

Clean Power Plan Benefits and Carbon Pollution Targets

Preliminary Analysis from [NRDC](#) – August 4, 2015

The Clean Power Plan (CPP) announced by President Obama is a game-changer – the first-ever limits on carbon pollution from power plants.

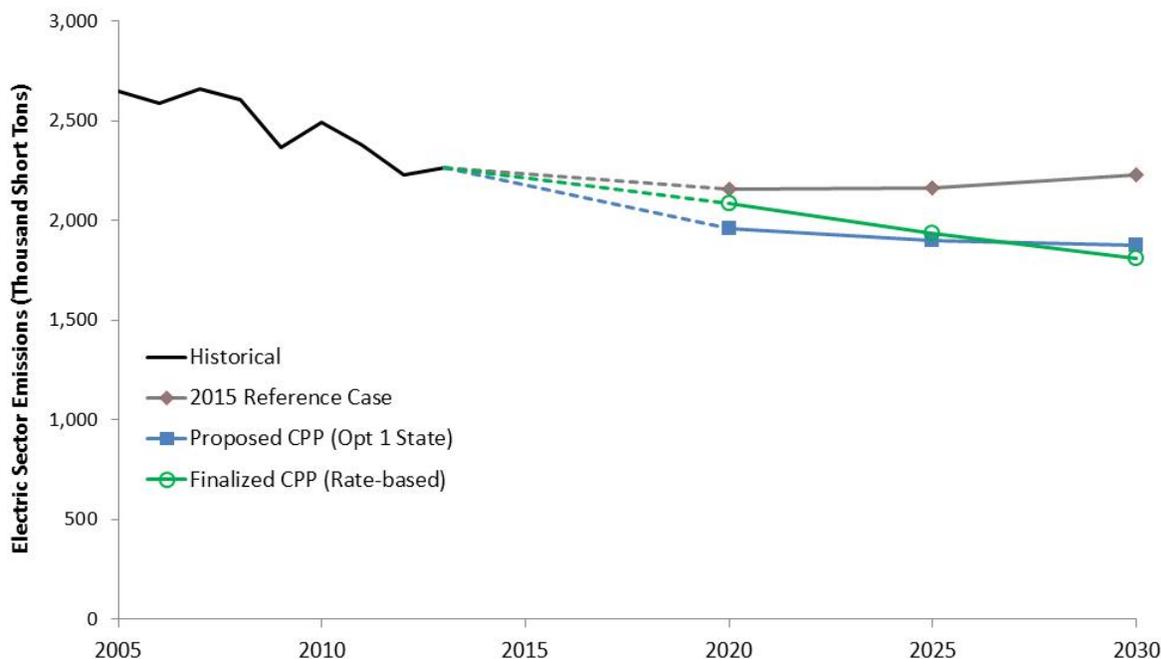
America is taking historic action against climate change, the greatest environmental, public health and humanitarian threat of our time—and a threat whose impacts we’re already seeing in extreme weather, drought, and more wildfires, for example. Limiting carbon pollution from the nation’s power plants is the single biggest step we can take to fight climate change today. The U.S. Environmental Protection Agency (EPA) has finalized the Clean Power Plan, setting the first federal standards on the nation’s largest source of carbon pollution –power plants. This major step forward to rein in power plant pollution will protect our health now, and helps to safeguard future generations from the worst impacts of climate change.

The Clean Power Plan sets flexible and achievable standards that allow each state to design its own most cost-effective pathway toward a cleaner electricity system. Achieving the Clean Power Plan goals will protect public health and expand the nation’s economy through investment in clean energy resources. We can take action now to achieve a clean energy future by transitioning away from fossil fuels that endanger our health. And America will be well-positioned to continue its global leadership on climate change because the Clean Power Plan should keep us on track to meet the Administration’s international goals.

