

The Coal Refuse Reclamation to Energy Industry A Public Benefit in Jeopardy

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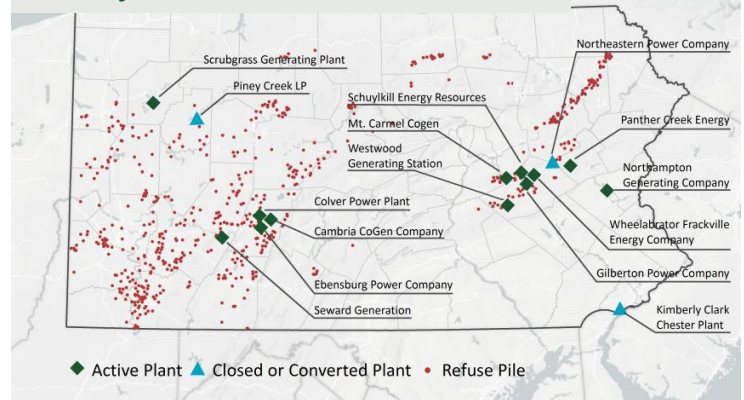
Private Activity, Public Benefit

Pennsylvania's coal mining legacy has left the Commonwealth with significant environmental liabilities, including more than 770 coal refuse piles. For decades, Pennsylvania's coal refuse reclamation to energy industry has addressed these liabilities by **removing coal refuse, using it as fuel to generate energy, and rehabilitating mining-affected lands.**

Focused Upon Environmental Remediation

- > 225 million tons of refuse consumed to date
- > 1,200 miles of polluted streams restored
- > 7,200 acres of land restored

Pennsylvania's Coal Refuse Plants



770 identified coal refuse piles covering 8,300 acres and containing more than 220 million tons remain unaddressed, creating a variety of environmental issues for Pennsylvania's legacy coal communities.

Seanor Reclamation Site



Industry reclamation of the Seanor site restored the area to an unmanaged natural habitat adjacent to the Westmoreland Heritage Trail. The project received a Governor's Excellence Award in 2014, one of numerous environmental awards bestowed on the industry.

A Reclamation Solution in Crisis

Market and regulatory challenges, including low-cost natural gas supply from the Marcellus Shale formation and other regulatory and policy initiatives, have altered the economics of the industry. In recent years, **wholesale energy prices have often been below the "breakeven" point required for coal refuse reclamation to energy plants to simply recover their cost of production.** In addition, capacity payments received by plants for the year commencing June 2019 fell significantly and will remain well below recent levels for a two-year period.

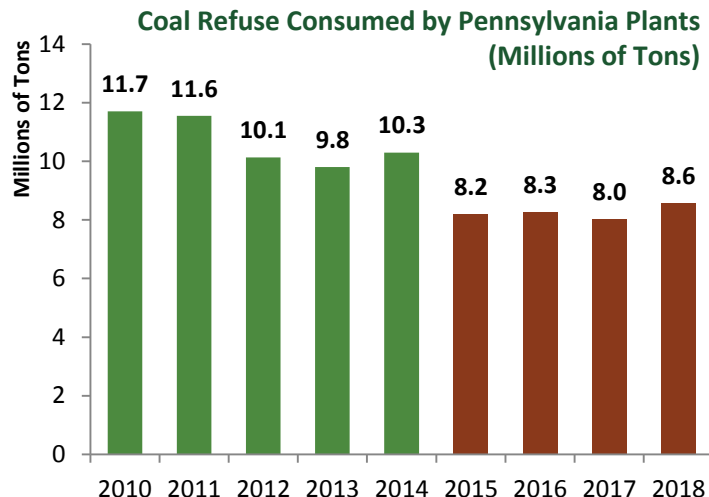
The mismatch between revenue and costs has led to the closure or conversion of 3 of 15 Pennsylvania plants to date, and to seasonal idling for others, resulting in a significant decline in annual benefits to Pennsylvania. **The current economics of the industry are unsustainable, and without some intervention will lead to further plant closures and to a permanent loss of their public benefits.**

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A Public Benefit in Jeopardy

A Simple Business Model

The industry operates on a simple business model in which **revenue from the sale of electricity pays for environmental benefits in the form of the reclamation and restoration** of mining-affected sites. This privately funded activity has “positive externalities” for Pennsylvania, delivering benefits to the environment, the Commonwealth and the general public. When plants are forced by pricing realities to operate seasonally or to cease operations, the volume of coal refuse the industry consumes falls, and the public benefits are reduced or lost.



Piney Creek Plant Demolition



Plants that have been closed are typically demolished and sold for scrap, or disassembled and reassembled in another country. As a result, once plants are shuttered, they are unable to return in the future even if the economics of the industry were to change.

