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U.S. Environmental Protection Agency
Air and Radiation Docket and Information Center
Mail code: 28221T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Attention: Docket No. EPA-HQ-OAR-2017-0355

Re: Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (82 Fed. Reg. 48035; October 16, 2017)

To Whom It May Concern:

The Department of Environmental Protection (DEP or Department) appreciates the opportunity to submit comments on the U.S. Environmental Protection Agency's (EPA) proposed rule concerning the Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (82 Fed. Reg. 48035; October 16, 2017) otherwise commonly known as the "Clean Power Plan." It is important to note that the comments submitted by DEP represent the Department's official position on this proposal. Any comments submitted on behalf of an organization of which DEP might be a member represent the comments of that organization and not necessarily those of the Department.

I. Introduction

The Commonwealth of Pennsylvania is blessed with abundant energy resources and, according to the U.S. Energy Information Administration, is ranked third for overall energy production in the country. Gross natural gas production, primarily from the Marcellus Shale, exceeded 5 trillion cubic feet in 2016, and Pennsylvania was the nation's second-largest natural gas producer for the fourth consecutive year. Pennsylvania was the third-largest coal-producing state in the nation in 2016 and the only state producing anthracite, which generally has a higher heat value than other kinds of coal. In 2016, Pennsylvania ranked second in the nation in electricity generation from nuclear power, which supplied 39 percent of the state's net electricity generation, more than from any other source. Moreover, Pennsylvania's Alternative Energy Portfolio Standard requires 18 percent of electricity sold by 2021 to come from approved renewable or alternative sources, including at least 0.5 percent solar photovoltaic power. In 2016, renewable energy accounted for 4 percent of Pennsylvania's net electricity generation. Electricity generation regularly exceeds in-state consumption, making Pennsylvania an important electricity supplier to the Mid-Atlantic region.

The need for energy is one of the primary drivers of greenhouse gas (GHG) emissions, and Pennsylvania is the third largest emitter of carbon dioxide in the country. Nevertheless, Pennsylvania has made significant strides in the past few years to reduce GHG emissions. For

instance, the 2014 carbon dioxide (CO₂) emissions from existing Pennsylvania electric generating facilities intended to be regulated under the Clean Power Plan (CPP) were 106,967,641 tons. In 2015, those emissions decreased to 96,266,428 tons, and again in 2016 to 87,613,794 tons. Accounting for emissions from new sources, the 2016 total CO₂ emissions were 89,467,892 tons. *See* enclosed spreadsheet. Pennsylvania's 2030 CPP goal is 89,822,308 tons. Thus, Pennsylvania has already exceeded its 2030 CPP goal through a combination of market-driven techniques like fuel switching and renewable energy standards and is doing its fair share to combat climate change. In Pennsylvania, the CPP **has proven** to be a cost-effective way to reduce carbon pollution without sacrificing electric grid reliability.

The CPP plays a central part in combating climate change and should not be repealed. The consequences of inaction on mitigating the causes of climate change will be felt by all Pennsylvanians. Some of those consequences are already being felt through extreme weather events such as Superstorm Sandy and excessive heat waves. The Commonwealth faces two fundamental threats related to climate change: (1) sea level rise and its impact on communities and cities in the Delaware River Basin, including the city of Philadelphia; and (2) more frequent extreme weather events, including large storms, periods of drought, heat waves, heavier snowfalls, and an increase in overall precipitation variability. Based on studies commissioned by the Department, as part of its mandate under the Pennsylvania Climate Change Act, 71 P.S. §§ 1361.1 – 1361.8, Pennsylvania has undergone a long-term warming of more than 1°C over the past 110 years.¹ The models used in these studies suggest this warming is a result of man-made influence, and that this trend is accelerating. Projections show that by the middle of the 21st century, Pennsylvania will be about 3°C warmer than it was at the end of the 20th century.

