

2018 PA ABANDONED MINE RECLAMATION CONFERENCE:

Environmental Benefits of the Coal Refuse to Energy Industry

By: Jaret Gibbons, ARIPPA Executive Director

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www.arippa.org



JARET GIBBONS - BIOGRAPHY



- Hometown: Ellwood City, Pennsylvania (Lawrence County)
- Graduate of Duquesne University and University of Pittsburgh School of Law
- Member of the Pennsylvania House of Representatives representing the 10th Legislative District in Beaver, Butler, and Lawrence Counties (2007-2016)
 - Member – House Environmental Resources and Energy Committee
 - Sponsor of House Bill 1370 of 2015 – Coal Refuse Energy and Reclamation Tax Credit (Act 86 of 2016)
- Executive Director of the Appalachian Region Independent Power Producers Association (ARIPPA) since March 2018



WHAT IS COAL REFUSE



- Remnants of centuries-old coal mining, conducted before the advent of modern environmental protection laws like SMCRA
- Consists of low quality coal mixed with rock, shale, slate, coal and other material
- Also referred to as “culm” or “gob” piles, discarded as “waste” during original mining process and randomly disposed in piles near the mine sites

CURRENT INVENTORY



DEP's inventory of abandoned refuse piles in PA:

- Inventory is not static but growing
- 840 piles scattered throughout the coal fields
- 52 piles are currently burning
- Land mass covers an aggregate area of 10,000 acres
- Contain at least 300 million tons of coal refuse
- Studies conducted in the 1960s and 70s by the PA Dept. of Mines and Mineral Industries and Penn State indicate in excess of 2 billion tons of coal refuse in PA, split evenly between the anthracite and bituminous regions of the state.

POLLUTION CAUSED BY COAL REFUSE



More than eyesores – coal refuse piles are prone to subsidence, spontaneous combustion, acid seepage and leachate production, and low soil fertility.



Of the 840 piles in PA, 52 are currently burning, releasing uncontrollable toxic air emissions into the atmosphere.

COAL REFUSE TO ENERGY INDUSTRY



State	Plant	Net Operating Capacity (MW)	Fuel Type
Montana	Rosebud Colstrip Energy	39	Bituminous
Pennsylvania	Cambria Cogen	87	Bituminous
Pennsylvania	Colver Power Project	111	Bituminous
Pennsylvania	Ebensburg Power Company	50	Bituminous
Pennsylvania	Gilberton Power Company	80	Anthracite
Pennsylvania	Kimberly Clark Chester Operations	67	Anthracite
Pennsylvania	Mt. Carmel Cogen	43	Anthracite
Pennsylvania	Northampton Generating Company	112	Anthracite
Pennsylvania	Northeastern Power Company	52	Anthracite
Pennsylvania	Panther Creek Power Operating	80	Anthracite
Pennsylvania	Rausch Creek Generation	33	Anthracite
Pennsylvania	Schuylkill Energy Resources	80	Anthracite
Pennsylvania	Scrubgrass Generating	83	Bituminous
Pennsylvania	Seward Generation	521	Bituminous
Pennsylvania	Wheelabrator Frackville Energy Company	42	Anthracite
Utah	Sunnyside Cogeneration Associates	60	Bituminous
West Virginia	American Bituminous Power Partners	80	Bituminous
West Virginia	Morgantown Energy Associates	50	Bituminous
	TOTAL CAPACITY	1,679 MW	

Sources:

