Reducing Carbon Pollution from Power Plants

Proposed Emission Limits for New Sources

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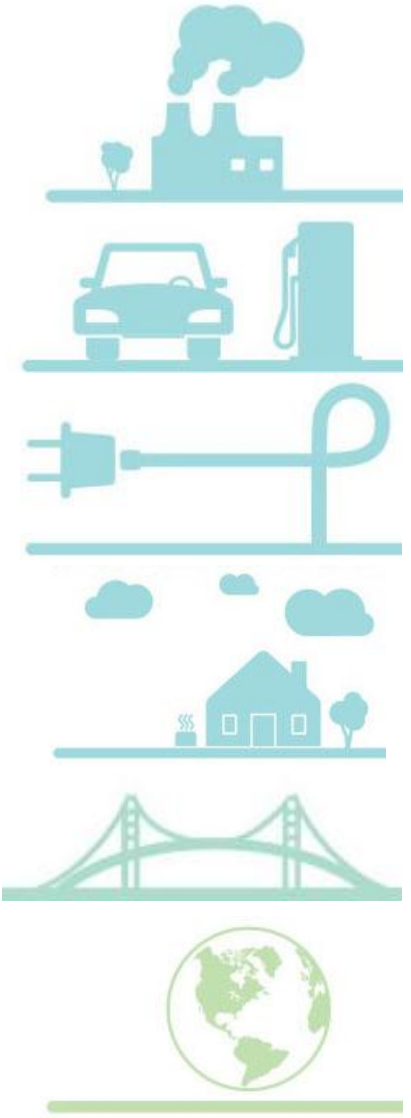
President Obama's Climate Action Plan

- Reinforces the federal commitment to:
  - Cutting harmful pollution,
  - Protecting our country from the impacts of climate change, and
  - Leading an international effort to address a changing climate
- EPA's Role
  - *Reducing carbon pollution from power plants*
  - Building a 21st century transportation sector
  - Cutting energy waste in homes, businesses, and factories
  - Reducing methane and HFCs
  - Preparing the U.S. for the impacts of climate change
  - Leading international efforts to address global climate change



CARBON POLLUTION IS THE BIGGEST DRIVER OF CLIMATE CHANGE

U.S. GREENHOUSE GAS POLLUTION INCLUDES:

CARBON DIOXIDE (CO_2) — 84%

Enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement).

FLUORINATED GASES — 2%

Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes.

