

International Brotherhood of
BOILERMAKERS • IRON SHIP BUILDERS

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The Honorable Gene Yaw
Chairman, Senate Environmental Resources and Energy Committee
Senate Box 203023
362 Main Capitol
Harrisburg, PA 17120-3023

Chairman Yaw,

My name is Martin Williams and I am a business agent for the International Brotherhood of Boilermakers, Local Lodge 13 in Philadelphia, Pennsylvania. I appreciate the opportunity to offer comments on some of the pressures facing Pennsylvania's coal industry and their potential impact on our members and other Pennsylvania workers.

Boilermakers Local 13 represents nearly 800 active members covering 41 counties in eastern Pennsylvania. Primarily our work involves the installation, repair, and maintenance of industrial pressure vessels and associated components. Accordingly, our members work in a variety of facilities, including power generation, petrochemical, and steel mills. Over the years, our members have worked hundreds of thousands of man-hours at various coal-fired power plants across Pennsylvania and have been directly involved in the construction and installation of some of the most advanced electric generating technology located anywhere.

Coal is woven into the fabric of our history, from our early days in the railroad industry to today's supercritical steam generators. We are very proud of the work we perform and its necessity in providing Pennsylvania and the country with safe, reliable energy. Since our connection to the coal industry involves end use applications, my comments will focus largely on coal's use as a source of electric power generation and some of the challenges facing the industry.

Pennsylvania's coal industry is a vital part of the state's economy, supporting more than 36,000 direct and indirect jobs and responsible for more than \$4 billion in economic output.¹ \$2.1 billion can be directly attributed to labor income paid to employees and contractors, payments to property owners, and state taxes generated in Pennsylvania.² Workers in Pennsylvania's coal industry, on average, enjoy higher wages and benefits than those employed in other areas of the private sector.³ Coal is also responsible for 36% of all electricity generated in Pennsylvania, which is the largest of any fuel source. Coal is abundant, affordable, and reliable. However, it is well known that coal is facing enormous market and regulatory pressures, and the industry's future is very uncertain. We are concerned that without prudent action, the reliability of our power grid, our state's economy, and the jobs of thousands of working class Pennsylvanians are at risk.

One of the big issues facing coal right now is the anticipated issuance and implementation of the Environmental Protection Agency's (EPA) Clean Power Plan (CPP), which seeks to reduce carbon

¹ Pennsylvania Economic League of Greater Pittsburgh. *Economic Impact of the Coal Industry in Pennsylvania*. p.6 (2014).

² *Id.*

³ *Id.* at 7.

emissions by 30% from 2005 levels. To be clear, Local 13 acknowledges the realities of climate change and supports EPA's overall goal of reducing the threat of climate change to our country. This is consistent with EPA's mandate under the Clean Air Act to protect the environment and human health. In the past, we have supported EPA's goals of reducing energy sector emissions and our members have greatly benefitted from those efforts, through the installation of pollution control equipment such as precipitators, selective catalytic reduction (SCR) units, and flue gas desulfurizers (FGD). However, with regard to EPA's approach to mitigate carbon emissions, we have some serious concerns—especially over the future viability of coal-fired power generation and job opportunities for our members.

The CPP requires each state to develop an implementation plan based on four criteria or “building blocks”. EPA has stated that each state will have the flexibility to structure its implementation plan by selecting which combination of measures best achieves the reduction goals established by EPA. However, when each building block is examined within the specific context of Pennsylvania's energy sector, it becomes apparent that flexibility may be very limited.

Building Block 1 allows for carbon emissions reductions at individual facilities through adoption of best operating practices, including a heat rate improvement of six percent at existing coal-fired power plants. A facility's heat rate is the measure of the amount of heat needed to generate 1 kWh of electricity and a low heat rate can result in lower emissions and lower fuel consumption. Heat rate improvements can be achieved through a variety of methods, however, EPA's six percent improvement target is based on a national estimate and does not account for state or site-specific considerations.⁴ It should be noted that many of Pennsylvania's larger coal-fired power plants, which are routinely maintained, have already spent millions of dollars in upgrades in order to comply with other environmental regulations and are operating close to maximum operational efficiency. Other plants which have the capacity to improve their heat rate may not have the incentive to invest in newer technologies as the cost of investment may be outweighed by the cost savings of retiring the plant altogether.⁵ Further, as some coal-fired power plants will be expected to operate at lower outputs to comply with other building blocks of the CPP, this will result in higher heat rates as most coal-fired power plants were designed to operate most efficiently as base load units. This means higher emissions per unit of electricity.⁶

Building Block 2 relies on redispatching coal-fired generation to natural gas units. This is based on the determination that current natural gas units are underutilized and emit approximately half of the carbon emissions of the average coal-fired unit. There are two problems with this approach. First, coal-fired generating units are designed to operate as base load units and not as load-following units, or units which only operate during times of elevated demand. Coal-fired generating units which are not operating at optimal output are less efficient and produce higher emissions per unit of electricity, thereby potentially undermining EPA's overall goal of reduced carbon emissions.

Second, as the Pennsylvania Public Utility Commission (PAPUC) has stated in its public comments of the Clean Power Plan, EPA's proposal will require the PJM (PJM Interconnection LLC) to move to a model that selects generation based on environmental drivers instead of economic considerations.⁷ PJM's mandate is to dispatch produced energy at the lowest cost to reliably serve consumers, while recognizing the operational limits of generation and transmission facilities.⁸ Primarily focusing on environmental needs instead of economic needs will require a restructuring of the PJM's dispatch system, and may place of the stability of the grid at risk by relying on generating sources not historically suited to base load operation, while also increasing costs to consumers.