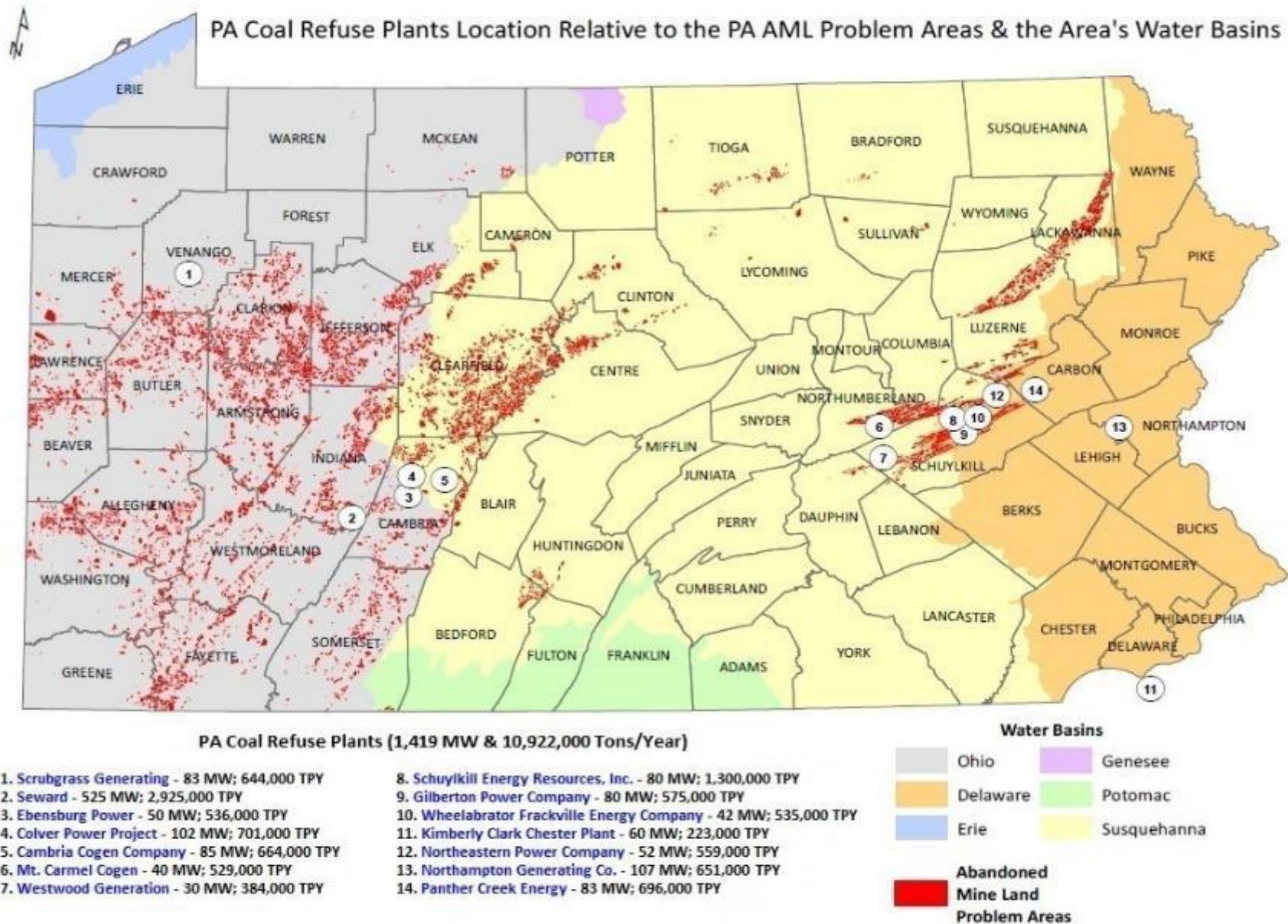
ARIPPA Survey (2018)

Permit Technical Review Document, Montana DEQ (2014)

SCA #2 CCR Certified Dust Control Plan, Sunnyside Cogeneration Facility (2015)



- ARIPPA represents PA's coal refuse to energy industry, an industry which has helped the Commonwealth turn its environmental challenges into economic opportunities.
- Comprised of electric generation facilities that utilize circulating fluidized bed (CFB) boiler technology to convert coal refuse into energy.
- The industry in Pennsylvania consists of 14 electric generating plants
 - 5 that use bituminous coal refuse (western PA)
 - 9 that use anthracite coal refuse (northeast PA)



