

Section 111 of the CAA: Reducing Greenhouse Gas Emissions from Power Plants

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U.S. Environmental Protection Agency
Office of Air and Radiation





Overview

- The President's Climate Action Plan
- EPA's Task
- Section 111 of the Clean Air Act (CAA)
- Stakeholder Engagement
- Next Steps



The President's Climate Action Plan

- Calls on the federal government to work with states, cities, industries, consumers and the international community to address one of the greatest challenges of our time
- Reinforces the federal commitment to:
 - Cut harmful pollution
 - Protect our country from the impacts of climate change
 - Lead an international effort to address a changing climate



Reducing Carbon Pollution From Power Plants

President's Directive to EPA:

- Set flexible Carbon Pollution Standards, Regulations or Guidelines, as appropriate, for Power Plants under Section 111 of the Clean Air Act
- Focus on these elements when developing the standards
 - Stakeholder engagement on program design
 - States
 - Leaders in the power sector
 - Labor leaders
 - Non-governmental organizations
 - Tribal officials
 - Members of the public
 - Flexibilities in the program design
 - Market-based instruments, performance standards, others
 - Costs
 - Tailor regulations and guidelines to reduce costs
 - Continued importance of relying on a range of energy sources
 - Other regulations that affect the power sector



EPA's Task

- 1. Using the Clean Air Act authority, issue carbon pollution standards for new power plants**
 - Published a new proposal on January 8, 2014
 - Informed by the more than 2.5 million comments received on the April 2012 proposal
 - Reflects recent developments and trends in the power sector
 - Will follow the agency's open and transparent review process, including public comment and hearings





EPA's Task

2. Using the Clean Air Act authority, issue carbon pollution standards for modified and reconstructed power plants

- Will follow the agency's open and transparent regulatory process
 - Proposal: June 2014
 - Final: June 2015





EPA's Task

3. Using the Clean Air Act authority, issue carbon pollution guidelines for existing power plants

- Issue federal guidelines for the states
 - Work in partnership with states
 - States will develop plans that set standards for existing sources
 - States use EPA guidelines as a reference
- Federal guidelines should build on states' leadership and experience with programs that reduce GHGs
- Will follow the agency's open and transparent regulatory process to develop guidelines and review state plans
 - Proposed guidelines: June 2014
 - Final guidelines: June 2015
 - State plans due: June 2016





Clean Air Act Section 111

- Authorized in 1970
- Establishes a mechanism for controlling air pollution from stationary sources
 - Applies to sources for which the Administrator, in his or her judgment, finds “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare”
 - Can apply to new, existing, modified and reconstructed sources
- Technology-based regulations
- More than 70 stationary source categories and subcategories are currently regulated under section 111

Source categories regulated under CAA section 111 include:

- Electric Generating Units (EGUs)
- Portland Cement Plants
- Nitric Acid Plants
- Sulfuric Acid Plants
- Petroleum Refineries
- Lead Smelters

A full list can be found in 40 CFR Part 60



Clean Air Act Section 111 (cont.)

- Lays out different approaches for new and existing sources
 - **New sources under section 111(b)**
 - Federal standards for new, modified and reconstructed sources
 - **Existing sources under section 111(d)**
 - State programs for existing sources that are equivalent to federal guidelines



Clean Air Act Section 111 (cont.)

Section 111(b) for New Sources

- EPA sets a **standard of performance** for new stationary sources
- Standard reflects the degree of emission limitation achievable through the application of the **best system of emission reduction (BSER)** that the Administrator determines has been adequately demonstrated
- EPA may distinguish among classes, types and sizes of sources
- Each new source must meet the standard
- EPA can delegate implementation and enforcement of the standards of performance to the states
- Standards are incorporated in state air permits
- Standards are to be reviewed at least every 8 years and revised, if appropriate

Determining “BSER” takes into account:

- The costs of achieving emission reductions
- Non-air quality health and environmental impacts
- Energy requirements



Clean Air Act Section 111 (cont.)

Section 111(b) for Modified and Reconstructed Sources

- EPA must also set a standard to address modified and reconstructed sources
- Follows same process as setting standards for new sources
- Each modified or reconstructed source must meet the standard
- Standards are incorporated in state air permits
- Standards are to be reviewed at least every 8 years and revised if appropriate

Modification

A physical or operational change that increases the source's maximum achievable hourly rate of emissions

Reconstruction

When a single project replaces components and exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility



Clean Air Act Section 111 (cont.)

Section 111(d) for Existing Sources

- Requires a different approach for achieving emission reductions than for new sources
- Provides that EPA establish a procedure for states to issue performance standards for existing sources in the source category
- EPA has established section 111 (d) regulations for existing sources for 5 source categories

On the books section 111(d) regulations

- Sulfuric acid plants (acid mist)
- Phosphate fertilizer plants (fluorides)
- Primary aluminum plants (fluorides)
- Kraft pulp plants (total reduced sulfur)
- Municipal solid waste landfills (landfill gases)



Clean Air Act Section 111 (cont.)

