between 2007 and 2015, which points to the successes in the investment of RGGI proceeds to energy efficiency programs.

Another consideration for comparison would be the carbon intensity of electricity generation for the states. Carbon intensity here is the amount of CO_2 emitted per unit of electricity generated. Carbon intensity also improves as it decreases as less CO_2 is emitted per MWh of electricity generated. Table 2 shows generation, CO_2 emissions, and the carbon intensity data

[23] Id 22.
[24] Bureau of Economic Analysis. (2018). *GDP by State*. Retrieved from https://www.bea.gov/data/gdp/gdp-state
[25] Id 22.

for Delaware, the comparison states, and the United States[26]. Carbon intensity decreased at twice the rate of the comparison states and the United States between 2007 and 2015, again signaling the successes of the CO_2 Budget Trading Program to reduce CO_2 emissions from the power sector.

Table 2. Carbon intensity of Delaware, comparison states, and the U.S.*

	Generation (million MWh)		CO_2 emissions (million tons CO_2)		Carbon Intensity (MWh/ton CO_2)		Percent Change
	2007	2015	2007	2015	2007	2015	
Delaware	8.5	7.8	6.6	3.7	0.86	0.52	-39%
Comparison States *	1,042.1	1,038.1	577.1	464.0	0.53	0.43	-18%
U.S. Total	4,156.7	4,077.6	2,311.3	1,843.4	0.85	0.69	-19%

* Comparison states were IL, OH, OR, PA, and TX

Comment 18

A few comments been made that increasing electricity imports causes the emissions for Delaware electricity use to be exported to out-of-state sources, otherwise known as emissions leakage.

Department Response

The Department reiterates that in-state generation has increased while demand is decreasing. Thus, there has not been an increase in the amount of electricity that is imported to Delaware. Nonetheless, the RGGI, Inc. 2015 Monitoring Report for CO_2 emissions from electricity generation and imports in the region provide indicators of emissions leakage, or lack thereof[27]. The report focuses on the RGGI region, and not specifically towards the State of Delaware. However, import data with regards to the PJM region for non-RGGI sources to RGGI states are provided in Table 1 (p. 15) of the report. The relevant data provided in the report to the State of Delaware are "Net Imports – from non-RGGI PJM to RGGI PJM." These data are presented as both electricity serving demand and CO_2 from the electricity serving demand. It should be noted that Maryland would also be included in this data, as Maryland and Delaware are the only RGGI states currently within the PJM regional transmission organization (RTO). In Table 1 of the report, the electricity demand and emissions data associated with the specified net imports can be seen. While net electricity import did increase in 2015 in this region, it cannot be determined if majority of the imports are to Maryland or Delaware. Regardless, in 2015, the CO_2 emissions associated with import from the PJM non-RGGI sources were among their lowest values since 2009 (in this time period, only 2014 was lower by 18,000 tons, or 0.1%). Furthermore, the emissions in 2015 were nearly equal to those in 2007 associated with imports (2015 CO_2 emissions were only 220,000 tons greater, or 1.3%). Finally, 2015 CO_2 emissions from imports were lower than those from 2005 by 2.42 million tons, or 11.8%.

[26] Id 22.
[27] RGGI, Inc. (2018, April). *CO2 Emissions from Electricity Generation and Imports in the Regional Greenhouse Gas Initiative: 2015 Monitoring Report.* Retrieved from https://www.rggi.org/sites/default/files/Uploads/Electricity-Monitoring-Reports/2015_Elec_Monitoring_Report.pdf

The 2015 Monitoring Report offers no conclusion on emissions leakage, since electricity generation is dependent on a variety of different factors, including changes in demand, relative fuel prices, and wholesale electricity prices. The rising amount of electricity imports from non-RGGI sources in the PJM region could indicate emissions leakage, however, decreases in emissions rates caused the overall emissions from imports to decrease. These trends essentially produce a counteracting effect which may lead to their being no increase in emissions leakage.

Comment 19

One comment received stated that the price of RGGI allowances reduced the efficiency and operating hours of Delaware's remaining coal-fired generating unit at the Indian River power plant. The comment further stated that the ultimate effect of the price of RGGI allowances will cause the plant to shut down, which could cause reliability issues. In addition, a graph was provided showing data to support this case.

Department Response

The comment is based on an assessment that the Department believes does not accurately capture the state of the electricity market with respect to the operating schedule of the Indian River power plant. As explained in a previous response, power plants are dispatched for electricity generation by the grid operator based on the offer price that is submitted to the wholesale electricity market. Offer prices are submitted based on factors such as current demand, fuel prices, operating expenses, and more. Power plants, or electricity generating units that offer below the determined clearing price are dispatched. Typically, power plants with lower operating costs are able to submit the most competitive bids, since they will have less costs to make-up.

