



**Statement of Michael Catanzaro**  
**Managing Director, FTI Consulting, Inc.**  
**Hearing of the Pennsylvania House Environmental Resources and Energy Committee**  
**On EPA's Clean Power Plan**  
**September 16, 2014**

Chairman Miller, Democratic Chair Vitali, distinguished members of the committee, thank you for the opportunity to submit the following statement to the committee for its hearing on EPA's Clean Power Plan. My name is Michael Catanzaro, and I'm Managing Director of the Energy and Natural Resources practice with FTI Consulting, Inc. Before joining FTI Consulting, I spent several years in public service, including as Associate Deputy Administrator of the Environmental Protection Agency, where I worked on, among other things, implementation and enforcement of the Clean Air Act.

FTI Consulting is a global business advisory firm dedicated to helping organizations protect and enhance enterprise value in complex legal, regulatory and economic environments. FTI has been helping several coops and merchant plants, such as the Homer City Power Generation facility in Indiana County, assess the likely impacts of EPA's proposed Clean Power Rule to implement section 111(d) of the Clean Air Act<sup>1</sup>.

## **Summary**

EPA published its proposed rule in the Federal Register on June 18, 2014<sup>2</sup>. Because of its scope and reach, the proposed rule has sparked considerable debate among stakeholders, policymakers and the general public. FTI has been analyzing the proposal over the last several months. My testimony today will focus on specific aspects of the proposal and FTI's analysis of its potential impacts on coal-dominated, non-diversified power plants, such as Homer City.

Homer City and other non-diversified plants do not operate as part of larger fleets, foreclosing the compliance option of averaging their carbon dioxide emissions with lower-emitting units. There is no commercially available, cost-effective technology to control carbon dioxide emissions from existing power plants. This leaves non-diversified plants, like Homer City, with few, if any, viable options to meet EPA's proposed emission rate for the Commonwealth. The proposed rule, moreover, provides states with no meaningful flexibility to provide unit-level relief. Homer City, and other similarly situated plants, likely will be forced to curtail operations and consumer electricity rates are likely to rise.

Not only does EPA's proposed rule threaten the financial viability of plants like Homer City, it also presents grave difficulty for communities dependent on these facilities for good-paying jobs, affordable, reliable electricity and economic development. Homer City has 260 full-time employees, supports thousands of additional local jobs and provides electricity to 2 million homes in Pennsylvania. Homer City is undergoing an \$800 million renovation project to install state-of-the-art pollution control equipment, which, when complete, will make it one of the cleanest burning coal-fired power plants in the U.S.

Homer City is a so-called "merchant" power plant, meaning it sells power into wholesale, competitive electricity markets, has no way to pass on its environmental costs directly to rate payers, and gets dispatched based on variable costs. This stands in contrast to vertically integrated utilities, which obtain a regulated rate of return from state officials. Because no cost-effective, commercially available technology exists to control carbon dioxide emissions, and without a larger, lower-emitting fleet to help offset its emissions, Homer City's only

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<sup>1</sup> 42 U.S.C. § 7411(d).

<sup>2</sup> Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34,830 (June 18, 2014)

likely compliance options would be to purchase credits from lower emitting entities (in the event Pennsylvania adopts or joins an emissions trading regime) or curtail operations.

Both of these options would result in less dispatch for Homer City's units, impairing its ability to recover its \$800 million investment in pollution controls to comply with other EPA rulemakings, most recently the Mercury Air Toxics Standards finalized in 2012,<sup>3</sup> and repay its bondholders and investors. This threatens the continued operation of the plant, along with the jobs, affordable electricity and economic opportunity it provides the local community.

## Background

The proposed "Clean Power Plan" was developed pursuant to President Obama's "Climate Action Plan," released on June 25, 2013.<sup>4</sup> Among other things, the Climate Action Plan renewed the President's pledge to "reduce greenhouse gas emissions in the range of 17 percent below 2005 levels." To help accomplish this goal, the President simultaneously issued a Presidential memorandum<sup>5</sup>, which directed EPA "to work expeditiously to complete carbon pollution standards for both new and existing power plants." Today I will focus on standards being developed for existing power plants.

The President's memorandum instructed EPA to do several things, including:

- Issue proposed regulations for existing power plants by no later than June 1, 2014;
- Issue final standards for existing power plants by no later than June 1, 2015; and
- Require states to submit to EPA so-called state implementation plans required under Section 111(d) by no later than June 30, 2016.

Importantly, President Obama ordered EPA to abide by several criteria in meeting these goals. The criteria include directly engaging states, given their "central role in establishing and implementing standards for existing power plants," as well as the public and leaders of affected stakeholder groups; "tailoring" regulations and guidelines to reduce costs, consistent with other rules and regulations affecting the power sector; developing approaches that allow for "regulatory flexibilities"; and ensuring that the standards are "developed and implemented in a manner consistent with the continued provision of reliable and affordable electric power for consumers and businesses."

