Testimony of Christina E. Simeone
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Environmental Resources and Energy Committee
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Good morning Chairman Yaw, Chairman Yudichak and members of the Environmental Resources and Energy Committee.

My name is Christina Simeone and I am the director of the Energy Center for Enterprise and the Environment at Citizens for Pennsylvania's Future, also known as PennFuture. PennFuture is non-profit, membership-based environmental advocacy organization focusing on land, air, water and energy issues that impact Pennsylvania.

Overview of Clean Power Plan (CPP)

In June of this year, the U.S. Environmental Protection Agency (EPA) proposed a rule to limit carbon emissions from existing power plants. The proposals, called the Clean Power Plan (CPP) aims to reduce national carbon emissions from the power sector 30 percent (from 2005 levels) by 2030, with each state having its own "rate-based" (lbs of CO2 per megawatt hour) carbon reduction goal. State goals were developed by EPA through a standard methodology that examines four "building blocks" including improved energy efficiency at power plants, greater use of natural gas-fired electricity, enhanced retail energy efficiency and increasing zero-carbon sources of power, such as renewables and nuclear energy. States are required to develop and submit to EPA for approval, plans to meet these carbon reduction goals. States have the flexibility to use EPA's building blocks, or other strategies to reduce electricity system emissions. In addition, states can: join together to develop regional compliance approaches, propose market-based mechanisms, use a mass-based approach (a reduction goal based on total lbs of CO2 reduced) for goal setting, have optional lower interim reduction targets, and can apply for compliance timeline extensions.

EPA's goal setting process for Pennsylvania

EPA's goal of a 12.07 percent reduction in Pennsylvania's carbon emissions by 2030 is very reasonable. The standards of performance EPA selected in developing this target were based on a "Best System of Emissions Reductions", which was developed by first looking at commercially available technologies. EPA also examined costs, air quality benefits to human health and the environment, energy requirements, non-air quality impacts, and the opportunities to promote the development and use of pollution control technology. The result is a system of emissions reductions that is both technically feasible and cost effective.

While EPA has proposed a standard and shown us one way to achieve it, the method we choose to reach that standard is ultimately up to the Commonwealth. If we decide there are more cost-effective options or better policy choices, we can follow a different path. We have, however, already made significant progress on many of the measures EPA selected.

One key building block used by EPA was the re-dispatch of a certain amount of generation from coal to more efficient natural gas combined cycle plants.[1] While many opponents of the rule claim that this will force coal plants to shutdown, this is not the case. Over the past few years, prior to EPA's carbon proposal, Pennsylvania has seen a number of older coal plants retire, or announce plans to retire. As a result, there is already a need to re-dispatch more power to other sources. No further shutdowns are required.

Pennsylvania is also likely to exceed EPA's expectations related to our nuclear resources. All five of our nuclear generating stations are currently licensed until after the 2030 compliance period. We may also see additional nuclear capacity from uprates at existing facilities. Such uprates, like any additions to nuclear capacity, will offset the reductions needed from other sources.

Our alternative energy portfolio standards are also currently providing more renewable energy than EPA expected and data suggests that the EPA's goals could be met with modest additional effort.

Energy efficiency, however, may be the star of the show.[2] Our Act 129 program sets specific targets for efficiency across the state. All our electric distribution companies ultimately met their overall Phase I goals and are now working on Phase II. That success is good news, but the best news is that an independent evaluator for the PA Public Utility Commission (PUC) found the programs returned $3 in direct economic benefits to consumers for every dollar spent—and that doesn't include health and environmental benefits. The evaluator also examined over 579 energy efficiency measures and found that Pennsylvania could more than double the reductions EPA expects and still save money.

In addition to the measures above, EPA also suggested improving the efficiency (or heat rate) of existing coal-fired power plants by 6%. When we combine the EPA's proposed strategies with actual plant retirements, we would see an average emission rate of 1,016 pounds per million BTU by 2029, which is well below the EPA goal of 1,052.

Why is EPA taking this action?

EPA is required by law to reduce the carbon pollution that is causing climate change and harming public health, and existing power plants are the number one source of these emissions. According to the EPA, the CPP will lead to climate and health benefits worth an estimated $55 billion to $93 billion per year in

[1] EPA's reference scenario recommends dispatching existing and under-construction natural gas combined cycle units up to 70% capacity factor.

[2] EPA's reference scenario recommends increasing demand side energy efficiency to 1.5% annually.