II. Clean Power Plan Background

EPA is on record acknowledging that CO₂ and other GHGs in the atmosphere have risen to unprecedented levels because of human activities, and that GHGs are the primary cause of ongoing global climate change. 74 Fed. Reg. 66,496, 66,517 (December 15, 2009). In *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court held that the “sweeping definition of ‘air pollutant’” in the Clean Air Act (CAA) unambiguously covers “greenhouse gases”—so named because they “act[] like the ceiling of a greenhouse, trapping solar energy and retarding the escape of reflected heat.” *Id.* at 505, 528-29 (citing 42 U.S.C. § 7602(g)). On remand, EPA comprehensively assessed the effects of GHG pollution, concluding that it endangers the public health and welfare of current and future generations and thus requires CAA regulation. *See* “Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act;” 74 Fed. Reg. 66,496 (December 15, 2009).

¹ *See* “Pennsylvania Climate Impacts Assessment Update,” May 2015, available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-108470/2700-BK-DEP4494.pdf>. *See also* “Pennsylvania Climate Impacts Assessment Update,” October 2013, available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-97037/PA%20DEP%20Climate%20Impact%20Assessment%20Update.pdf>; “Pennsylvania Climate Assessment,” June 2009, available at <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-75375/7000-BK-DEP4252.pdf>.

The purpose of the CAA is to promote public health and welfare by addressing air pollution. 42 U.S.C. § 7401(b)(1). The CAA establishes a comprehensive program for air-pollution control through a system of shared federal and state responsibility. One of those programs is under Section 111 of the CAA, which “directs the EPA Administrator to list ‘categories of stationary sources’ that ‘in his judgment ... caus[e], or contribut[e] significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.’” *Id.* (quoting 42 U.S.C. § 7411(b)(1)(A)). For each category, EPA must prescribe federal “standards of performance” for emissions of pollutants from new or modified sources. 42 U.S.C. § 7411(b)(1)(B).

In addition, EPA “shall prescribe regulations” under Section 111(d) with respect to existing sources for pollutants not covered under certain other programs. *Id.* § 7411(d). These regulations are not designed to regulate existing sources directly, but instead to guide “each State” in submitting to EPA a “satisfactory” plan that establishes “standards of performance” for any existing source of the relevant pollutant. *Id.*² Specifically, EPA identifies those “system[s] of emission reduction” that are “adequately demonstrated” for a particular source category; determines the “best” of these systems, based on the relevant criteria; and then derives from that system an “achievable” emission-performance level for sources. 80 Fed. Reg. at 64,720.

On October 23, 2015, EPA published two final rules. One established CO₂ emission standards under Section 111(b) for new, modified, and reconstructed plants. *See* “Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units;” 80 Fed. Reg. 64,510 (October 23, 2015). The other, the CPP, established Section 111(d) emission guidelines for states to follow in developing plans limiting CO₂ from existing plants. *See* “Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units;” 80 Fed. Reg. 64,662 (October 23, 2015).

EPA additionally proposed a federal plan with two approaches for states that failed to submit an approvable plan, as well as models for states to use in developing their own plans. *See* “Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations;” 80 Fed. Reg. 64,966 (October 23, 2015).

When promulgating the CPP, EPA also released a detailed assessment of its likely economic impact. EPA concluded that the CPP would not result in any substantial increase in electricity costs to the public. 80 Fed. Reg. at 64,679-81, 64,748-51. EPA further explained that the CPP would not reduce the reliability of the electric grid and is consistent with long-term trends towards less coal-fired and more gas-fired and renewable generation. *See* 80 Fed. Reg. at 64,671, 64,694-96, 64,709.

² A “standard of performance” is defined as: a standard for emissions of air pollutants which 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 non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated. *Id.* § 7411(a)(1).

In the CPP, based on an analysis of what power plants are already doing with the purpose or effect of reducing CO₂ emissions, EPA determined that the “best system of emission reduction” “adequately demonstrated” for existing plants is a combination of three general types of pollution-control measures, referred to as “Building Blocks”:

- (1) improving heat rates at coal-fired steam plants (Building Block 1);
- (2) substituting generation from lower-emitting existing natural gas combined cycle plants (gas plants) for generation from higher-emitting steam plants, which are primarily coal-fired (Building Block 2); and
- (3) substituting generation from new zero-emitting renewable-energy generating capacity for generation from existing fossil fuel-fired plants, which are primarily coal- or gas-fired (Building Block 3).

