

# EPA's Clean Power Plan

## NRDC's Initial Summary of Proposed Carbon Standards for Existing Power Plants

June 9, 2014



Natural Resources Defense Council

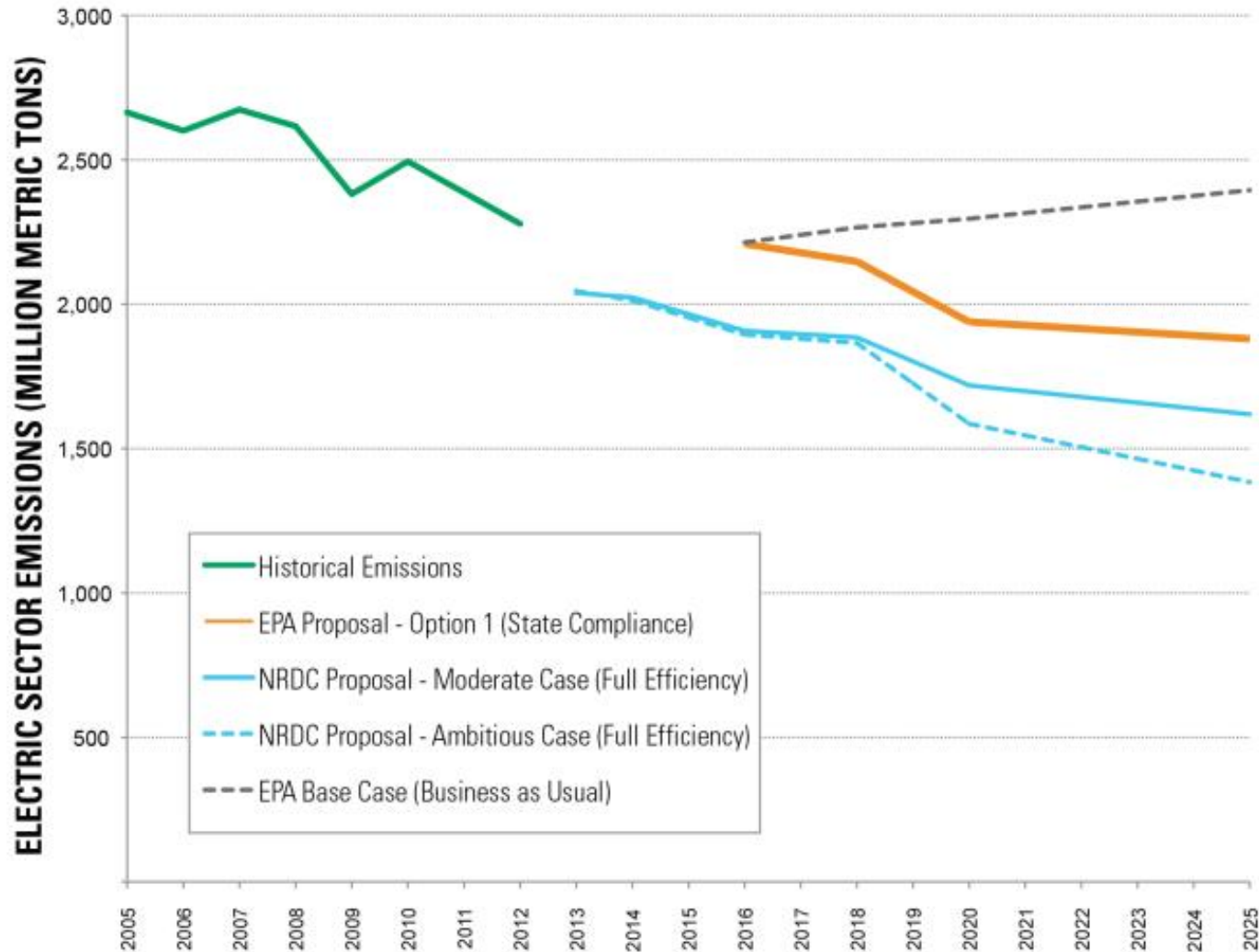
Photo credit: USDA

# EPA's Proposal

- National Outcome: estimated CO<sub>2</sub> emissions reduction of 26% below 2005 baseline by 2020, 30% by 2030
- Benefits far outweigh the costs as estimated by EPA:
  - Climate and health benefits = \$55 to \$93 billion in 2030, while costs are estimated to be between \$7.3 - \$8.8 billion that year.
  - Pollution that leads to soot and smog will be cut by over 25% in 2030; for every dollar invested, American families will see up to \$7 in health benefits
    - Avoids 2,700 to 6,600 premature deaths and 140,000-150,000 asthma attacks in children
  - Electricity bills will be about 8 percent lower from increased use of energy efficiency, saving average families \$8 on monthly residential electricity bills.

