



January 14, 2021

Submitted via <http://www.ahs.dep.pa.gov/eComment>

Environmental Quality Board
Harrisburg, PA 17105-8477

**Re: Public Comments to the Proposed Rulemaking: CO₂ Budget
Trading Program #7-559**

To Whom It May Concern,

On behalf of the ownership and employees of Seward Generation, please accept our comments to the Environmental Quality Board (EQB) published notice of its proposal to amend 25 Pa. Code Chapter 145 (relating to interstate pollution transport reduction) to add Subchapter E (relating to CO₂ budget trading program) to establish a program to limit the emissions of carbon dioxide (CO₂) from fossil fuel-fired electric generating units (EGU) located in this Commonwealth, with a nameplate capacity equal to or greater than 25 megawatts (MWe). 50 Pa.B. 6212. Adoption of this proposal will establish Pennsylvania's participation in the Regional Greenhouse Gas Initiative, known as RGGI, a regional CO₂ Budget Trading Program.

About Seward Generation:

Located in New Florence, Indiana County, Pennsylvania, Seward Generation (Seward) is the world's largest waste coal-fired power plant, supplying 525 MW to the PJM (Pennsylvania/New Jersey/Maryland) Region.

The plant was constructed on the 296-acre site where an 82-year-old coal-fired power plant was retired. The new repowered Seward power station increased the electric output of the retired plant by 260% but reduced NO_x, SO₂, and particulate emissions by 74%, 85%, and 90% respectively. The plant directly employs 132 and roughly 290 indirect jobs in the transportation industry and materials handling making it one of the largest employers in the surrounding area.

The Seward plant became operational in 2004 and is the LAST waste coal plant to be built in Pennsylvania. The plant remediates up to 12,000 tons of waste coal per day or about 4 million tons per year. Seward sources its primary fuel from the 60+ million tons of waste coal which have

been discarded throughout the central Pennsylvania region. Although waste coal at one time was considered a cheap fuel source, the cost to remediate has increased while power prices have decreased. Power prices are at their same level as they were in 1999 due to a host of factors including the advent of the Marcellus shale, renewable energy mandates adding supply as well as adjacent states regulating their less than competitive power generators thus not allowing the market to reduce supply in the face of low prices. Additionally, the waste coal piles that were closer to Seward have been remediated causing the remediation work that provides the fuel to Seward to be sourced from piles further away; thus, increasing trucking expenses of the remediation process. It is estimated that there is still over a 30-year worth of remediation projects located with a 50-mile radius of the Seward power station that would support full load operations. Virtually all of these sites are from defunct steel and coal companies that have long since disappeared as the US economy started to deindustrialize in the 1970's. These abandoned waste coal piles are orphaned and a huge burden to local communities over the past 50+ years.

At full-load operation, the plant receives about 700 truckloads of waste coal a day, along with 120 truckloads of limestone for sulfur capture during the power-generation process. Due to the sheer size of the Seward plant the amount of waste coal removed from a five-county area surrounding the plant is truly remarkable and is perhaps the most positive environmental story in the region in the last century. The chart below shows how many tons of waste coal can be reclaimed at the different operating capacity percentage.

Operating Capacity	Waste Coal Reclaimed (tons)
100%	4,436,064
90%	3,992,458
80%	3,548,851
70%	3,105,245
60%	2,661,638

Seward Generation utilizes circulating fluidized bed technology (CFB) which enables the plant to burn up to 100% waste coal while meeting strict permitted emissions limits. Alkaline-rich ash, a beneficial byproduct from the process, is returned to the sites that once contained these piles of waste coal offsetting acidic soil. The Alkaline-rich ash is also utilized in environmental reclamation projects throughout the central Pennsylvania region including remediation of abandoned surface mines that were a product of a bygone era. Through this process, Seward has removed more than 40,000,000 tons of refuse from the Pennsylvania landscape since operations commenced.

Key environmental and related benefits are:

- Limestone is pulverized into a talcum-powder consistency and blown into the boiler along with the crushed coal. This reduces sulfur dioxide emissions by 95 percent.