80 Fed. Reg. at 64,666-67.

EPA determined that these three Building Blocks are collectively the best system of emission reduction (BSEER) because plants can implement them to achieve substantial CO₂ reductions cost effectively, without adverse energy reliability impacts. *Id.* at 64,744-51. After EPA determined the BSEER as the Building Blocks, EPA then established emission performance rates that reflected EPA’s quantification of the BSEER. *Id.* at 64,811. The CPP then translated these rates into equivalent State-specific emission goals for 2030 expressed in terms of “rate-based goals” and “mass-based goals.” *Id.* at 64,820. Pennsylvania had a rate-based goal of 1,095 pounds of CO₂ per net MWh and a mass-based goal of 89,822,308 tons of CO₂. *Id.* at 64,824 and 64,825.

On October 16, 2017, EPA published a notice in the *Federal Register* proposing to repeal the CPP. *See* “Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units,” 82 Fed. Reg 48,035. Specifically, EPA proposes a change in the legal interpretation of the BSEER as applied to Section 111(d) of the CAA on which the CPP is based. EPA proposes a narrow legal interpretation of the term BSEER to limit it to emission reduction measures that can be applied to or at an individual stationary source. That is, such measures must be based on a physical or operational change to a building, structure, facility, or installation at that source, rather than measures that the source’s owner or operator can implement on behalf of the source at another location. This means that Building Blocks 2 and 3, which substitute electricity production to other sources, would not be permissible under this proposed legal interpretation. All reductions would need to take place at the source itself, like in Building Block 1.

EPA is proposing to repeal the CPP in its entirety because it believes that the rule, or Building Blocks 2 and 3, exceeds its authority under the CAA and that those portions of the rule which arguably do not exceed its authority, like Building Block 1, are not severable and separately implementable.

III. The CPP Lawfully Implements EPA's Obligation to Regulate CO₂ Emissions from Existing Sources

The CPP is supported in multiple Supreme Court decisions upholding EPA's authority to regulate CO₂ emissions under the CAA. See *Massachusetts v. EPA*, 549 U.S. 497 (2007); *American Electric Power v. Connecticut*, 564 U.S. 410 (2011) (*AEP*); *Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014). In *AEP*, the court expressly held that Section 111(d) of the CAA "speaks directly" to limits on CO₂ emissions from existing power plants. Consequently, the CPP is a legitimate exercise of the legislative mandate under the CAA to promote public health and welfare by addressing CO₂ emissions from existing power plants.

a. The Statutory Text of the CAA Supports the CPP

The Supreme Court has previously recognized that Congress drafted the CAA to provide the flexibility necessary to address new and evolving problems, and that EPA is at the front line in determining when and how, consistent with statutory guidance, to address those problems. As the Supreme Court recognized in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the CAA – and its definition of "air pollutant" – "unquestionably" and "unambiguous[ly]" encompassed GHGs, and the CAA specifically addressed threats to climate. *Massachusetts*, 549 U.S. at 528-29, 532, 506. Even if in 1970 Congress "might not have appreciated the possibility that burning fossil fuels could lead to global warming," it made the conscious choice to draft parts of the CAA in broad language – language that "confer[red] the flexibility necessary to forestall ... obsolescence." *Massachusetts*, 549 U.S. at 532. Congress understood that "without regulatory flexibility, changing circumstances and scientific developments would soon render the [CAA] obsolete." *Id.*

Fossil fuel-fired power plants are by far the highest-emitting stationary sources of CO₂, generating approximately 37 percent of all domestic man-made CO₂ emissions – almost three times as much as the next 10 stationary-source categories combined. 80 Fed. Reg at 64,696-99. As a result, EPA realized that no serious effort to address the monumental problem of climate change could succeed without meaningfully limiting the CO₂ emissions from these plants.

