



EPA's Clean Power Plan

February 19, 2015

Summary of Proposed Carbon
Standards for Existing Power Plants

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Basic requirements are quite simple:

- Each state must submit plan to achieve its state-specific CO₂ emission rate standard (lbs/MWh)
 - “interim goal” for 2020-2029 to meet on average
 - “final goal” to meet by 2030 and thereafter
- States must show how they will measure and enforce compliance
- States may convert rate-based standard into mass-based standard (“cap”)
- States can meet the standard any way they choose



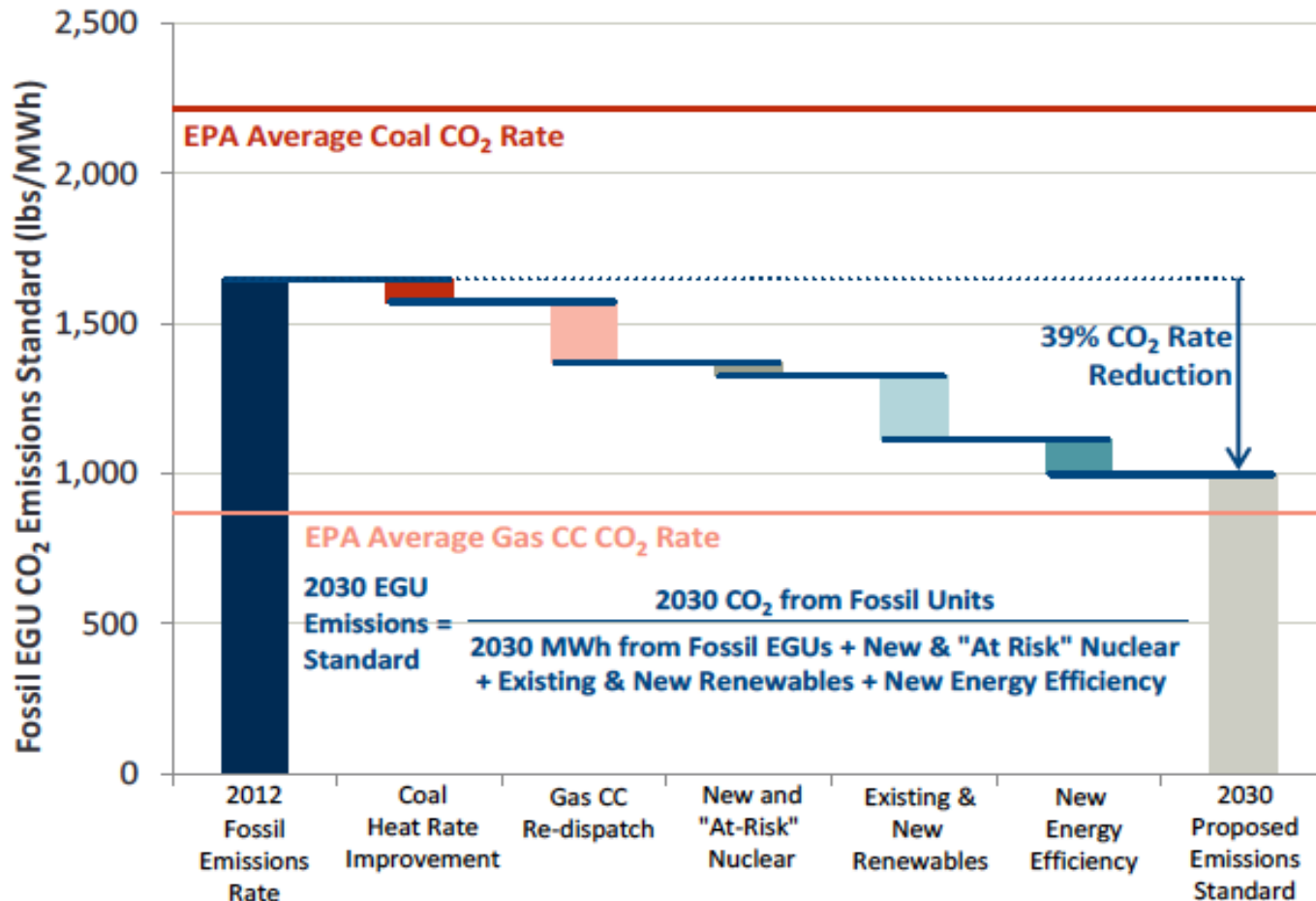
State target calculations are more complicated:

