



The Environmental Synopsis

A Monthly Update from the Joint Legislative Air and Water Pollution Control and Conservation Committee

APRIL 2016



The Chairman's Corner

**Senator Scott E. Hutchinson,
Chairman**

If you're from the anthracite region of Pennsylvania, you are probably familiar with the

large piles of coal waste located near the sites of former mining operations. Often referred to as "gob" or "bone piles," these heaping mounds contain millions of tons of rock materials discarded during the peak of the coal mining industry.

As the mining industry gradually faded, communities throughout the state have been burdened with remaining piles of coal waste, which can pose risks to the environment and public health. They are estimated to cover an area of over 8,500 acres and contain a total volume of 2 billion cubic yards of coal waste. An emerging technology, however, may be able to clean up these unsightly piles at little to no cost to taxpayers by utilizing the coal waste to power Pennsylvania homes and businesses.

Referred to as circulating fluidized bed (CFB), this technology allows coal waste to be burned for energy. The coal waste, which rests in thousands of dump sites across the state, was thought to have low energy potential but the piles actually contain significant amounts of useable coal. CFB power facilities can now use a combustion process to separate waste from useable material. There are

15 CFB plants currently operating in Pennsylvania, including the Scrubgrass Generating Plant in my district. Together, they consume 12 million tons of coal waste annually and produce nearly 1,500 megawatts of electricity.

The use of CFB technology drastically improves the environmental quality of former mining communities. Vegetation cannot grow on piles of coal waste, leaving the piles barren, unsightly and highly-susceptible to erosion. The runoff, referred to as acid mine drainage (AMD), can pollute nearby lakes, rivers, and streams. The drainage negatively impacts water quality and can often make it difficult or impossible for plants or animals to survive.



If not removed for use in CFB plants, coal waste piles would continue to pollute, until they could be removed by federal or state agencies. Estimates from

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Notes from the Director

Tony M. Guerrieri, Executive Director

Bact, cair, ghg, leed, mact, sip and cpp. This is not secret information encrypted in code and no it is not silly gibberish. This is a list of terms that you need to know if you want to understand what may be the biggest debate in Washington, D.C., and in Harrisburg in the next few years.

These terms, and many others, will be part of the federal and state “Clean Power Plan.” They are also acronyms. The use of special terminology crosses into almost every section of today’s society, especially within the environment, energy and business sectors.

An acronym is a word or name that is formed by joining the first letters (or first few letters) of a series of words. Acronyms are often less clumsy than the complete expressions they represent and are easier to write. Government programs are riddled with acronyms, letters that signifies agencies, buildings, programs, sources of money, long chemical names and groups of people. Some acronyms are well known. Almost everyone, for example, knows the IRS, YUPPIE and VIP.

To be successful in understanding information from a government entity, one must be trained in the use of acronyms and all kinds of special use jargon. For example, bact is, of course, BACT – Best Available Control Technology. Cair is CAIR – Clean Air Interstate Rule. GHG is Greenhouse Gas; LEED is Leadership in Energy and Environmental Design; MACT is Maximum Achievable Control Technology; and a SIP is a State Implementation Plan. And, they all play a role in the federal CPP (Clean Power Plan). Confused? The government’s plan to reduce carbon emissions is such an alphabetical maze that even those involved might get lost.

So just how new is the use of acronyms? They are an ancient practice – Roman soldiers carried standards en-

graved with the “SPQR,” standing in Latin for “Senate and People of Rome.” Although acronyms have always been part of bureaucratic jargon, their use surged during the 1930s and 40s with the advent of “New Deal” agencies and the military during World War II.

The use of acronyms in the environment and energy sectors is a long-standing tradition, but do these shortcuts really make things easier to understand?

There was a time when no one used acronyms when talking about natural resources. It was a simpler era. Then, in 1962, the modern environmental movement was kick-started by the novel *Silent Spring* by Rachel Carson. A considerable amount of evidence indicated that the prevalence of a new pesticide called DDT in the environment threatened several species of birds with extinction, including the bald eagle, our nation’s symbol.

The use of pesticides and other chemicals was thrust to the forefront of the public eye, which caused anti-pollution legislation and regulations to be passed on the federal, state and local levels. Months after the first Earth Day in 1970, the forerunner of the federal pollution control laws – the Clean Air Act of 1970 (or CAA) – was passed. An alphabet soup of agencies and programs soon followed – NEPA, EPA, CWA, CAA, ESA and others. With the proliferation of technology, and new movements in politics, energy and the environment, acronyms would grow and evolve in a way no one could predict.

