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Testimony of Michelle Bloodworth
President and CEO, America's Power
Before the Pennsylvania House of Representatives
Environmental Resources & Energy Committee
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Good afternoon, Chairman Metcalfe, Chairman Vitali, and members of the Environmental Resources & Energy Committee. My name is Michelle Bloodworth. I am CEO of America's Power, a national trade association representing coal-fired electric power generation. The members of America's Power include coal-fired electricity generators, coal producers, rail and barge companies, and mining equipment and service providers.

Thank you for the opportunity to testify today about the prospect of Pennsylvania joining the Regional Greenhouse Gas Initiative (RGGI), a multi-state cap-and-trade program that covers the electric power sector in each of the RGGI states.

At the outset of my testimony, I'd like to make three points. First, climate change is a very important issue for all of us because of its environmental and economic consequences. Second, joining RGGI's cap-and-trade program is not a sensible or meaningful way to address climate change. Third, the nation's fleet of coal-fired electric generating units is only the number three source (26% share) of energy-related CO2 emissions in the U.S. economy; transportation is first (45%) and natural gas is second (29%).[i]

A. Benefits

To begin with, there are no real climate change benefits from joining RGGI. That's because joining RGGI would reduce CO2 emissions by a trivial amount. If CO2 emissions are reduced by a trivial amount, then the benefits would be trivial also.

According to DEP analysis, CO2 emissions from U. S. electricity generation are almost the same regardless of whether Pennsylvania does or does not join RGGI. Emissions of CO2 from electricity generation in the U.S. average —

- 1.127 billion tons per year over the period that DEP analyzed if Pennsylvania joined RGGI, and
- 1.130 billion tons per year if the commonwealth did not join RGGI.

These numbers mean the reduction in CO2 emissions if Pennsylvania joined RGGI would average 3 million tons per year, which might sound like a large reduction, but it is not. It's actually a trivial reduction with no real effect on climate change. Here's why.

U.S. greenhouse gas (GHG) emissions—about 80% of which are CO2—totaled more than 7 billion tons in 2018, according to the most recent data from the U.S. EPA.[ii] A reduction of 3 million tons per year if Pennsylvania joined RGGI would equate to a reduction of 0.05% in U.S. emissions, which is a rounding error for all practical purposes. If you had $10, this would be equivalent to reducing it by a half a penny.

More importantly, worldwide GHG emissions total more than 50 billion tons.[iii] Reducing emissions by 3 million tons would be smaller than a rounding error, and the climate effect would be meaningless.

My last statistic to put the RGGI emissions reduction into perspective is the fact that in 2018 energy-related CO_2 emissions increased worldwide by more than 600 million tons.[iv] China was responsible for exactly half of this global increase.[v] If Pennsylvania joined RGGI, it would take four decades of emission reductions by RGGI to simply make up for only one year of emissions increases by China.

In short, my point is that Pennsylvania joining RGGI would have no real effect on climate change.

B. Disadvantages

Besides the lack of any real climate change benefits, there are downsides to joining RGGI. In particular, it could cause the retirement of more coal-fired generation and will increase power prices in Pennsylvania.

a) Coal retirements

Coal-fired generation, both in Pennsylvania and nationally, is essential because it –

- **Helps maintain grid reliability,**
- **Is a highly resilient source of electricity,**
- **Is one of the two most fuel-secure electricity sources we have,**
- **Provides affordable electricity,**
- **Serves as an insurance policy against spikes in fuel and electricity prices, and**
- **Promotes national security because of its resilience and reliability.**

Since 2010, more than 8,600 megawatts (MW) of coal-fired generating capacity in Pennsylvania have retired. The 9,600 MW of coal-fired generating

capacity that remain are now less than 20% of the state's electric generating capacity.

As I'm sure you are aware, the nation's electricity grid is undergoing profound changes that include the retirement of traditional baseload sources of electricity, specifically coal and nuclear. These changes have become more complicated because of Covid-19.

Much of this retiring capacity is being replaced with natural gas and renewables, each of which has its unique role to play as part of a diverse energy portfolio. However, the grid's increasing dependence on natural gas and renewables, along with the retirement of fuel-secure coal and nuclear power plants, have led concerns that these trends may be jeopardizing both the reliability and resilience of the electric grid. Such concerns have been raised by DOE, FERC, NERC, ISO/RTOs, the National Academy of Sciences, and the National Energy Technology Laboratory (NETL), among others.[vi]

Fuel security is important because it makes the grid resilient. The coal fleet provides a high degree of fuel security because the average coal-fired power plant has at least two months of coal stockpiled on site.[vii] This means the average coal plant could continue operating for several weeks even in the unlikely event that coal supplies were interrupted. Without fuel-secure electricity sources, our electricity supply is more vulnerable to highly disruptive events like extreme weather and cyber and physical attacks.

