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Testimony of ARIPPA before the Senate Environmental Resources & Energy Committee on the Coal Refuse to Energy Industry

Carbon County Commissioner's Conference Room

Jim Thorpe, PA

October 11, 2016

George Ellis

Good morning. Senator Yaw, Senator Yudichak, members of the Senate Environmental Resources and Energy Committee, my name is George Ellis, and I'm the Executive Director of ARIPPA, the trade association representing the interests of the coal refuse to energy industry. On behalf of ARIPPA, I thank the Committee for scheduling this hearing today to address the benefits to Pennsylvania derived from, and the challenges faced by, our industry.

ARIPPA membership is comprised of electric generation facilities located in Pennsylvania and West Virginia that utilize circulating fluidized bed (CFB) boiler technology to convert coal refuse into electricity. These plants are located in or near the anthracite and bituminous coal regions and, although relatively small in size, have a total generation capacity in excess of 1,400 megawatts and produce about 10 percent of the total electricity generated in the Pennsylvania region.

Moreover, these plants play a critical role in environmental remediation by removing abandoned coal refuse piles and cleaning-up the land and water polluted by the piles without shifting costs to public sources.

Both the federal government and the Commonwealth of Pennsylvania have long-recognized and embraced the environmental benefits of the consumption and reclamation of coal refuse. For example, during regulatory development of the Mercury and Air Toxics Standards Rule (MATS), EPA stated that "Units that burn coal refuse provide multimedia environmental benefits by combining the production of energy with the removal of coal refuse piles and by reclaiming land for productive use…" (76 Fed. Reg. 25,066).

This past July, the Pennsylvania Legislature and Governor Wolf approved a tax credit proposal to support the consumption of coal refuse, acknowledging it as a beneficial environmental option to improve the Commonwealth's scarred and polluted landscape. I thank the members of this committee for helping to make this happen.

What is the Coal Refuse to Energy Industry?

The coal refuse to energy industry represents a unique paradigm for mine land reclamation in which environmental and economic objectives overlap.

By removing coal refuse piles from the environment, reclaiming the sites to productive uses and using the refuse as an alternative fuel for the production of electricity, the coal refuse to energy industry provides a range of environmental, economic and societal benefits to the Commonwealth.

Coal refuse is a legacy of previous coal mining and consists of low-quality coal mixed with rock, shale, slate, clay and other material. Also known as waste, culm, gob and boney, it was discarded as a "waste" during the original coal extraction process and randomly disposed in piles near the mine sites. These piles, which can spontaneously combust or catch fire from lightning strikes and which also leach acid mine water and hazardous substances, are major sources of polluted land, air and water and represent public health and safety hazards.

Because of the costs associated with the removal of coal refuse and fiscal constraints governing public funding, the threats posed by these piles are mostly backburner issues for government authorities unless or until the mounds suddenly combust and become an immediate health and safety threat to nearby residents.

Prior to the development of CFB technology, there was no productive use for coal refuse. As a result, these hazardous piles littered the local landscapes and polluted nearby land and water for decades.

Genesis of Industry

In response to the oil shortages during the 1970s, U.S. Congress sought to diversify the nation's electric generation mix by promoting the use of alternative fuels (e.g. electricity produced from unconventional fuel sources like coal refuse).

Toward this end, Congress enacted the Public Utility Regulatory Policies Act of 1978 (PURPA). PURPA required that electric utilities buy alternative energy generated by qualified facilities at an "avoided

cost" rate. The avoided cost mandate proved instrumental in encouraging developers to invest in what was then "new and risky" business ventures like generating electricity from coal refuse through the use of the innovative CFB technology. As a result of fortuitous timing between maturation of the CFB process and the passage of PURPA, a new technology was established providing both economic value in the productive burning of coal refuse and environmental service through the removal of the piles and reclamation of the sites.

Benefits

In the ensuing years, the 14 plants that currently make up Pennsylvania's coal refuse to energy industry (see attachment) have removed and burned as fuel more than 200 million tons of refuse, improved or restored more than 1,200 miles of stream and reclaimed more than 7,000 acres of abandoned mine lands (AML). In addition to these environmental benefits, the industry also provides much needed employment opportunities and a solid economic impact to our rural communities.

According to the Econsult Solutions' Report, "Economic and Environmental Analysis of Pennsylvania's Coal Refuse Industry," at historic operating levels, the industry removes and uses 10 million tons of coal refuse and reclaims 200 acres of land per year, improving numerous waterways in the process. According to the Report, the environmental and public benefits of this activity total more than $520 million, averaging over $26 million per year over a twenty year period.

Additionally, the fiscal impact of the industry to the Commonwealth in terms of fees and taxes totals almost $20 million per year.

Not only has Pennsylvania's coal refuse to energy industry saved the Commonwealth millions of dollars in environmental clean-up costs, it is also an economic engine, generating annual economic benefits to Pennsylvania of nearly $740 million.

