



# Overview Presentation: Clean Air Act Section 111

North Dakota PSC Symposium on EPA  
Carbon Regulation - January 2014

Shaun McGrath, Regional Administrator  
U.S. Environmental Protection Agency  
Region 8

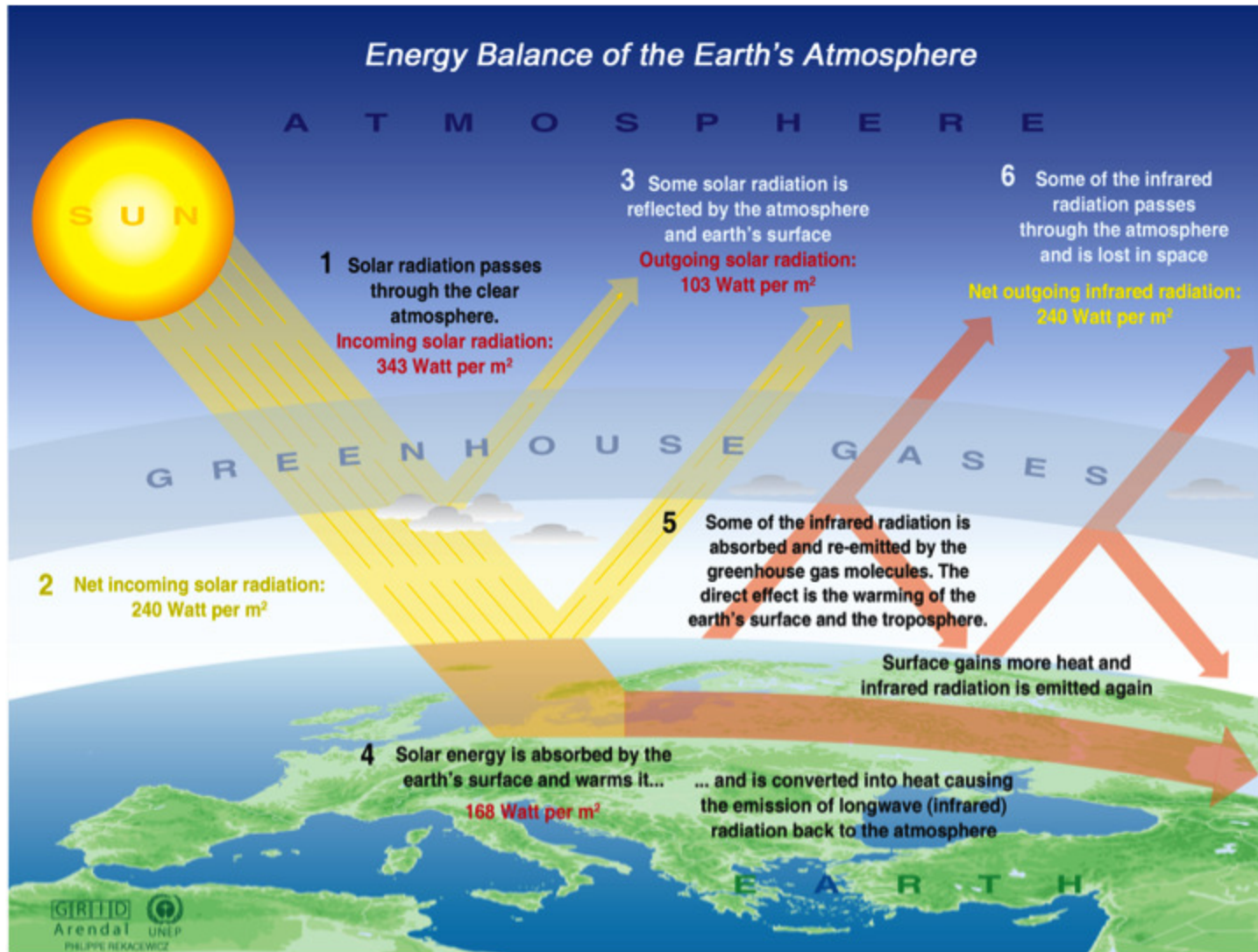


# Purpose

- To build a common understanding of the basics of the Clean Air Act (CAA) Section 111
- Describe outreach and process to engage with stakeholders on President Obama's directive to reduce carbon pollution from power plants
- Discuss timelines and status of EPA carbon regulations