Twenty years ago, more than 70 percent of the nation's electric generating capacity was comprised of <u>fuel-secure</u> electricity sources. Today, we have the opposite situation where <u>fuel-insecure</u> electricity generating sources make up 70 percent of the electricity supply.[viii]

A good example of the importance of fuel security comes from the PJM system. During the polar vortex storm of January 2018, high electricity demand drove natural gas prices to levels nearly 40 times higher than they had been the previous month due to demand for power generation, and a study from NETL concluded that there simply was not enough gas available to supply all the power plants that needed it. For that reason, an additional 26,000 MW of coal-fired generation was called on—raising the total to 45,000 MW of coal—to keep the lights on. In fact, in the six regional power markets affected by the polar vortex, coal-fired generation provided 63% of the additional electricity needed to meet surging demand.[ix] PJM's CEO later noted in Congressional testimony that PJM "could not have served customers without coal-fired assets."[x]

PJM, which includes Pennsylvania, has established a task force to address fuel security in its 13-state region. ISO New England has already enacted a

tariff to compensate electricity generators that provide fuel security. Just this year, NERC enacted reliability guidelines to help grid operators identify and manage fuel security risks. We are hopeful that FERC will provide guidance in the near future on resilience and fuel security. In the meantime, it is risky to take steps that could make Pennsylvania's electricity supply less resilient and less fuel secure.

b) Higher power prices

In addition to causing premature coal retirements, taxing carbon emissions via RGGI's cap-and-trade program will increase power prices in Pennsylvania. Recently, PJM modeled the effect of RGGI on the region's power prices and carbon emissions.[xi] PJM assumed two prices (or two levels of taxation) for carbon emissions—one based on a "cost containment reserve" and the other based on an "emissions containment reserve" that are fundamental to the RGGI program. PJM found that if Pennsylvania joined RGGI, power prices across Pennsylvania and three other RGGI states (DE, MD, and NJ) that belong to PJM could increase by as much as 13.2%.[xii] The remaining PJM states that do not belong to RGGI would see their power prices increase by as much as 8%. Therefore, joining RGGI puts Pennsylvania at an economic disadvantage relative to many other states in the region.

I should also point out that PJM's modeling projects a CO2 emissions reduction of 11 million to 17 million tons in 2023 if Pennsylvania joins RGGI. This equates to, at most, an insignificant reduction of 0.2% in U.S. GHG emissions and a trivial reduction of 0.03% in worldwide emissions.

C. Path forward

In summary, the coal fleet in Pennsylvania provides an affordable, reliable, resilient, and fuel-secure supply of electricity. Joining RGGI would lead to a meaningless reduction in CO2 emissions and would have no effect on climate change, which undercuts the reason for joining RGGI.

On the other hand, joining RGGI is likely to cause the premature retirement of more coal-fired generation and higher power prices. Considering the economic consequences of the Covid pandemic, neither of these two outcomes is desirable.

Some want to eliminate coal, but that is simply unrealistic and unwise for the reasons I have highlighted. Better technologies—some available today, some yet to come—are the best strategy to reduce CO2 emissions from the coal fleet. Better technologies are the main reason each kilowatt-hour of electricity generated from coal today emits 90% fewer conventional air pollutants compared to several decades ago.[xiii] These technologies took time

and sustained effort, but the environmental payoff was worth it. I would urge all of us to apply that same lesson to reducing CO2 emissions.

Thank you again for the opportunity to testify today. I would be pleased to answer your questions.

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[i] EIA, "*Energy-Related Carbon Dioxide Emissions by State, 2005-2016*," February 27, 2019.

[ii] U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018*, April 2020. https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

[iii] International Energy Agency, "*Global Energy & CO_2 Status Report – The latest trends in energy and emissions in 2018*," March 2019.

[iv] *Ibid.*

[v] *Ibid.*

[vi] These include DOE's "*Notice of Proposed Rulemaking, Grid Resiliency Pricing Rule*," Docket RM17-3-000, Sept. 28, 2017; NERC's *Generation "Retirement Scenario Special Reliability Assessment*," Dec. 18, 2018; NETL's "*Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units, Volume I: The Critical Role of Thermal Units During Extreme Weather Events*," DOE/NETL-2018/1883, Mar. 13, 2018; FERC's Docket AD18-7-000, "Grid Resilience in Regional Transmission Organizations and Independent System Operators," opened January 8, 2018; National Academy of Sciences "*Enhancing the Resilience of the Nation's Electricity System*, 2017; Western Electricity Coordinating Council "*Western Interconnection Gas – Electric Interface Study*," prepared by Wood Mackenzie, June 2018; and PJM "*Fuel Security: Analyzing Fuel Supply Resilience in the PJM Region, Summary of Results, Conclusions and Next Steps*," Nov. 1, 2018.

[vii] EIA, "*Electricity Monthly Update With Data for March 2020*," May 2020.

[viii] EIA, "*Electric Power Annual*," October 22, 2018, and EIA, "*Annual Energy Outlook 2019*," January 24, 2019.

[ix] National Energy Technology Laboratory (NETL), "*A Review of PJM Interconnection's April 13, 2018, Response to National Energy Technology Laboratory's Report on Reliability, Resilience and the Oncoming Wave of Retiring Baseload Units*." Report DOE/NETL-2019/1912, November 7, 2018.

[x] Senate Energy and Natural Resources Committee, "*Full Committee Hearing to Examine the Performance of the Electric Power System Under Certain Weather Conditions*," 23 January 2018, https://www.energy.senate.gov/public/index.cfm/hearings-and-business-meetings?ID=9AEFC551-DFEC-450F-B0A9-15D23C90CA5F.

[xi] PJM Carbon Pricing Senior Task Force, "*Expanded Results of PJM Study of Carbon Pricing & Potential Leakage Mitigation Mechanisms Version 2*," March 27, 2020.

[xii] *Ibid.*

[xiii] America's Power, "*Coal Facts*," June 2020. www.americaspower.org.