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January 14, 2021

Pennsylvania Environmental Quality Board
Rachel Carson State Office Building
16th Floor
400 Market Street
Harrisburg, PA 17101-2301

Via Web (eComment)

Re: Public Comments on Proposed Rulemaking #7-559 – CO_2 Budget Trading Program

Dear EQB:

Tenaska Pennsylvania Partners, LLC ("Tenaska") owns and operates the 940 MW, gas-fired combined cycle Tenaska Westmoreland Generating Station in Westmoreland County, PA. As a merchant generator selling capacity and energy into the competitive PJM regional transmission organization, Tenaska will be directly affected by Pennsylvania's participation in the Regional Greenhouse Gas Initiative ("RGGI"). We appreciate the opportunity to provide the following comments on Proposed Rulemaking #7-559 – CO_2 Budget Trading Program ("Proposal").

1. Generation and Emissions Leakage / Border Adjustment

As I am sure you are aware, PJM is a regional, wholesale market covering all or parts of 13 states and the District of Columbia, only four of which are participating in RGGI. Should Pennsylvania join RGGI, RGGI-participating states (aka "Carbon-Price Sub-Region") would still represent only roughly half (54%) of the total PJM nameplate generation capacity.[1] Electricity sold into PJM routinely flows across state lines, including between states that are and are not RGGI participants. RGGI imparts a price on CO_2 emissions, which is translated into a cost on power generation. PJM specifically allows emissions costs to be included in generators' energy market offer price, so generators will normally do so on a $/MWh basis in order to recoup their allowance costs. The allowance cost will add approximately $3.12/MWh to the average offer price of a natural gas-fired combined cycle plant (greater than 17%), based upon a typical bid of $18/MWh[2] and a RGGI allowance cost of $7.41.[3]

[1] PJM Carbon Pricing Senior Task Force, Expanded Results of PJM Study of Carbon Pricing & Potential Leakage Mitigation Mechanisms, February 25, 2020
[2] Glen Thomas, Pennsylvania Energy Summit, PA House Majority Policy Committee, June 12, 2020
[3] December 2, 2020 RGGI auction clearing price

Given that most PJM states are not RGGI participants, this will disadvantage Pennsylvania generators as their offer price will be burdened with the RGGI allowance costs and generators in non-participating states (most notably West Virginia and Ohio) will not. This will result in plants in those states, even those less efficient and higher emitting, being dispatched ahead of those in Pennsylvania and causing generation and emissions to simply be shifted, or "leaked", to the non-RGGI states, negating much of the perceived benefit from the reduction in CO_2 emissions in Pennsylvania and harming Pennsylvania generators. This is confirmed in the modeling ICF conducted on behalf of the Department of Environmental Protection ("DEP").[4]

PJM created a Carbon Pricing Senior Task Force ("CPSTF") to study this phenomenon and ways to mitigate it. One such way is the introduction of a "border adjustment" of electricity costs for energy that flows from a RGGI state to a non-RGGI state, or vice versa, so that no state's generators are advantaged over another due to participation in RGGI. PJM's task force has modeled leakage and confirmed it will indeed occur and that a two-way border adjustment reverses the effects.[5] Specifically, the modeling results project a <u>decrease</u> in 2023 Pennsylvania generation of 9-16% and an <u>increase</u> in generation in the non-RGGI PJM states of 4-7%, depending upon allowance prices. With a two-way border adjustment, 2023 Pennsylvania generation decreases less than 1%. However, PJM has stated they will not move forward on rulemaking to implement a border adjustment unless and until RGGI states request that they do so.[6]

In its comments to the CPSTF's August 2020 poll on what specific areas require additional education or analysis, DEP recommended "*an analysis taking into consideration transmission constraints to more clearly identify localized impacts and outcomes within the carbon pricing subregion. Analysis to date is not specific enough to identify state-level impacts which is necessary in order to support any specific approach which is necessary to begin rule development*." Further, in response to the poll question on what areas of market rule development the CPSTF force should consider, DEP stated they are "*unsure of the best way to prioritize the market rule areas at this point in time. Would need some additional education on the total scope of market rules from PJM*." Clearly, DEP believes further study is necessary to properly address leakage.