TABLE 1: SUMMARY OF THE BSER BUILDING BLOCKS

BUILDING BLOCKS	DESCRIPTION	ASSUMPTIONS FOR GOAL SETTING FORMULA	NET COST ESTIMATE (\$/METRIC TON)
1 Making existing coal plants more efficient	Reducing the carbon intensity of generation at individual affected EGUs through heat rate improvements	Average heat rate improvement of 6% for coal steam electric generating units (EGUs)	\$6 to \$12
2 Using Existing Gas Plants More Effectively	Reducing emissions from the most carbon-intensive affected EGUs in the amount that results from substituting generation at those EGUs with generation from less carbon-intensive affected EGUs (including NGCC units under construction)	Dispatch to existing and under-construction natural gas combined cycle (NGCC) units to up to 70% capacity factor	\$30
3 Increased Renewable and Nuclear	Reducing emissions from affected EGUs in the amount that results from substituting generation at those EGUs with expanded low- or zero-carbon generation	Dispatch to new clean generation, including new nuclear generation under construction, moderate deployment of new renewable generation, and continued use of existing nuclear generation	\$10 to \$40
4 Increased End-use Energy Efficiency	Reducing emissions from affected EGUs in the amount that results from the use of demand-side energy efficiency that reduces the amount of generation required	Increase demand-side energy efficiency to 1.5% annually	\$16 to \$24



Figure 2
Calculation of National Average Fossil EGU CO₂ Emissions Standards based on BSER

