UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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Carbon Pollution Emission Guidelines	)	**Docket No. EPA-HQ-OAR-2013-0602**
for Existing Stationary Sources:	)	
Electric Utility Generating Units	)	*Via regulations.gov*
	)	*December 1, 2014*
	)	

Thank you for accepting these comments on EPA's proposed Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 2, 2014).

We submit these comments on behalf of the Natural Resources Defense Council (NRDC). NRDC is a national nonprofit environmental organization representing 1.4 million members and online activists. NRDC uses law, science, and the support of its members to ensure a safe and healthy environment for all living things. One of NRDC's top priorities is to reduce emissions of the air pollutants that are causing climate change.

EXECUTIVE SUMMARY

NRDC strongly supports the U.S. Environmental Protection Agency's (EPA) proposed Clean Power Plan, which will establish landmark carbon pollution standards for existing fossil-fuel power plants. The Clean Power Plan is an essential step toward ending unlimited carbon pollution into our atmosphere from the largest source in the United States – existing power plants. It sets the first-ever national limits on how much carbon pollution the country's existing power plants can release, and is a groundbreaking step toward combating climate change before it's too late to avoid the worst impacts. The Clean Power Plan is flexible and affordable. NRDC's analysis shows that once updated cost and performance data for energy efficiency and renewable energy are factored in, the Clean Power Plan emission reduction targets proposed in June 2014 can be met at a net savings to Americans of $1.8 billion in 2020 and $6.6 billion in 2030.

EPA can and should strengthen the Clean Power Plan's targets, most importantly by more fully recognizing the vast potential for scaling up energy efficiency and renewable energy throughout the United States. NRDC has presented a number of ways to improve and strengthen the CPP and with just three of these major recommendations: 1) updated baseline and cost and performance data, 2) implementation of the noticed formula change to properly account for energy efficiency and renewables, and 3) adoption of a minimum transition from older steam generation to new natural gas combined cycle units, we find that EPA can significantly strengthen the proposal at reasonable cost. Emissions reductions of 36% below 2005 by 2020 and 44% by 2030 can be accomplished at a cost of $6.5 Billion in 2020 and $10.5 Billion in 2030 with net benefits estimated to be up to $70 Billion and $108 Billion respectively. These projections, along with results of other scenarios we analyzed, are

illustrated in Figures ES-1 and ES-2 below. We urge EPA to strengthen and finalize the Clean Power Plan on schedule by June 1, 2015.

Background

It is imperative that we dramatically reduce carbon pollution. The science is clear: rising concentrations of heat-trapping gases like carbon dioxide in the atmosphere will destabilize our climate and lead to severe impacts on our health and well-being and risk triggering catastrophic climate change.

We are already seeing the impacts of climate change on our communities and facing substantial costs from these impacts. But the costs that our children and grandchildren will face if we fail to act now are simply unacceptable.

In November 2014, the world's leading scientists released their gravest warning yet about the threat of climate change, saying we will face "severe, pervasive and irreversible impacts" unless we act now. This report from the United Nations Intergovernmental Panel on Climate Change confirms that climate change is already contributing to intense drought, flooding, and heat waves. And it says we will see widespread impacts worldwide including food shortages and armed conflict if the human community fails to reduce dangerous carbon pollution.

Here at home, the Third National Climate Assessment, released earlier this year, found that if greenhouse gas emissions are not reduced it is likely that American communities will experience:

- increased severity of health-harming smog and particulate pollution in many regions;
- intensified precipitation, hurricanes, and storm surges;
- reduced precipitation and runoff in the arid West;
- reduced crop yields and livestock productivity;
- increases in fires, insect pests, and the prevalence of diseases transmitted by food, water, and insects; and
- increased risk of illness and death due to extreme heat.

We must act now to reduce carbon pollution and mitigate these impacts. Fossil fuel-fired power plants are the largest source of greenhouse gases in our nation, and the solutions are at hand to reduce carbon pollution from the power sector. Reducing carbon pollution will also result in important reductions in health-harming co-pollutants such as sulfur dioxide, nitrogen oxides, particulates, and mercury, beyond the reductions to be delivered by other standards. Reducing these co-pollutants will reduce asthma attacks, heart attacks, hospital admissions, missed school and work days, and premature deaths.