Avoided Tasks

At its current reduced capacity, the industry consumes 8 million tons of coal refuse and remediates 240 acres of land per year. Historically, the industry has removed 225 million tons of coal refuse, restored thousands of acres of land, restored 1,200 miles of polluted streams, and had treated billions of gallons of polluted drainage water each year. **Absent the activities of the industry, the responsibilities and costs for the range of environmental and safety hazards associated with coal refuse falls on the Commonwealth.**

Avoided Cost Calculation

State clean-up efforts incur additional costs for disposal not required by the more comprehensive industry efforts. Further, state efforts produce no revenue from energy generation to offset the environmental remediation and reclamation costs. As a result, it is cost prohibitive for the state to remediate sites to the same standard as the industry.

Based on recent project bids, state costs for removal and disposal of coal refuse can run up to \$33 per ton (in addition to land remediation costs). Replicating the annual removal of 8 million tons of refuse and remediation of 240 acres would cost the state \$93 million annually under the most favorable conditions, and **\$267 million annually including typical disposal costs**. Addressing all identified piles across the state would cost \$2.6 - \$7.4 billion at this rate.



\$93 M - \$267 M in annual avoided cost to the Commonwealth

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Environmental Benefits

The removal of coal refuse piles and the reclamation of mining-affected lands has demonstrated environmental and public benefits, including water quality, public health and safety, and land value.

South Branch Blacklick Creek



"We've got fish in the water now. People weren't fishing here before. This is a good news story."

- Cambria County Commissioner Tom Cherinsky

Swoyersville



\$37 M in Annual Enviro / Public Benefits



Water
Quality



Public Health
and Safety



Land
Value

Addressing Priority Sites

Through a closely regulated and proven process in cooperation with the Pennsylvania Department of Environmental Protection, **industry activities can address high priority sites for the Commonwealth**, including coal refuse piles polluting key waterways and located in densely populated areas.

In cooperation with the federal government, the Commonwealth, environmental groups, and local landholders, an industry plant is leveraging federal AML pilot funds to remediate a 4 million ton pile in heart of Swoyersville. This project will restore the land for community recreation and economic development uses.

The industry also plays an important role in removing burning piles and other piles threatening air quality with fugitive dust particles. This relieves local communities of unanticipated health and safety costs and potential emergency expenditures.

Economic Benefits

The industry also represents a major source of economic activity and family-sustaining employment. The industry produces \$615 million in annual economic benefit, supporting 3,000 Full-Time Equivalent (FTE) jobs annually.

These benefits are concentrated in Pennsylvania's coal communities that face existing challenges in generating economic opportunities for residents.

\$615 million in annual economic impact



\$363M
Direct
Expenditures



\$194M
Earnings
Supported



\$18M
State
Taxes/Fees

3,000 FTE jobs from economic impact

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Path to Sustaining the Public Benefits

If Pennsylvania seeks to preserve the benefits and retain this strategic environmental resource, the economic and regulatory framework must recognize the value of the positive externalities that the industry delivers. A demonstrated approach to achieving this goal is through **performance based-tax credits**.

- Raise the statutory cap on the PA Coal Refuse Energy and Reclamation Tax Credit to **\$45 million** so that funding is sufficient and a bridge to a federal solution.
- Replace the state tax credit with a **federal tax credit** as a long-term solution.

Changing the Pricing Dynamics

Government can assist the industry either through enhanced performance-based tax credit support, or through a restructuring of the regulatory framework that reflects the environmental externalities of the industry. Either approach would recognize and assign a financial value to the public benefits that are not currently realized within the economics of industry operations.

The Pennsylvania legislature and Governor Wolf acknowledged these benefits in enacting the Coal Refuse Energy and Reclamation Tax Credit in 2016. This program provides a \$4 credit per ton of coal refuse used to generate electricity. However, due to the total program cap of \$10 million, awards are scaled down proportionally, with a realized yield per plant of around \$1.20 per ton. This yield is insufficient to close the gap between industry production costs and revenues, meaning that **the current funding level is insufficient to achieve the program goal**.

At a statewide allocation of \$45 million, as originally envisioned, plants would be able to realize the allowable \$4 per ton credit. This would have the effect of lowering the “breakeven price” needed to cover the cost of generation, increasing the duration of periods in which plants could operate economically.

This mechanism could serve as a bridge to a federal tax credit as a long-term solution. **A federal credit of \$12 per ton would reduce the “breakeven price” to a point where plants could operate continuously**, maximizing the environmental benefits that the industry delivers at far less cost than the monetized benefits provided.

**PJM Wholesale Energy Market
Weekly Energy Prices (\$MWh)**