Market trends have recently favored power plants that generate electricity using natural gas over those that are coal-fired. Natural gas prices are currently at historical lows and are anticipated to remain low in the future. This trend reflects the current case in operations at the Indian River power plant. Figure 3 below expands upon the data provided in the comment. The data for the operating hours of the Indian River power plant were obtained from the RGGI CO_2 allowance tracking system (COATS)[28]. The historical price data for natural gas were obtained from the EIA[29]. It can be seen that the operating hours of the Indian River power plant typically rise when there is an increase in the price of natural gas and, likewise, fall when there is a decrease in the price of natural gas. This is expected since electricity generation from coal-fired plants becomes more competitive if natural gas prices rise. The operations at the Indian River power plant cannot be directly related to the CO_2 allowance costs when there are other market factors that can cause fluctuations.

[28] RGGI, Inc. (2018). *RGGI CO2 Allowance Tracking System - Reports: Quarterly Emissions*. Retrieved from https://rggi-coats.org/eats/rggi/index.cfm?fuseaction=reportsv2.quarterly_emissions_rpt&clearfuseattribs=true
[29] U.S. Energy Information Administration. (2018). *Henry Hub Natural Gas Spot Price*. Retrieved from https://www.eia.gov/dnav/ng/hist/rngwhhdM.htm

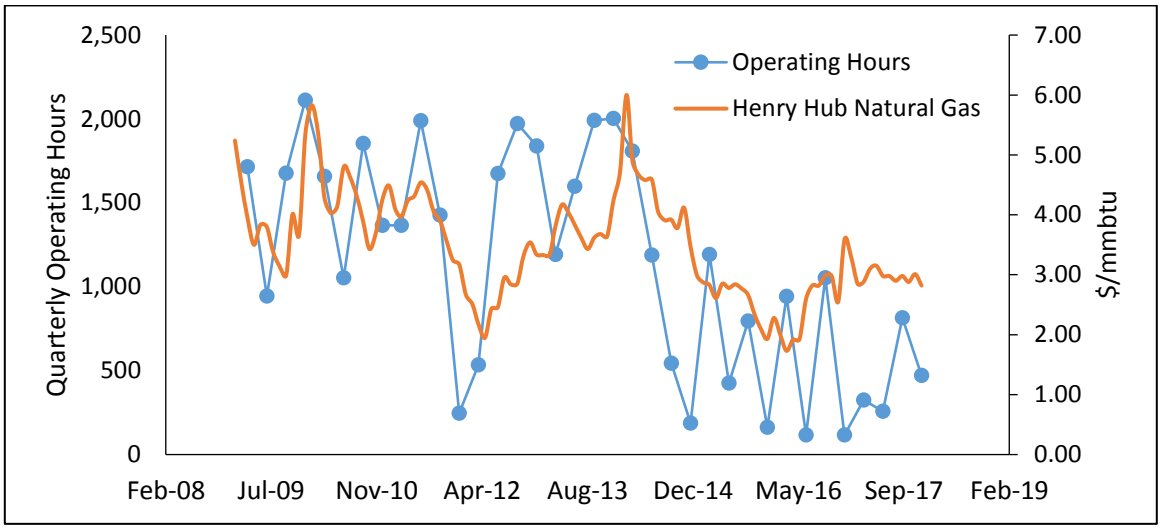

Figure 3. Quarterly operating hours at the Indian River power plant as compared to the Henry Hub spot price of natural gas

Another method to identify a trend for which types of electricity generation plants will be dispatched is to observe which plants have the current lowest short run marginal costs. In the PJM State of the Market Report for 2017, a figure is provided showing the average short run marginal costs from 2009 – 2007 (Figure 7-5, page 314)[30]. The figure is very similar, showing that combined cycle and combustion turbines had significantly higher costs than coal plants in the winter months (January, February) of 2014. Thus, it would be expected that coal plants would be dispatched favorably compared to natural gas plants since operation costs were lower. As natural gas began to decrease in price, operating costs for natural gas-fired plants decreased and the plants became more competitive than coal plants. This further explains the decrease in operating hours at the Indian River power plant.

As explained in previous responses, Delaware in-state electricity generation is at a 20-year high. The decrease in generation from the Indian River power plant is more than made up for from other generation sources, particularly natural gas power plants. Furthermore, the Delmarva IRP shows that grid reliability requirements have been met through 2026 for PJM. In addition, according to a recent PJM 30-day reliability study, the announced closures of 4 GW of capacity in the near future will not affect grid reliability[31]. If the Indian River power plant does not operate at full capacity, it would be expected that grid reliability would not suffer.