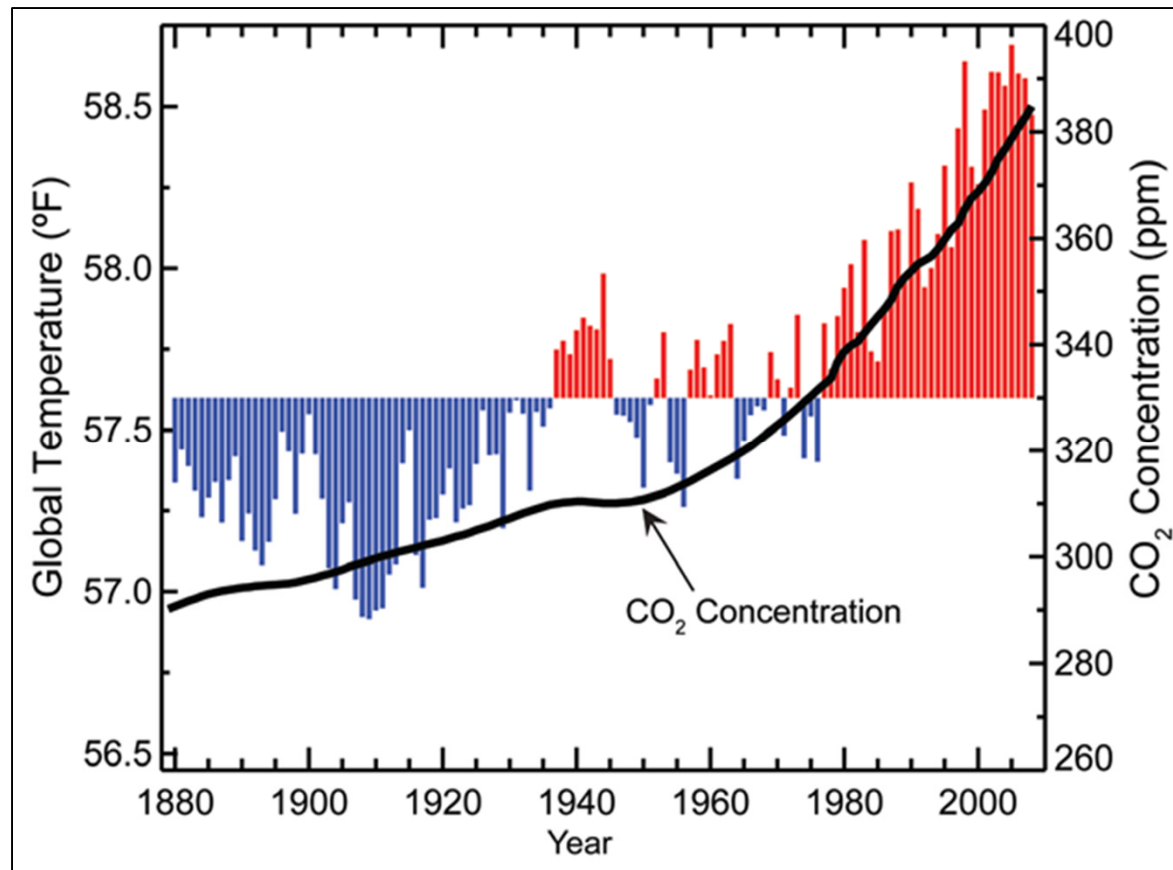
# The Climate System





# Rising Global Temperatures

Scientific consensus shows that the Earth's climate is changing due to increased concentrations of greenhouse gases in the atmosphere

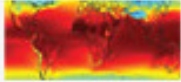









# Impacts of Climate Change

Trends observed in recent decades include:

- Rising temperatures
- Increasing heavy downpours
- Rising sea level
- Changes in the amounts and timing of river flows
- Longer growing seasons
- Reductions in snow and ice

Indicators	
	U.S. and Global Temperature
	High and Low Temperatures
	U.S. and Global Precipitation
	Heavy Precipitation
	Drought
	Tropical Cyclone Activity