Governor Wolf's Executive Order 2019-07, directing DEP to develop a proposed rulemaking package requiring participation in a market-based CO_2 program consistent with RGGI, requires DEP, working with the Public Utility Commission, to "*engage with PJM Interconnection to promote the integration of this program in a manner that <u>preserves orderly and competitive economic dispatch within PJM and **minimizes emissions leakage**</u>*" (emphasis added). Therefore, Tenaska believes a decision to join RGGI without leakage mitigation, especially given DEP's comments to the CPSTF, is grossly premature and inconsistent with the governor's Order.

[4] IPM Modeling Results Discussion: Reference Case and RGGI Policy Scenario, April 23, 2020
[5] PJM Carbon Pricing Senior Task Force, Expanded Results of PJM Study of Carbon Pricing & Potential Leakage Mitigation Mechanisms, February 25, 2020
[6] PJM Carbon Pricing Senior Task Force Polling Results, August 21, 2020

2. RGGI Benefits

CO_2 Emissions

Among the "impacts" to Pennsylvania that are being stated as the basis for Pennsylvania joining RGGI are increased temperatures and precipitation that, in turn, cause increased incidence and severity of floods and landslides and increased ozone concentrations, crop damage, dairy cow heat stress, and prevalence of Lyme disease.[7] However, DEP has not provided what mitigation to any of these will result from participating in RGGI. For example, DEP states average Pennsylvania temperatures are expected to increase 5.4°F by 2050 yet is silent on what the expected temperature increase (or decrease) will be as a direct result from RGGI participation. DEP has limited their CO_2 benefits analysis to mass (i.e., tons) and percent mass emissions reductions with no data in terms of ambient concentrations or the related impacts of those concentrations. DEP's cost-benefit analysis is incomplete if it does not provide the benefits in terms of the metrics used for justification of the regulation. Even the mass emissions reductions are largely meaningless if leakage is not addressed, as a significant portion of the modeled emission reductions in Pennsylvania will simply be shifted, or leaked, to upwind states such as Ohio and West Virginia, providing little to no benefit to Pennsylvania on an ambient concentration basis.

SO_2 and NO_x Emissions Co-benefits

Reductions in certain criteria pollutants (i.e., SO_2 and NO_x) are espoused by DEP as co-benefits of RGGI participation and comprise virtually all the quantitative health benefits.[8] However, DEP has not provided a basis for the need for these reductions or why RGGI is the proper pathway for doing so. If NO_x and SO_2 emissions reductions are needed, there are existing programs in place specifically for this purpose. Reasonably Available Control Technology ("RACT") and State Implementation Plans ("SIPs") are the proper regulatory schemes by which emissions reductions from existing sources shall be effectuated (new sources are governed by New Source Review). Further, if DEP's repeated assertion that all remaining Pennsylvania coal-fired power plants will soon retire regardless of RGGI participation is true, the majority of the NO_x and virtually all the SO_2 reductions will occur anyway.

NO_x

There are numerous pending regulatory activities that will no doubt require NO_x emission reductions from the same sources that would be covered under RGGI (see below). This means RGGI-related NO_x emission reductions are duplicative and benefits from such cannot be used in the RGGI cost-benefit analysis.

a. DEP was recently chided by the U.S. Court of Appeals for the Third Circuit[9] for failing to require sufficient reductions in NO_x emissions from certain coal-fired power plants, all of which would be covered sources under RGGI, in order to attain the 2008 ozone National Ambient Air Quality Standard ("NAAQS"). DEP is now required to submit a revised SIP requiring additional NO_x emissions reductions.

[7] IRRC CO_2 Budget Trading Program Regulatory Analysis Form at (10)
[8] IRRC CO_2 Budget Trading Program Regulatory Analysis Form at (10) & (17)
[9] Sierra Club v U.S. EPA (EPA-1: R03-OAR-2017-0290), August 27, 2020

b. USEPA is required to issue by March 15, 2021 a Federal Implementation Plan ("FIP") for Pennsylvania to address the "Good Neighbor Provision" of the Clean Air Act to address transport of NO_x emissions that affect downwind states' attainment of the 2008 ozone NAAQS.[10] This FIP will require additional NO_x emission reductions on some of the same sources that would be subject to RGGI.

c. Promulgation of the 2015 ozone NAAQS triggered a requirement, which has not yet been met, for Pennsylvania to revise its SIP to address the state's obligations under the Good Neighbor Provision.[11]

d. The Northeast Ozone Transport Commission ("OTC") petitioned USEPA in June 2020 under Clean Air Act §184 recommending that EPA require Pennsylvania to revise its SIP to include additional control measures that would establish daily NO_x emissions limits from coal-fired electricity generating units (EGUs) with existing add-on NO_x controls to ensure that the controls are optimized to minimize NO_x emissions each day of the ozone season. This "optimization" includes simply operating the controls at all times the EGU is operating. The reason for the petition is to assist downwind states within the Ozone Transport Region in meeting the 2008 ozone NAAQS.

e. USEPA recently issued a proposed revision to the Cross State Air Pollution Rule ("CSAPR") that would reduce the number of ozone season NO_x allowances in Pennsylvania by 55% each year.[12] The sources covered under CSAPR would also be covered sources under RGGI.