# Emissions Trend Estimates

**FIGURE 1: Historic National CO<sub>2</sub> Emissions vs. EPA *Clean Power Plan* Proposal & NRDC Proposal Estimates**



The proposal has two main elements:

1. State-specific CO<sub>2</sub> emission rate goals - two-part goal structure, with an “interim goal” that states must meet on average (2020-2029) and a “final goal” that must be reached by 2030.
2. Guidelines for the development, submission and implementation of state plans.

State-specific CO<sub>2</sub> goals but does not prescribe how a state should meet its goal.

# Calculating a State's Emissions Target

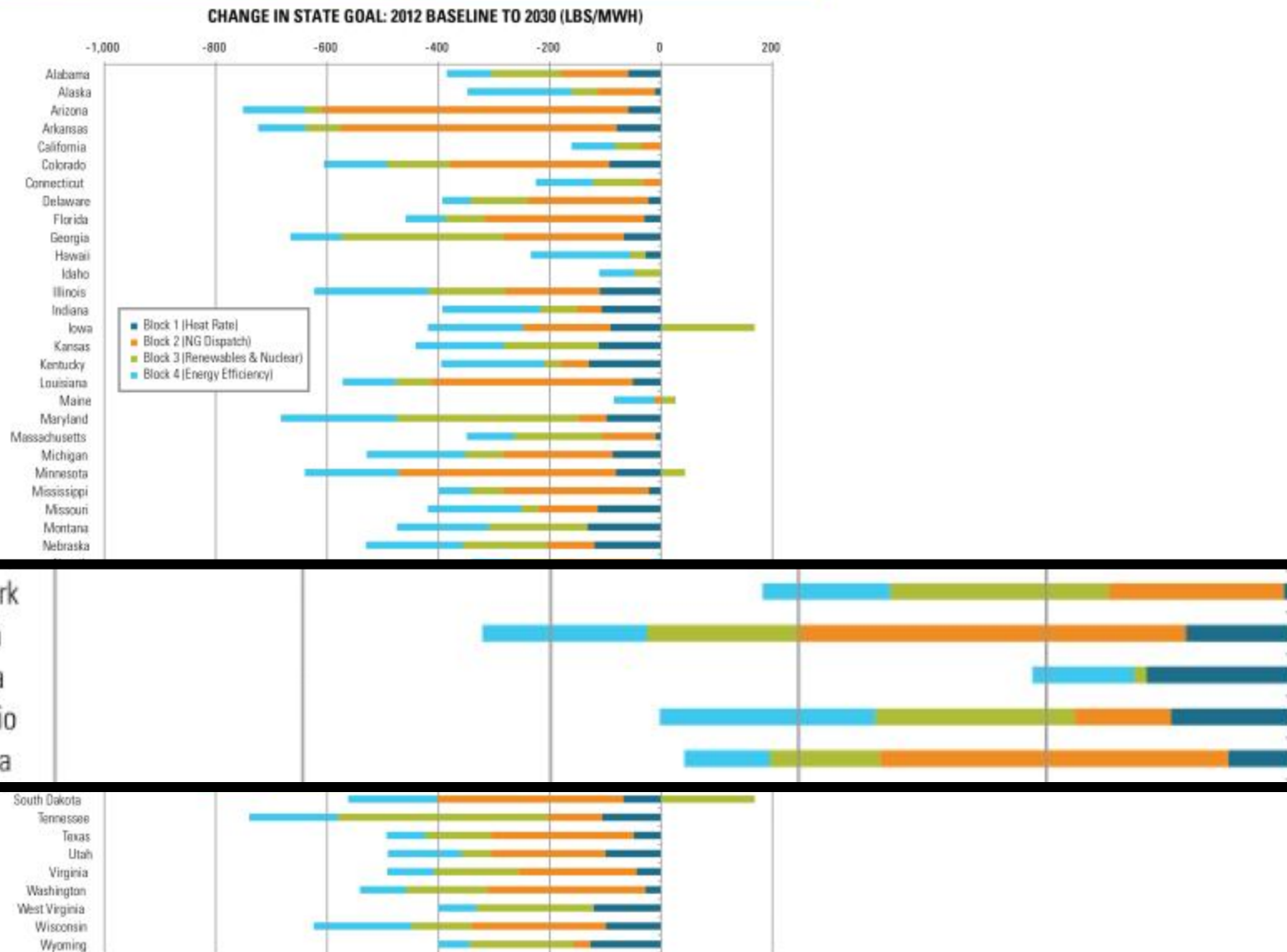
- Best System of Emissions Reduction (BSER) based on a range of measures falling into four main categories, or “building blocks.” – these determine the state goal
- 2012 Baseline = fossil intensity (lbs/MWh) adjusted by adding existing renewables and 6% of existing nuclear to the denominator