- The CFB is actually considered a low temperature boiler even though temperatures are maintained at 1,600 degrees Fahrenheit. This low temperature greatly minimizes the formation of Nitrogen Oxides a precursor to the formation of smog.
- This process significantly reduces the total air emissions of these waste coal piles, since over time many of these piles will self-combust releasing all the air toxins into the atmosphere with no capture. This would include CO₂.

The plant was named the 2004 Plant of the Year by Platt's POWER magazine. In addition, Seward received The Pennsylvania Governor's Award for Environmental Excellence in 2014.

Background:

In the early days of coal mining, waste-coal was discarded with no environmental regulation in regard to proper disposal. Much of this refuse material was left in large waste piles near local waterways. These piles were often referred to as "bony piles" with some holding millions of tons of acidic materials. Due to the acidic composition, the piles leach acid mine water and heavy metals into regional waterways greatly impairing water quality in economically distressed regions. This pile also can even spontaneously combust releasing uncontrolled hazardous emissions into the air including CO₂.

During the 1990's and early 2000's on the back of new regulations designed to create a public private partnership to incentivize mine reclamation efforts in the state, a wave of new Circulating Fluidized Bed (CFB) power plants were constructed throughout Pennsylvania. These plants were designed to utilize fuels with lower heating values, primarily waste coal and provide the only economically viable solution for restoring the environment where refuse piles exist.

Since Seward was built it has attributed to cleaning up over 40,000,000 tons of waste coal piles and reclaiming over 1300 acres of land. The following table lists the waste coal sites that have been completely reclaimed by shipping to Seward since 2004. It is truly remarkable the amount of acid mine runoff that has been saved from leaching into the local waterways of central Pennsylvania. It is estimated that these piles contained over 1.6 billion pounds of sulfur that would over time continue to leach into waterways or be released uncontrol into the air.

Coal Waste Site	Reclaimed Acres	County	Watershed
Renton	157	Allegheny	Plum Creek
Sugar Run	2	Blair	Clearfield
Barnes-Watkins	18	Cambria	W. B. Susquehanna
Mine 20	115	Cambria	W. B. Susquehanna
K&J	32	Cambria	Chest Creek
Cooney-Beaverdale 3&4	16	Cambria	Conemaugh
Cooney-Beaverdale 1&2	20	Cambria	Conemaugh
Onalinda	5	Cambria	Conemaugh
Hastings	10	Cambria	Chest Creek
Cresson #9	10	Cambria	Clearfield
Riley Shaft	25	Cambria	W. B. Susquehanna
Amsbry	33	Cambria	Clearfield
Cooney #3	10	Cambria	Conemaugh
Puritan	4	Cambria	Conemaugh
Stineman	40	Cambria	Conemaugh
Laurel Land Development	43	Cambria	Blacklick
Piney Creek	25	Clarion	Piney Creek
Juniata Processing	18	Huntingdon	Juniata
Six Mile Run	4	Huntingdon	Juniata
Tide	254	Indiana	Yellow Creek
Heilwood #1	28	Indiana	Blacklick
Heilwood #2	16	Indiana	Blacklick
Kent 3	28	Indiana	Reeds Run
Wehrum	6	Indiana	Blacklick
Blacklick	15	Indiana	Blacklick
Kent 2A	25	Indiana	Aultman Run
Laurel Run 2 (SGL 276)	5	Indiana	Yellow Creek
Keystone Pad	5	Indiana	Crooked Creek
Dilltown BAUCC	31	Indiana	Blacklick
Dilltown CMAP	96	Indiana	Blacklick
Custom Coal Laurel	72	Somerset	Shade Creek
Penn Pocahontas	23	Somerset	Buffalo Creek
Gerney	5	Somerset	Shade Creek
G+G (GFCC)	3	Somerset	Stoneycreek
Marmon Fines	11	Somerset	Quecreek
Seanor	25	Westmoreland	Loyalhanna
Iselin	12	Westmoreland	Kiski
Whitney	43	Westmoreland	Loyalhanna
Luxor	14	Westmoreland	Loyalhanna
Mt. Pleasant	5	Westmoreland	Brush Creek
	1,307		

RGGI:

Seward is a member of the Appalachian Region Independent Power Producers Association (“ARIPPA”) and supports their comments submitted to the Department. However, we offer the following supplemental information.

