

EPA's Clean Power Plan

Final Rule for Reducing GHG Emissions from Power Plants

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US Greenhouse Gas Emissions

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

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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

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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

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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

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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)

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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)

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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

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Comparison of Final State Goals

State	Goal Type	2012 Emissions	Proposed CPP		Final CPP	
			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 CO₂/MWh/year. Mass goals displayed in short tons CO₂)

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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**

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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

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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** PM_{2.5}
 - * **~450,000 tons** sulfur dioxide
 - * **~417,000 tons** nitrogen dioxide

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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

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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)

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