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

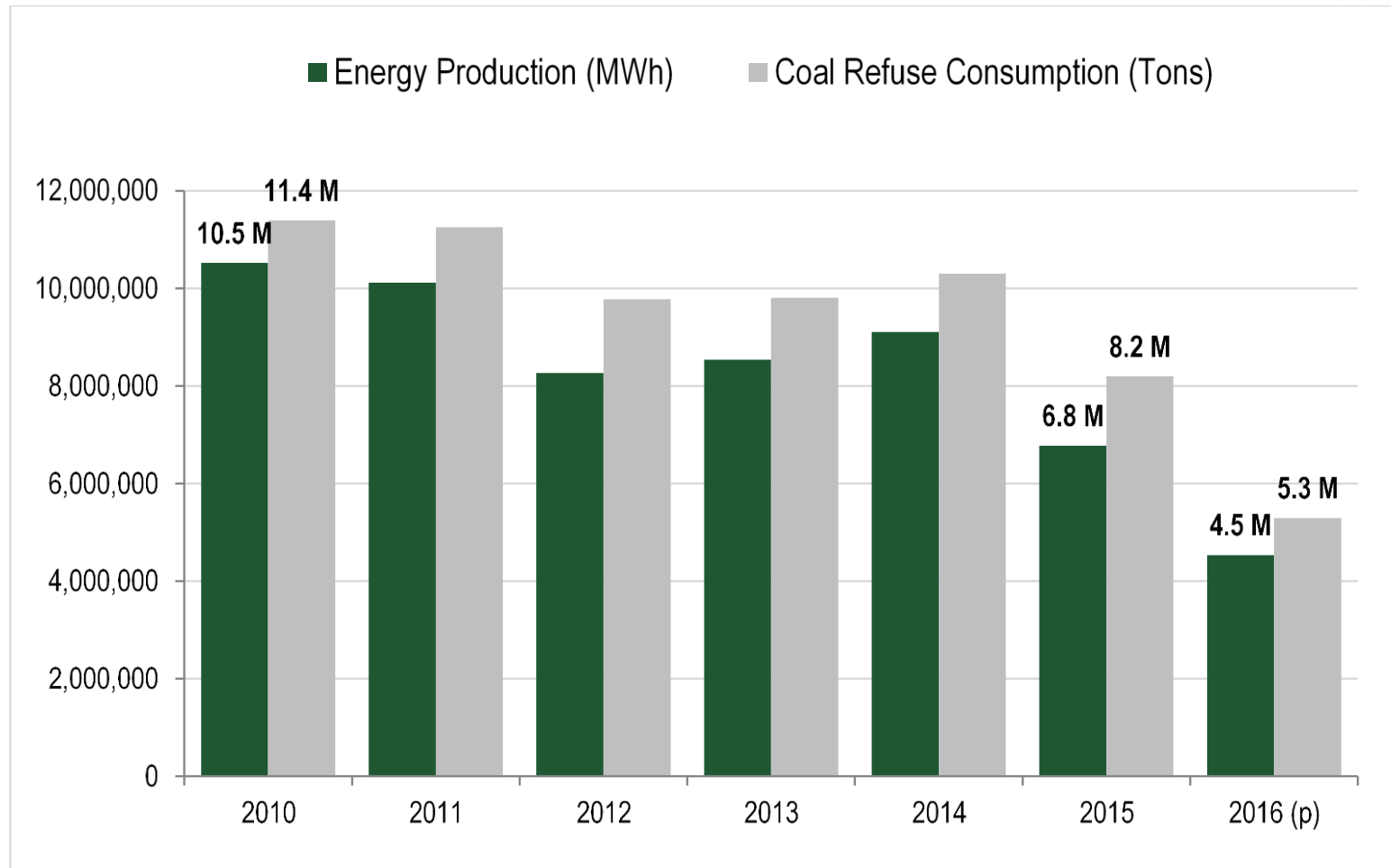
ARIPPA PLANTS BY COUNTY

County	Plant	Operating Capacity (MW)	Year First Unit in Service	Tons of Coal Refuse Burned in 2016
Cambria	Cambria Cogeneration	87.5	1991	585,921
Cambria	Colver Power Project	110	1995	591,795
Cambria	Ebensburg Power Company	50	1991	276,362
Carbon	Panther Creek	83	1992	143,620
Delaware	Kimberly Clark Chester Operations	67	1986	171,285
Indiana	Seward Waste Coal	521	2004	2,428,714
Northampton	Northampton	112	1995	217,392
Northumberland	Mount Carmel Cogeneration	43	1990	602,452
Schuylkill	John B. Rich Memorial Power Station (Gilberton)	80	1988	663,535
Schuylkill	Northeastern Power Cogeneration Facility	52	1989	232,413
Schuylkill	St. Nicholas Cogeneration (SER)	86	1990	1,478,011
Schuylkill	Westwood Generating Station	30	1987	105,354
Schuylkill	Wheelabrator Frackville Energy Company	42.5	1988	505,328
Venango	Scrubgrass	86.1	1993	440,519
	TOTALS	1450.1		8,442,701