Benefits of the Clean Power Plan

Nationally, EPA projects the final Clean Power Plan (CPP) will reduce carbon pollution from the electric sector by 32 percent from 2005 levels by 2030. The figure below compares the EPA proposed rule to the final rule. The projected emissions for the final rule rate and mass targets will have almost the same carbon dioxide (CO₂) emissions outcome so only the rate-based policy scenario is shown in Figure 1.

Figure 1: Projected National CO₂ Emissions under the Clean Power Plan



The Clean Power Plan will cut pollution that leads to soot and smog by more than 20 percent in 2030 and avoid up to 3,600 premature deaths, 90,000 asthma attacks, and prevent 300,000 missed work and school days. EPA estimates climate and health benefits of \$34 billion to \$54 billion in 2030, far exceeding the \$8.4 billion cost. Expected investments in energy efficiency result in an 8 percent decline in electricity bills. These efficiency investments will save Americans nearly \$85 on annual household energy bills in 2030 for a total consumer savings of \$155 billion from 2020-2030.

New Carbon Pollution Targets: Fair and Consistent Treatment of Power Plants and States

The state emissions reduction targets in the EPA's final Clean Power Plan treat all power plants and all states consistently and fairly. The EPA designed them based on extensive stakeholder input and public comments. We are confident that the final carbon pollution limits will be achievable for each state and present tremendous opportunities for investment in cost-effective clean energy.

The final state targets are based on assessing the carbon pollution reduction potential of low-emitting electricity generating resources across three regions of the country that share interconnected electricity grids (the Eastern Interconnect; the Western Interconnect; and the Texas Interconnect). This approach recognizes that generating resources in each interconnected region are available to others in the region to assist in reducing the carbon pollution from electricity consumed in each state.

States can meet customer needs for reliable electricity services with much less carbon pollution by putting priority on using lower-emitting options like energy efficiency (which avoids the need for electric generation), wind, solar, other renewables, nuclear, and efficient natural gas, and by relying less on or improving the efficiency of coal plants. States could also prioritize cost-effective clean energy options, including investments in energy efficiency programs and renewable energy projects, to meet their targets.

EPA has been conservative in estimating the size of the quantity of clean energy resources available to the states and the amount of carbon pollution reduction they can make. EPA assessed the potential to cut coal plant emissions (by making coal plants more efficient and by substituting more renewable and gas-fired electricity) for each of the three interconnected regions. EPA did the same for the potential to reduce gas plant emissions by substituting renewable energy. The agency then set state targets based on the least demanding of three regional assessments of the potential to reduce emissions at coal and gas plants. Other technologies and programs not used in target setting, such as energy efficiency, also increase flexibility and will ease compliance.

States and stakeholders expressed concern that EPA's June 2014 proposed rule had very different targets across states. Some coal-heavy states would have been asked to achieve very little reduction in carbon pollution. The revised approach still sets targets for coal-heavy states that are less demanding than those for states with cleaner generation resources, but the size of the disparity has been significantly reduced.