EPA's authority and responsibility under Section 111(d) to control CO₂ emissions from fossil fuel-fired power plants was central to the Supreme Court's holding in *AEP* that "the [CAA] and the EPA actions it authorizes displace any federal common-law right to seek abatement of [CO₂] emissions from fossil-fuel fired power plants." 564 U.S. at 424. The court specifically examined Section 111 and concluded that provision provides a means for EPA to provide limitations on power-plant CO₂ emissions that would abate their contribution to climate change. *Id.* Thus, EPA properly exercised its Section 111(d) authority by promulgating the CPP to limit CO₂ emissions from these plants.

In determining the guidelines to apply to CO₂ emissions from existing power plants, under Section 111(d), EPA was required to select the "best system of emission reduction" that is "adequately demonstrated" to achieve pollution reductions. 42 U.S.C. § 7411(a)(1). To satisfy this statutory obligation, EPA appropriately considered "strategies, technologies and approaches

already in widespread use by power companies and states” to address the unique qualities of carbon-dioxide pollution and the interconnected electricity grid. 80 Fed. Reg. at 64,664, 64,689; *see also id.* at 64,667, 64,725, 64,744. EPA’s careful consideration of existing practices and emission-reduction strategies highlights the reasonableness of the CPP.

EPA reasonably concluded that the three Building Blocks collectively constitute the “best” system of emission reduction, applying the relevant considerations (including the degree of reductions achieved, costs, energy requirements, and non-air quality health and environmental impacts). 80 Fed. Reg. at 64,744-51; *see also id.* at 64,801-02, 64,810-11 (cost considerations); *id.* at 64,670-71, 64,693-94, 64,800, 64,874-81 (energy considerations); *id.* at 64,746, 64,748 (non-air quality health and environmental impacts). The selected set of measures presents the most cost-effective available system for sources to meaningfully limit their CO₂ emissions. 80 Fed. Reg. at 64,751.

While the guidelines rely on generation-shifting measures, they follow industry trends towards greater use of renewable energy and gas-fired generation, and less use of coal-fired generation. These trends are due largely to falling prices for renewables and gas, as well as the aging of existing coal-fired plants. *Id.* at 64,678, 64,694-95, 64,795, 64,803-04. Notably, the use of renewable energy was already increasing prior to the CPP promulgation; by 2013, renewable energy had increased five-fold in just 15 years. *Id.* at 64,695. And while EPA projects that the CPP will reduce some coal-fired generation by the time it is fully implemented in 2030, the amount of that reduction is projected to be less than, and to occur more gradually than, the reduction that already occurred from 2005 to 2014. *Id.* at 64,785.

The language under Section 111(d) – identifying the “best system of emission reduction” as the central determination in the standard-setting process – establishes that a broad scope of potential pollution-curbing measures can serve as the basis of guidelines. This broad statutory language shows that Congress was directing EPA to consider a wide range of measures to reduce emissions from sources. 80 Fed. Reg. at 64,762. In the case of power plants, those can include on-site, technology-based control measures, but they can also include measures through which power plants reduce emissions by replacing higher-emitting generation with lower-emitting generation. *Id.*

The language of section 111(a)(1) is also clear that after determining the BSER, EPA is authorized under the CAA and the implementing regulations, as an integral component to setting emission guidelines, to determine the resulting emission limitation from the BSER. Specifically, the definition of a “standard of performance” under section 111(a)(1) is “a standard for emissions ... which reflects the degree of emission limitation achievable through the application of the [BSER].”

Following the determination of the BSER, section 111(a)(1) authorizes EPA to determine “the degree of emission limitation achievable” from the BSER. This is precisely what EPA did under the CPP where it established emission performance rates based on the BSER and then translated these rates into equivalent State-specific emission goals for 2030. EPA’s emission guidelines set

forth these performance levels, along with other requirements, as the minimum requirements for states to meet in order to have an approvable state plan. If a state failed to submit an approvable plan, then EPA would implement a federal plan imposing emission standards for the affected electric generating units (EGUs) in that state.