The popularity and exponential growth of acronyms is hard to exaggerate. They pervade every discussion, creating their

own special language. The use of acronyms in subjects has reached such proportions that even people who are in the field need help. In a recent report by the Governor’s Pipeline Infrastructure Task Force here in Pennsylvania, there were over 150 separate acronyms. It is now common practice that many reports and websites contain an index to help decipher the acronyms.

Acronyms of agencies are fairly common, and some of them have become the designation of choice. Less familiar but still recognizable to many outside Harrisburg are DEP for the Pennsylvania Department of Environmental Protection and DCNR for the Department of Conservation and Natural Resources. In 1995, the 25-year-old Pennsylvania Department of Environmental Resources (DER) was replaced by cabinet-level departments, DEP and DCNR, splitting the state’s environmental regulatory functions from its resource management actions. While the acronym DER was not toxic, the mere mention of it was enough to raise the hackles of some who had dealt with the agency and come away disappointed or angry. Granted, DEP still administers many of the same programs, but a new name and a new focus certainly helped as it moved forward.

In my opinion, the silliest-sounding one has to be NIMBY (Not In My Back Yard), yet it stands for a crucial land use term. Spinoffs from this popular planning term include LULUs (Locally Unacceptable Land Uses), but the ultimate acronym is expressed by BANANA: Build Absolutely Nothing Anywhere Near Anything.

Clearly, environmental and energy acronyms are not going to go away any time soon. If history is any indication, acronyms are likely to keep coming, as government continues to evolve, become more complex and grow in size.

Research Briefs

Each month, the committee's staff researches and prepares a number of "briefs" on several topics relevant to the committee's mission. Very often these briefs include references to reports and further research on the topics so that readers may pursue issues on their own. Please note that the information and opinions expressed in the Research Brief articles do not necessarily represent the opinions or positions of the Joint Legislative Air and Water Pollution Control and Conservation Committee, nor those of the Pennsylvania General Assembly.

Pennsylvania's 2014 Organic Production Survey

Tony M. Guerrieri
Executive Director

Pennsylvania ranks in the top 10 among states for several categories in the organic production of livestock and crops, according to statistics compiled from the 2014 Organic Production Survey. The survey results provide acreage, production and sales data for a variety of organic crops, as well as inventory and sales data for selected organic livestock commodities. In addition, data for land in farms, participation in federal programs, and marketing practices on organic farms are included in the full report.

With 679 organic farms, Pennsylvania has 5 percent of the nation's 14,093. According to the survey, California had 2,805 farms while New York had 917 and Washington 716.

The top 10 states in organic acres are: California (687,000), Montana (318,000), Wisconsin (229,000), New York (213,000), Oregon (204,000), North Dakota (135,000), Minnesota (133,000), Wyoming (129,000), Texas (127,000) and Idaho (125,000).

For organic sales in 2014, Pennsylvania was among the 10 which accounted for 78 percent of the \$5.5 billion in sales. Pennsylvania ranked third with sales worth \$313 million compared to California's \$2.2 billion (or 40 percent of all sales) and \$515 million in Washington. The remaining seven are: Oregon (\$237 million), Wisconsin (\$201 million), Texas

(\$199 million), New York (\$164 million), Colorado (\$147 million), Michigan (\$125 million) and Iowa (\$103 million).

Of the 679 Pennsylvania organic farms included in the survey, the average production expenses per farm were \$340,595 compared to the national average of \$280,772.

The state's 282 organic farms with a total of 14,591 milk cows had a gross sales of nearly \$3.4 million in 2014 on the animals alone. For other livestock, the reported inventories as of December 31, 2014 were 451 beef cows on 32 farms, 92 hogs and pigs on 14 farms, 207 sheep and lambs on 13 farms, 53 goats and kids on 4 farms, 930,664 laying hens on 59 farms, and 9,908 head of other cattle on 312 farms.

Pennsylvania is one of the nation's top purchasers of organic livestock and crops, with sales totaling more than \$313 million in 2014.