[30] Monitoring Analytics, LLC. (2018, March). *State of the Market Report for PJM, Volume 2: Detailed Analysis.* Retrieved from http://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2017/2017-som-pjm-volume2.pdf

[31] Walton, R. (2018, October). *PJM: FirstEnergy can shut 4 GW of fossil plants without harming reliability.* Retrieved from https://www.utilitydive.com/news/pjm-firstenergy-can-shut-4-gw-of-fossil-plants-without-harming-reliability/538618/

Comment 20

One commenter expressed concern that electricity generation by natural gas may not be enough to mitigate greenhouse gas emissions.

Department Response

The Department recognizes that there are greenhouse gas emissions associated with natural gas-fired electricity generation and agrees more efforts will be needed to meet the USCA target reduction. The proposed amendments to the CO_2 Budget Trading Program do not change the applicability of Delaware's regulation. Natural gas-fired plants that have a nameplate capacity of 25 MW or greater are required to comply with CO_2 allowances.

IV. Comments regarding the impact of CO_2 emissions

Comment 21

A few of the comments received stated that either increased CO_2 emissions are not harmful, or the impact of reducing CO_2 emissions in the State of Delaware will have a negligible impact on global CO_2 emissions.

Department Response

The Department believes that this comment is beyond the scope of the proposed amendments. Further, the belief that CO_2 emissions are not harmful or that Delaware's emissions are negligible are incorrect. Delaware's participation in the RGGI program is based upon the threat that increasing greenhouse gas emissions pose to the welfare of the state's citizens and economy. Delaware Code Title 7 §6043 states that climate change poses serious potential risks to human health and terrestrial and aquatic ecosystems and that it is in the interest of the state to take actions to stabilize and limit CO_2 contributions from the state.

The U.S. Environmental Protection Agency issued an endangerment finding in 2009, which states:

> "*…that the current and projected concentrations of the six key well-mixed greenhouses – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) – in the atmosphere threaten the public health and welfare of current and future generations*[32]."

Among these greenhouse gases, CO_2 presents the greatest risk as it is by far the most abundant, reaching 81% of all greenhouse gas emissions in 2016[33].

While the greenhouse effect caused by these gases is necessary for life on the planet, the heightened concentrations accelerate this effect. This causes a rapid increase in temperature around the globe, which presents harmful effects. One such effect with direct implications on

[32] U.S. Environmental Protection Agency. (2017, July). *Endangerment and Cause of Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act*. Retrieved from https://www.epa.gov/ghgemissions/endangerment-and-cause-or-contribute-findings-greenhouse-gases-under-section-202a-clean

[33] U.S. Environmental Protection Agency. (2018, April). *Overview of Greenhouse Gases*. Retrieved from https://www.epa.gov/ghgemissions/overview-greenhouse-gases

the State of Delaware is sea level rise. Sea level rise occurs for two primary reasons: first, rise in ocean temperatures causes the water to expand; second, increases in ambient air temperatures can cause land-based glaciers and ice-caps to melt, and the resulting water runs into the ocean. At the long-term tide gauge in Lewes, the observed sea level rise trend is about 0.135 in per year, or 13.5 inches in a 100-year period[34]. However, with the rapid increases in concentrations of CO_2 and rising temperatures, sea level rise is expected to accelerate; sea levels off the coast of Delaware could rise between 1.6 feet and 4.9 feet above 2009 levels by 2100[35]. Furthermore, as much as 8 to 11% of land statewide could be inundated with water at high tide by 2100. This directly impacts tourism in Delaware, which depends greatly on the state's beaches that would be negatively affected by sea level rise. Tourism is an important part of Delaware's economy. In 2016, tourism generated more than $504 million in taxes and fees for the state and local governments, which helped to avoid $1,400 in taxes for each Delaware household[36].

For further information, the Department refers to Delaware Climate Change Impact Assessment[37]. Additional information on the effects of climate change for Delaware are provided by the EPA's "What Climate Change Means for Delaware[38]."

Comment 22

One comment stated that there is no real evidence of the effects of climate change that are a result of increased CO_2 emissions.

Department Response

The Department reiterates that this rulemaking is limited to the proposed amendments to the CO_2 Budget Trading Program in Delaware and believes this comment is beyond this scope. Nonetheless, the Department reiterates that the rapid increase in concentration of CO_2 and other greenhouses gases in the atmosphere results in serious public health, economic, and environmental risks to the state, nation, and world. The International Panel on Climate Change has recently released a special report detailing the impacts of global warming of 1.5°C (2.7°F)[39]. Such a temperature rise presents high to very high risk for threatened systems such as warm water corals, the arctic region, coastal flooding, and more. The report concludes that if the global community does not enact "rapid and far-reaching" carbon reduction policies in the next decade, there could be irreversible damage to the climate as soon as 2040.

