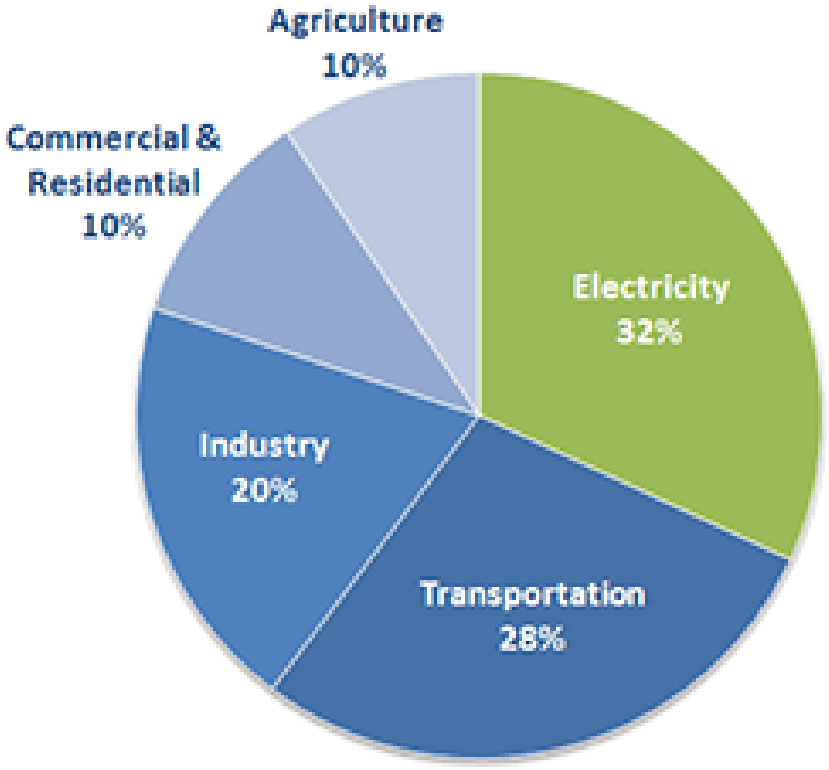
EPA's Clean Power Plan

Final Rule for Reducing GHG Emissions from Power Plants

Presentation to MWAQC-TAC
September 8, 2015

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)
* **August 2015** –Clean Power Plan published for existing plants; Final rule published for New power plants
* **Sept 2016** – State Plans Due for existing power plants
  * *Optional Extension to 2018*
* **2022-2032** – 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)

Existing Source Standards

- Sets state-specific goals for 2032
  - *Except VT and DC – they have no affected power plants*
  - *Interim goals starting 2022*
- Goal = *emissions rate* (lbs. CO2/MWh)
  - CO2 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 2032 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 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

Comparison of Final State Goals

			Proposed CPP		Final CPP	
State	Goal Type	2012 Emissions	2030 Goal	Percent Change	2032 Goal	Percent Change
Maryland	Rate	1,870	1,187	-37%	1,287	-31.2%
	Mass	20,171,027	n/a	n/a	14,347,628	-28.9%
Virginia	Rate	1,297	810	-38%	934	-28.0%
	Mass	27,365,439	n/a	n/a	27,433,111	0.2%

State CO2 Emissions Performance Goals in the COG Region

(Rate based goals displayed in pounds CO_2/MWh/year. Mass goals displayed in short tons CO_2)

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
* Reliability, community engagement

State Plans, Cont

* Some key decisions for State Plans:
  * Submit Abbreviated plan in 2016 & Request Extension to 2018
  * Rate Based or Mass Based Approach
  * Emission Standards or State Measures in the Plan
  * Role/Input from Local Governments and Regional Organizations
  * Role of Cap and Trade, and Multi-State Initiatives

Environmental Benefits

Reduce carbon pollution from the power sector

32 percent by 2030 (using 2005 baseline)

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

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

* **~55,000 tons** PM2.5
* **~450,000 tons** sulfur dioxide
* **~417,000 tons** nitrogen dioxide

Health Benefits

EPA estimates:

* **Up to 3,600** premature deaths prevented
* **90,000** asthma attacks in children prevented

* Climate and health benefits:

worth $34– $54 billion in 2030

Things to Watch

* Several States challenged the rule in court
* 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)

Questions?