Milk is by far the leading organic commodity in terms of sales, with \$1.1 billion worth sold in 2014. On the 282 organic farms whose milk production for 2014 was tabulated in the survey, the total was just over 188 million pounds with a gross sales value of nearly \$60.6 million. Pennsylvania had 54 farms producing organic chicken eggs, which are laid by hens raised without cages, in 2014.

The 2014 survey indicated that 450 organic farms were growing field crops in



Pennsylvania. Those farms had a total of 58,465 of crop acres with a gross sales value of \$16,202 million for crops grown in 2014. The report noted that Pennsylvania had 71,000 acres certified for organic production. Among the organic field crops, corn for grain led the way with a 2014 production of more than 1.260 million bushels from almost 11,000 acres on 256 farms. It was worth \$5.396 million when sold. Alfalfa was grown on 8,220 acres on 166 farms for a yield of 21,750 tons. It had a sales value of just over \$2.8 million. Corn was raised on 2,939 acres on 152 farms for silage or green chopping. When sold, it had a value of \$642,160.

Oats were grown on 979 acres on 56 organic farms in 2014. Its yield of 49,527 bushels had sales value of \$167,408. The 2,867 acres of wheat grown on 40 farms produced a 2014 yield of 124,279 bushels. Its gross value in sales was just over \$1.306 million. Soybeans were grown 93 organic farms in Pennsylvania in 2014. Their 5,750 acres provided a yield of 201,311 bushels with a gross value of more than \$1.6 million in sales.

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The report also included a statistical group for all vegetables, potatoes and melons. Those crops were grown on 1,267 acres on 184 farms and had a gross value of \$17.270 million.

Fruits, tree nuts and berries were also tabulated in the 2014 survey. In total, they were grown on 100 acres on 49 farms with a total sales value of \$825,917. Apples were harvested at 12 organic orchards in 2014 – producing 1,494,270 pounds of apples.

Despite milk and poultry leading the way in sales, organic crops still dominated in terms of total sales, making up 42 percent of the \$5.5 billion in total organic sales. One reason for this could be that feed costs were reported as the highest production expense, even higher than farm labor. Farmers reported feed costs of \$927 million, slightly more than reported labor costs of \$917 million. These high feed costs can be a barrier to farmers entering the organic livestock market.

For the nation as a whole, the \$5.5 billion in sales value of organic food in 2014 was a jump of 72 percent from 2008.

The complete 592-page U.S. Department of Agriculture's National Agricultural Statistic Service's 2014 Organic Productions survey can be found online at: www.agcensus.usda.gov.

Harvesting Rainwater in Urban Areas

Coleen P. Engvall
Research Analyst

Whether it be in drought-ridden California, or the rain-rich East Coast, water conservation is an important discussion. Reducing water waste not only saves money for both municipalities and citizens, but it also improves the health of the waterbodies surrounding population centers. Public education on the problem has tended to focus on reducing household demand. For example, people are

encouraged to purchase toilets that use less water to flush or to buy low-flow showerheads.

In most houses that use water from municipal sources, all plumbing is potable. That means the water from the tap and the water in the tank of the toilet are the same quality. Drexel University engineers point out that this is a waste of clean, drinkable water.

In a study released in March, they argue that there is a source of water that is not only being wasted, but one that is an expensive nuisance in urban areas: rainwater. The study is entitled, *Down the Drain: Here's why we should use Rainwater to Flush Toilets: Feasibility of Rainwater Recycling in Four Major U.S. Cities*.

The study focuses on two main benefits of harvesting rainwater from private rooftops: municipal water savings and runoff reduction. Water saving has clear benefits; it saves money for consumers and it is less taxing on the aquifer than the water utility sources. While less well known, reducing the amount of runoff in storm water systems positively impacts the environment as well. During heavy rainfall, traditional storm water systems, like storm drains and other concrete infrastructure, can be overwhelmed. This can lead to flooding, which can transfer pollutants like raw sewage into the environment. The problem is more pronounced in places with more impenetrable surfaces like buildings, sidewalks and roads, which prevent rainwater from being absorbed and filtered by soil and vegetation.



Environmental engineers at Drexel University argue that using urban rainwater to flush toilets can have a positive impact on municipal water supplies and local watersheds.

So what does all this have to do with flushing the toilet? First of all, many Americans are unaware that flushing the toilet is the single largest use of water in the average household. Collecting rainwater for use in flushing can allow water to be treated and reintroduced into waterways more gradually, keeping storm water systems from overflowing. It also reduces the volume of water drawn from municipal water systems.

