

The Clean Power Plan Brief Sheet

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The essentials

- The Environmental Protection Agency (EPA) announced the finalized Clean Power Plan rule on August 3, 2015. The Clean Power Plan limits carbon dioxide emissions from existing power plants on a state-by-state basis under Clean Air Act 111(d).
- The final rule for states includes both a mass-based approach and a rate-based approach for states to ensure emission reductions.
- States have an interim goal for 2022-2029 and a final goal to meet by 2030.
- Arizona's final rate-based goal is a 34% reduction from its 2005 carbon dioxide emissions level.
- The EPA is also issuing a proposed Federal Plan as both a model design for state plans and as the plan that will be used in cases where states do not submit their own plan. The proposed rule was published on October 23rd, 2015, and the public has until January 21, 2016 to provide substantive comments.

The Clean Power Plan overview

The Environmental Protection Agency (EPA)'s Clean Power Plan (CPP) is a national policy aimed at decreasing carbon dioxide emissions from existing power plants (i.e. existing generating units, or EGUs). It was issued under the authority of the Clean Air Act's 111(d), "Standards of performance for existing sources; remaining useful life of source."¹

¹ CAA §111(d) Standards of performance for existing sources; remaining useful life of source

(1) The Administrator shall prescribe regulations which shall establish a procedure similar to that provided by [section 7410 of this title](#) under which each State shall submit to the Administrator a plan which (A) establishes standards of performance for any existing source for any air pollutant (i) for which air quality criteria have not been issued or which is not included on a list published under [section 7408\(a\) of this title](#) or emitted from a source category which is regulated under [section 7412 of this title](#) but (ii) to which a standard of performance under this section would apply if such existing source were a new source, and (B) provides for the implementation and enforcement of such standards of performance. Regulations of the Administrator under this paragraph shall permit the State in applying a standard of performance to any particular source under a plan submitted under this paragraph to take into consideration, among other factors, the remaining useful life of the existing source to which such standard applies.

(2) The Administrator shall have the same authority—

Under the CPP, carbon emissions from EGUs will decrease 32 percent from 2005 levels by the year 2030 on a country-wide basis.² Each state was given a specific emission performance level to achieve by the year 2030, with an interim goal for 2022-2029; the different goals are each based on the “best system of emissions reductions” (BSER) for each state. EPA announced the final rule on August 3rd, 2015, a little over a year after the initial proposed rule was published in June 2014,³ but it was not until October 23rd, 2015 that it was actually published in the Federal Register.

The Final Rule

The EPA’s standard of performance under the final rule sets performance standards for Arizona at 1031 lbs CO₂/MWh under a rate-based plan and 30,170,150 short tons CO₂ per year under a mass-based plan. Arizona’s total standard of performance, or goal, is based on the weighted average of performance standards set for two types of generating units: steam-powered plants (e.g. coal) and natural gas combined cycle power plants. Unit Four of the Springerville coal-fired power plant, for instance, generates about 2.3 GW of electricity and 2,333,998 tons/CO₂ each year. The weighted average resulted in an overall goal of a 34 percent reduction in state emissions from 2005 levels (under both the rate-based and mass-based standards). Previously, under the proposed rule, the state would have had to reduce CO₂ emissions from EGUs by about 52 percent, at a rate of 702 lbs CO₂/MWh by 2030.

The change in Arizona’s performance standards was a result of the significant changes the EPA made to the final rule, after receiving more than four million comments on the proposed rule. Some of the major changes include:

- BSER: Under CAA 111(d), the EPA is required to identify the “best system of emission reduction ... adequately demonstrated” to decrease air pollutants and to set reduction guidelines based on

(A) to prescribe a plan for a State in cases where the State fails to submit a satisfactory plan as he would have under [section 7410\(c\) of this title](#) in the case of failure to submit an implementation plan, and

(B) to enforce the provisions of such plan in cases where the State fails to enforce them as he would have under sections [7413](#) and [7414](#) of this title with respect to an implementation plan.

In promulgating a standard of performance under a plan prescribed under this paragraph, the Administrator shall take into consideration, among other factors, remaining useful lives of the sources in the category of sources to which such standard applies.