For more than 40 years the Clean Air Act has been used successfully to reduce emissions of sulfur, nitrogen, and mercury, with benefits for Americans' health that far exceed the costs. Yet there are currently no national limits on the amount of carbon dioxide that power plants can pump into the air. The Clean Power Plan answers this need.

The Clean Power Plan's "Best System of Emission Reductions"

The Clean Air Act requires EPA to set standards of performance at the level that reflects the emissions reductions achievable by the "best system of emission reduction" that has been "adequately demonstrated" considering cost, energy requirements, and other health and environmental outcomes. The Clean Power Plan's proposed "best system of emission reduction" sets targets for each state's fossil fuel power plants by looking at the real-world potential to reduce their carbon pollution by deploying renewable energy, harvesting our nation's vast energy efficiency resource, improving the efficiency of power plants, and relying more on lower-polluting and less on the highest-emitting power plants.

NRDC strongly supports this approach, which fully comports with the Clean Air Act. EPA's proposed best emission reductions system in the Clean Power Plan is certainly "adequately demonstrated" because power companies and states across the country are effectively using each of the building blocks to cut emissions of carbon pollution and other dangerous air pollutants from fossil fuel-fired power plants. NRDC agrees with EPA that it is the "best" system as defined by the Clean Air Act because it has the potential to secure large reductions in carbon pollution at reasonable cost, and will provide companies and states with flexibility to manage energy requirements and identify the emission reduction pathways that make the most sense for them.

EPA's System of Emissions Reductions Can Achieve Even Greater Emission Reductions Than Reflected In EPA's Analysis

The emissions reductions Building Blocks proposed by EPA in the Clean Power Plan include:

1) Making existing coal plants more efficient;
2) Using existing natural gas plants more effectively;
3) Increasing renewable and non-fossil fuel generation; and
4) Increasing end-use energy efficiency

These four Building Blocks are appropriate and legally supported. However, in the proposed Clean Power Plan, EPA significantly underestimates the carbon pollution reductions that can be achieved at reasonable costs. NRDC's analysis of the emission reduction opportunities in the blocks identified by EPA demonstrates that even greater savings are available at reasonable cost, if not savings, from each of the four blocks. EPA should correct its analysis to reflect these greater opportunities in the states' targets. EPA must also fix the formula for calculating state targets to properly account for greater reductions from renewable energy and energy efficiency than the proposed Clean Power Plan assumes.

BSER Goal-Setting Equation and Treatment of Incremental Renewables and Energy Efficiency

In its October 27, 2014 Notice of Data Availability (NODA), EPA explains that the original formula used in its proposed rule failed to correctly account for the emission reductions generated by renewables and energy efficiency. As EPA explains, the formula used in the proposed rule failed to account for the reduction in generation at coal and gas power plants that will occur when additional renewables are added to the grid and when we improve energy efficiency. In setting state targets, EPA should employ a

formula that fully reflects the potential for zero-emitting resources and demand-side efficiency to reduce emissions from fossil generating units (as they have done with natural gas in Block 2). This will be achieved by basing targets on the use of available Block 3 and Block 4 resources to displace the highest-emitting fossil units (generally coal-fired power plants) first. This approach will achieve the greatest emission reductions from the available resources and thus comports with the Act's mandate to base standards on the best system of emission reduction.

Building Blocks 1 & 2 – Making Existing Power Plants More Efficient

EPA's analysis appropriately considered the potential for efficiency improvements at power plants – the opportunity to produce greater amounts of electricity using less fuel, thus reducing pollution emissions. EPA identifies opportunities for improvements that can be made based on specific power plant upgrades and also for operational and maintenance changes. EPA determined that coal-fired power plants can achieve at least a six percent improvement in performance. This is a conservative estimate. Analysis of carbon emissions at coal plants shows that even greater reductions would be available if power plants simply had to match the lowest emission rate actually achieved by the plant over the past decade.

EPA has also requested comment on whether it should consider the potential to shift electricity production from coal plants to existing natural gas combined cycle power plants, and the potential to co-fire existing coal plants with natural gas or convert them to natural gas. We believe that scaling up energy efficiency and renewable energy is the best and least-cost compliance pathway, and we will urge states to create state plans that rely, to the maximum extent possible, on energy efficiency and renewable energy. But it is also important that EPA set carbon pollution reduction targets that reflect the emission reduction opportunities presented by coal conversion options. These stronger reduction targets are amply justified under the Clean Air Act. Already all of the coal conversion pathways are being deployed across the country even without carbon pollution standards —and as such they are clearly adequately demonstrated, and reasonable in cost.