2030, including avoiding 2,700 – 6,600 premature deaths and up to 150,000 asthma attacks in children.[3] The climate and health benefits of the CPP far outweigh the estimated annual costs of the plan, which are $7.3 billion to $8.8 billion in 2030. From soot and smog reductions alone, for every dollar invested through the CPP, American families will see up to $7 in health benefits.[4]

The cost of inaction is too high for taxpayers

In 2012, extreme weather (Hurricane Sandy, droughts) cost every person in American more than $300, or $100 billion in total.[5] The National Flood Insurance Program is $24 billion in debt, the Federal Crop Insurance Program paid record claims of over $17 billion in 2012, and wildfire costs have tripled since the 1990s.[6] According to a report from the White House Council of Economic Advisors, for every decade of inaction, the costs to control climate change rise by 40 percent.[7]

Pennsylvania is a major contributor to the climate problem

Historically and over the long-term, the United States has been the largest greenhouse gas emitter, eclipsed only recently by China. Pennsylvania is the third largest emitter of carbon pollution in the United States, and the second largest power producer in the country (behind Texas), we are also a major source of fossil fuel resources. Some argue that Pennsylvania has done its fair share to address climate change, because our Marcellus Shale formation has enabled lower-carbon natural gas resources to displace coal in electric power markets. However, these emissions reductions are 1) unclear given the uncertainty surrounding lifecycle methane leakage, and 2) are depended on market dynamics, therefore are not guaranteed to continue.

Other countries are taking action on climate change

Some believe that the U.S. should not take action to reduce carbon emissions because climate change is a global problem and other countries also need to act in order to address the problem. But other countries are taking action. For example, the European Union has a 20% reduction goal (from 1990 base) by 2020, 40% by 2030, and 80-95% by 2050. China's twelfth 5-year plan includes a 16% reduction in energy intensity (energy by GDP), a 17% reduction in carbon intensity, and an 11.4% increase in non-fossil fuel based energy. In 2013, China invested $61.3 billion in clean energy, while the United States invested $48.4 billion.[8]

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[3] U.S. EPA, Factsheet: Clean Power Plan Benefits, http://www2.epa.gov/carbon-pollution-standards/fact-sheet-clean-power-plan-benefits

[4] U.S. EPA, Factsheet: Clean Power Plan Benefits

[5] Ceres, "Inaction on Climate Change: The Cost to Taxpayers", 2013, http://www.ceres.org/resources/reports/inaction-on-climate-change-the-cost-to-taxpayers/view

[6] Ceres, Inaction on Climate Change: The Cost to Taxpayers, 2013

[7] White House Council of Economic Advisors, "The Cost of Delaying Action to Stem Climate Change", July 2014, http://www.whitehouse.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf

[8] Bloomberg New Energy Finance, "Clean Energy Investment Falls for Second Year", January 15, 2014, http://about.bnef.com/press-releases/clean-energy-investment-falls-for-second-year/

United States action and leadership matters

The 1990 amendments to the Clean Air Act authorized the control of toxic mercury pollution from power plants. After decades of litigation, mercury limits on power plants were finalized in 2011. U.S. action on mercury was critical to spurring international action. The Minamata Conventions was introduced for vote in October 2013, with the U.S. playing a key role. Today, over 102 international governments, including the U.S., China and the European Union, have signed on to the Minamata Convention to control and reduce mercury emissions.[9]

Pennsylvania can benefit from this rule

Energy efficiency is our lowest cost resource. According to the PA PUC, for every $1 spent on energy efficiency in Pennsylvania, ratepayers receive $3 in benefits. Moreover, the PUC found we have the ability to cost-effectively achieve 27 percent energy savings over the next 10 years. PJM interconnection, the electricity grid operator serving Pennsylvania and 12 other states, found that increasing renewable energy to 20-30% of the regional grid supply (up from the current ~2%) would reduce wholesale electricity prices by $9 - $21 billion annually, without sacrificing grid reliability.[10]

New solar and wind capacity will not only bring more clean domestic energy to the market, but recent modeling has shown that construction of these resources creates more jobs than building the equivalent fossil fuel capacity. PennFuture found that increasing the Alternative Energy Portfolio Standard (AEPS) Tier I requirements from the current 8% up to 20% would result in an additional 100,000 jobs in Pennsylvania as well as additional jobs within the PJM region.[11] On average, $1 million spent in the U.S. economy supports approximately 17 total jobs (direct, indirect, and induced), while $1 million invested in energy efficiency leads to 20 total jobs.[12]

EPA's plan does not have to force coal plant retirements

Pennsylvania has the tools to achieve the proposed goals[13] and grow its economy without the need to retire additional power plants. Low energy prices have forced a number of older coal-fired plants to retire since the 2012 CPP base year, and a number of others are scheduled to be retired in the next few years. This is, in part, a result of our aging fleet—while coal-fired power plants nationwide tend to last 48 years, most of our plants are in their 60s when they close. This is also natural result of our competitive energy markets combined with low natural gas prices and relatively weak demand for power. First Energy president James Lash recognized this in testimony last year when he admitted that

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[9] United Nations Environmental Programme, Minamata Convention on Mercury, http://www.mercuryconvention.org/