Full language available: <https://www.law.cornell.edu/uscode/text/42/7411>

² M.J. Bradley & Associates, *Summary of EPA’s Final Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (the “111(d) rule”)*, (August 6, 2015).

³ *Id.*

that system. The final rule identifies three building blocks as the best system of emission reduction, or BSER:

Building Block One: improvements to heat rates for EGUs. A power plant's efficiency can be measured through its heat rate, or the amount of energy the plant combusts or burns to create a kWh of electricity.⁴ For example, Arizona Public Service's Ocotillo Power Plant's steam units have heat rates of 10,500 btu/kWh, or efficiency rates of 33 percent.⁵ The EPA's final heat rate improvement standards for coal-fired power plants are now based on grid interconnection averages; in Arizona, the heat rate improvement is 2.1 percent, based on the average improvements from EGUs on the Western Interconnection.⁶

Building Block Two: using more lower-emitting power plants (i.e. natural gas-fired plants) instead of higher emitting plants (i.e. coal-fired plants). The calculation for natural gas capacity is now based on summer capacity rather than nameplate capacity. Under building block two, Electricity from natural gas of 22 percent in 2022 and an increase of 5 percent per year at a regional level.⁷

Building Block Three: using more renewable energy sources, (defined as capacity that commenced operation after 2012). Existing nuclear energy has been removed from Building Block 3, but new plants may contribute to meeting the guidelines.

Building Block Four (energy efficiency) was removed completely from the BSER but can be used as part of a state measures compliance plan. The deletion of Building Block Four as part of the BSER is a significant reason why Arizona's final emission reduction standard is less stringent than in the proposed rule.

- Compliance period: The interim period is now separated into three time frames: 2022-2024; 2025-2027; 2028-2029. States can set their own goals for each period but must meet the average interim goal by 2029.⁸

⁴ Energy Information Agency. Retrieved from <http://www.eia.gov/tools/faqs/faq.cfm?id=107&t=3>

⁵ Arizona Public Service's Integrated Resource Plan, page 104. 2014. Retrieved from http://www.azenergyfuture.com/getmedia/c9c2a022-dae4-4d1b-a433-ec96b2498e02/2014_IntegratedResourcePlan.pdf?ext=.pdf

⁶ M.J. Bradley, *supra* note 1, at 2.

⁷ *Id.*

⁸ EPA's Clean Power Plan Summary. PowerPoint Presentation. August 2015. Slide 19. Retrieved from <http://www3.epa.gov/airquality/cpp/cpp-presentation.pdf>

	Rate-based Goal (Lbs CO ₂ /Net MWh)	Mass-based Goal (Short Tons)	Mass-based Goal + New Source Complement (Short Tons)
Interim Goal (2022- 2029)	1,173	33,061,997	34,486,994
Final Goal (2030 and beyond)	1,031	30,170,750	32,380,196

- Final goals: The range of target goals among the states is narrower in the final rule after some states had target emission rates reduced, while other states had target rates increase.⁹
- Types of goals: Under the final rule, EPA calculated both mass-based and rate-based goals for each state.

State plan types

A state can choose from two types of state compliance plans: 1) Emission Standards Plan or 2) a State Measures Plan. Under the *Emission Standards Plan*, EGUs must comply with the specific technology emission guidelines or with the state goal. These emission standards are federally enforceable. Either the mass-based approach or the rate-based approach, described below, may be used as the compliance framework in a states' Emission Standards Plan. A *State Measures Plan* would include statewide measures that are not federally enforceable, such as demand-side energy efficiency measures. However, a State Measures Plan must be supplemented with a backstop relying upon federally enforceable measures, to be used in the event the State Measures Plan does not attain compliance. The State Measures Plan also must be based on the mass-based goal for the state.

The Mass-based Approach (may be used in either the Emission Standards Plan that is designed to comply with the state mass-based goal, or in the State Measures Plan)

EGUs are allowed to emit a certain amount of CO₂ each year. Allowances are part of the emissions budget that may be purchased or generated by EGUs to ensure compliance. States may include only existing fossil units in the plan or they may include both existing EGUs and new EGUs.

⁹ *Clean Power Plan: State at a Glance*,
<http://www3.epa.gov/airquality/cpptoolbox/arizona.pdf> (updated Aug. 3, 2015, 5:15 PM).