The industry directly and indirectly supports 3,600 jobs with total earnings of more than $220 million. These high value family and community sustaining jobs, with salaries over $70,000 per year, relate

to every facet of our fuel cycle, ranging from mining, transportation, plant operations and management to environmental remediation.

Not to be overlooked is the fact that these benefits are primarily concentrated in the financially distressed rural communities of Pennsylvania which are not only disproportionately burdened by the environmental legacy of past mining, but also struggle to create new economic opportunities.

Challenges

Despite the efforts of the coal refuse to energy industry, the volume of remaining coal refuse across the Commonwealth is daunting. The Pennsylvania Department of Environmental Protection (DEP) has identified 840 piles (52 of which are currently burning) located in the Commonwealth on nearly 10,000 acres of abandoned mine lands containing at least 300 million tons of coal refuse. Frankly, if these piles are not removed during the refuse to energy generation process, the likelihood is that they will remain in place.

The Commonwealth is typically forced to address the environmental impacts of coal refuse piles on a reactive, rather than proactive basis, due in part to the cost structure of remediation for the Commonwealth relative to the coal refuse industry. The industry, on the other hand, has developed a comprehensive fuel cycle approach to the problem. The coal refuse is removed from these blighted areas and transported to the facilities where it is used to produce energy, offsetting mining and transportation costs, and beneficial use ash is then returned to mining sites for remediation and restoration. The Commonwealth, by contrast, cannot generate energy and attendant revenue with coal refuse, does not have beneficial ash available for reclamation, and most crucially, must pay to safely remove, transport and dispose of the coal refuse in a new location. As a result, the remediation activities of the industry are far more cost effective than those of the Commonwealth and result in a greater volume of environmental remediation.

The problem simply is that a variety of economic forces have recently conspired to undermine the fundamentals of our industry. As the industry declines so too does the amount of environmental

remediation that can be accomplished. These plants face unique challenges that jeopardize their financial viability as employers and taxpayers, including restrictive regulatory requirements, a stagnant demand for electricity, state and federal pricing subsidies for competing electricity technologies, and a glut of, and abnormally low prices, for natural gas.

Coal refuse plants are part of the PJM Interconnection, a Regional Transmission Operator that runs the wholesale electricity market for most of Pennsylvania and all or part of 12 other states and the District of Columbia. New development and extraction techniques have turned the natural gas in the Marcellus Shale formation into an abundant fuel source, significantly lowering the price of natural gas. The decreasing price of natural gas, the most significant variable cost for thermal electricity plants, has translated into falling electricity prices on the PJM Interconnection market into which coal refuse plants sell their electricity. This effect is particularly pronounced in Pennsylvania, where local prices are even lower due to a lack of infrastructure necessary to transport this natural gas to larger markets thus trapping the gas and overwhelming the supply in the Commonwealth.

Relative to natural gas producers, coal refuse plants are labor intensive and have an expensive fuel cycle with several components. Both coal refuse and limestone must be transported to plants, and beneficial use ash is then transported for use in environmental remediation. This series of steps and the attendant cost structure relative to increasingly prevalent natural gas production have created major marketplace challenges for the industry.

Competition from natural gas has driven wholesale electricity prices in the PJM down dramatically over the past two years. Weighted average prices per Megawatt hour (MWh) fell from $64 in 2014 to $43 in 2015. In 2016, prices for Q1 and Q2 have fallen still further to around $32, half the level of 2014. Consequently, the price for our commodity is significantly below the cost to produce it.

It also cannot be ignored that other renewable electricity generation technologies, most prominently solar and wind, receive substantial price support at the federal and state levels. That price support permits those projects to bid their energy pricing into the PJM market at rates that are actually

below their true cost to produce such electricity. This subsidization has a further dampening effect upon electricity pricing and upon the coal refuse to energy facilities' ability to compete.

Furthermore, the PJM pricing scheme undervalues coal refuse generated electricity because it fails to recognize the environmental value of remediating hazardous abandoned refuse sites and the beneficial environmental externalities attendant to this industry.