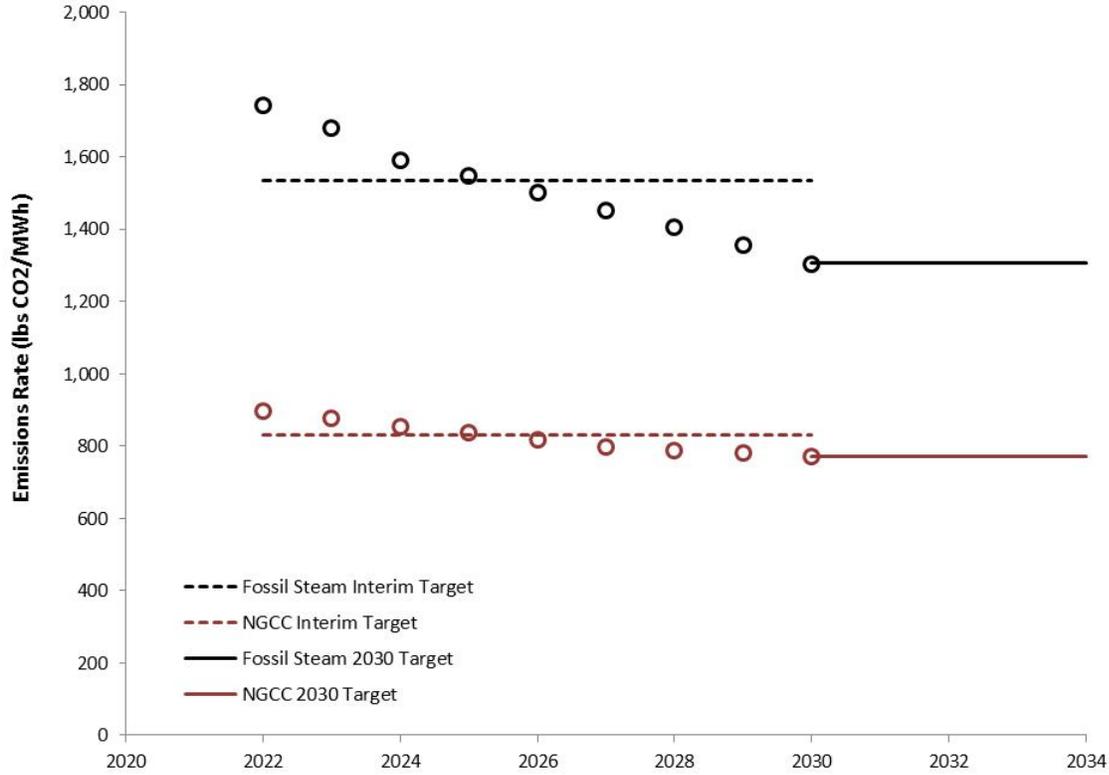
EPA has established four different pollution targets for existing fossil power plants on a plant type and state basis – two are based on an emissions performance rate (pounds per megawatt-hour) and two are based on a mass-based limit (tons). The following is a description of the four targets a state can choose to adopt, depending on the policy approach they pursue in their state plan:

- 1) Nationally consistent emissions performance rates by power plant type:
 - a) Fossil-fuel fired steam units (primarily coal); and
 - b) Stationary combustion turbines (primarily natural gas).
- 2) State average emissions performance rates based on the targets above and the mix of electricity generated from steam (coal) and combustion turbines (gas) in 2012.
- 3) State mass-based targets for plans that regulate existing plants.
- 4) State mass-based targets for plans that regulate both existing and new plants.

The nationally consistent emissions performance rates by power plant type decline over time from 2022 to 2030, providing a glide path. In 2030 and beyond, the nationally consistent standards are:

- Fossil-fuel fired steam units (primarily coal): 1,305 lb CO₂/MWh
- Stationary combustion turbines (primarily natural gas): 771 lb CO₂/MWh

Figure 2: National Rate Targets by Power Plant Type



Under this approach, all coal plants across the country are subject to the same standard and all natural gas plants across the country are subject to the same standard.

State emissions performance rates based on the targets above and each state's mix of electricity generated from steam and combustion turbines in 2012 are shown in Figure 3, for both the interim period from 2022 to 2029, and for 2030 and beyond. The figures also show the much wider spread of targets in the proposed rule. State targets were much less consistent in the proposed rule, and the range of state targets has now narrowed in the final rule.

Figure 3: Final State Rate-based Targets for the Interim Period (2022-2029)