Source: ARIPPA, *Electric Power Outlook for Pennsylvania 2015-2020*
prepared by PA PUC (2016)

COAL REFUSE CONSUMPTION DECLINING

Figure 1.5 – Annual Industry Energy Generation and Coal Refuse Consumption Trends, 2010 – 2016(p)



Source: ESI analysis of ARIPPA member reported data (2016)

MULTIMEDIA ENVIRONMENTAL BENEFITS

- The role that coal refuse EGUs play in environmental remediation distinguishes these plants from traditional EGUs:
 - removing abandoned coal refuse piles from the landscape
 - reclaiming the underlying land
 - restoring impacted water resources
 - protecting human health and safety
- In 2011, the EPA reported, “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.”
- Tier 2 alternative fuel source under the Pennsylvania Alternative Energy Portfolio Standard (AEPS) Program.

ENVIRONMENTAL SCORECARD



- 200 million tons removed
- 1,200 miles of stream restored
- Over 7,000 acres reclaimed
- Remove on average about 10 million tons and reclaim 200 acres per year

QUANTIFICATION OF ENVIRONMENTAL AND PUBLIC USE BENEFITS GOING FORWARD (\$M)

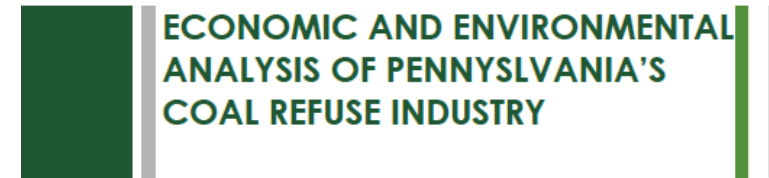
Category	Benefit Type	Year 1	Year 10	Year 20	Total	20 Year Avg
Water	Cumulative	\$1.5	\$14.6	\$29.2	\$306.2	\$15.3
Fire/Air	Cumulative	\$0.1	\$0.5	\$1.0	\$10.0	\$0.5
Public Safety	Cumulative	\$0.6	\$6.4	\$12.8	\$133.9	\$6.7
Land Reclamation	One-Time	\$2.0	\$2.0	\$2.0	\$40.4	\$2.0
Nearby Property Value	One-Time	\$1.6	\$1.6	\$1.6	\$32.6	\$1.6
Total		\$5.8	\$25.1	\$46.5	\$523.1	\$26.2

Source: ESI Calculations

Environmental Clean-up Benefit: \$26.2 million/year

2016 STUDY: ECONOMIC AND ENVIRONMENTAL BENEFITS OF PENNSYLVANIA'S COAL REFUSE INDUSTRY

For more information on the environmental and economic impact of the Coal Refuse to Energy Industry in Pennsylvania, read the full report conducted by Econsult Solutions at www.arippa.org.



FINAL REPORT
September 8, 2016

FINAL REPORT SUBMITTED TO:
ARIPPA
2015 Chestnut Street
Camp Hill, PA 17011

FINAL REPORT SUBMITTED BY:
Econsult Solutions, Inc.
1435 Walnut Street
Philadelphia, PA 19102



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PA COAL REFUSE REMEDIATION PROJECTS

BEFORE

&

AFTER



Cambria Cogen – Ebensburg, PA

Ernest Site – Indiana County

177 ACRES, 11 MILLION TONS OF COAL REFUSE

ADJACENT TO MCKEE RUN



OVER 10.5 MILLION TONS OF COAL REFUSE
REMOVED SINCE MID-1990'S

A SUBSTANTIAL REDUCTION IN ACID, IRON,
MANGANESE AND ALUMINUM TO MCKEE RUN IS
OCCURRING.



Cambria Cogen – Ebensburg, PA

Lucerne Site – Indiana County

197 ACRES, 9 MILLION TONS OF COAL REFUSE

ADJACENT TO YELLOW CREEK, WHICH IS AN AMD
IMPAIRED STREAM



OVER 5 MILLION TONS OF COAL REFUSE REMOVED
SINCE 2012

SUBSTANTIAL REDUCTIONS IN ACID, IRON,
ALUMINUM, AND MANGANESE EXPECTED TO
YELLOW CREEK.