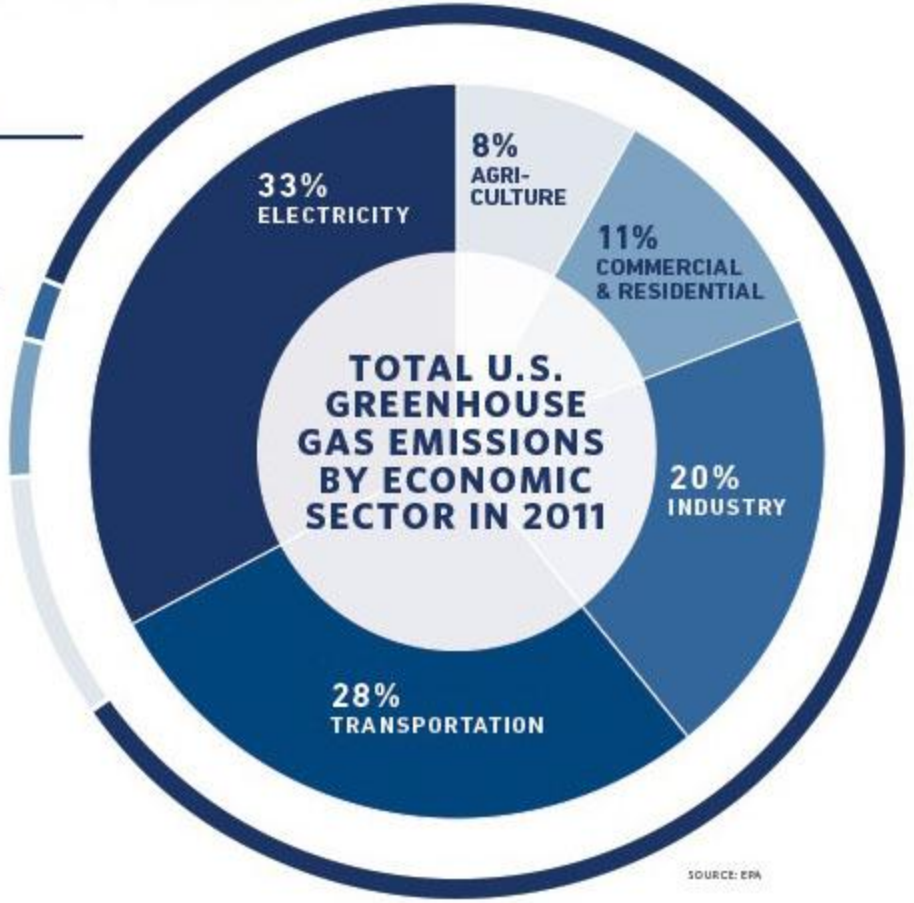
NITROUS OXIDE (N_2O) — 5%

Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.

METHANE (CH_4) — 9%

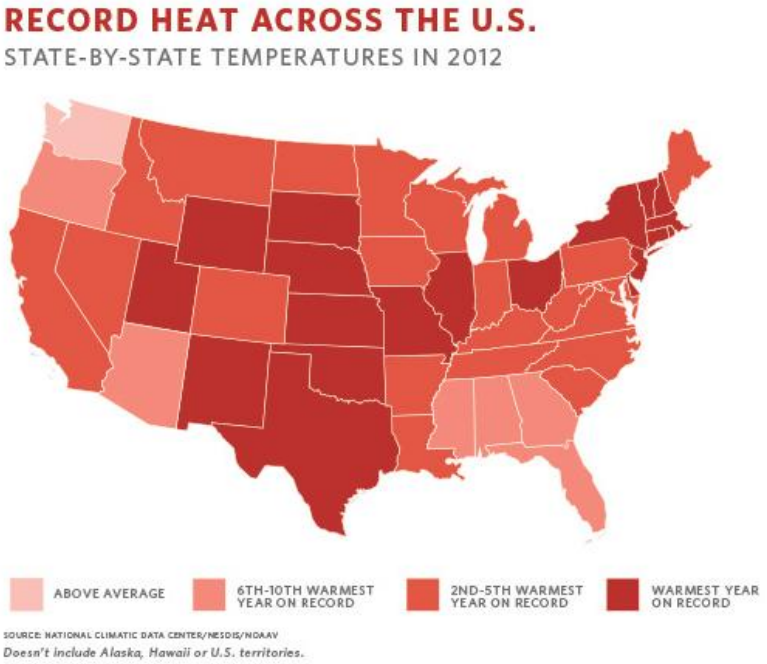
Emitted during the production and transport of coal, natural gas, and oil as well as from landfills.

SOURCE: EPA



Climate Change Means Serious Impacts on…

- *… Our health*
- *… The spread of disease*
- *… Heat waves and droughts*
- *… Wildfires*
- *… Storms*
- *… Water*
- *… Rising seas*
- *… Plants and wildlife*



EPA's Regulatory Approach:
Reducing Carbon Emissions from Power Plants

President's Directive to EPA:

- Develop carbon pollution standards, regulations or guidelines, as appropriate, for:
  1. New power plants—111(b)
     - Proposed on September 20, 2013
  2. Modified and reconstructed power plants—111(b)
     - Proposal: June 2014
     - Final: June 2015
  3. Existing power plants—111(d)
     - Proposed Guidelines: June 2014
     - Final Guidelines: June 2015
     - State Plans due: June 2016

EPA's Regulatory Approach:
Clean Air Act Section 111

- 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

EPA's Regulatory Approach:
Clean Air Act Section 111

Statutory Authority

- Clean Air Act (CAA) section 111(b) requires EPA to regulate new stationary sources of air pollution
  - **Section 111(b) – Federal Program for New Sources**
    - The Administrator shall "establish Federal standards of performance" for "new sources within [the] source category."
  - "**Standard of Performance"**
    - "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."