Consistent with the President's plan, EPA's proposal is designed to reduce power plant carbon dioxide emissions 30 percent below 2005 levels. For purposes of regulatory compliance, however, emissions and generation data from 2012 were chosen to determine each state's mandatory, enforceable emissions rate, expressed in pounds of CO<sub>2</sub> per megawatt hour of fossil-based electric generation. The program will commence in 2020, and EPA has established an interim emissions rate requirement in 2029 (based on the average of annual emissions rates from 2020 to 2029), with a final standard slated for 2030, which will thereafter be measured according to a rolling, three-year average of emission rates.

State emission rates were established according to EPA's application of four so-called "building blocks." The four building blocks are: 1) heat rate improvements of 6 percent (relative to 2012 average rates) at existing coal-fired steam EGUs; 2) re-dispatching natural gas combined cycle power plants to a 70 percent capacity factor; 3) maintaining financially at-risk nuclear units and increasing electric generation from non-hydro renewable resources; and 4) increasing demand-side energy efficiency.

<sup>3</sup> National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 77 Fed. Reg. 9,304 (Feb. 16, 2012)

<sup>4</sup> The President's Climate Action Plan, [www.whitehouse.gov](http://www.whitehouse.gov) (June 2013.)

<sup>5</sup> Presidential Memorandum - - Power Sector Carbon Pollution Standards, [www.whitehouse.gov](http://www.whitehouse.gov) (June 25, 2013)

These building blocks comprise EPA's determination of what constitutes the "best system of emission reduction," or BSER, under Section 111(d)<sup>6</sup>. Before I move on, some background on BSER and what the CAA requires under 111(d) is in order.

### **BSER, 111(d) and the Clean Air Act**

Section 111 of the Clean Air Act cover categories of stationary sources that may, in the EPA Administrator's judgment, cause, or contribute significantly to, air pollution "which may reasonably be anticipated to endanger public health or welfare."<sup>7</sup> For purposes of this hearing, we are discussing proposed regulations under Section 111(d), which covers *existing* sources—in this case, *existing fossil fuel-fired electric generating units*.

Under Section 111(d), the EPA Administrator is required to:

establish a procedure similar to that provided by section 110 of this title under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under section 108(a)...but (ii) to which a standard of performance under this section would apply if such existing source were a new source...Regulations...under this paragraph shall permit the State in applying a standard of performance to any particular source...to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.

The CAA defines the term "standard of performance" as a "standard [that] reflects the degree of emission limitation achievable through the application of the best system of emission reduction which (taking into account the cost of achieving such reduction and any nonair quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."

EPA has elected to look "beyond the fence line" of individual EGUs to other components of the electricity system. It is my understanding that this is the first time that EPA has taken this approach to establish performance standards. Apparently, requiring only unit-level reductions would not achieve the President's more ambitious emissions goals. To get more reductions, EPA has developed a "systems-based" approach that treats the entirety of the electric grid as the source category. Hence EPA's determination that BSER constitutes elements stretching from the generating plant all the way to the end-use consumer of electricity.

As noted above, under EPA's proposal, states are required to submit plans to EPA that demonstrate compliance with their assigned emission rates. In the preamble to the proposed rule, EPA notes that states have the flexibility to adopt any one, or all, of the four building blocks in developing compliance plans. EPA also noted that states are free to adopt other measures as appropriate, that is, beyond what EPA has defined as BSER, "provided that the state's plan achieves the required level of emission performance for affected sources."

### **BSER and Pennsylvania**

The legality and appropriateness of a systems-based approach under 111(d) is controversial, but that is not within the scope of my testimony today. I do want to comment on how EPA's approach applies to Pennsylvania, and what it portends for specific power facilities in the state.

After applying all four building blocks using 2012 emissions and generation data for Pennsylvania, EPA calculated an emissions rate for the state in 2030 of 1,052 lbs. CO<sub>2</sub> MWh.<sup>8</sup> The final goal, according to EPA, is equivalent to a 31 percent reduction in CO<sub>2</sub> emissions from the 2012 level. Moreover, according to

<sup>6</sup> See 42 U.S.C. §7411(a) and (d).

<sup>7</sup> CAA § 111(b); 42 U.S.C. §7411(b).

<sup>8</sup> U.S. EPA, Agency, Office of Air and Radiation, Technical Support Document for CAA Section 111(d) Emission Guidelines for Existing Power Plants, Docket ID No. EPA-HQ-OAR-2013-0602, Goal Computation Technical Support Document (June 2014).

testimony by Eugene Trisko before the Pennsylvania Senate Environmental and Energy Resources Committee on June 27, 2014, the relative contribution of each of the four building blocks to achieving Pennsylvania's final target in 2030 is as follows:

- Coal heat rate improvements: 11 percent;
- Natural gas re-dispatch from coal units: 11 percent;
- Nuclear energy: 7 percent;
- Renewable energy: 43 percent;
- Demand-side energy efficiency: 27 percent.

EPA's proposed emission rate for Pennsylvania is not achievable by any individual coal-fired unit. The only way for the State to comply with the emission rate is to reduce coal generation and increase generation from other sources. According to EPA's calculations, the lion's share, or about 70 percent, of eventual compliance for Pennsylvania must come from building blocks 3 and 4. Given that the state now generates 40 percent of its electricity from coal, achieving its emissions targets primarily with new renewable generation and demand-side energy efficiency will be extraordinarily difficult, and will have substantial costs ultimately borne by consumers and the state's economy.