[10] PJM Renewable Integration Study, March 2014, http://pjm.com/~/media/committees-groups/task-forces/irtf/postings/pris-executive-summary.ashx

[11] "Clean Energy Wins: A Policy Roadmap for Pennsylvania", March 2014, www.cleanenergywins.org, job analysis at page 50

[12] American Council for an Energy-Efficient Economy "How Does Energy Efficiency Create Jobs?" http://aceee.org/files/pdf/fact-sheet/ee-job-creation.pdf (March 2014)

[13] Rate-base carbon targets are 1,179 lbs of CO2/MWh averaged between 2020-2029, and 1,052 lbs of CO2 per MWh in 2030. The business-as-usual baseline rates are 1,566 lbs CO2/MWh in 2020, 1,639 lbs CO2/MWh in 2025, and 1,684 lbs CO2/MWh in 2030. The 2030 goal represents a 12.07% reduction from the projected 2030 baseline.

"even without the EPA [his] plants [that were closing] would be losing money."[14] Fortunately, newer and cleaner sources of power are already making up for the lost capacity and more is on the way.

CPP's impact on electricity reliability

Many will assert the CPP will lead to electricity reliability problems and skyrocketing electricity prices, and point to the January 2014 polar vortex situation as a warning. However, it is important to understand the reasons for the polar vortex-related reliability problems and what is being done to address the issue. Take January 7th, 2014 as an example, when extremely cold temperatures gripped the region. Approximately 40 gigawatts (GW) of power plant capacity was unable to provide power when needed, about 22 percent of PJM's supply. This is 2-3 times higher than the typical winter peak forced outage rate of 7-10 percent. About 34% (13.7 GW) was due to operational problems at coal plants that resulted in the coal plants not being able to perform. About 24% (9.7 GW) was related to operational issues at gas plants, resulting in these plants not being able to perform. About 23% was related to natural gas plant interruptions, for example, due to the inability for gas plants to secure affordable supply of natural gas fuel. This is in part related to the fact that our electricity grid has become more dependent on natural gas, and in extremely cold weather the demand for natural gas increases for home and business heating purposes. The result is an increase in the commodity price of gas and supply shortfalls. The combination of increased demand for power and inability of coal and gas generators being able to provide needed power supply led to increasing electricity prices and reliability concerns.

PJM has performed extensive analysis of the polar vortex reliability problems and is taking action. They identified the need to improve coordination between natural gas commodity markets and the electricity system, as well as improve the winter operations preparedness and performance at power plants. In addition, PJM is in the early stages of making changes to their capacity performance definition to ensure there are sufficient financial incentives to incent performance and penalties for failure to perform. Lastly, PJM's independent market monitor has raised questions about suppressed capacity prices that are impacting retirement decisions and failing to incent new market entries.

PJM's market is dynamic and efforts are underway to address current reliability challenges in the market that have nothing to do with carbon emissions. PJM's market will be able to adapt to carbon limitations, and Pennsylvania can and should be doing much more work now to preparing for and investigate various CPP compliance options and any potential PJM market challenges that could arise.

Pennsylvania is not doing enough to ensure a positive outcome with carbon rule implementation

Although PennFuture was pleased to see the PA Department of Environmental Protection (DEP) act early to issue a draft carbon rule implementation white paper in April 2014, the approach outlined in the white paper would not be approved by EPA. At the June 27, 2014 hearing of the Senate Energy and Environment Committee, Mr. Vince Brisini, DEP's Deputy Secretary of Air, Waste and Radiation, acknowledged that the white paper would not meet EPA's criteria and would result in EPA imposing a

[14] http://www.pjm.com/~/media/about-pjm/who-we-are/public-disclosures/20130918-chairman-powelson-letter-to-chairman-schneider-regarding-generation-retirements.ashx

federal implementation plan.[15] In spite of DEP's acknowledgement of this shortcoming, the department has been unwilling to investigate other options. It is critically important that DEP being working on alternative compliance pathways, based on the proposal EPA has set forth. Although EPA's final rule will likely deviate from the proposal, DEP should be utilizing all the time and information it has to analyze a wide variety of potential compliance solutions in order to determine what the best compliance solution is for Pennsylvanians.

Conclusion

If done right, implementing the CPP can not only create jobs and lower electricity prices, but it can also help stem the billions of dollars of taxpayer costs that are occurring as a result of climate change impacts. If done wrong, Pennsylvanians could see job losses and higher electricity prices, in order to minimize the impacts and costs of climate change damage. Doing nothing or promoting continual delay should not be an option. Pennsylvanians will continue to spend more and more money on climate change related damages, the eventual cost of addressing climate change will increase and lead to severe future economic disruptions, and the impacted industries before you today will have more severe requirements and less flexibility.

[15] Video testimony available at http://environmental.pasenategop.com/2014/06/19/epas-clean-power-plan/ referenced comment at minute 14:20