Section 111(d) should be interpreted in light of the purpose and letter of the CAA, which is to regulate all air pollutants that have the potential to damage public health and welfare, including CO₂. EPA's interpretation that a "best system of emission reduction" includes cost-effective generation-shifting for this industry and pollutant is eminently reasonable. The purpose of Section 111 is, after all, to protect public health and welfare through cost-effective measures that sources can implement, and EPA's legal interpretation under the CPP best fulfills that purpose.

b. The Legislative History of the CAA Supports the CPP

The history of the 1970 CAA Amendments clearly shows Congress's intent to regulate all air pollutants which threaten public health or welfare. The evolution of Section 111(d) through the legislative process in 1970 shows that the Senate, recognizing that scientific and other advancements would reveal future air pollutants that would require control, established a mechanism for regulating such future pollutants from existing sources. *See* S. Rept. 91-1196 at 18. Section 111(d) was understood to "provide[] authority to control pollution not covered by the ambient air standards or by hazardous substance emission controls." Leg. Hist. at 328 (September 22, 1970) (Statement of Senator Murphy).

The language and structure of Section 111 give EPA expansive authority to determine which system of emission reduction best serves the statutory goals. The broadness of the language indicates Congress' intention to provide EPA with ample flexibility in conceiving systems of emission reduction. Neither the term "best system of emission reduction" nor its components are given technical definitions in the Act. The ordinary meaning of the term "system" does not limit EPA to choosing end-of-pipe control technologies or other mechanical interventions at the power plant. Rather, EPA may choose any "complex unity . . . serving a common purpose" that meets the other statutory requirements. A system of emission reduction that reflects the unified nature of the electric grid and achieves cost-effective emission reductions from the source category by treating all fossil fuel-fired power plants as an interconnected group, averaging emissions across plants and recognizing changes in plant use that reduce emissions, fits securely within this framework.

The history of Section 111 demonstrates that Congress deliberately rejected terms that were more restrictive than "best system of emission reduction," and that it was especially important to Congress for EPA to have flexibility in identifying solutions to reduce emissions from existing sources. The original 1970 language provided a unitary definition of "standard of performance" for both new and existing sources that is rather similar to the current definition: "a standard for emissions of air pollutants which 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) the Administrator determines has been adequately demonstrated.”³

Changes to the definition made in the 1977 Amendments to the CAA required Section 111 standards for new sources to reflect “*the best technological system* of continuous emission reduction.”⁴ In contrast, the section 111 standards for existing sources were to reflect the “best system of continuous emission reduction” which, as clarified by the Conference Report, need not be a technological system.⁵

In 1990, Congress removed the requirements that standards for new sources be based on “technological” systems and that standards for both new and existing sources achieve “continuous” reductions, restoring use of broad “system” language for both new and existing source standards.⁶ It is noteworthy that even during the period of time when Congress determined that a more specific definition of “standard of performance” was advisable for new sources, it did not take this approach for existing sources. The current text of the CAA reflects both Congress’ more recent decision to allow EPA to select a non-technological system of emission reduction when promulgating standards for new sources under section 111 as well as Congress’ longstanding policy of allowing that approach for existing sources.

In short, the legislative history of section 111 gives EPA wide discretion to identify an emission reduction system that relies on solutions like those used in the CPP to maximize environmental performance and enhance cost-effectiveness. The BSER need not be limited to source-specific technology standards as EPA now contends in its proposed CPP repeal notice. The BSER can include generation-shifting methods like those in the CPP. Both the plain language and legislative history of Section 111 show that non-technology systems are permissible to control air pollution like CO₂ emissions.

c. The CPP is Consistent with Prior Agency Practice

Congress’s language – identifying the “best system of emission reduction” as the central determination in the standard-setting process – establishes that a broad scope of potential pollution-curbing measures can serve as the basis of guidelines. This broad statutory language shows that Congress was directing EPA to consider a wide range of measures to reduce emissions from sources. 80 Fed. Reg. at 64,762. The record established under the CPP shows that generation-shifting measures are an “adequately demonstrated” system of emission

³ Clean Air Amendments of 1970, Pub. L. No. 91-604, § 4(a), 84 Stat. 1676, 1683. The original definition lacks the language directing EPA to consider “any [non-air] quality health and environmental impact and energy requirements.” 42 U.S.C. § 7411(a)(1).