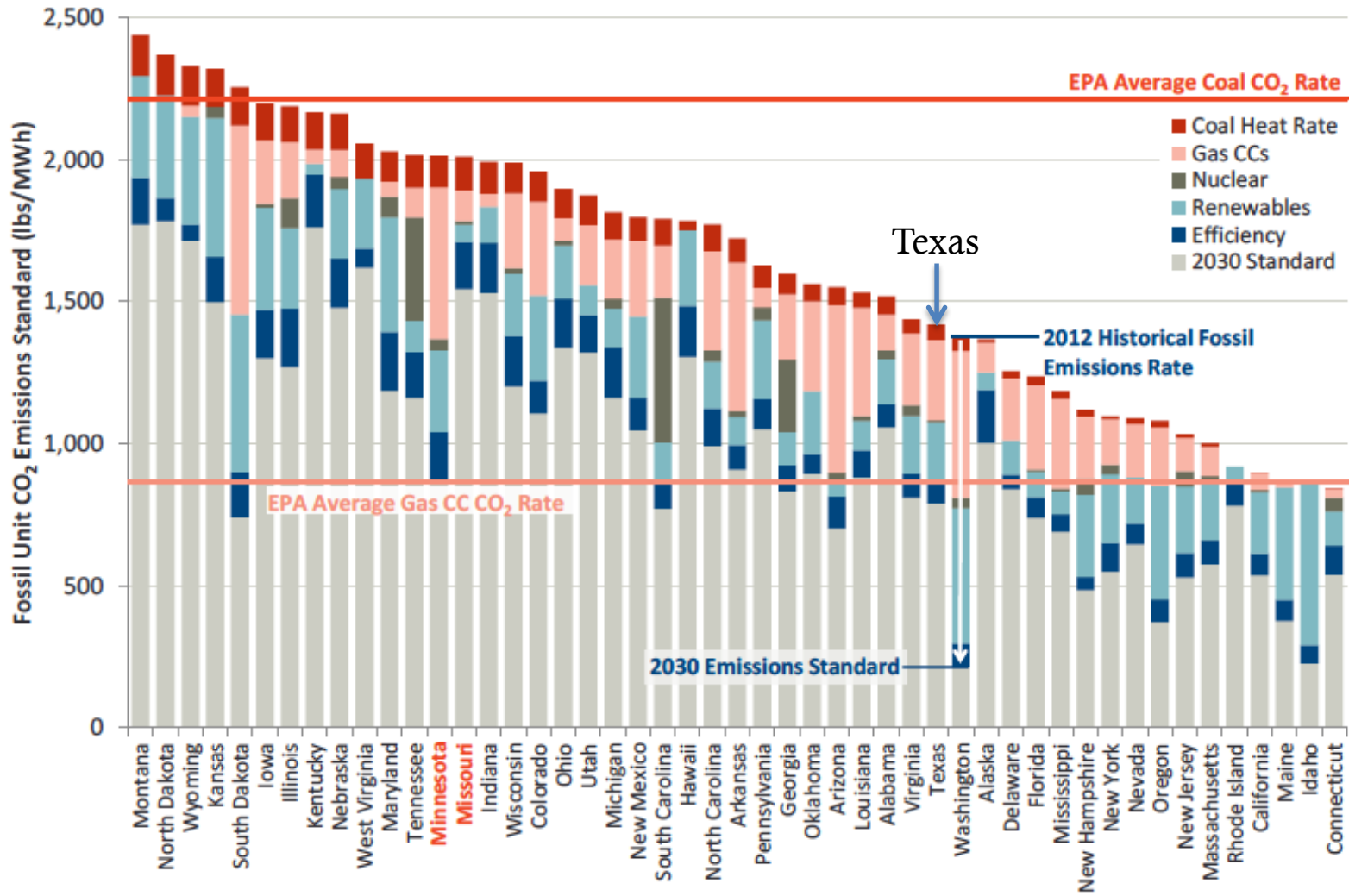


Sources and Notes:

Reflects Option 1 final rate for years 2030 from EPA Technical Support Document: Goal Computation, Appendix 1.

Source: Brattle Group

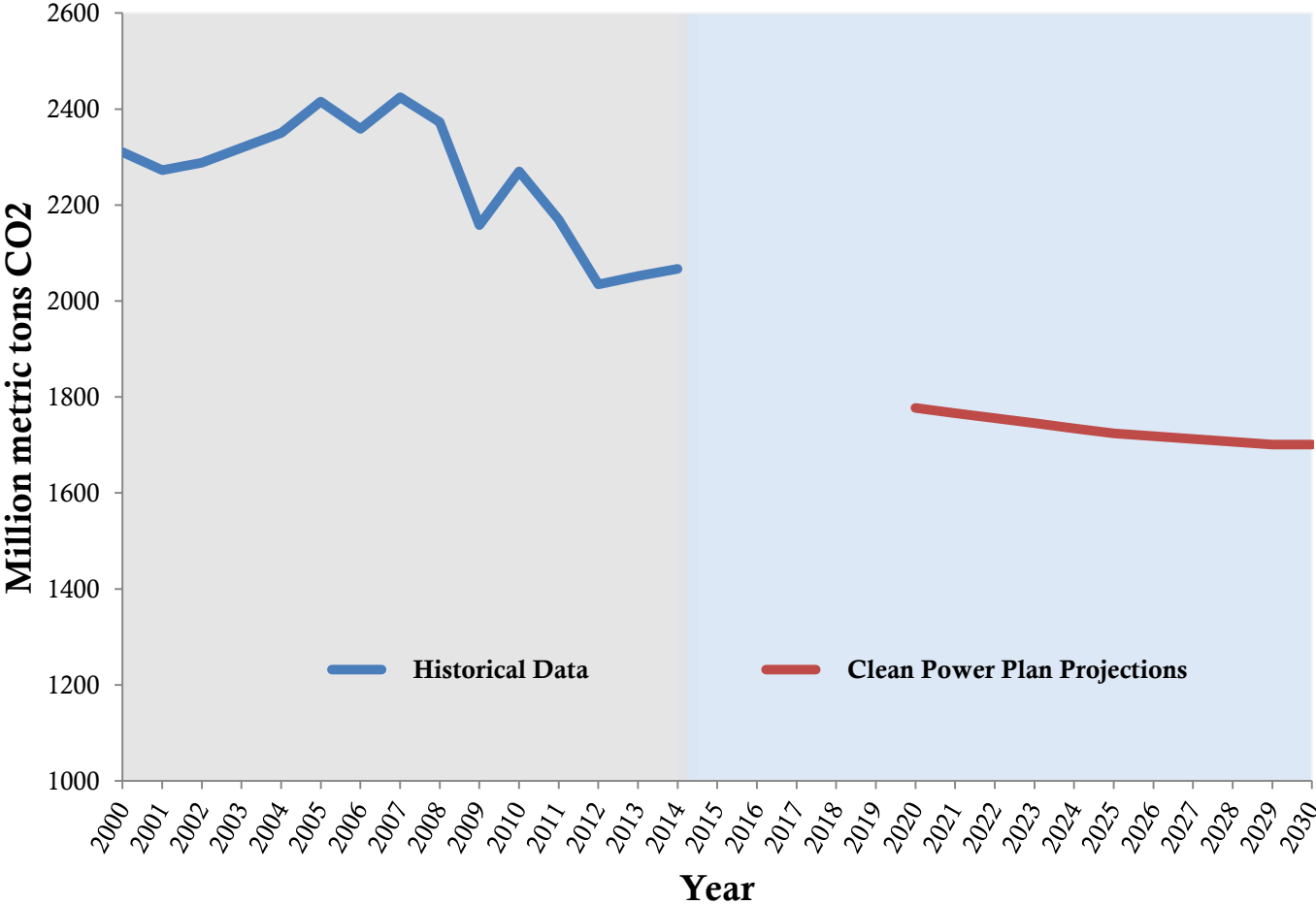
EPA's Proposal: State Emission Rate Targets