Section 111(d) is broad by design

- Congress anticipated that there might be air pollution problems beyond those covered by national ambient air quality standards (such as ozone and fine particle pollution) or air toxics standards that EPA would need to address
- Also recognized that existing sources do not have as much flexibility as new ones to build emission controls into their design
- Therefore, the statutory language in section 111(d) is broad
- Section 111 (d) provides greater flexibility to EPA and states to design a program in consultation with diverse range of stakeholders



Clean Air Act Section 111 (cont.)

How Section 111(d) Has Worked

- EPA previously has set “emission guidelines” for 5 source categories
 - Has not prescribed technology that must be used to comply
- Once EPA set the guidelines, states developed section 111(d) plans establishing standards of performance for the covered sources in their state
- States then submitted section 111(d) plans to EPA for review and approval
- EPA subsequently approved or disapproved the plans through notice and comment rulemaking
- EPA has authority to prescribe a plan for a state in cases where the state fails to submit a satisfactory plan and to enforce the provisions of a plan in cases where the state fails to enforce them

Common elements of past guidelines

- Description of BSER that has been adequately demonstrated
- Degree of emission limitation achievable, costs and environmental impacts of application
- Time required to implement
- Other information to facilitate formation of State Plans
- A goal for reductions – or “standard of performance” -- based on a BSER analysis



Clean Air Act Section 111 (cont.)

Section 111(d) sets up a partnership between states and EPA

- EPA's role:
 - Establish process for states to issue performance standards for existing sources in the source category
 - Provide guidelines to the states on the performance standard stringency and timing
 - Review and approve state plans
 - Promulgate a FIP for states that either do not submit a plan or for which EPA disapproves their plan
- State's role:
 - Develop a plan establishing performance standards for the affected sources in their state
 - Standards must be based on Best System of Emission Reduction (BSER)
 - Plan must include timeframe of reductions
 - State performance standards can differ from EPA's guideline
 - Submit plan to EPA that is responsive to the EPA guideline
 - Implement the plan if EPA approves it

Clean Air Act Section 111(d) Process



Goal:
Emissions
Reductions



Clean Air Act Section 111 (cont.)

How State Plans Have Worked

- States determine the combination of measures that will meet the guidelines
- State plans set standard of performance
 - Can be identical to EPA's guidelines (states adopt EPA's model rules)
 - Can differ from, but be equivalent to, EPA's guidelines
- State plans provide for implementation and enforcement
 - States have had flexibility when applying the standard of performance in their plans to take into consideration, among other factors, the remaining useful life of the source
- Timeframe to submit state plans has been set by EPA in the guidelines



Clean Air Act Section 111 (cont.)

Section 111(d) and Carbon Pollution

- In general, carbon pollution emissions differ from the pollutants that have been regulated in the past under section 111(d)
- Carbon pollution is:
 - Global
 - An order of magnitude greater than the other pollutants covered under section 111(d) in the past
 - Accumulating and remaining in the atmosphere over hundreds of years
- We have opportunities to explore various program designs and flexibilities because of
 - The broad statutory language of section 111(d)
 - The unique characteristics of carbon pollution
 - The interconnected nature of the power sector



Stakeholder Engagement

- EPA has been conducting a robust stakeholder engagement process
 - Conducted over 200 meetings with utility, labor and environmental groups since August 2013
 - Developed video webinar about the Climate Action Plan and CAA 111(d) has been viewed more than 3,800 times
 - Held 11 public listening sessions around the county
 - 3,300 people attended
 - More than 1,600 people offered oral statements
- Engagement process has given EPA several key insights and takeaways



Key Messages from Stakeholders

- Several common themes emerged from stakeholder outreach
 - Opportunities exist to lower the carbon intensity of power generation through a wide range of measures
 - States need more than one year to develop and submit plans
 - More time necessary due to legislative/regulatory schedule in many states
 - Additional time would allow and promote multi-state programs and cooperation
 - Multiple opinions about how broader measures taken throughout the electric system could factor into programs
 - General support for giving states flexibility
 - Recognize existing programs and the progress achieved
 - Allow compliance options that permit the use of approaches that are outside the power plant “fence line” (e.g., demand-side management)
 - Acknowledge leadership for prior GHG activities in states



Key Messages from Stakeholders (cont.)

- Potential hurdles or concerns identified by stakeholders:
 - Views vary regarding form of the goal
 - Rate-based: States must stay below a tons of CO₂ per megawatt hour limit
 - Mass-based: States must stay below a total tons of CO₂ emitted per year limit
 - Many states have already achieved greenhouse gas reductions and have exceeded the President's goal
 - Some suggest that EPA can legally only base the reduction goal on measures "within the fence line"
 - This would eliminate EPA's ability to count reductions achieved away from the power plant (e.g., demand-side management programs)
 - Concerns that rulemaking will have a negative impact on jobs and ratepayers
 - Concern that ratepayers will have to pay for stranded assets
 - Concerns regarding maintaining the reliability of the electric power system



Next Steps: Actions and Timing

- Per the President's Directive
 - EPA will issue proposed carbon pollution standards, regulations, or guidelines, as appropriate, for modified, reconstructed, and existing power plants
 - by no later than June 1, 2014
 - EPA will issue final standards, regulations, or guidelines, as appropriate
 - by no later than June 1, 2015
 - EPA will include in the guidelines addressing existing power plants a requirement that States submit to EPA the implementation plans
 - by no later than June 30, 2016