⁴ Clean Air Act Amendments of 1977, Pub. L. No. 95-95, § 109(c)(1)(A), 91 Stat. 685, 699-700 (emphases added).

⁵ The conference committee explained that the amendments “make[] clear that standards adopted for existing sources under section 111(d) of the act are to be based on available means of emission control (*not necessarily technological*).” H.R. Rep. No. 95-564, at 129 (1977) (Conf. Rep.) (emphasis added).

⁶ Clean Air Act Amendments of 1990, Pub. L. No. 101-549, § 403(a), 104 Stat. 2399, 2631.

reduction for power plants. Moreover, this emission reduction technique is not novel and has been used by EPA in the past.

Generation-shifting has formed the basis of multiple CAA standards. For example, the Cross-State Air Pollution Rule – which was upheld by the Supreme Court in 2014 as a “permissible, workable and equitable” interpretation of the CAA – established statewide limits on smog and soot-forming pollution from power plants that were explicitly premised on the potential to shift generation from dirtier power plants to cleaner ones. *EPA v. EME Homer City Generation*, 134 S. Ct. 1584 (2014).

As another example, in the acid rain program in CAA Title IV, 42 U.S.C. §§ 7651-7651o, Congress recognized power plants’ ability to use generation-shifting as one available pollution-control strategy. *See* S. Rep. No. 101-228, at 316 (1989) (identifying strategies for power plants to reduce emissions to include “least-emissions dispatching,” i.e., generation-shifting). Title IV established a nationwide cap on power-plant SO₂ emissions to harness the ability of plants to undertake a range of control actions, including shifting generation to renewable and other cleaner generation.

And as early as 1982, EPA set standards for lead in gasoline that some refiners could meet only by obtaining lead credits from other, cleaner refineries – an approach that the D.C. Circuit explicitly upheld. *See Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 534–35 (D.C. Cir. 1983). EPA already has a robust record which demonstrates that generation-shifting measures are an “adequately demonstrated” system of emission reduction for power plants and a system that is consistent with past EPA practice. Indeed, these measures are already widely used by power plants for controlling pollution, including CO₂. *Id.* at 64,667, 64,724-26, 64,762 n.468, 64,768-73, 64,795-811.

d. The CPP Respects the “Cooperative Federalism” Approach of the CAA

The CPP is also consistent with the “cooperative federalism” framework that is at the heart of section 111(d) and many other CAA programs. The CPP establishes minimum emissions performance requirements – and gives states tremendous flexibility in deciding how to implement those requirements in ways that best meet local needs and priorities. Among other things, states have the flexibility to decide between “mass-based” targets (which limit total pollution per year from power plants) and “rate-based” targets (which limit the amount of pollution per unit of electricity generated); to adjust the pace of pollution reductions prior to 2030, within broad parameters; and to establish flexible, market-based programs that allow power companies to meet their emission standards through whatever measures are most cost-effective. States can also opt out of implementing the CPP altogether, without any sanctions or penalties, in which case EPA will directly regulate emissions from power plants instead.

Pennsylvania has developed and will continue to develop statutory and regulatory strategies to reduce carbon emissions. Many of these strategies fall under the purview of statutes implemented by the Department like the Air Pollution Control Act, (APCA) 35 P.S. § 4001 *et*

seq. Others like the Alternative Energy Portfolio Standards (AEPS) Act of 2004, 73 P.S. §§ 1648.1- 1648.8, address renewable energy targets and are administered by the Pennsylvania Public Utility Commission. These state CO₂ emission-reduction efforts, together with the CPP and market-driven solutions, have already reduced emissions in Pennsylvania to the point where the Commonwealth is already in compliance with its 2030 CPP goal. This balance between federal and state efforts appropriately helps to ensure that the CPP achieves meaningful CO₂ emission reductions without unduly intruding on state authority.