Source: Brattle Group



U.S. Power Sector Emissions

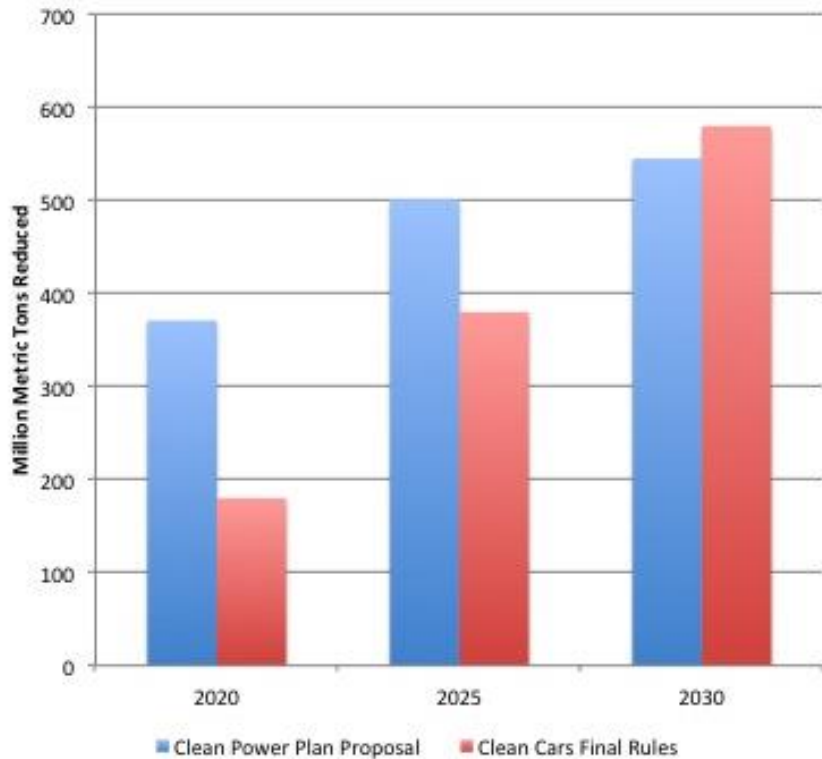




- **Estimated CO2 emissions reductions:**
 - 26% below 2005 levels in 2020
 - 30% below 2005 levels in 2030
- **Benefits outweigh the costs by more than 4-to-1:**
 - Climate and health benefits > \$30 billion in 2020 (2011\$; EPA estimate using central estimate for social cost of carbon plus health benefits from NOx and SOx reductions)
 - Compliance costs < \$7.5 billion in 2020 (annualized 2011\$; EPA estimate)
 - Avoids at least 1,700 premature deaths
 - Prevents at least 95,000 asthma attacks in children



Emission Reductions from Clean Power and Clean Car Rules



Cumulative Reductions from Clean Power and Clean Car Rules (2020-2030)





- **System-based or source-based scope**
- **Revisions to building blocks**
- **Revisions to formula for calculating standard from building blocks**
- **Reductions schedule and “when” flexibility**
- **Inter-state issues: regional cooperation, emissions leakage, and “where” flexibility**
- **State plan options: rate, mass, portfolio**
- **Federal implementation plan**



- **Rule proposed – June 2, 2014**
- **Additional information (NODA) – October, 2014**
- **Rate-to-Mass TSD – November 2014**
- **Comment Period Closed – December 2014**
- **FERC workshops – February, March, 2015**
- **Final rule, proposed FIP – Summer 2015**
- **Congressional Review Act vote – Fall 2015?**
- **State plans due – Summer 2016**
- **Compliance begins – January 2020**



EPA Clean Power Plan proposal and analysis: <http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule>

CEA Report:

<http://www.whitehouse.gov/administration/eop/cea/factsheets-reports>

NRDC Materials:

<http://www.nrdc.org/air/pollution-standards/>

Rhodium Group:

<http://rhg.com/reports/remaking-american-power>

Brattle Group:

<http://www.brattle.com/news-and-knowledge/news/684>

<http://info.aee.net/hs-fs/hub/211732/file-2486162659-pdf/PDF/EPAs-Clean-Power-Plan--Reliability-Brattle.pdf>

Analysis Group:

http://www.analysisgroup.com/uploadedFiles/Publishing/Articles/Analysis_Group_EPA_Clean_Power_Plan_Report.pdf