The study examined how the practice of rainwater harvesting could impact the cities of Philadelphia, New York, Chicago and Seattle. They begin by noting how much rainfall each of these cities experiences and the potential for individuals to harvest the water. Harvesting potential is determined in the study by relative roof coverage and annual rainfall. Their conclusion notes that all four cities experience enough rainfall for harvesting to be worth-while.

For example, if residential waterspouts in Philadelphia directed water into 1,000 gallon storage tanks, the average family would be able to use rainwater for 80 percent of their annual flushing. Even with smaller systems, savings would be significant. In fact, they note that Philadelphia would be a prime candidate for rainwater harvesting, with potential runoff mitigation of 40 percent per household. This number is higher than those seen in the other cities because the surface area of rooves is smaller relative to population, which equals less runoff management per family. All of these numbers would vary by family size, home size and holding tank size. How-

ever, with widespread adoption of these practices, urban runoff systems would see significant relief and residents could see cuts in their water bill of 25 percent, on average.

The researchers mention that the city of Philadelphia already runs a rainwater recycling program that offers rain barrels to residents, and they encourage the expansion of such programs.

An overview of the study is available at: <http://drexel.edu/now/archive/2016/March/rainwater-recycling/>

Challenges to the Transportation of Spent Nuclear Fuel

Michael McKelvey
Intern

The Nuclear Waste Policy Act of 1982 (NWPA) established federal responsibility for the disposal of spent nuclear fuel; a radioactive waste product removed from nuclear reactors after it has been used to produce energy. This act called for the U.S. Department of Energy (DOE) to begin investigating options for management of spent fuel.

Five years later, the act was amended to focus research on the capability of Yucca Mountain, Nevada, as a permanent disposal site. Research persisted on Yucca Mountain until 2009 when the Secretary of Energy determined that a repository at Yucca Mountain was not a feasible option due to resistance from the people of Nevada.

Due to the lack of a consolidated disposal site, most spent nuclear fuel remains at the location where it was generated. The U.S. has about 72,000 tons of spent nuclear fuel in temporary storage at reactor sites. Many of these storage locations, however, are beginning to fill up. Subsequently, focus is being cast on transportation solutions to move the spent fuel to a more permanent resting ground.

A recent study by the U.S. Government Accountability Office (GAO) highlights legislative, technical and societal challenges to the transportation of spent nuclear fuel.

The DOE is responsible for the transportation of spent nuclear fuel; however, with the exception of Yucca Mountain, the DOE does not currently have clear legislative authorization to develop and maintain sites for interim storage or permanent disposal. Further, there is no current initiative to determine a repository location other than Yucca Mountain. To pursue such an initiative would require legislative change to the NWPA and would restart the lengthy and expensive process of siting, licensing and testing necessary to develop a disposal location.

The U.S. has 72,000 metric tons of spent nuclear fuel in temporary storage at reactors across the country and many of these storage sites are nearing full capacity.

The transportation of spent fuel also exhibits numerous technical challenges. First, there exist uncertainties regarding the stability of “high burn-up” fuel during transportation. Until recently, most fuel discharged from nuclear facilities was “low burn-up” fuel. For decades this was the most prevalent form of spent nuclear fuel and industry officials have developed extensive experience with the way that it functions during transportation. With modern advances in technology, however, facilities are now able to burn fuel much longer. This results in a larger quantity of high burn-up fuel, which is hotter and more radioactive. Officials have less experience transporting this material and are uncertain of its long-term stability; thus, further re-



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search is required before large-scale transportation can safely begin.

A second technical challenge arises from the readiness of spent fuel to be transported. There are two main methods of storing spent fuel: wet storage and dry storage. Wet storage places spent fuel in a pool of water for several years, allowing for substantial cooling. Dry storage encases spent fuel in a canister called a cask. Dry storage holds fuel at a much higher temperature, and only 30 percent of fuel currently in dry storage meets temperature requirements for transportation due to a discrepancy between storage and transportation guidelines. To be stored it may legally be as hot as 752 degrees Fahrenheit; and to be transported it must be cooled to below 185 degrees. Potential solutions to this problem are to let the spent fuel cool at reactor sites, to divide large quantities of spent fuel into small specialized canisters which could reduce heat, or to develop a large “over pack” which could encase large sums of hot fuel for transportation purposes.