EPA Climate Change Indicators in the United States:

<http://www.epa.gov/climate/climatechange/science/indicators/index.html>



# Carbon Pollution and Health

- Public health risks include:
  - Heat exposure can lead to heat stroke and aggravate some chronic diseases
  - Heat also increases concentrations of ground-level ozone pollution
  - Extreme weather events (hurricanes, extreme precipitation, drought) can cause direct injury, and contaminate water supplies or result in shortages of clean water
  - Ecosystem changes can increase the range of ticks and mosquitoes, which can spread diseases such as Lyme Disease and West Nile Virus
- Our most vulnerable citizens, including children, older adults, people with compromised health, and those living in poverty may be most at risk from the health impacts of climate change



# Carbon Pollution is the Biggest Driver of Climate Change



## CARBON DIOXIDE (CO<sub>2</sub>)

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).

84%



## FLUORINATED GASES

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

2%



## NITROUS OXIDE (N<sub>2</sub>O)

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

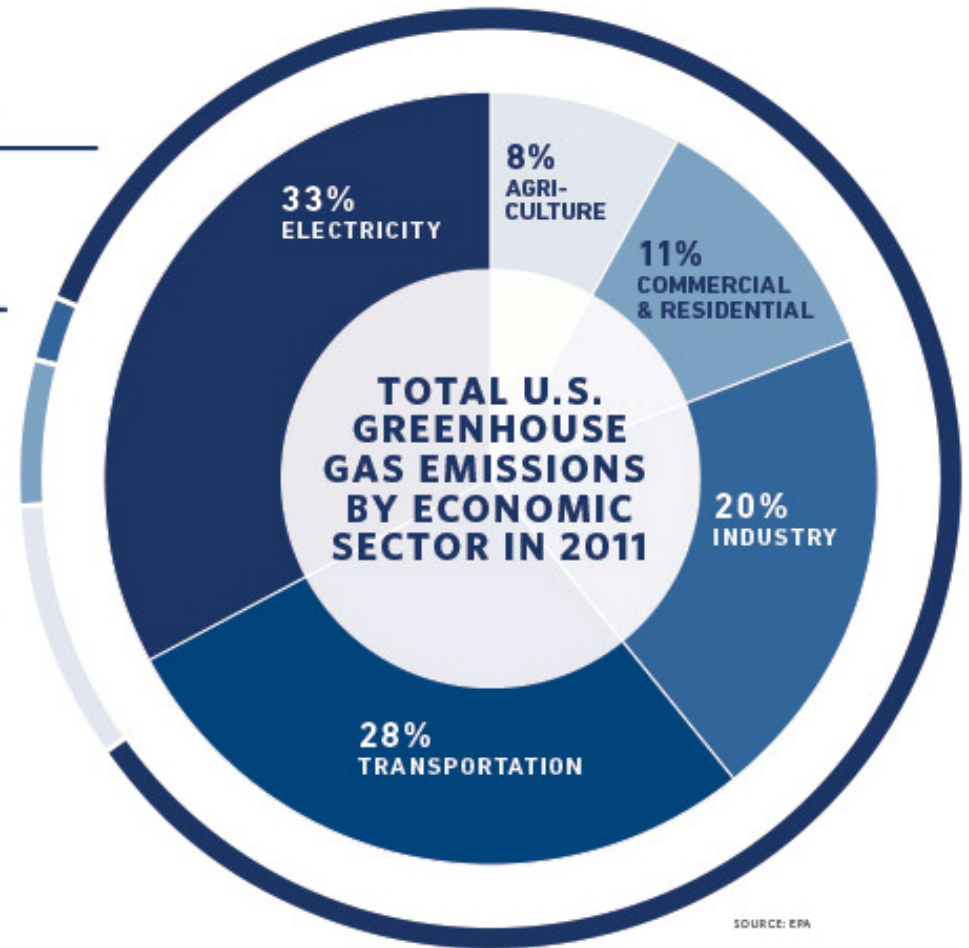
5%

## METHANE (CH<sub>4</sub>)

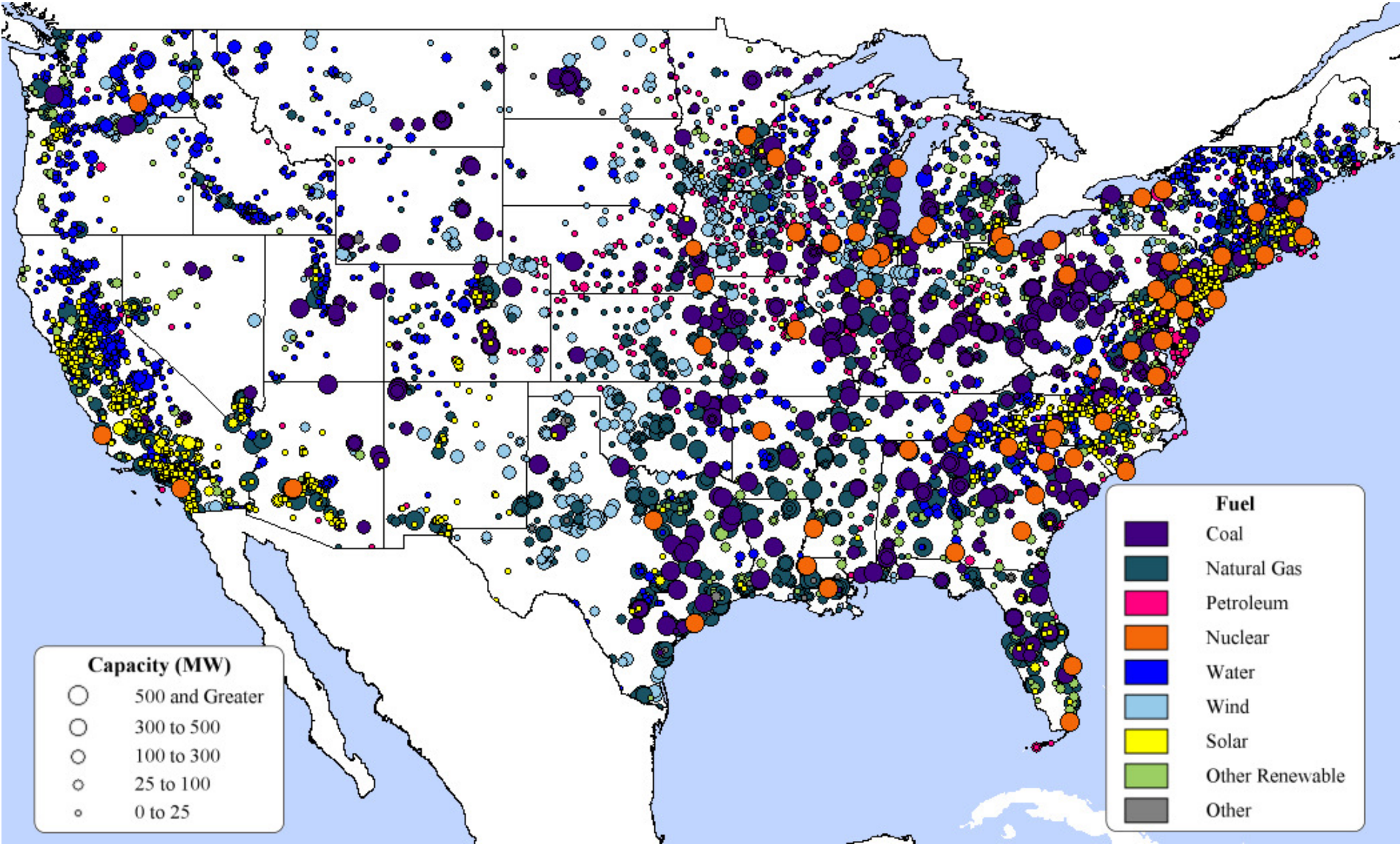
Emitted during the production and transport of coal, natural gas, and oil as well as from landfills.