The Rate-Based Approach (may be used only in the Emission Standards Plan that is designed to comply with the state rate-based goal).

There are three types of rates a state can establish in order to comply with the final rule using a rate-based emissions reduction program.

1. A state can implement the subcategory-specific emission performance rates for EGUs. The rates would be measured at each EGU rather than on a statewide basis.
2. A state may set its own rate for all EGUs in the state. This would still be applied at the EGU level rather than a statewide level.
3. A state could set different emission levels for each EGU. This is allowed as long as the average state emission rates are compliant with EPA's target rates.

EGUs can generate or purchase emission reduction credits (ERCs). The ERCs would then be factored in to compliance reports to reflect a lower emissions output. ERCs issued in 2022 or later can be saved and used for reporting compliance in a later year. This is meant to encourage compliance in the earlier years of the interim period.

Arizona's compliance process and pathways to compliance

The Arizona Department of Environmental Quality (ADEQ) is responsible for developing Arizona's compliance plan. Since the publication of the proposed rule, ADEQ has held stakeholder meetings to inform interested parties and solicit input from them. ADEQ also submitted comments to EPA relating concerns about the ability to meet the proposed interim goal. After the announcement of the final rule, ADEQ has continued to hold stakeholder meetings and configured a Technical Workgroup to develop the initial compliance plan and research issues related to reliability and economic impacts. EPIC is an active member of the Technical Workgroup, which includes representatives from all the major utilities in Arizona, Arizona's electric co-operatives, the Arizona Corporation Commission staff, RUCO, Arizona Office of Grants and Federal Resources, Advanced Energy Economy, Energy Strategies, the Environmental Defense Fund, SWEEP, and Freeport McMoran.

ADEQ has stated during Stakeholder meetings that they will likely conform the state plan to the Federal Model plan, which was published as a proposed rule on October 23, 2015. Regardless of what plan Arizona chooses, the state may not have to reconfigure its electric generation mix

much beyond what utilities had already planned prior to the announcement of the Clean Power Plan. The following coal-fired power plants were planned for retirement or conversion to natural gas combustion units before the final rule was developed:



Coal plant retirements or repower to NG:

Apache ST2: Will be repowered to natural gas in 2018 (AEP/CO)

Cholla Unit 1: will be retired or repowered with natural gas in mid-2020s (APS)

Cholla Unit 2: will be retired in 2016 (APS)

Cholla Unit 3: will be retired or repowered with natural gas in mid-2020s (APS)

Cholla Unit 4: Will be retired or repowered with natural gas by 2025 (PacifiCorp)

Additionally, Arizona's Renewable Energy Standard and Tariff and Energy Efficiency Resource Standard had placed Arizona on the path to decreased CO₂ emissions years before the Clean Power Plan was drafted.

State compliance plans must be submitted by September 6, 2016, but states can request a two-year extension if they file an initial plan that shows the state has taken "certain preliminary and readily achievable steps."¹⁰ The final rule pushes compliance back from 2020 to 2022, but the end date for compliance remains at 2030. States must also meet interim compliance goals in 2024, 2027, and 2029.

Opportunities for input:

The public has until January 21, 2016 [to provide input](#) on the Federal Model rule, which ADEQ has stated it will likely use for the state compliance plan. The Clean Energy Incentive Program, which rewards states for renewable energy developments throughout the state and energy efficiency projects in vulnerable communities, is also open for public input until January 21, 2016

¹⁰ Page, Stephen D. "Initial Clean Power Plan Submittals under Section 111(d) of the Clean Air Act." October 22, 2015. Retrieved from <http://www3.epa.gov/airquality/cpptoolbox/cpp-initial-subm-memo.pdf>

Learn More

EPA's Main Website for the Clean Power Plan:

<http://www2.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants>

EPIC's Clean Power Plan Initiative, including our open-source Compliance Tool and blog posts providing background information:

<https://energypolicy.asu.edu/clean-power-plan-initiative/>

Website to help state and local leaders develop a compliance plan:

<http://www2.epa.gov/cleanpowerplanttoolbox>

Highlights from the Final Rule:

<https://www.fas.org/sgp/crs/misc/R44145.pdf>

Webinars:

<http://www2.epa.gov/cleanpowerplanttoolbox/epa-webinar-series-proposed-clean-power-plan>

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