Securing the full benefit of the Clean Power Plan also requires effective measures to curb the high levels of methane leakage and venting upstream of gas-using power plants. Given the recent increases in the use and extraction of natural gas, it is imperative that EPA directly regulate emissions of methane, a potent climate pollutant, from the natural gas sector under section 111(b) and (d) of the Clean Air Act. President Obama committed to taking action on methane as part of the Climate Action Plan. It is vital that EPA follow through on this pledge by promptly setting standards limiting emissions of methane from new and existing sources in this sector.

Building Block 3 – Increasing renewable and non-fossil fuel generation

EPA appropriately included in the best system of emission reduction the potential to reduce emissions from fossil fuel power plants by deploying renewable energy. But EPA has significantly underestimated the amount of renewable energy that can be deployed at reasonable cost. In its proposal, EPA included two frameworks for analyzing the potential for emission reductions via renewable energy deployment—the use of regional averages of renewable energy policies and a technical-economic potential analysis. Both significantly underestimate the actual potential by using out-of-date data that fails to reflect

dramatic cost reductions in renewable energy sources such as solar and wind that have occurred in recent years. In order to properly assess the potential from renewable energy, EPA must use up-to-date data. Current data show that wind and solar costs are each approximately 45 percent lower than EPA assumed in its analysis. We urge EPA to use current data in order to evaluate the quantity of renewable energy that can be deployed at reasonable cost in each state. We further urge EPA to ensure that the rate of renewable energy deployment assumed in EPA's analysis is at least as fast as the historical rates of deployment.

Building Block 4 – Increasing End-Use Energy Efficiency

EPA's Clear Power Plan also properly included in the best system of emission reduction the potential to use improved demand-side energy efficiency to drive reductions in carbon pollution. Energy efficiency measures will also drive reductions in the harmful co-pollutants emitted by fossil fuel-fired power plants. By making investments to increase energy efficiency in our homes, businesses and factories, we can reduce carbon pollution while also lowering utility bills, creating jobs, and stimulating the economy.

Based on its analysis, EPA determined that energy efficiency can supplant 1.5 percent of retail electricity sales. This is an underestimation of energy efficiency's potential, which excludes a number of important additional opportunities for energy efficiency such as building codes, transmission and distribution, voltage optimization, and combined heat and power. EPA should include all available energy efficiency opportunities in its analysis. Energy efficiency can achieve savings equal to 2 percent of retails sales per year. The country's energy efficiency resource is vast, and grows continuously as new technologies are developed.

Further, EPA also underestimates the potential for energy efficiency by assuming that states will ramp up energy efficiency programs slowly. But new energy efficiency programs can be implemented more quickly than EPA assumes, as demonstrated by the faster expansion of efficiency programs achieved in many states. EPA should use a faster ramp up rate, allowing for greater overall emission reductions from energy efficiency.

NRDC notes in particular that energy savings from affordable multi-family housing programs should be credited in state compliance plans. More than 20 million American households, almost 18% of the nation's total, live in apartments and condominium communities. Energy efficiency is a key resource for maintaining and improving quality of life for residents and owners of affordable housing. The affordable multi-family sector is also a critical untapped resource for achieving widespread energy demand reductions, and thus emissions reductions, in the residential sector.

In addition to the potential energy savings, improving the energy efficiency of multifamily housing also improves the stability of vulnerable households. Most multifamily households are renters, whose average annual income is just over half that of homeowners. This means that nationally, the burden of the untapped savings in the older and less energy-efficient multifamily housing stock is being borne by the families with the fewest resources. As a result, renters typically pay a higher percentage of their income for energy. This lowers their discretionary income and makes them much more vulnerable to

fluctuations in energy prices. Thus, efficiency gains from multifamily retrofits have the concurrent benefit of relieving low- and middle-income families of some of their financial strain and uncertainty.

Unfortunately, only a fraction of the potential energy savings in the multifamily sector has been realized despite the economies of scale not available in single-family homes. By investing more resources into the multi-family sector, states can scale up energy efficiency programs much more rapidly than previously imagined, enabling real energy savings quickly.