[34] National Oceanic and Atmospheric Administration. (2018, August). *Relative Sea Level Trend Lewes, Delaware*. Retrieved from https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=8557380

[35] Love, S., Arndt, T., & Ellwood, M. (2013, September). *Preparing for Tomorrow's High Tide; Recommendations for Adapting to Sea Level Rise in Delaware.* Retrieved from http://www.dnrec.delaware.gov/coastal/Documents/SeaLevelRise/FinalAdaptationPlanasPublished.pdf

[36] Chesney, M. (2018, February). *Study: Delaware Tourism has another record-breaking year.* Retrieved from https://www.visitdelaware.com/articles/post/value-of-tourism-2016/

[37] Department of Natural Resources and Environmental Control. (2014, February). *Delaware Climate Change Impact Assessment.* Retrieved from http://www.dnrec.delaware.gov/energy/Documents/Climate%20Change%202013-2014/DCCIA%20interior_full_dated.pdf

[38] U.S. Environmental Protection Agency. (2016, August). *What Climate Change Means for Delaware.* Retrieved from https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-de.pdf

[39] International Panel on Climate Change. (2018, October). *Global Warming of 1.5 °C.* Retrieved from http://www.ipcc.ch/report/sr15/

The consequences of the buildup of greenhouse gases, including CO_2, in the atmosphere is well documented and scientifically accepted. In Delaware, the effects will primarily be sea level rise, ocean acidification, increased temperatures, and increased heavy precipitation events. The impacts to Delaware are well documented in the 2012 Climate Change Impact Assessment report[40].

V. Comments suggesting additions to the proposed amendments

Comment 23

A comment was submitted that the Department take additional steps to protect environmental justice communities and communities most directly impacted by power plant pollution within the state.

Department Response

The Department will continue to provide forums for robust stakeholder engagement. The effects of climate change are apparent in Delaware and can present particular hardships to those is disadvantaged communities. The Department believes continued opportunities for feedback from all Delawareans will provide guidance on how to best address environmental justice issues pertaining to power plant pollution in the state.

Comment 24

A comment was submitted that the Department adopt an optional provision of the RGGI model rule regarding voluntary renewable energy (VRE) set-asides.

Department Response

The Sustainable Energy Utility (SEU) was created to assume primary responsibility for promoting energy efficiency and renewable energy in the state. Pursuant to §6046 (c) of Delaware Code Title 7, Chapter 60, 65% of the RGGI auction revenue is directed to fund the SEU. The SEU along with the Delaware's Renewable Portfolio Standard are adequate in achieving reductions in CO_2 emissions from energy efficiency projects as well as stimulating electric utilities to meet the mandated goal of 25% renewable sources for their energy portfolios by 2025. As of the 2017 SEU Annual Report, energy efficiency projects through the SEU totaled a lifetime energy savings of 465,000 MWh and lifetime cost savings of $35.4 million[41]. Furthermore, from 2009 to 2017, Delaware increased renewable energy capacity – including wind, solar, and landfill gas – by 5%. Within this increase wind and solar capacity increased by a factor of nearly 20. Thus, the Department believes the SEU serves the same purpose as the VRE set-aside, and adopting the optional provision is not necessary, at this time.

[40] Id 37.
[41] Id 16.

VI. Comments received at public hearing

(A copy of the public hearing transcript is available on the RGGI page of the Department website)

Comment 25

A comment was made that the base budget value in subsection 5.1.9 of the proposed amendments contained an error.

Department Response

The Department noted this error and issued an amended document of the regulation as well as an errata table detailing the adjustment. The error was a typographical error, and thus, is believed to be non-substantive. For clarity, the base budget value listed in subsection 5.1.9 of the regulation, as posted in the August edition of the Delaware Register was 2,280,690 tons. The corrected value of the base budget that has been addressed in the amended document of the regulation is 2,870,690 tons. Both versions of the regulation are available on the RGGI page of the Department website[42].

Comment 26

A comment was made that the Department does not have the authority to change the regulations without going to the General Assembly.