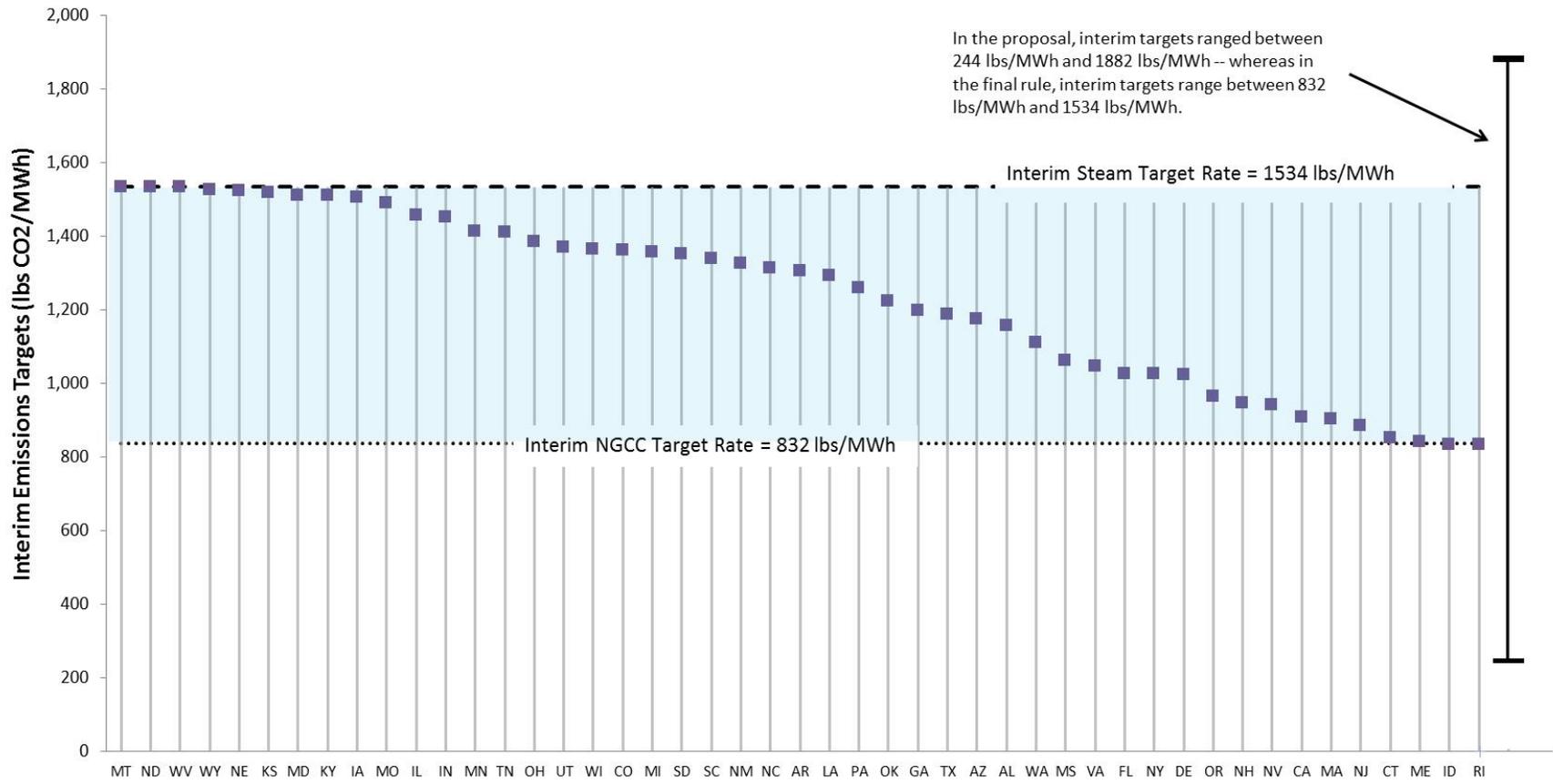