A Strengthened Clean Power Plan is Cost Effective

NRDC's technical comments focus on how EPA can strengthen the Clean Power Plan and make even deeper cuts to dangerous carbon pollution. Through our analyses of several different policy scenarios, and associated sensitivity analyses, we demonstrate that there is ample room to strengthen the CPP and achieve even deeper emissions reductions at reasonable compliance costs, and that the benefits consistently outweigh the costs. It is important to note that we examined a few illustrative policy scenarios which do not reflect our full set of recommendations for strengthening the Clean Power Plan, and that there are some additional pieces of analysis still under development (we will submit additional material to the docket in the coming weeks).

First, we examined compliance with EPA's state targets, and then performed the same analysis with updated cost and performance data for renewables and efficiency. Further detail on this subject may be found in NRDC's November 2014 issue brief, titled, "The EPA's Clean Power Plan Could Save Up to $9 Billion in 2030," available at: http://www.nrdc.org/air/pollution-standards/files/clean-power-plan-energy-savings-IB.pdf.

NRDC analyzed potential strengthening of state targets based primarily on the ideas put forth in EPA's October 28, 2014 Notice of Data Availability (NODA). We evaluated compliance for the resulting set of state targets under both approaches described in the NODA. These model runs are described below as "NODA Dirtiest First" and "NODA Pro Rata" cases. Under both "NODA Dirtiest First" and "NODA Pro Rata" target-setting approaches, we also analyzed a second list of state targets that accounts for a minimum generation conversion from higher-emitting sources to lower-emitting sources. These are referred to as "NODA Dirtiest First + Conversion" and "NODA Pro Rata + Conversion." Summary results from these policy runs are shown below.