As in many other areas of environmental law, the EPA has set minimum federal requirements for a class of polluting facilities, and states can design a program to meet those requirements, or go beyond them if they so choose. In this way, the CPP is fully consistent with the principles of cooperative federalism that underlie the CAA and that are incorporated into section 111 and maintains a proper balance of roles between the federal government and states.

e. The CPP is an Environmental Protection Regulation and Not an Energy Regulation

Like past successful pollution control programs, the CPP respects and harnesses the routine shifting of generation among sources to cost-effectively reduce CO₂ emissions from the entire electric grid. The CPP does not fundamentally change how the grid operates. Instead, like other pollution controls, and other generation-shifting regulations, compliance with the CPP will be one of multiple inputs to the Least-Cost Dispatch process, thereby allowing operators to employ normal tools and practices to ensure electric reliability. The gradual shifts that the CPP promotes are modest compared to broader changes already underway as the power sector trends away from coal and toward cheaper, more efficient lower-carbon sources.

In promoting lower-carbon generation, the CPP builds on ongoing market trends. With or without the CPP, the U.S. power sector is in the midst of a transition. Many coal-fired generators are headed toward retirement. By 2025, coal-fired units will have an average age of 49 years and, with 20 percent of units over 60 years old, are well beyond their typical expected operating life of 40 years. *See* 80 Fed. Reg. at 64,694, 64,872. As aging infrastructure is replaced, utilities are upgrading to renewable energy and other modern technologies that allow them to meet demand more cost-effectively and with fewer emissions. Natural gas and renewable sources accounted for approximately 90 percent of new generation capacity built between 2000 and 2013. *Id.* at 64,694.

Nevertheless, coal and natural gas will remain the country's two leading sources of electricity. Projections to 2030 show that coal will continue to provide more than one-quarter of all U.S. electricity generation – only 5.4 percent less than projected without the CPP, and natural gas will provide about one-third. *See* 80 Fed. Reg. at 64,665.

The central focus of the guidelines is to reduce CO₂ emissions. 80 Fed. Reg. at 64,663. As such, the CPP promotes public health and welfare by addressing air pollution. 42 U.S.C. § 7401(b)(1). The mere fact that it follows market trends in the energy sector does not make it an energy regulation. The CPP does not result in any fundamental “restructuring” of the electric grid. The

CPP reduces carbon emissions by following industry trends towards greater use of renewable energy and gas-fired generation, and less use of coal-fired generation.

IV. Environmental Justice Concerns

The environmental justice section for the proposed repeal does not adequately show that low income and minority communities will be impacted less than other communities. EPA's proximity analysis done for the CPP showed that these communities would have experienced improvements in air quality because of the emission reductions. The benefits of the CPP repeal to lower income households possibly include lower energy bills, but, given that we do not know how states would have implemented energy efficiency programs, this may not be the case. In addition, the proposed repeal, while mentioning the possibility of job loss in the coal, power, and natural gas sectors, ignores the job gains in the renewables sector. It is also questionable whether jobs in the natural gas sector would have been lost since the CPP shifts power generation to natural gas turbines in place of coal plants. It would have also created jobs in the renewable power sector as well as jobs building natural gas plants and demolishing coal plants.

The full 2017 Proposed Repeal Regulatory Impact Analysis (RIA) states that in the original CPP 2015 RIA, the EPA examined the population characteristics of people living within three miles of EGUs and found that they are more likely to be low income or minority compared to the general population. The 2017 RIA then states that air pollution from coal-fired units tends to be dispersed widely due to stack height, atmospheric conditions, and meteorological conditions. While there are other factors besides distance that determine how air pollution will affect an area, distance is an important factor in determining exposure to an air pollution source. Given that the EPA found that vulnerable populations are nearby, this strongly suggests that they will be disproportionately affected.

However, the 2017 RIA made no effort to show how vulnerable populations would be disproportionately affected. The 2017 RIA merely pointed out that the 2015 RIA did not look at the fine details of how each small area would be impacted. The 2017 RIA also fails to mention that considering these fine details would be exceedingly difficult as it would require a prediction of exactly how each coal facility would be affected under the CPP. This difficulty arises from the freedom that states were given to meet the targets. This is likely why the original 2015 RIA did not examine the finer details and made a valid assumption that distance from a source is a good approximation for exposure to its emissions; when considering the large number of coal-fired plants existing in the United States, the large sample size would likely smooth out the effects of the other variables.

