

# EPA's Clean Power Plan

Proposed Rules for Reducing GHG Emissions from Power Plants

Presentation to MWAQC  
July 31, 2014

1

## US Greenhouse Gas Emissions

Sector	Percentage
Electricity	32%
Transportation	28%
Industry	20%
Commercial & Residential	10%
Agriculture	10%

- \* Fossil fuel-fired power plants are the largest source of U.S. GHG emissions
- \* Electric power sector responsible for 32% of GHG emissions in 2012
- \* GHG emissions from electricity have increased by about 11% since 1990

2

## The Clean Air Act

### The Clean Air Act (CAA) – 1970

- \* *Requires EPA to set standards for different types of air pollution to protect public health and welfare*
- \* **Section 111:** establishes a mechanism for setting performance standards for new and existing sources
  - \* **Section 111(b):** Gives EPA authority to establish standards for new, modified and reconstructed sources
  - \* **Section 111(d):** Gives EPA authority to establish guidelines for state-based programs to achieve reductions from existing sources

3

## Regulation of GHGs Under CAA

### Timeline:

- \* **2007:** Supreme Court decision *Massachusetts v. EPA*
  - \* *Affirms EPA authority to regulate GHGs under CAA*
- \* **2009:** EPA Endangerment Finding
  - \* *GHGs endanger public health and welfare*
- \* **2010:** First CAA regulation of GHGs
  - \* *Mobile source tailpipe standards*
- \* **2012:** First EPA proposal to limit GHGs for new power plants

4

## GHG Regulations for Power Plants

- \* **June 2013** – President’s Climate Action Plan
  - \* *Directs EPA to set GHG standards for new and existing power plants*
- \* **Sept 2013** – Proposed CO<sub>2</sub> Standards for New Sources 111(b)
- \* **June 2014** – Proposed CO<sub>2</sub> Standards for Existing Sources 111(d)
- \* **June 2015** – Expected final rules for both new & existing plants
- \* **June 2016** – State Plans Due for existing power plants
  - \* *Optional Extension to 2017 (single state plan) or 2018 (multi-state plan)*
- \* **2020-2030** – Implementation and reporting

5

## New Source Standards

Sets a cap on the *rate of emissions*

Separate limits for new natural gas and coal plants

- \* Natural gas: **1,000** lbs/MWh/year
- \* Coal: **1,100** lbs/MWh/year
  - \* OR coal plants can average emissions over 7 years if agree to meet more stringent standard (1,000-1,050 lbs/MWh/year)
  - \* Requires coal to use carbon capture & sequestration (CCS)

*Comments were due March 2014, final rule expected in June 2015*

6

## Existing Source Standards

- \* Sets state-specific goals for 2030
  - \* Except VT and DC – they have no affected power plants
  - \* Interim goals starting 2020
- \* Goal = *emissions rate* (lbs. CO<sub>2</sub>/MWh)
  - \* CO<sub>2</sub> emissions from a state's power plants ÷ electricity they generate
  - \* States have the option to convert to a mass goal
- \* Goal = EPA determination of emissions reductions each state can reasonably achieve by 2030 using  
**Best System of Emissions Reduction (BSER)**
  - \* EPA has used BSER for other standards under 111(d)

7

## Best System of Emissions Reduction

### Four Building Blocks:

- \* **Improve coal plants efficiency**
- \* **Switch from coal to natural gas & use natural gas plants more**
- \* **Increase renewable energy, keep nuclear plants open**
- \* **Increase demand-side energy efficiency**

### Goals based on EPA analysis of BSER opportunities in each state

- \* State goals differ A LOT – grid infrastructure, market dynamics, existing policies affect what can be reasonably achieved
- \* States do NOT have to implement measures the same way EPA used to calculate the goal

8

## Comparison of Proposed State Goals

	Historic Emissions Rate (2012)	Average Interim Goal 2020-29	2030 Emission Rate Goal	Required Change
North Dakota	1,994	1,817	1,783	11%
Maryland	1,870	1,347	1,187	37%
Virginia	1,297	884	810	38%
Washington State	763	264	215	72%

Emissions rate = lbs/MWh/year

9

## State Plans

- \* Identify affected entities
- \* Describe the plan approach and scope (single or multi-state)
- \* Identify state emission performance level
- \* Demonstrate that plan is projected to achieve the emission performance goal
- \* Identify emissions standards that are: quantifiable, non-duplicative, permanent, verifiable, enforceable
- \* Identify monitoring, reporting, recordkeeping requirements
- \* Identify milestones and “backstop” measures
- \* Hold a hearing on the state plan

10

## Alternative “less ambitious goals”

Proposed Goals (“Reasonable assumptions” of BSER Implementation)	Alternative Goals (“Less ambitious assumptions” of BSER Implementation)
6% improvement in coal plant efficiency	4% improvement in coal plant efficiency
Increase natural gas plant use to 70% capacity	Increase natural gas plant use to 65% capacity
13% renewables by 2030	9.4% renewables by 2025
10.7% cumulative savings by start of 2030	5.2% cumulative savings by start of 2025

11

## Environmental Benefits

Reduce carbon pollution from the power sector

**30 percent by 2030** (using 2005 baseline)

\* Mitigates **730 million metric tonnes** of CO<sub>2</sub>

Reduce criteria pollutants over **25 percent by 2030**, mitigating:

\* **~55,000 tons** PM<sub>2.5</sub>

\* **~450,000 tons** sulfur dioxide

\* **~417,000 tons** nitrogen dioxide

12

## Health Benefits

EPA estimates:

- \* **2,700 – 6,600** premature deaths prevented
- \* **140,000 – 150,000** asthma attacks in children prevented
  
- \* Climate and health benefits:  
**worth \$55– \$93 billion in 2030**

13

## Things to Watch

- \* What happens if there are delays in implementation? e.g.:
  - \* Will Congress try to prevent implementation?
  - \* Will the Courts modify or overturn the rules?
  
- \* **How** will the state plans actually be developed?  
(Stakeholder groups? Task Force? Internal Decision?)
  
- \* How will this affect private-sector decisions?  
(Utilities, businesses, investors)

14

## Questions & Opportunities for Comment

- \* 120 day public comment period (Due: Oct 16, 2014)
- \* States can comment on the proposed % reduction target, methodology, components of emissions reduction considered and *many* more issues.
- \* Public Hearing - **July 30** at EPA HQ in Washington, DC