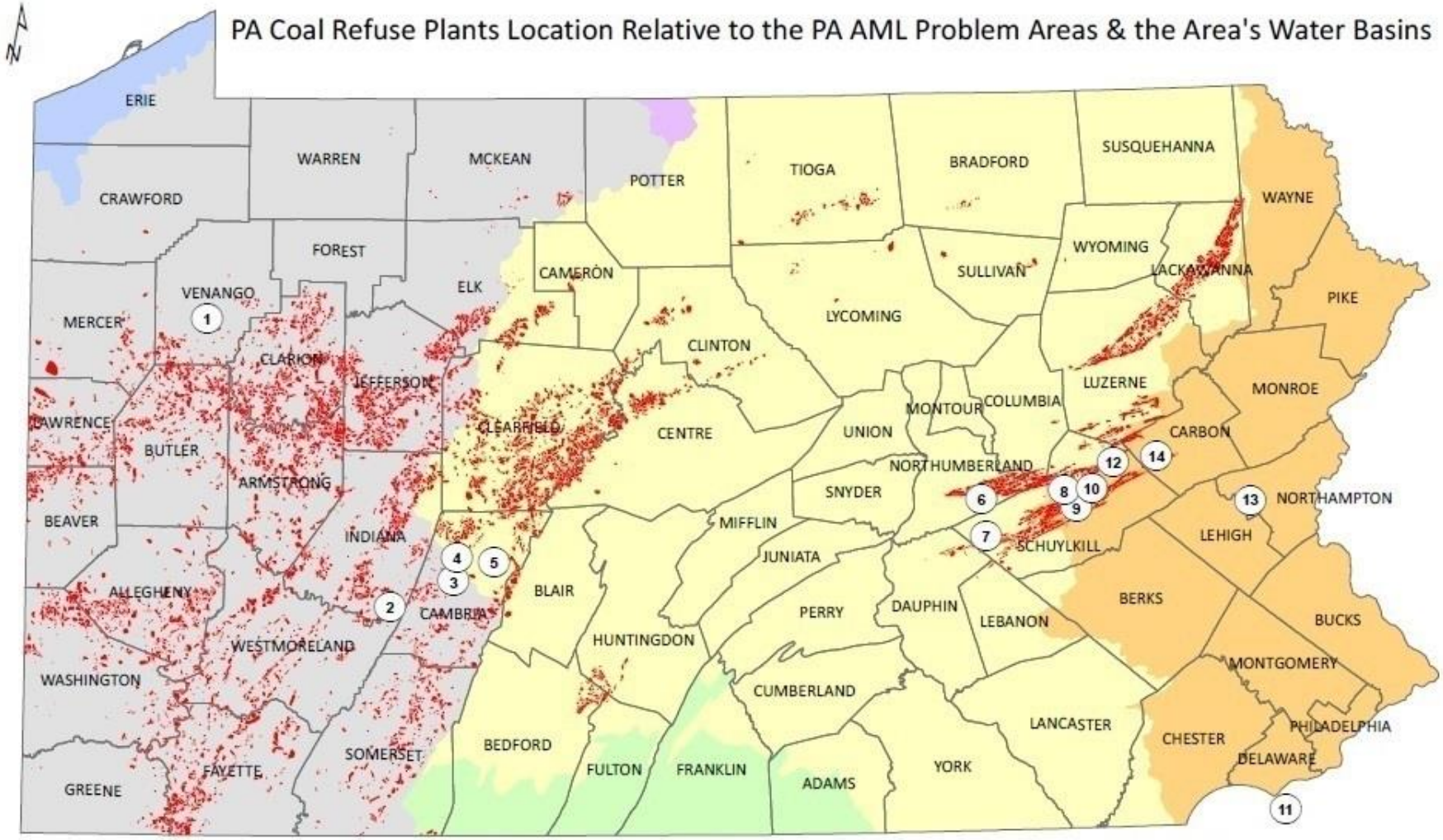
Conclusion

We are looking to the Commonwealth to help us right this ship. Specifically, we seek to form a partnership whereby the Commonwealth helps us to manage a portion of our fuel cycle costs in return for saving the taxpayers from bearing the inevitable cost of state funded remediation efforts to remove these environmentally threatening coal refuse piles.

As previously stated, this industry is appreciative of your efforts last July to pass a state tax credit bill for the coal refuse to energy industry. We note that the credit was appropriated in 2017 and beyond at a cap of $10 million. We would appreciate your continued support for that program. In addition, we look forward to working with you and your staff to explore other ways to strengthen our private public partnership as we continue this industry's tradition of generating a unique form of electricity and at the same time restoring the environment of the Commonwealth.

Thank you.

PA Coal Refuse Plants Location Relative to the PA AML Problem Areas & the Area's Water Basins



PA Coal Refuse Plants (1,419 MW & 10,922,000 Tons/Year)

1. Scrubgrass Generating - 83 MW; 644,000 TPY
2. Seward - 525 MW; 2,925,000 TPY
3. Ebensburg Power - 50 MW; 536,000 TPY
4. Colver Power Project - 102 MW; 701,000 TPY
5. Cambria Cogen Company - 85 MW; 664,000 TPY
6. Mt. Carmel Cogen - 40 MW; 529,000 TPY
7. Westwood Generation - 30 MW; 384,000 TPY
8. Schuylkill Energy Resources, Inc. - 80 MW; 1,300,000 TPY
9. Gilberton Power Company - 80 MW; 575,000 TPY
10. Wheelabrator Frackville Energy Company - 42 MW; 535,000 TPY
11. Kimberly Clark Chester Plant - 60 MW; 223,000 TPY
12. Northeastern Power Company - 52 MW; 559,000 TPY
13. Northampton Generating Co. - 107 MW; 651,000 TPY
14. Panther Creek Energy - 83 MW; 696,000 TPY

Water Basins

- Ohio
- Genesee
- Delaware
- Potomac
- Erie
- Susquehanna

Abandoned Mine Land Problem Areas

*MW = Installed Capacity; TPY = Average Tons per Year from 2009-2013