V. Regulatory Impact Analysis

a. Co-Benefits are Ignored

The 2017 RIA ignores PM_{2.5} benefits after ambient levels fall below the National Ambient Air Quality Standards (NAAQS). This is wholly unreasonable. The 2015 RIA states that the

calculated “regional benefit-per-ton estimate” for PM_{2.5} is based on areas which are both in and out of attainment. The regional average cost per ton was derived from the best data available and includes the benefit of reduced PM_{2.5} emissions in areas below the NAAQS and Lowest Measured Limit (LML), whether there is harm to the people of these areas or not. The 2017 RIA eliminates these areas as a benefit, without any reasonable justification, even though the 2015 RIA has either clearly shown that there is a benefit or factored the lack of a benefit into the regional average.

In the 2017 RIA, EPA states they are unable to quantify the benefits of reduced NO_x and SO_x. This may be done using the same methodology DEP and EPA use when evaluating the cost of control through Best Available Technology (BAT) and Best Available Control Technology (BACT). BAT and BACT assume approximately \$5,000 per ton of NO_x or SO₂ reduced as economically feasible; this implies each ton of NO_x or SO_x not emitted is equivalent to approximately \$5,000 of benefit. In the year 2030, this results in 318,000 fewer tons of SO_x and 282,000 fewer tons of NO_x emitted resulting in (318,000 tons + 282,000 tons) * \$5,000/ton = \$3 billion in savings. This approach is also consistent with the 2017 RIA’s position that the cost of reducing co-benefit pollutants from this regulation should be compared to the cost of reducing them in other ways (i.e. other regulations). This approach ignores the extra benefit associated with removal of NO_x and SO_x from nonattainment areas subject to the Lowest Achievable Emissions Rate (LAER).

b. The Global Cost of Climate Change is Ignored

It is inappropriate to ignore the global benefits of the CPP. The CPP came into existence, in part, due to the United States’ participation and leadership in the Paris Climate Agreement. Other countries have made obligations under the Paris Climate Agreement as well as the United States. By repealing the CPP, the United States is placing the Paris Climate Agreement in jeopardy because other nations may not fulfill their CO₂ emission reduction pledges. This can result in higher world-wide CO₂ emissions that might result in damages to the United States. Therefore, the narrow view taken in the 2017 RIA ignores the chance of damage to the US economy due to higher emissions of CO₂ around the world.

c. Discount Rates Used to Calculate Costs of the CPP are Not Reasonable

Discounting the cost of carbon at 7 percent is inappropriate. Circular A-4 provides guidance for the use of discount factors in regulatory analysis. 68 FR 58366 (October 9, 2003) Circular A-4 suggests that discount rates from 1 percent to 3 percent are most appropriate for intergenerational impacts. The CPP is clearly affecting future generations, so a discount rate as low as 1 percent should be used to model the long-term impact of reducing CO₂ emissions.

The 2017 RIA only estimates costs of the CPP to 2030. Excess CO₂ emissions that contribute to climate change are not a short-term problem but a long-term one. The CPP will continue to produce impacts beyond 2030.

March 15, 2018

VI. Conclusion

In summary, the CPP plays a central part in combating climate change, the most important environmental issue facing the world today, and should not be repealed. The CPP is firmly rooted under the statutory authority of the CAA and appropriately engages states in creating flexible solutions under BSER established in the CAA. If clear benefits of the reduction in emissions under the CPP are not ignored, the benefits of the CPP outweigh the costs as demonstrated in the 2015 RIA. Finally, the strategy of the CPP is clearly working in Pennsylvania. Repealing the CPP will only move the country and world backward on this important issue. Forward-thinking companies and governments throughout the globe understand climate risks and are making sound investment strategies based on those risks. Repeal of the CPP only adds regulatory uncertainty, which impedes sound investment strategies for this country. The consequences of inaction on mitigating the causes of climate change will be felt by not only Pennsylvanians, but by all beings and future generations inhabiting our planet.

Sincerely,



Patrick McDonnell
Secretary

Enclosure