The main purpose of RGGI is to reduce carbon emissions from fossil fuel electric generation thru a cap-and-trade program. Although waste coal plants generate electricity, the main purpose of these plants is to burn coal waste that had been discarded in large piles by the mining and electric generation industry in the past. These waste piles have been polluting the air and water. In addition, these rather large waste piles have been an eye sore and a danger for the communities in which they reside.

We want to thank Governor Tom Wolf, his Administration and PA DEP for recognizing the environmental benefits that waste coal plants (WC plants) provide to the Commonwealth by setting aside allowances for WC plants such as Seward.

According to the PA Department of Environmental Protection (DEP)'s comment notice, *"While this Commonwealth's participation in RGGI will have tangible health, environmental and economic benefits, the inclusion of the waste coal set-aside has the additional benefit of avoiding unintended impacts to this generation sector, so that the environmental benefits of continuing to remediate this Commonwealth's legacy waste coal piles may continue. For context, since 1988 a total of 160.7 million tons of waste coal has been removed and burned to generate electricity, with an additional 200 million tons of coal ash beneficially used at mine sites. Of this Commonwealth's over 13,000 acres of waste coal piles cataloged by the Department, 3,700 acres have been reclaimed with roughly 9,000 acres remaining. Additionally, of the piles that remain, approximately 40 of them have ignited, and continually burn which significantly impacts local air quality."*

Furthermore, *"Under § 145.342(i) (relating to CO2 allowance allocations), the Department proposes to set aside 9,300,000 CO2 allowances at the beginning of each year for waste coal-fired units located in this Commonwealth. The Board is establishing this waste coal set-aside in this proposed rulemaking because waste coal-fired units provide an environmental benefit of reducing the amount of waste coal piles in this Commonwealth. Reducing waste coal piles is a significant environmental issue in this Commonwealth, because waste coal piles cause air and water pollution, as well as safety concerns. Waste coal-fired units burn waste coal to generate electricity thereby reducing the size, number and impacts of these piles otherwise abandoned and allowed to mobilize and negatively impact air and water quality in this Commonwealth. In recent years, waste coal-fired units have struggled to compete in the energy market, due in part to low natural gas prices, and several units have shut down or announced anticipated closure dates. Given the environmental benefit provided, the Board determined that it is necessary to assist owners or operators of waste coal-fired units with meeting their compliance obligation under this proposed rulemaking."*

In addition, *"By providing a set aside, as opposed to an exemption, the CO2 emissions from waste coal-fired units are included in this Commonwealth's CO2 emissions budget and owners or operators of waste coal-fired units are still required to satisfy compliance of all the regulatory requirements in this proposed rulemaking. After reviewing the last 5 years of CO2 emission data from waste coal-fired units, the Department determined that the CO2 allowance set aside should be equal to the total of each waste coal-fired unit's highest year of CO2 emissions from that 5-year period. That total is 9,300,000 tons of CO2 emissions. Thus, the Department will set aside 9,300,000 CO2 allowances annually. Each year, the Department will allocate the CO2 allowances directly to the compliance accounts of the waste coal-fired units equal to the unit's actual emissions. However, if the waste coal-fired units emit over 9,300,000 tons of CO2 emissions sector-wide in any year, then the units must acquire the remaining CO2 allowances needed to satisfy their compliance obligation."*

Although we greatly appreciate the set aside and have welcomed the participation in stakeholder meetings, we are seeking additional changes to the definition of “legacy emissions.” We feel that the legacy emissions should be based on a 2010-2019 lookback period of actual annual emissions from the waste coal plants to capture a period of more representative operating potential or alternatively a 2015-2019 lookback period for Potential Annual Emissions analysis that would capture a more representative future potential if power pricing were to rebound and promote reclamation of more waste coal tons.

DEP had rationalized the legacy date by looking at the market in the past and in the future and maintained that it was “highly unlikely” that these plants would run more in the future than in the past five years. However, just as the Coronavirus has wreaked havoc in our lives and the economy, it has also had other consequences that no one could have predicted. For example, due to statewide and country lockdowns the demand for electricity decreased causing plants to run less than in prior years. As we rebound from the pandemic and demand for electricity grows it will likely increase the power pricing and the operating capacity of the Seward plant thus resulting in more waste coal tons being reclaimed from Pennsylvania watersheds.