The last technical challenge cited pertains to infrastructure. Rail is the preferred method of transporting spent fuel, but many of the reactor sites which are currently storing spent fuel are not located near railroads and thus a safe form of truck hauling would need to be developed and regulated.

In closing, the report mentions public acceptance as a societal challenge to the transportation of spent nuclear fuel. Without a satisfactory understanding of

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potential costs and benefits, the public is unlikely to support the development of any spent nuclear fuel transportation program.

The GAO report; Spent Nuclear Fuel – Legislative, Technical, and Societal Challenges to its Transportation, is available at: <http://www.gao.gov/assets/680/672889.pdf>



Most Americans Concerned About Tap Water Quality

Tony M. Guerrieri
Executive Director

Over the past 20 years, a growing number of people are consuming bottled water. This indicates that people do not trust tap water, even though its quality water is regularly monitored and regulated through the federal Safe Drinking Water Act by the U.S. Environmental Protection Agency.

When it comes to water, only about half of Americans are very confident in the safety of tap water, and a majority think lead contamination of the tap water in Flint, Michigan, indicates a more widespread problem. Lower-income Americans and those from minority groups are especially likely to worry about their water being contaminated, according to the results of a new national poll on public attitudes and concerns about water.

The Associated Press-GfK poll found that only 47 percent of the 1,033 Ameri-

can adults surveyed say they are extremely or very confident that the water flowing from their tap is safe to drink. Another third (33 percent) are moderately confident. Nearly 2 out of every 10 Americans have zero confidence in the safety of their own tap water.

According to GfK, Caucasians (54 percent) are significantly more likely than African-Americans (40 percent) or Hispanics (28 percent) to be very confident in their tap water being safe. Six in 10 people living in households making more than \$100,000 a year, but less than 4 in 10 of those making less than \$50,000 a year, are very confident in the safety of their water.

The lead-contaminated water in Flint has been in the headlines for months and more than half of Americans (56 percent) believe it is a sign of more widespread problems in the U.S. About 4 in 10 say it is an isolated incident. But relatively few – 21 percent – say they are paying close attention to news about the situation in Flint; 38 percent say they are following somewhat closely and 38 percent are not following closely.

Public sentiment toward the safety and quality of tap water is largely divided by race and economic status, according to a recent poll.

According to GfK, African-Americans are significantly more likely than Caucasians to think it is a sign of a more widespread problem and 32 percent of them are following the story very closely, compared with 20 percent of Hispanics and 19 percent of Caucasians.

Only about a third of Americans say they usually drink straight tap water at home. About 36 percent said they filter their drinking water, while another 30 percent said they relied on buying bottled water in bulk to use at home to drink.

About 4-in-10 Caucasians, but less than 2-in-10 African-Americans or Hispanics, say they drink straight tap water at home. Just over half of African-Americans and 4-in-10 Hispanics drink bottled water at home, compared to only a quarter of Caucasians, according to GfK.

Just 4-in-10 Caucasians, but 6-in-10 non-Caucasians say concerns about contamination are a major factor in their decision to drink bottled or filtered water.

Six-in-10 Americans in households making less than \$50,000 a year, less than half of those making between \$50,000 to \$100,000, and just 4-in-10 of those making \$100,000 cite concerns about contamination as a reason for not drinking tap water.

Half of Americans say the federal government should do more to ensure safe drinking water, while 40 percent say its involvement is about right and 7 percent think it should be doing less. Blacks (69 percent) and Hispanics (62 percent) are more likely than Caucasians (44 percent) to want more federal government involvement.

Those in households making less than \$50,000 are more likely than those making more than \$100,000 to say the federal government should do more, 57 percent to 40 percent. Those living in urban areas (60 percent) are more likely than those in suburban (50 percent) or rural areas (44 percent) to want more federal government involvement, according to the GfK.

When it comes to local government making the right decisions to ensure safe tap water, those in households making more than \$100,000 are more likely than those making less than \$50,000 to trust municipalities to handle the issue, 38 percent to 18 percent. Whites are more likely than non-Caucasians to have a lot of trust in local government, 30 percent to 23 percent.

The AP-GfK Poll questions and results are available at: <http://www.ap-gfk.com>.

On the Horizon *A Look at Upcoming Events*

Monday, May 16, 12 p.m.