Department Response

The Department believes the amendments proposed to the CO_2 Budget Trading Program are within the statutes of Delaware Code Title 7, Chapter 60, subchapter II-A. §6044 (a) states:

> "*The General Assembly explicitly authorizes and sanctions the prior and ongoing participation of the Secretary of the Department of Natural Resources and Environmental Control, and the Chair of the Public Service Commission, and their duly authorized representatives, as part of their official duties, to implement and participate in the Regional Greenhouse Gas Initiative (RGGI).*"

Furthermore, §6043 (a) (9) sets an initial emissions cap for Delaware and requires a minimum of 25 percent of Delaware's allocation of CO_2 allowances under the cap-and-trade program to be used for public benefit purposes. It then states that "*[t]he cap and Delaware's allocation may be adjusted in the future.*"

In addition, §6044 (c) authorizes the Secretary of the Department to promulgate regulations to implement the RGGI cap and trade program consistent with the RGGI Memorandum of Understanding, as amended. The Department believes that based on these sections of the Code, the Secretary of the Department has the authority by regulation to implement the amendments to the CO_2 budget trading program and adjust the emissions cap.

[42] Department of Natural Resources and Environmental Control. (2018, October). *Regional Greenhouse Gas Initiative*. Retrieved from http://www.dnrec.delaware.gov/Air/Pages/RegionalGreenhouseGasInitiative.aspx

Comment 27

A comment was made that CO_2 is not a pollutant; however, CO_2 is needed as it is beneficial to plant growth. The effort of Delaware to reduce CO_2 emissions is unnecessary when compared to global emissions, particularly those of China and India. The commenter entered a chart showing global CO_2 emissions trends as an exhibit to the record (available on the RGGI page of the Department website). Furthermore, the commenter noted that participation in the RGGI program is a tax increase for consumers that shows on electricity bills.

Department Response

The Department reiterates that CO_2 is the most abundant of six greenhouse gases included in an endangerment finding by the U.S. Environmental Protection Agency. The finding states that current and projected concentrations CO_2 and the other greenhouse gases threaten the public health and welfare of current and future generations.

Furthermore, the Delaware General Assembly identified in §6043 (a) (1-4) that the increased amount of greenhouse gases, particularly anthropogenic emissions, and particularly CO_2 enhanced the effects of climate change that pose serious potential risks to human health and ecosystems on a global, regional, and state level. The General Assembly found that "*[i]t is in the interest of the State to protect human health and terrestrial and aquatic ecosystems by taking actions to stabilize and to limit the CO_2 contributions from the State.*"

The Department does agree that the increase in CO_2 emissions is a global issue. However, in agreeance with the General Assembly findings in §6043 (a) (4), it is in the interest of the State to mitigate and limit CO_2 contributions from Delaware for human and environmental welfare. The Department also reiterates that the CO_2 budget trading program is not a tax, but a market based approach to reducing CO_2 emissions in the power sector. Nonetheless, the Department points to an earlier response that the participation in the RGGI program has not and will not cause increase in electricity rates. In fact, since the beginning of Delaware's participation in the RGGI program in 2009, consumer electricity rates decreased.

Comment 28

A comment was made that the State of Delaware expeditiously incorporate the proposed amendments to the regulation. The commenter also suggested that Delaware incorporate additional changes that would make the regulation more stringent, including expanding coverage of the RGGI program to groups of electricity generating units that collectively exceed a capacity of 25 MW. A copy of the comments were entered as an exhibit to the record.

Department Response

The Department appreciates the support of the proposed amendments; however, the department does not agree, at this time, that the regulation be applied to collections of smaller electricity generating units that exceed 25 MW of capacity. The purpose of the regulation has been, and remains to be, to reduce CO_2 emissions from fossil fuel-fired electricity generating units having a rated capacity equal to or greater than 25 MW. The 25 MW threshold applies to individual electricity generating units and not cumulative units. However, the Department will be evaluating feasible measures to reduce CO_2 emissions from other source categories in

the future, and may consider expansion of this program to smaller units during the next program review.

Comment 29

A comment was made stating that CO_2 may be beneficial for plant growth, but it is not beneficial for human development or health. The commenter presented examples of climate change and agreed that CO_2 emissions are a global issue, and that the United States should be leading efforts to reduce emissions.

Department Response

The Department agrees and reiterates that CO_2 provides harmful effects on human health and welfare, as well as harmful effects on the environment. The Department also agrees that the issue of climate change and increasing anthropogenic CO_2 emissions continues to have a global impact, and all entities, whether at the global, national, regional, or state level need to take action to limit their impact.

VII. Comments in favor of the RGGI program

Comment 30

Comments were received in favor of the RGGI program and the efforts to continue to reduce CO_2 and other greenhouse gas emissions in the State of Delaware.

Department Response

The Division of Air Quality appreciates the letters of support, and recommends that the Department finalize the revisions as proposed.