Power prices over the past five years have been at historically low levels due to the factors mentioned above. The chart below shows the lower power prices effect on Seward’s operating rate as power market has decreased.

	Annual Firing Rate mmbtu's	% of Max Firing	Seward 22KV Ave Power Price \$/mwh	Henry Hub Gas Price \$/mmbtu
2005	30,637,865	69%	\$ 63.30	\$ 8.69
2006	34,087,682	77%	\$ 43.72	\$ 6.74
2007	37,614,222	85%	\$ 48.69	\$ 6.94
2008	40,557,655	91%	\$ 58.14	\$ 8.85
2009	36,965,852	83%	\$ 34.58	\$ 3.92
2010	39,852,732	90%	\$ 39.21	\$ 4.37
2011	34,314,738	77%	\$ 39.30	\$ 3.99
2012	20,309,890	46%	\$ 31.12	\$ 2.75
2013	20,547,623	46%	\$ 35.47	\$ 3.72
2014	30,269,836	68%	\$ 43.83	\$ 4.32
2015	21,374,929	48%	\$ 30.80	\$ 2.60
2016	29,641,201	67%	\$ 25.28	\$ 2.48
2017	27,309,012	62%	\$ 27.41	\$ 2.96
2018	28,337,132	64%	\$ 33.05	\$ 3.12
2019	20,569,905	46%	\$ 24.30	\$ 2.51
2020	25,168,126	57%	\$ 18.44	\$ 1.99

During the first six years that Seward was operational the plant ran at an average 83% capacity and the average power price was \$47.94 per mwh. But during the last six years the plant

only operated at an average of 57% capacity when power prices average \$26.55 per mwh with the past three years being some of the lowest power prices for the PJM on record. By only looking at the actual emissions during the 2015-2019 time period for developing the waste coal set aside amounts, Seward would be limited to 3,130,604 CO2 emissions which represents approximately 67% of its potential annual emissions if operating at full load. However, if DEP looked at the 2010-2019 time period, then Seward's legacy emissions would be 4,132,383. This would still limit the plant to operating at 89% capacity which is a level that the plant had historically achieved. The higher allocation based on 2010 operating capacity could result in an additional 1.47 million tons per year of waste coal reclamation annually.

In addition to market changes, there have been legislative changes that will influence the generation market too. On November 23, 2020, Governor Wolf signed House Bill 2536 (Act 114 of 2020) amending the Fiscal Code to include Section 1799.10-E limiting eligibility in Tier II of the Alternative Energy Portfolio Standards (AEPS) program to Alternative Energy Credits (AECs) created by alternative energy resources located in the Commonwealth, effectively closing the border on participation in this program. This language is modeled after Section 2804 of the Administrative Code (amended by Act 40 of 2017), which excluded out-of-state resources from being eligible for the Solar Photovoltaic (PV) Carveout in Tier I of the AEPS program. An AEC represents a megawatt hour of generation, is valid for three years after the date it was generated, and prior to this change could originate within Pennsylvania or the PJM regional transmission organization (RTO). Out-of-state credits created prior to November 23, 2020 or sold under existing contracts as of that date will continue to be eligible for the remaining term of the contract.

By limiting where the generation of these credits can come from, this will increase the need for in-state credit generation. Waste coal is a Tier II source. Prior to this change, the Tier II category under Pennsylvania's AEPS had two notable failures: (i) a historically low AEC price rendering it almost meaningless in the past, and (ii) a looming Tier II structural crisis leading to an expected outflow of funds per year of Pennsylvania ratepayer financial support to out-of-state resources. An oversupply of out of state credits historically produced Tier II AEC prices so insignificant as to offer no support for plant operations or investment decisions. While there were 6678.4 MW of Tier II generation facilities located outside of the Commonwealth registered under the AEPS program, only 4067 MW of facilities located in Pennsylvania were similarly registered. As such, the average Tier II AEC traded around \$0.25 over the life of the AEPS program due to this massive surplus of registered out-of-state capacity.