Environmental Issues Forum

Room 8E-A, Capitol East Wing, Capitol Complex, Harrisburg, PA

The topic of May's forum will be chronic wasting disease, a fatal neurological disease that has been detected in segments of Pennsylvania's whitetail deer population. Discovered in the late 1960s, CWD has rapidly spread throughout the U.S. and poses a significant risk to the health of our state animal. Guests from DCNR, the Department of Agriculture and Game Commission will discuss inter-agency initiatives aimed at controlling this deadly disease.

Please call the committee office at 717-787-7570 if you plan to attend. And be sure to check the committee website at <http://jcc.legis.state.pa.us> for more details and events as they are added to the schedule.



Check Us Out on Social Media!



You can now receive updates on committee events, new research and more by following the Joint Legislative Conservation Committee on social media. You can find us on Facebook at www.facebook.com/jointconservationcommittee, or on Twitter at www.twitter.com/PA_JLCC. Take a moment and follow us today for the latest on issues related to Pennsylvania's diverse natural resources!

Committee Chronicles *A review of memorable committee events*

On March 21, the Joint Legislative Conservation Committee held a public hearing at the State Capitol on Act 108 of 2010, the Covered Device Recycling Act. Since the law's enactment, serious challenges have been identified with the CDRA that are preventing the effective recycling of e-waste across the Commonwealth. Testifiers at the hearing represented each level of the e-waste supply chain including DEP, the recycling industry, municipalities, environmental advocates and consumers.

Representative Rick Saccone (pictured left) questions a testifier on challenges that have been identified with Pennsylvania's electronics recycling law. Representative Saccone represents parts of Allegheny and Washington counties.

The hearing attracted a standing-room only crowd, (pictured below) including many who travelled from across the Commonwealth to show support for amending the CDRA.





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The Chairman's Corner

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DEP show that remediation of refuse piles would cost taxpayers over \$2 billion. CFB plants offer a market-based alternative by remediating coal waste, converting it to energy and creating thousands of jobs in the process. It truly is a win-win situation for Pennsylvania's taxpayers.

A prime example of the benefit CFB technology provides is the Big Gorilla Project, an AMD remediation project in northeast Pennsylvania. Prior to the involvement of the industry, DEP estimated that the total project would require over \$80 million in public funds to remediate. Through the eventual aid of CFB technology, that total was reduced to just over \$4 million.

According to ARIPPA, the trade organization for plants utilizing CFB technology, the industry directly employs 1,200 residents with an annual payroll of about \$84 million. Another 4,000 jobs exist in support industries such as project management, engineering and transportation. The jobs are often located in areas that once thrived during the days of a prosperous coal industry, but have experienced economic hardship in recent decades.

In addition to removing coal waste, CFB plants produce a byproduct that can further help remediate abandoned mine lands. Referred to as CFB ash, it is a mixture of limestone and native rock left over from the combustion process. The limestone neutralizes the acidity levels of the ash and gives it a concrete-like consistency. The ash is often trucked back to the original coal waste site and distributed as part of the reclamation process. The ash helps contain pollution at the site and ultimately allows for vegetation to be restored in the area.

Turning coal waste into energy is a great way for Pennsylvania to address the

legacy of mining while stimulating the economy. Unfortunately, the industry has become a victim of its own success. Distances to fuel and related transportation costs have increased as coal piles are removed and remediated. The cost to ship CFB ash back to mining sites has also increased operating costs. The industry also grapples with challenges in the wholesale energy market, as well as increased regulatory requirements. That is why a legislative effort is underway to provide support for the important industry.

CFB technology is both environmentally and economically beneficial to Pennsylvania. By converting coal waste into energy, CFB power plants improve environmental quality, create jobs and save taxpayers' money.

Senate Bill 368, which I cosponsored, would create a coal refuse energy and reclamation tax credit of \$4 per ton of coal waste removed. The tax credit is performance-based and contains strict eligibility criteria to ensure public funds are used effectively. By offering this tax credit, the industry can continue removing coal waste at a cost that is four-to-five times lower than what would be required if left solely to state and federal agencies.

CFB technology has great potential here in Pennsylvania to assist in reclaiming abandoned mine lands and remediating acid mine drainage. Through the continued support of our state, these cutting-edge plants can convert millions of tons of unsightly and unsafe coal waste into power while restoring beauty and prosperity to vast regions of the Commonwealth.



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