### **Impacts on Non-Diversified Coal Plants**

In our white paper<sup>9</sup> on 111(d) released earlier this year, FTI Consulting found that these costs will fall disproportionately on non-diversified coal-fired generators, such as Homer City.

We examined several cases of individual plants in different parts of the country, ranging from merchant and municipal coal units operating in organized, competitive markets to geographically remote rural coops. In each case examined, there is no feasible means of complying with EPA's proposal aside from carbon capture and storage technology, which has not been widely demonstrated at commercial scale, and is not yet cost-effective. These plants, then, under EPA's proposed regime, will be faced with some combination of increased costs and decreased revenues, which will likely produce one or a combination of the following outcomes:

- (1) Higher electricity costs borne by their customers, often with no material reduction in CO<sub>2</sub> emissions;
- (2) Failure to recover the investment of bondholders and other creditors in electric generation-backed securities; and
- (3) Reduced likelihood that investments in emission reduction technologies to comply with other EPA regulations would be recovered.

That last point is worth exploring in more detail, as some analysts have overlooked its significance. Some have assumed that investments in pollution control technology amount to "sunk costs"—in other words, a cost that has been incurred and cannot be recovered. But as we show in our paper, the capital spent installing pollution controls is far from sunk once the technology retrofit is in service. To the contrary, many of these plants rely on a project financing model to raise funds needed for large-scale retrofits. This stands in contrast to entities with numerous assets that can use so-called balance sheet financing.

Simply put, with project finance, the project may be the only cash flow-producing asset an entity owns. In this case, the owner has no choice but to issue debt supported by the assets and cash flows of the project, or the revenues that can be collected from captive customers. Thus revenues from the facility must not only support

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<sup>9</sup> *The Impact of a Fleet Emission Rate Averaging and Trading CO<sub>2</sub> Reduction Regulation on Non-Diversified Coal Generation Entities*. Professor Bradford Cornell. FTI Consulting. (February 2014).



material financing costs in the form of interest and principal payments over the life of the investment, but also provide an opportunity for recovery of, and return on, equity capital.

I should note that our white paper, completed prior to the release of EPA's proposal, examined the impacts stemming from an emissions averaging and trading regime on these particular entities. Though EPA's proposal does not specifically require averaging or trading, but instead allows states to use those mechanisms to comply with the rule, our analysis and central conclusion still holds: EPA's proposal sets unrealistic requirements and timetables that will leave coal-dominated, non-diversified entities without meaningful, cost-effective compliance options to remain in operation.

Homer City illustrates our conclusion. As noted, Homer City has recently invested nearly \$800 million in environmental controls to become one of the cleanest coal-fired power plants in the U.S. Yet the investment, as well as the viability of the plant, is at risk under EPA's proposal. Again, Homer City's only options are purchasing credits from other lower emitting entities or to run less often. In either case, the plant's revenues will decline, and therefore its financial ability to recoup its investment in pollution controls will be significantly impaired.

But you don't have to take my word for it. EPA's own modeling predicts the impact of the rule on Homer City. Specifically, EPA's analysis shows that, under EPA's "Option 1," described as the portfolio approach relying on the four building blocks, Homer City's units 1 and 2 would be retired in 2025. That puts not only Homer City's investors in jeopardy, but also the community that relies on Homer City for jobs, affordable power and economic development.

## **Path Forward**

Disproportionate economic impacts on these facilities can be alleviated in a number of ways. Some of them were outlined in the White Paper prepared by the Pennsylvania Department of Environmental Protection<sup>10</sup>.

- EPA should establish an emissions glide path that provides more time for entities to recoup investments in pollution control equipment installed to comply with other environmental regulations.
- EPA should adopt reasonable changes to the Clean Air Act's New Source Review program, to prevent units that make efficiency improvements under the Clean Power Plan from triggering NSR.
- EPA should allow states to utilize flexibility found in the Clean Air Act and in EPA's regulations implementing CAA section 111(d)(1). Those provisions allow states the option of adopting different standards and compliance schedules based on "remaining useful life" and other factors, such as recent investments in pollution controls. EPA's proposal needlessly eliminates this flexibility.
- EPA should provide states with greater flexibility to use more representative baselines to establish mandatory emission rates, and allow credit for CO2 reductions that have already been achieved.

## **Conclusion**

Unless EPA adopts significant changes to its 111(d) proposal, and at the same time affords states the true flexibility that exists under the Clean Air Act and EPA's own regulations, a significant number of coal-fired power plants serving communities across the country, including Homer City, face the dire prospect of bankruptcy and retirement, threatening to disrupt the communities that rely on those plants.

Thank you again for the opportunity to submit this statement for the record.

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<sup>10</sup> Recommended Framework for the Section 111(d) Emissions Guidelines Addressing Carbon Dioxide Standards for Existing Fossil Fuel-Fired Power Plants. [www.depweb.state.pa.us](http://www.depweb.state.pa.us) (April 10, 2014)..