The Public Utility Commission (PUC) has projected that there will be a 2.5 million AEC shortfall in Tier II based upon the previous three years of production from in-state Tier II resources by 2023. (See ARIPPA's comments and attached letter from the PUC on HB 2536). This rule change will incentivize and likely require Seward to operate at levels similar to those in the 2010 year as to balance the Tier II market.

At the time DEP wrote the proposed regulation it was projected that the Colver Power Plant was going to close. This resulted in DEP to exclude its legacy emissions resulting in

9,300,000 CO2 tons instead of 10,400,000 CO2 tons that would be needed to include Colver. On July 29, 2020, the deactivation notice was withdrawn from PJM and the plant was subsequently sold and the plant restarted on October 6, 2020 and has run nearly continuously since that time.

DEP also states that *“To comply with this proposed rulemaking, each CO2 budget unit within this Commonwealth will need to acquire CO2 allowances equal to its CO2 emissions. If CO2 allowances are purchased through the multistate auctions, the owner or operator of a CO2 budget unit will pay the auction allowance price, currently around \$5 per ton, for each ton of CO2 the unit emits. As mentioned previously, reserved CO2 CCR allowances can be released into the auction if allowance prices exceed predefined price levels, meaning emission reduction costs are higher than projected. The total cost of purchasing allowances will therefore vary per unit based on how much CO2 the unit emits and the allowance price. The owner or operator may also purchase CO2 allowances on the secondary market where they could potentially purchase CO2 allowances at a price lower than the RGGI allowance price. CO2 allowances also have no expiration date and can be acquired and banked to defray future compliance costs.*

Since the Department will allocate CO2 allowances to waste coal-fired units each year up to 9,300,000 allowances sector-wide, waste coal-fired units will incur minimal compliance costs. Owners or operators of waste coal-fired units will only need to purchase CO2 allowances if the set-aside amount is exceeded. However, waste coal-fired units still have to comply with the other components of the regulation, including incorporating the CO2 budget trading programs into their permits.

The requirements this proposed rulemaking would establish will require the owner or operator of an applicable source to submit a complete application for a new, renewed or modified permit and pay the associated fee. The application must be submitted by the later of 6 months after the effective date of the final-form rulemaking or 12 months before the date on which the CO2 budget source, or a new unit at the source, commences operation.”

In conclusion, although waste coal power plants generate electricity, the main purpose of these plants is to dispose of waste coal in a beneficial manner. Many of these waste coal facilities were built under Purchase Power Agreements which made operating them economical. However, due to forces that are not under their control such as the natural gas boom, agreements not being renewed, suppressed power prices, and electric demand changes, many of these plants such as ours may not be able to survive in general. Adding any increases in cost due to the implementation of RGGI would be devastating to these facilities and inhibit their ability to provide future remediation to the maximum extent as possible.

Changes in the AEPS Act regarding Tier II credits will necessitate that waste coal plants will need to operate more than in the past five years. As mentioned previously, Seward has not run at its full potential in the last five years (2015-2019) whereas in the previous five years (2010-2015) it ran closer to its full capacity. Therefore, looking back at only the past five years will effectively limit Seward’s remediation operations. However, if DEP looked at the legacy

emissions for our plant for the past 10 years rather than 5 years, then we would at least have the ability to run near full capacity.

In remarks made by the Administration, and specifically the DEP Secretary, they have stated it was their intention to hold the waste coal power plants harmless. If waste coal plants are forced with the decision of whether to run more to meet AEPS or forced to pay for allowances in excess of the current legacy emissions as proposed, Seward will have to limit its reclamation efforts once the cap is exceeded.

Even with an increase in Tier II prices and an economy rebounding from the fallout from COVID-19, waste coal plants like Seward, will still face economic hardship if it would have to purchase RGGI allowances for any emissions that exceeds its legacy set aside. So much so, the plant's annual remediation effort will stop when a cap is exceeded.

Therefore, we are respectfully requesting that the Administration and DEP work with us and similar stakeholders in reaching a legacy emissions definition that will hold waste coal plants harmless per the stated intentions of the Administration.

Thank you for your consideration. We look forward to working with you.

Sincerely,

James Panaro
Executive Vice President