9%

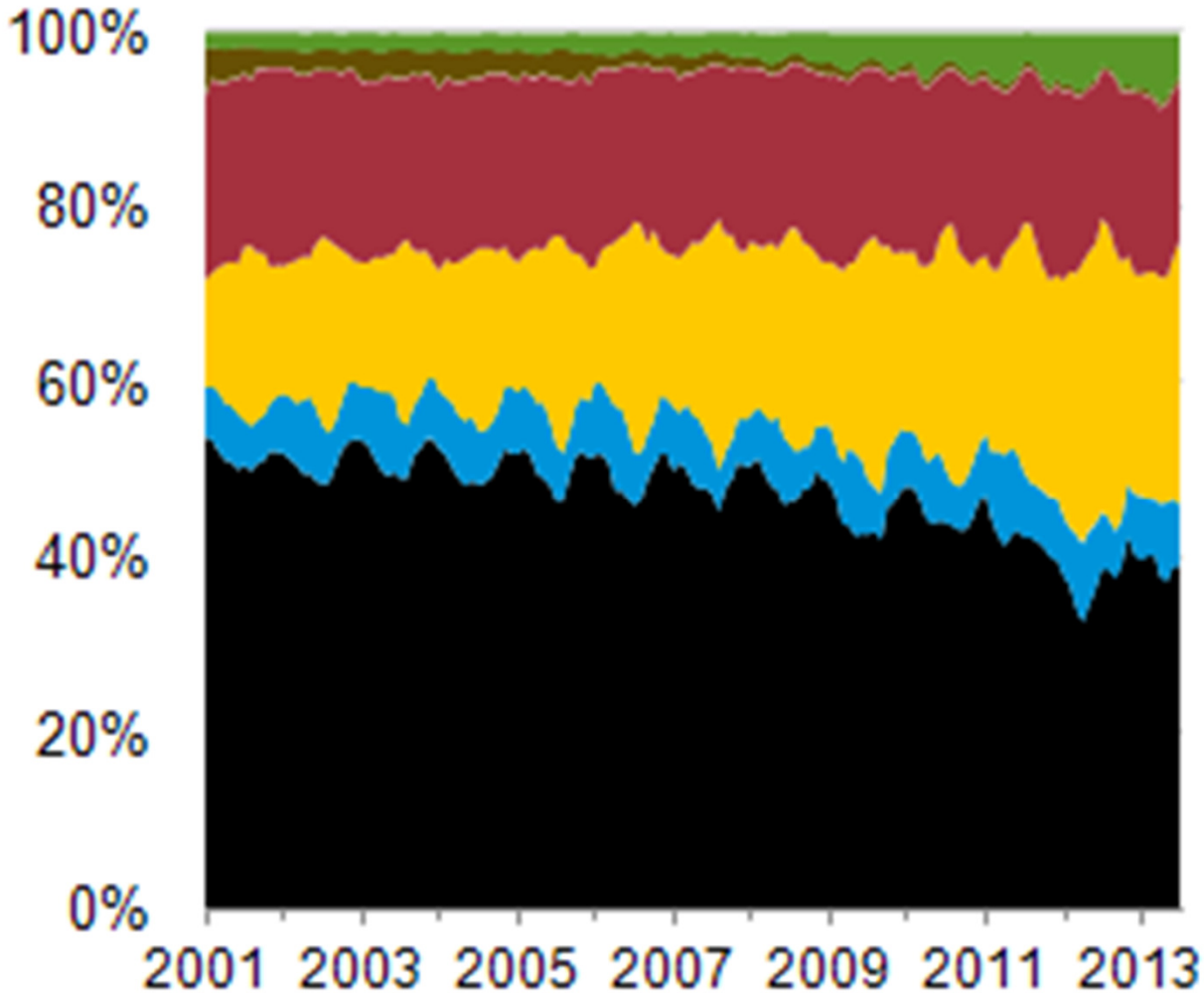
SOURCE: EPA



# U.S. Electricity Generation Capacity 2013

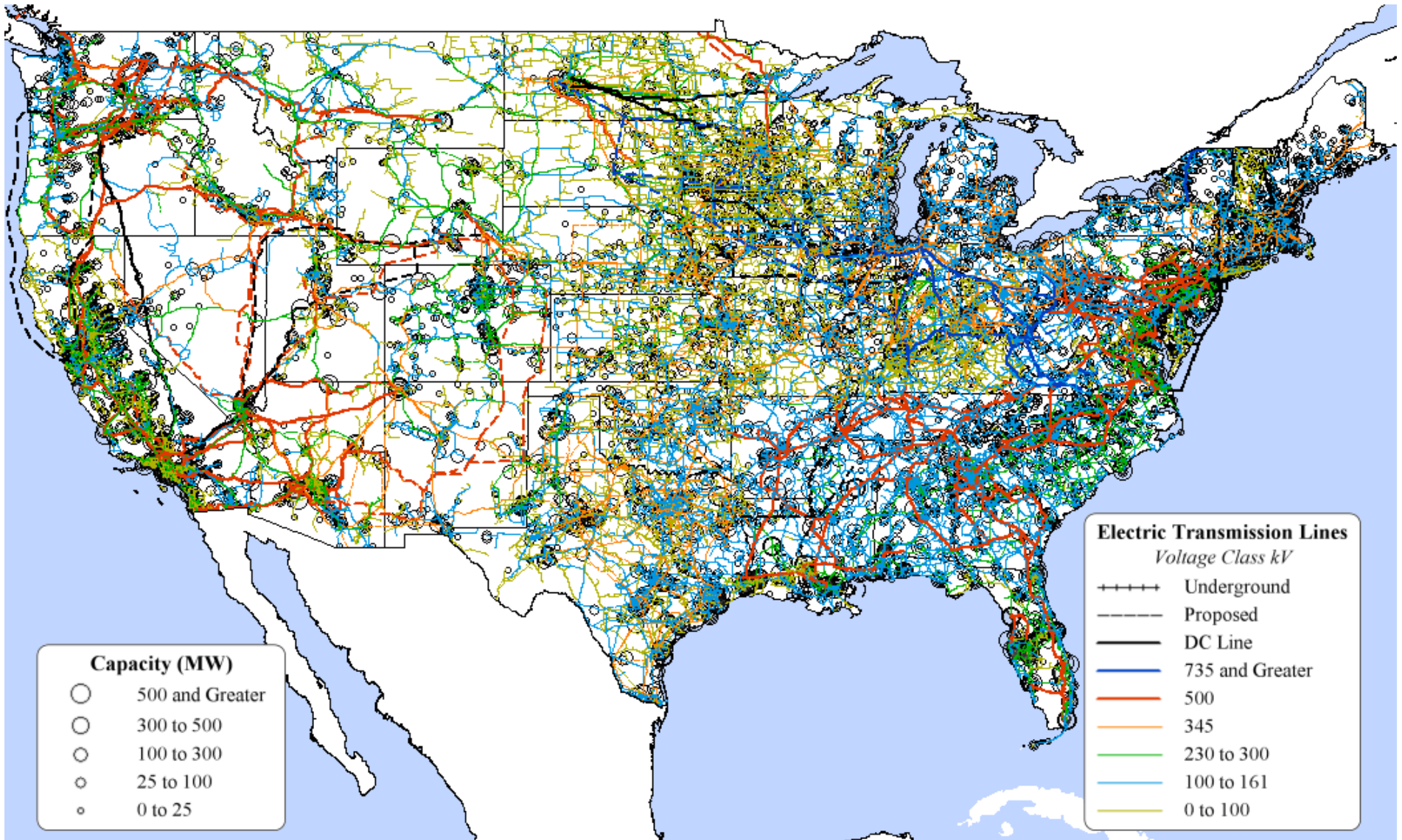


# Mix of Fuels for Electricity Generation in the U.S. - EIA



■ coal ■ hydro ■ natural gas ■ nuclear ■ petroleum ■ non-hydro renewable ■ other

# U.S. Electricity Transmission 2013





# The President's Climate Action Plan

## *The Plan has Three Components:*

- Cut carbon pollution in America
- Prepare the country for the impacts of climate change
- Lead international efforts to combat global climate change



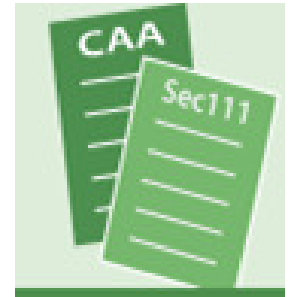
# Reducing Carbon Pollution from Power Plants