Therefore, the purported NO_x emission reductions achieved as a co-benefit of joining RGGI would be duplicative to those already required by the FIP, revised SIP, and revised CSAPR and will occur anyway.

<u>SO_2</u>

There are only four areas in Pennsylvania designated non-attainment for the 2010 1-hr SO_2 NAAQS. The NAAQS are ambient concentrations below which provide for public health protection, including the health of "sensitive" populations such as asthmatics, children, and the elderly. DEP has submitted SIPs for each current non-attainment area that outline how the respective areas will come into attainment and all four have been approved by EPA.[13] [14] None of the four SIPs rely on RGGI participation, meaning RGGI is not needed for the entire Commonwealth to meet the SO_2 NAAQS. In fact, the latest 3-yr average design value for all but one of the areas (Allegheny County, which is not even affected by any source that would be subject to RGGI) is well below the NAAQS, meaning these counties are already attaining the NAAQS but are just not yet re-designated as such. Therefore, additional SO_2 reductions resulting from RGGI participation are of dubious value.

[10] US District Court for the Southern District of New York, Case No. 1:20-cv-01425
[11] On December 5, 2019, USEPA published findings that Pennsylvania (and several other states) had failed to submit SIP revisions to address their good neighbor obligations with respect to the 2015 ozone NAAQS (at 84 FR 66612)
[12] https://www.epa.gov/csapr/proposed-rule-revised-cross-state-air-pollution-rule-update
[13] USEPA, SIP Status Reports
[14] Federal Register, Vol. 85, No. 202, pgs. 66240-66257

3. Discriminatory Treatment of Generation Technologies

DEP's Proposal establishes two discriminatory set-asides for covered sources that would result in disparate treatment among various generation technologies and distort competitive market efficiencies.

Waste Coal-Fired Units

Units that are fueled by waste coal would benefit from free allowances deposited directly into their RGGI compliance account equal to their actual emissions, subject to a state-wide cap of 9.3 million tons. While Tenaska appreciates the environmental problems caused by waste coal piles, we do not believe distorting the competitive electricity market via an air quality regulation is the proper scheme with which to address a solid waste and water quality issue. It is nonsensical to essentially force gas-fired units to subsidize the cleanup of solid waste caused by others and a fuel they have never utilized. Given the Commonwealth's long history of coal mining surely a more direct, equitable, and legally durable solution is available. Therefore, the waste coal allowance set-aside should be removed from the final regulation.

Cogeneration Units

The Proposal contains an allowance set-aside and compliance obligation adjustment for cogeneration units, including combined heat and power systems ("CHP"), and electricity generators that do not supply more than 10% of their electricity generation to the grid.[15] DEP justifies these because "*cogeneration units concurrently produce electricity and useful thermal energy, making them energy efficient and environmentally beneficial…These units provide useful thermal energy, a byproduct of electricity generation, to the manufacturing facility which helps prevent the need for the facility to run additional boilers onsite to generate electricity which in turn avoids additional CO_2 emissions*".

Combined cycle power generating facilities, which will not benefit from any allowance set-asides, also produce electricity and useful thermal energy, making them just as efficient and environmentally beneficial. The only difference is that instead of ultimately using the useful thermal energy as steam, combined cycle power generating facilities utilize this energy to produce additional electricity without any additional fuel consumption. That additional electricity generation precludes other generation sources from having to consume fuel to produce an equal amount of electricity. CO_2 emissions from CHP facilities have no less environmental impact than those from combined cycle facilities. Therefore, there is no sound basis for the cogeneration allowance set-aside and compliance obligation adjustment, and they should be removed from the final regulation.

[15] §145.342(k) and §145.305

Please contact me at 402.938.1661 or lcarlson@tenaska.com should you have any questions or require additional information.

Sincerely,

TENASKA PENNSYLVANIA PARTNERS, LLC
By: Tenaska Pennsylvania I, LLC, Its Managing Member

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