Colver Power Project – Colver, PA

3.5 MILLION TONS COAL REFUSE PILE FROM COAL MINE OPERATED FROM 1911-1978



COAL REFUSE PILE VIRTUALLY ELIMINATED OVER THE PAST 23 YEARS, ELK CREEK HAS ACHIEVED ALMOST PRE-MINING WATER QUALITY



Ebensburg Power – Ebensburg, PA

Revloc Site – Cambria County

56 ACRES

3.2 MILLION TONS OF COAL REFUSE



RECLAMATION PROJECT COMPLETED IN 2011

6 MILES OF BLACKLICK CREEK RETURNED TO QUALITY
TO SUPPORT AQUATIC LIFE, INCLUDING TROUT



Northampton Generating – Northampton, PA

Loomis Bank Site – Luzerne County

OVER A MILLION TONS OF CULM MATERIAL
DURING 11 YEAR PROCESS TO RECLAIM SITE



RECEIVED THE “EXCELLENCE IN SURFACE COAL
MINING AND RECLAMATION” NATIONAL
AWARD



Northampton Generating – Northampton, PA Loomis Bank Mine Fire

BEFORE



AFTER



Panther Creek Energy – Nesquehoning, PA Bank A Site

COAL REFUSE PILE WAS LEFT OVER FROM A
1940'S PP&L COAL PLANT



TODAY BANK A REMAINS ABLE TO SUPPORT WILDLIFE,
NO LONGER POLLUTES THE STREAMS, AND IS A
VIALE LOCATION FOR LOCAL BUSINESSES



Seward Generation – New Florence, PA Beaverdale Site – Cambria County

15.8 ACRES, SITUATED DIRECTLY ON AN UNNAMED
TRIBUTARY TO THE CONEMAUGH RIVER



250,000 TONS OF COAL REFUSE WAS REMOVED,
RECEIVED A RECLAMATION AWARD FROM THE
PENNSYLVANIA COAL ASSOCIATION IN 2016



Seward Generation – New Florence, PA

Seanor Site – Westmoreland

SITUATED DIRECTLY ON AN UNNAMED TRIBUTARY
TO GETTY RUN AND LOYALHANNA CREEK



PROJECT RECEIVED THE GOVERNOR'S
EXCELLENCE AWARD IN 2014



Schuylkill Energy Resources – Shenandoah, PA

“STRIPPING PITS” AT THE SER PLANT



RECLAIMED WITH ASH FROM THE SER PLANT



Gilberton Power Company – Frackville, PA

BEFORE



AFTER

PLANT HAS BEEN OPERATING FOR 27 YEARS



Scrubgrass Generating – Kennerdell, PA Armstrong County Site

BEFORE



AFTER



Scrubgrass Generating – Kennerdell, PA Clearfield County Site

BEFORE



AFTER



CONCLUSION

- The coal refuse to energy industry is historically the most effective and prolific actor in the remediation of coal refuse piles across the Commonwealth.
- Public funding of AML remediation continues to dwindle.
- ARIPPA and our members want to partner with you to promote the values of reclamation and find ways to secure multiple sources of funding that will sustain and increase the current level of AML reclamation activities.
- No one but the coal refuse industry can remove the abandoned coal waste piles and address these attendant environmental and safety hazards in a holistic, efficient, and permanent manner.

ARIPPA AML/AMD RECLAMATION GRANT AWARDS

Applications Now Being Accepted

ARIPPA will once again contribute \$5,000 to deserving watershed and conservancy organizations facilitating abandoned mine land (AML) and/or acid mine drainage (AMD) remediation projects in Pennsylvania this year. Since 2010, the ARIPPA AMD/AML Reclamation Award Program provided \$65,000 in funding.

Grants up to a maximum of \$2,500 will be awarded to at least one eligible organization in the anthracite region and one in the bituminous region.

Awards are granted under the guidance and administration of EPCAMR and WPCAMR.

More information and copies of the application are available online at:

www.amrclearinghouse.org, www.wpcamr.org, www.epcamr.org

All proposals must be postmarked by June 29, 2018.



QUESTIONS & CONTACT INFO

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