## *President's Directive to EPA:*

- Set carbon pollution standards for new and existing power plants under Section 111 of the Clean Air Act
- Engage stakeholders on program design
- Include flexibilities for states
- Tailor standards to reduce costs
- Continue reliance on a range of energy sources
- Consider other regulations that affect the power sector



# 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



# Reducing Carbon Pollution from New Power Plants

## ***Under Section 111(b) of the Clean Air Act:***

- EPA first proposed standards in April 2012
- Received more than 2.5 million comments
- Reissued proposed standards in September 2013 to reflect comments and changes in the power sector
- Will follow the Agency's open and transparent review process, including public comment and a public hearing



# Reducing Carbon Pollution from New Power Plants

## *Proposed Standard Specifies:*

- New large natural gas-fired turbines must achieve 1,000 pounds of CO<sub>2</sub> per megawatt-hour (>250 MW)
- New small natural gas-fired turbines must achieve 1,100 pounds of CO<sub>2</sub> per megawatt-hour (73 to 250 MW)



# Reducing Carbon Pollution from New Power Plants

## *Proposed Standard Specifies:*

- New fossil fuel utility boilers and IGCC units must achieve 1,100 pounds of CO<sub>2</sub> per megawatt-hour over 12 months, or 1,050 lbs CO<sub>2</sub> per megawatt-hour over seven years
- Based on the partial use of carbon capture and storage



# Reducing Carbon Pollution from Existing Power Plants

## *Using Section 111(d) of the Clean Air Act:*

- Issue federal guidelines for states
- Build on state leadership and experience
- Follow the Agency’s open and transparent regulatory process, including public comment and a public hearing
  - Proposed guidelines: June 2014
  - Final guidelines: June 2015
  - State plans due: June 2016



# Stakeholder Engagement

- EPA held a webinar on Section 111 of the Clean Air Act in August to begin the stakeholder engagement process
  - The link to this overview presentation is available at:  
<http://epa.gov/airquality/cps/webinar.html>
- EPA held four teleconferences in September to follow-up on the webinar and help build a common understanding of the task ahead
  - September 9, 2013
    - Community/General Public
    - States
  - September 12, 2013
    - Environmental Groups
    - Industry



# Stakeholder Engagement

- EPA and all 10 Regional Offices held public listening sessions on Section 111(d)
- In total, more than 3300 people attended, and more than 1600 people spoke
- The EPA Region 8 session in Denver was attended by 239 people in person, and another 28 attended a two-hour call-in session. In total, 153 people provided comments.
- Region 8 held additional focused calls with utilities, states offices (environmental, energy) and PUCs



# Stakeholder Engagement

## ***Concerns Raised to Date:***

- The standards may affect communities and industries that rely on fossil fuels
- Utilities may have stranded assets if the standards shut down coal-fired plants
- The timeframe for the standards is too short
- EPA has not heard from the people who will be the most affected by the standards
- Energy prices will go up and affect the poor, the elderly, and hurt the economy
- EPA has already imposed too many standards on power plants



# Reducing Carbon Pollution from Existing Power Plants

## *Design Approaches Suggested by Stakeholders:*

- **Source-based approach**
  - Emission reduction measures that could be taken directly by affected sources (power plants)
- **System-based approach**
  - Broader portfolio of measures including those that could be taken beyond the affected sources but still reduce emissions at the sources



# State Plans Under Section 111(d)

## *Design Approaches for State Plans:*

- States determine the combination of measures that will meet the guidelines
- State plans:
  - Can be identical to EPA's guidelines
  - Can differ from, but be equivalent to, EPA's guidelines
- State plans provide for implementation and enforcement
  - States have the flexibility in their plans to take into consideration, among other factors, the remaining useful life of the source



# Building On State Leadership

- Many states already have climate and energy policies that reduce greenhouse gases from the electric power sector
- Their programs show the range of opportunities for cost-effective reductions
- States also have in-depth knowledge of the power industry in their jurisdictions
- EPA is seeking to build a Section 111(d) program that preserves and supports this state leadership and knowledge



# Thank You!

Shaun McGrath, Regional Administrator  
U.S. Environmental Protection Agency  
Region 8