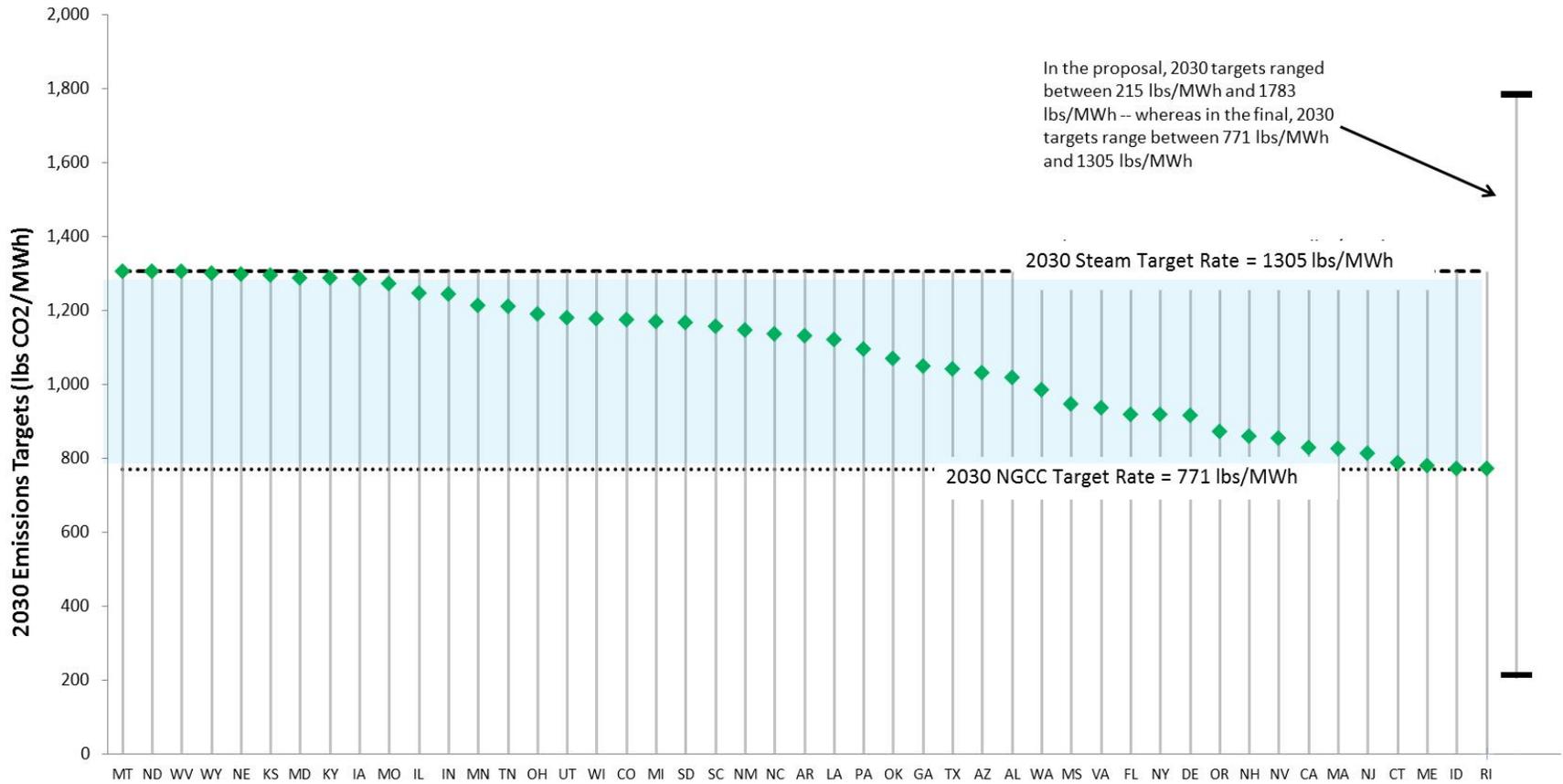