BSER: Best System of Emission Reduction

Key Factors in BSER Determination For New Power Plants

- **Feasibility**
  System of emission reductions must be technically feasible

- **Costs**
  Costs of the system are reasonable

- **Size of reductions**
  EPA may consider the amount of emission reductions the system would generate

- **Technology**
  Designed to promote the implementation and further development of technology

Summary of the September 20th Announcement

- On September 20, 2013, EPA released a new proposal for setting carbon dioxide emissions limits for new power plants under the authority provided by Section 111(b) of the Clean Air Act

New Proposal for New Sources

- Sets separate standards for different types of new power plants
- Does not apply to existing units or units undergoing modification or reconstruction
- Reflects more than 2.5 million public comments received in April 2012 new source proposal
- Reflects recent trends in the electric power sector
- Maintains similar level of environmental protection
- Withdraws April 2012 proposal in a separate action

Proposed Carbon Pollution Standards for New Sources

Natural gas-fired stationary combustion turbines

- Standard based on the performance of modern natural gas combined cycle (NGCC) units
- Proposing 2 limits depending on the size of the unit.
- Proposed limits are:

Size of Unit	Proposed Limit
Small Less than or equal to 850 mmBtu/hr	1,100 lb CO_2 per MWh (gross)
Large Greater than 850 mmBTU/hr	1,000 lb CO_2 per MWh (gross)

- New natural gas-fired stationary combustion turbines can meet the proposed standard without the need for add-on controls

Proposed Carbon Pollution Standards for New Sources

Fossil fuel-fired utility boilers and integrated gasification combined cycle (IGCC) units (coal-fired)

- Standard based on performance of a new efficient coal unit implementing partial carbon capture and storage (CCS)
- Limits would lead to capture of only a portion of the CO_2 from a new unit (roughly 30%-50%)
- Proposing two limits, depending on the compliance period that best suits the unit
- Proposed limits are:

Averaging Period	Proposed Limit
12-operating month period	1,100 lb CO_2 per MWh (gross)
84-operating month period	1,000 - 1,050 lb CO_2 per MWh (gross)

Proposed Standards In Line with Power Sector Trends

- According to new capacity projections made by Energy Information Agency – and confirmed by additional EPA analysis – the rule is not projected to require changes in the design or construction of new units

- Most new electricity generating capacity is forecast to be either natural gas-fired or renewable.

- These units would already meet the standards proposed in this rule or are not covered by this rule

- The North American Electric Reliability Corporation's (NERC) Long Term Reliability Assessment, which is based on utility plans for new generating capacity over a 10-year period, [1] reinforces this likelihood by stating that "gas-fired generation [is] the primary choice for new capacity."

1. NERC, Long-Term Reliability Assessments for 2009 (Table 5) and 2012 (Figure 51). Capacity includes both planned and conceptual resources as defined by NERC.

Public Process: Next Steps

- 60 day comment period following publication in the Federal Register
- Comments on the proposed standard should be identified by Docket ID No. EPA-HQ-OAR-2013-0495
  - All comments may be submitted by one of the following methods:
    - Online: www.regulations.gov
    - Email: a-and-r-docket@epa.com
    - Fax: 202-566-9766
    - Mail: Air and Radiation Docket and Information Center
      Environmental Protection Agency, Mail Code 2822T
      1200 Pennsylvania Ave. NW
      Washington, DC, 20460
    - Hand Deliver: EPA Docket Center
      Room 334
      1301 Constitution Ave., NW
      Washington, DC 20460
- EPA also plans to hold a public hearing on this proposal. The dates, times, and locations of the public hearings will be available soon.
  - Will be published in the Federal Register and also listed on http://www.epa.gov/carbonpollutionstandard

Outreach on *Existing Sources*

PURPOSE

- Engage a wide variety of stakeholders
- Gather ideas and look at solutions
- Better understand the range of views about how this program could be designed

OPPORTUNITIES

- Overview presentation – posted on the Web
  - "Building a Common Understanding: The Clean Air Act and Upcoming Carbon Pollution Guidelines for Existing Power Plants," (available at: http://epa.gov/airquality/cps/webinar.html)
- 4 sector-specific teleconference calls held by EPA on Section 111 (completed)
- 11 Public outreach sessions hosted by EPA (completed)
- Input on forthcoming existing sources guidelines can also be sent to carbonpollutioninput@epa.gov.

For more information, visit:

http://www2.epa.gov/carbon-pollution-standards