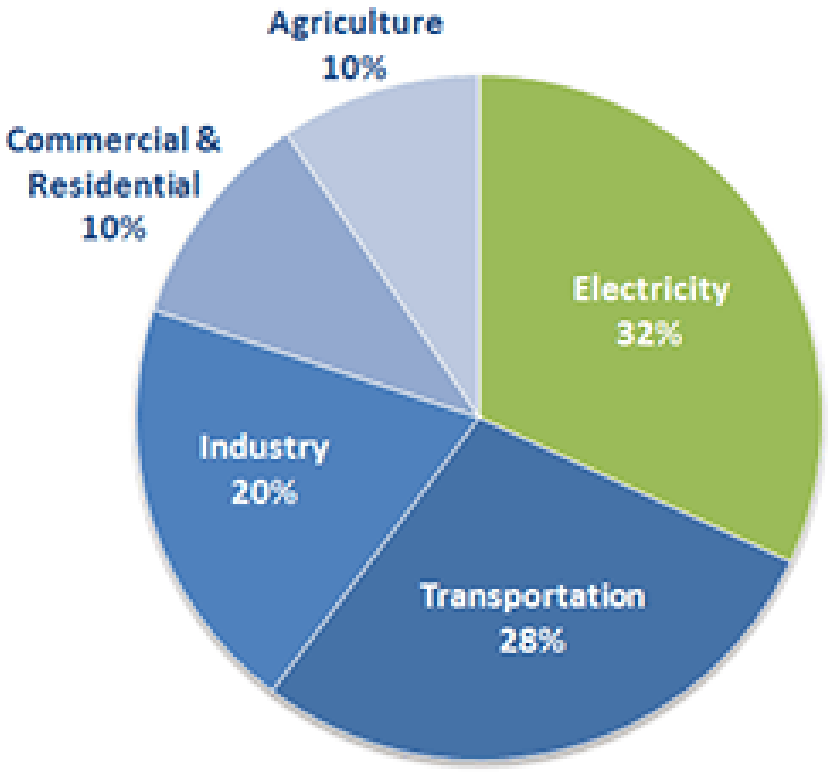
EPA's Clean Power Plan

Proposed Rules for Reducing GHG Emissions from Power Plants

Presentation to MWAQC TAC
July 17, 2014

US Greenhouse Gas Emissions



* 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

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

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

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 CO2 Standards for New Sources *111(b)*
* **June 2014** – Proposed CO2 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

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

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_2/MWh)
  * CO_2 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)*

Best System of Emissions Reduction

Four Building Blocks:

* Improve efficiency of coal plants
* Switch to from coal to natural gas, use existing natural gas plants more
* Increase renewable energy, keep nuclear plants open
* Increase energy efficiency of electricity consumption – 1.5% per year

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

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

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	763	264	215	72%

Emissions rate = lbs/MWh/year

State Plans

Must:

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

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

Environmental Benefits

(If implement proposed standards)

Reduce carbon pollution from the power sector **30 percent** by 2030 (using 2005 baseline)

* Mitigates **730 million metric tonnes** of CO2

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

* **54,000 - 56,000 tons** of PM2.5
* **424,000 - 471,000 tons** of sulfur dioxide
* **407,000 - 428,000 tons** of nitrogen dioxide

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

Things to Watch

* What will Congress do?
* What will states & utilities do?
* What will the courts do?
* How will compliance be affected by other market and regulatory trends?
* If there are delays in implementation, what will companies do in the mean-time?

Questions & Opportunities for Comment

* 120 day public comment period
* States can comment on the proposed % reduction goal
* Calls and webinars beginning in June 2014
* Public Hearings - **July 30** at EPA HQ in Washington, DC