Figure 4: Final State Rate-based Targets in 2030



The rule also establishes mass-based state targets for state plans. There are two versions: one for mass-based targets that cover just existing power plants and one that also include new plants. There are many reasons for states to opt to include new plants into a mass-based approach, including to address competitiveness issues among plants and ensure a good environmental outcome. In the first option, states must also include provisions to prevent inflation of the target by the operation of new plants outside the cap. Both the rate and mass-based goals are shown for the states in the table below.

Table 1: Final Rate and Mass-based State Targets

State	Emissions Rate (lbs/MWh)			Total Emissions (million short tons)				
	2012 Rate	Interim (2022-2029)		2012 Emissions	Interim (2022-2029)	Interim (2022-2029)	2030 Mass Target, Existing Only	2030 Mass Target, Existing + New
		Rate Target	2030 Rate Target		Mass Target, Existing Only	Mass Target, Existing + New		
AK		TBD	TBD	2	TBD	TBD	TBD	TBD
AL	1,518	1,157	1,018	76	62	63	57	58
AR	1,779	1,304	1,130	40	34	34	30	31
AZ	1,552	1,173	1,031	40	33	34	30	32
CA	963	907	828	46	51	54	48	53
CO	1,973	1,362	1,174	42	33	35	30	32
CT	846	852	786	7	7	7	7	7
DE	1,254	1,023	916	5	5	5	5	5
FL	1,247	1,026	919	118	113	115	105	107
GA	1,600	1,198	1,049	63	51	52	46	47
HI		TBD	TBD	5	TBD	TBD	TBD	TBD
IA	2,195	1,505	1,283	38	28	29	25	25
ID	858	832	771	1	2	2	1	2
IL	2,208	1,456	1,245	96	75	76	66	67
IN	2,021	1,451	1,242	107	86	87	76	77
KS	2,319	1,519	1,293	34	25	25	22	22
KY	2,166	1,509	1,286	91	71	72	63	64
LA	1,618	1,293	1,121	43	39	40	35	36
MA	1,003	902	824	13	13	13	12	12
MD	2,031	1,510	1,287	20	16	16	14	14
ME	873	842	779	2	2	2	2	2
MI	1,928	1,355	1,169	70	53	54	48	48
MN	2,033	1,414	1,213	28	25	26	23	23
MO	2,008	1,490	1,272	78	63	63	55	56
MS	1,185	1,061	945	26	27	28	25	26

Table 1 (Continued): Final Rate and Mass-based State Targets

State	Emissions Rate (lbs/MWh)			Total Emissions (million short tons)				
	2012 Rate	Interim (2022-2029)		2012 Emissions	Interim (2022-2029)		2030 Mass Target, Existing Only	2030 Mass Target, Existing + New
		Rate Target	2030 Rate Target		Mass Target, Existing Only	Mass Target, Existing + New		
MT	2,481	1,534	1,305	18	13	13	11	12
NC	1,780	1,311	1,136	59	57	58	51	52
ND	2,368	1,534	1,305	33	24	24	21	21
NE	2,161	1,522	1,296	27	21	21	18	18
NH	1,119	947	858	5	4	4	4	4
NJ	1,091	885	812	15	17	18	17	17
NM	1,798	1,325	1,146	17	14	14	12	13
NV	1,102	942	855	16	14	15	14	15
NY	1,140	1,025	918	35	34	34	31	32
OH	1,900	1,383	1,190	102	83	83	74	75
OK	1,565	1,223	1,068	53	45	45	40	41
OR	1,089	964	871	8	9	9	8	9
PA	1,682	1,258	1,095	117	99	101	90	91
RI	918	832	771	4	4	4	4	4
SC	1,791	1,338	1,156	36	29	29	26	26
SD	2,229	1,352	1,167	3	4	4	4	4
TN	2,015	1,411	1,211	41	32	32	28	29
TX	1,566	1,188	1,042	241	208	213	190	198
UT	1,874	1,368	1,179	31	27	28	24	25
VA	1,477	1,047	934	27	30	30	27	28
WA	1,566	1,111	983	7	12	12	11	12
WI	1,996	1,364	1,176	42	31	32	28	28
WV	2,064	1,534	1,305	72	58	59	51	52
WY	2,331	1,526	1,299	50	36	37	32	33

EPA has also released [state-focused fact sheets](#) containing further details on the targets and glide path trajectories for each state.