**TABLE 1: SUMMARY OF THE BSER BUILDING BLOCKS**

BUILDING BLOCKS	DESCRIPTION	ASSUMPTIONS FOR GOAL SETTING FORMULA	NET COST ESTIMATE (\$/METRIC TON)
<b>1</b> 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
<b>2</b> 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
<b>3</b> 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
<b>4</b> 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

# Calculating a State's Emissions Target

FIGURE 2: Contribution of Each Building Block to the State Goal



# Proposed State Targets

TABLE 2: Proposed State Targets

STATE	2012 Emission Rate (Fossil, Renew, and 6% Nuclear) (lbs/MWh)	Interim Goal (2020 - 2029 average)	Interim Goal Percent Reduction (Compared to 2012)	2030 State Goal (2030 and thereafter)	2030 Goal Percent Reduction (Compared to 2012)	STATE	2012 Emission Rate (Fossil, Renew, and 6% Nuclear) (lbs/MWh)	Interim Goal (2020 - 2029 average)	Interim Goal Percent Reduction (Compared to 2012)	2030 State Goal (2030 and thereafter)	2030 Goal Percent Reduction (Compared to 2012)
Alabama	1,444	1,147	-21%	1,069	-27%	Montana	2,245	1,882	-16%	1,771	-21%
Alaska	1,351	1,097	-19%	1,003	-26%	Nebraska	2,009	1,596	-21%	1,479	-26%
Arizona	1,453	735	-49%	702	-52%	Nevada	988	697	-29%	647	-34%
Arkansas	1,640	968	-41%	910	-45%	New Hampshire	905	546	-40%	486	-46%
California	698	558	-20%	537	-23%	New Jersey	932	647	-31%	531	-43%
Colorado	1,714	1,159	-32%	1,108	-35%	New Mexico	1,588	1,107	-30%	1,048	-34%
Connecticut	785	597	-22%	540	-29%	New York	983	635	-35%	549	-44%
Delaware	1,234	913	-26%	841	-32%	North Carolina	1,646	1,077	-35%	992	-40%
Florida	1,200	794	-34%	740	-38%	North Dakota	1,994	1,817	-9%	1,783	-11%
Georgia	1,500	891	-41%	834	-44%	Ohio	1,850	1,452	-22%	1,338	-28%
Hawaii	1,540	1,378	-11%	1,306	-15%	Oklahoma	1,387	931	-33%	895	-35%
Idaho	339	244	-28%	228	-33%	Oregon	717	407	-43%	372	-48%
Illinois	1,895	1,366	-28%	1,271	-33%						
Indiana	1,923	1,607									
Iowa	1,552	1,341									
Kansas	1,940	1,578									
Kentucky	2,158	1,844									
Louisiana	1,466	948									
Maine	437	393									
Maryland	1,870	1,347									
Massachusetts	925	655									
Michigan	1,696	1,227									
Minnesota	1,470	911									
Mississippi	1,130	732									
Missouri	1,983	1,621									

New York	983	635	-35%	549	-44%
North Carolina	1,646	1,077	-35%	992	-40%
North Dakota	1,994	1,817	-9%	1,783	-11%
Ohio	1,850	1,452	-22%	1,338	-28%
Oklahoma	1,387	931	-33%	895	-35%

# Changes Needed:

- EPA's proposal can and should be strengthened.
- NRDC believes the pollution reductions could be greater at a reasonable cost.
- In particular, states could do more to increase energy efficiency and the use of renewables than EPA assumed.
- Natural Gas: if new gas plants can be used for compliance, they need to be factored into the goal setting – symmetry principle
- Nuclear: structure and incentives do not factor in safety and economic factors



# Next steps

EPA receiving comments for 120 days and will issue final standards by June 2, 2015.

States will submit plans by June 30, 2016, with some limited opportunity for extensions

EPA is proposing to evaluate and approve state plans based on four general criteria:

1. Enforceable measures that reduce CO<sub>2</sub> emissions from existing power plants;
2. Projected achievement of EPA's state-level goals, on EPA's timeline;
3. Quantifiable and verifiable emission reductions; and
4. A process for biennial reporting on plan implementation, progress toward achieving CO<sub>2</sub> goals, and implementation of corrective actions, if necessary.



# More Information & Contacts

The detailed information from EPA on their Clean Power Plan is available at: <http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule>

NRDC's Fact Sheet summarizing the rule is available at: <http://www.nrdc.org/air/pollution-standards/files/pollution-standards-epa-plan-summary.pdf>

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

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