Building Block 3 calls for increased reliance on renewables and maintaining existing nuclear generating capacity. Pennsylvania already has in place an Alternative Energy Portfolio Standard (AEPS) which calls for 8% of the state's energy to be produced from solar and all Tier I sources by 2021. Under EPA's Clean

⁴ Pennsylvania Public Utility Commission. Submitted comments re: EPA Docket ID No. EPA-HQ-OAR-2013-0602. p.32, Dec. 2014.

⁵ *Id* at 33.

⁶ *Id* at 35.

⁷ *Id* at 6.

⁸ *Id* at 17.

Power Plan target, Pennsylvania would be expected to produce 16% of its total generation from Tier I sources by 2030—which represents an almost eight-fold increase from 2012 and double the target set by the AEPS.⁹

Unfortunately, EPA’s methodology for calculating Pennsylvania’s renewable target seems to be flawed and presents a potential problem of trying to meet unrealistic expectations. EPA’s determined renewable target for PA in the region is the result of taking the average of each state’s renewable portfolio standard. However, this methodology does not take into account each state’s renewable generation potential, nor does it factor in states which have yet to establish a renewable portfolio standard (RPS).¹⁰ This results in Pennsylvania shouldering an unfairly large burden of the region’s renewable generation target, while ranking next to the bottom nationally in potential resource development according to the National Renewable Energy Laboratory (NREL).

Building Block 4 of EPA’s CPP requires states to incorporate or increase demand-side energy efficiency measures as part of an overall carbon reduction plan. Similar to Building Block 3, EPA’s methodology for determining Pennsylvania’s target goal appears to be flawed and sets an annual savings goal (1.5%) at a rate of double what is thought to be achievable (.5% to .7%) according to the Electric Power Research Institute (EPRI). Further, implementing targets specified under Building Block 4 would require legislative changes to Act 129, which is the current mechanism through which Pennsylvania administers its energy efficiency program.¹¹

An additional concern we have with regard to the CPP’s effect on Pennsylvania’s coal industry is the resulting disincentive to invest in next generation coal technologies. In a sense, we’ve been here before. From 1997 to 2002, U.S. natural gas electric power prices averaged \$3.41/Mcf¹², which is lower than current prices. Those low prices led to a rapid expansion of natural gas-fired generating unit construction, quickly outpacing demand. Within a few years, gas prices started increasing and many newly constructed plants were left idle or underutilized. Subsequently, use of coal started to increase, once again, taking advantage of coal’s stable pricing and abundance.

Natural gas prices are volatile and there is a good possibility that we will see a repeat of the bursting of the gas price bubble. Increased use of shale gas for Liquefied Natural Gas (LNG) export, Compressed Natural Gas (CNG) vehicles, and home heating will inevitably push prices up, increasing electricity costs for consumers. At that point, many power generators will want to take another look at coal. But, if the industry is not innovating and advancing, then consumers will be stuck with inflated electricity costs.

In many ways, EPA’s CPP represents an aggressive approach to reducing carbon emissions and, in its current form, is unsuitable for Pennsylvania. However, with a few recommended changes, we believe it is possible to maintain a robust coal industry while addressing the need to reduce carbon emissions and protect the environment.

Different baseline periods for Building Block 1.

While EPA’s CPP is based on 2012 data in determining specific emission targets, the overall goal of the plan is to reduce total carbon emissions from 2005 levels. Setting a 2005 baseline would appropriately capture reductions already realized through investments made by facility owners¹³, as well as market shifts from coal to natural gas.

Correct methodologies used to calculate Pennsylvania’s emissions targets.

As previously stated, EPA’s renewables goal for Pennsylvania is based on flawed methodology and requires the state to obtain a share of its electric generation from renewables beyond its evaluated

⁹ Sen. Robert Casey. Submitted comments re: EPA Docket ID No. EPA-HQ-OAR-2013-0602. p6, Nov. 2014.

¹⁰ *Id* at 8.

¹¹ Pennsylvania PUC, *supra* at 60.

¹² Available via U.S. EIA online data portal, <http://www.eia.gov/naturalgas/data.cfm>.

¹³ Pennsylvania PUC, *supra* at 28-29.

potential¹⁴. Recalculating Pennsylvania's renewables target by factoring in technical potential as well those of other states should result in a more realistic, achievable goal.

Incentivize deployment of advanced coal technologies.

Technologies such as carbon capture and sequestration (CCS) are crucial to addressing climate change, while maintaining the viability of the coal industry. Pennsylvania has an opportunity to be a leader in this emerging field and should do everything possible to incentivize deployment, including direct investment in carbon capture technologies and support for ongoing research programs.

Special consideration for waste coal facilities

Pennsylvania's 13 waste coal electric generating facilities use coal refuse as a fuel source while facilitating the removal of legacy coal refuse stockpiles and allowing for the reclamation of land previously damaged by acid mine drainage. Given waste coal's low BTU content, compliance with CPP Building Block 1 by waste coal facilities is limited. We believe any state compliance plan should give special consideration to waste coal-fired generating facilities and the unique role they serve.

Over the last few years, we have witnessed the retirement of multiple coal-fired power plants in Pennsylvania; and just recently the U.S. Energy Information Administration (EIA) announced its analysis of the EPA's CPP shows that coal-fired power plant closings would accelerate under the plan. It is clear that the coal industry is at serious risk, which means Pennsylvania's economy and its middle class are also at risk. As EPA's final rule on the CPP is expected this summer, we ask that the General Assembly continue to remain engaged as implementation moves forward. Thank you for the opportunity to share our concerns.

Respectfully,

Martin Williams
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¹⁴ *Id* at 48.