Figure ES-1. Historical and Projected Electricity Sector CO2 Emissions

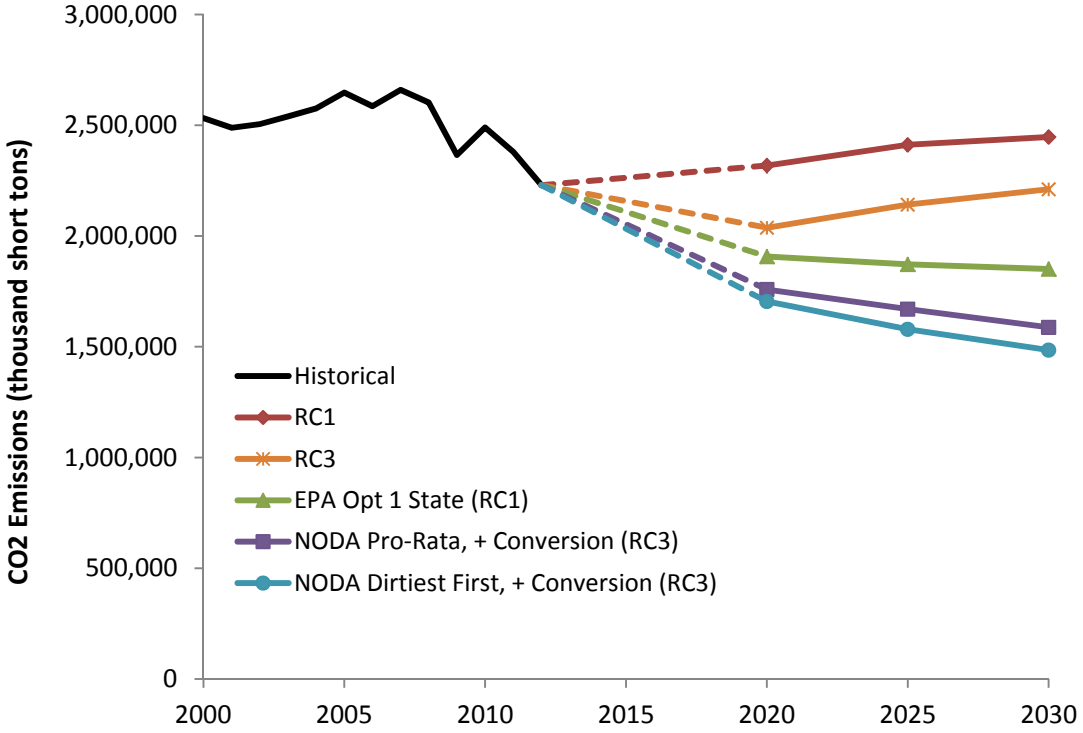
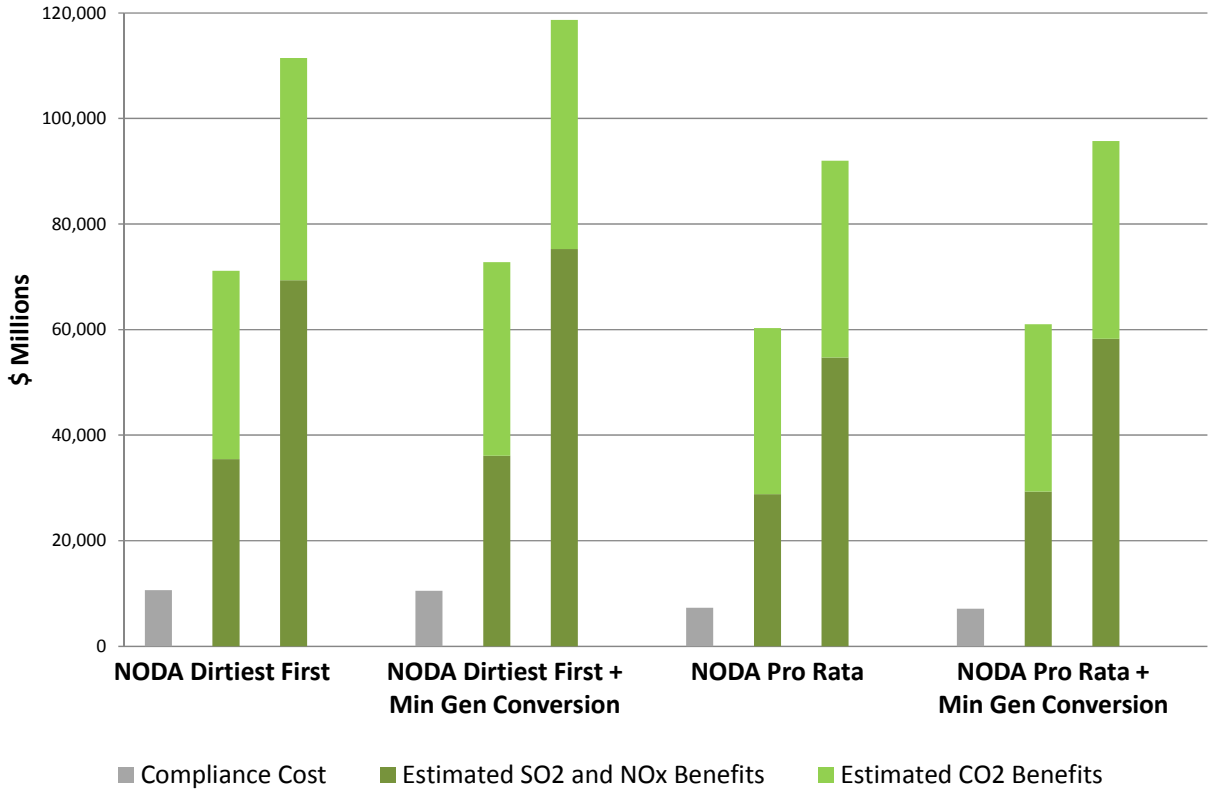


Figure ES-2. Compliance Costs and Net Benefits in 2030



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Environmental Justice Considerations

The Clean Power Plan will result in significant improvements in air quality across the country. EPA estimates that it will result in a twenty-five percent drop in the pollutants that lead to soot and smog. NRDC's suggested improvements will deliver even larger benefits. However, we urge EPA to include in the final rule a robust discussion of the ways in which state plans can be designed to ensure that pollution will be reduced in communities currently bearing a disproportionate share of ambient air pollution burdens. State plans will determine how the carbon pollution reductions required by the state targets are achieved—and those decisions will also determine how much reduction takes place in harmful co-pollutants, and where. This will be particularly important in the context of state planning for attainment of ozone ambient air quality standards and other clean air protections, enabling comprehensive planning to help states ensure that carbon pollution is reduced and other harmful air pollution problems are addressed.