



Under Section [111\(d\) of the Clean Air Act](#), the EPA set carbon dioxide emission performance rates for the two types of electric generating units: steam electric and natural gas fired power plants. When the Clean Power Plan is fully in place in 2030, carbon pollution from the national power sector will be 32 percent below 2005 levels, securing progress and making sure it continues. States will have the liberty to shape their own emissions reduction pathways by developing and following a state plan.

**Kansas State Plan Components**

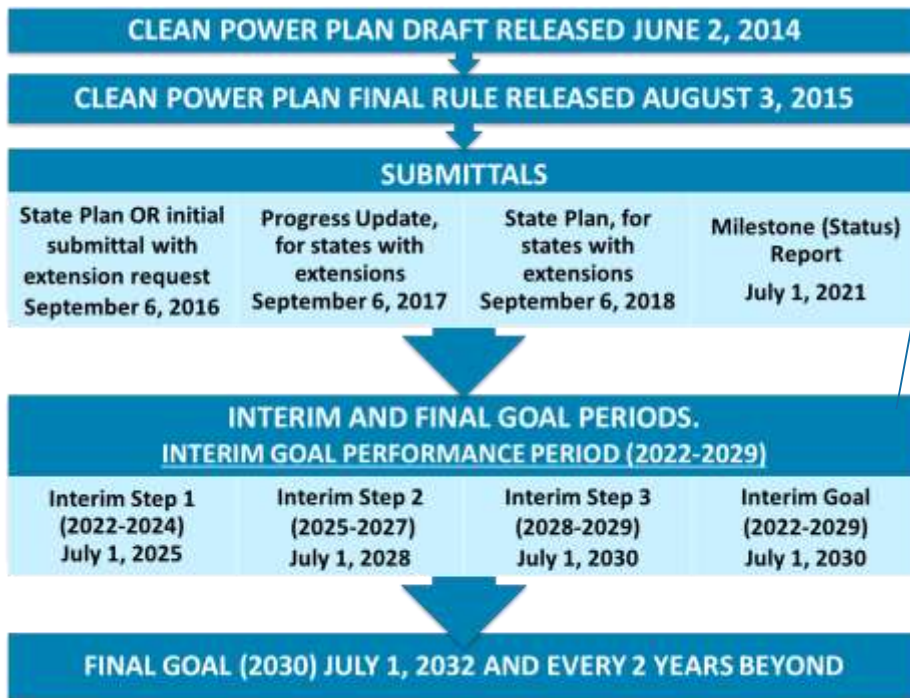
- ❖ Kansas has state-specific interim and final goals based on Kansas’ unique mix of power plants. To accomplish those goals, Kansas can choose from Rate Based and Mass-based approaches.
- ❖ EPA adjusted the 2012 CO2 pollution state baseline to maximize reliance on latest reported operating data and minimizes the need for fleet capacity adjustments.
  - **Rate based:** state goal expressed as pounds per megawatt hour (lb/MWh)
    - **Rate base:** under the plan, emissions will decrease from 2,319 lbs/Net MWh to 1,519 lbs/Net MWh (yearly average) during the 2022-2029 period and down to 1,293 lbs/Net MWh as the final goal and beyond.
  - Mass-based state goal expressed as total short tons of CO2
    - **Mass Base:** emissions will decrease from 34,353,105 short tons of CO2 to an average of 24,859,333 short tons of CO2 per year during the 2022-2029 period and down to 21,990,826 short tons of CO2 as the final goal and beyond. Additional CO2 emission allowances for new sources of energy (regulated power plants) are available: 260,683 short tons per year during interim years and 229,997 short tons per year for final goal year and years beyond.
    - Carbon pollution reductions from existing units can’t lead to increases in emissions from new sources.  
<http://www.epa.gov/airquality/cpptoolbox/kansas.pdf>
- ❖ Kansas has the flexibility to define interim step milestones and demonstrate how it will achieve these milestones, as well as the interim goal and final goal.

	CO2 Rate (lbs/Net MWh)	CO2 Emissions (short tons)
<b>2012 Historic</b>	2,319	34,353,105
<b>2020 Projections (without CPP)</b>	1,870	41,894,916

Emission Periods	Rate-based Goal (lbs/Net MWh)	Mass-based Goal (annual average CO2 emissions in short tons)	New Source Complement (in short tons)	Mass Goal (Existing) & New Source Complement (in short tons)
Interim Period 2022-2029 (year average)	1,519	24,859,333	260,683	25,120,015
Interim Step 1 Period 2022-2024	1,654	26,763,719	106,973	26,870,692
Interim Step 2 Period 2025-2027	1,485	24,295,773	360,874	24,656,647
Interim Step 3 Period 2028-2029	1,366	22,848,095	340,958	23,189,053
Final Goal 2030 and Beyond	1,293	21,990,826	229,997	22,220,822

- ❖ Kansas will receive [Clean Energy Incentive Program](#) credits if the state chooses to invest in the program early. This program supports renewable energy projects and energy efficiency in low-income communities that deliver benefits in 2020 and 2021. Efficiency programs and renewables implemented starting in 2017 would be eligible.
- ❖ Kansas must demonstrate consideration for [reliability of the grid](#) when developing their State Implementation Plan.
  - Kansas can modify an emission standard for specific Electric Generating Units (EGUs) for up to 90 days for reliability.
- ❖ States can adjust their SIPs should new reliability concerns emerge. Kansas can use EPA's model Emission Trading rules or write their own plan that includes trading with other "trading-ready" states, whether they are using a mass- or rate-based plan.

## Clean Power Plan Timeline and Deadlines



The period for mandatory reductions begins in 2022; there is a smoother glide path to 2030. The glide path gradually "steps" down the amount of carbon pollution.

Kansas can set its own milestones for interim step periods 1, 2 and 3 as long as the state meets the interim goal overall or "on average" over the course of the interim period, and meet the final goals, established in the emission guidelines.

To accomplish this, in its state plan, the state must define its interim step milestones and demonstrate how it will achieve these milestones, as well as the overall interim, and final, goals.

## Possible Compliance Strategies

Kansas may choose to include numerous measures to assist in meeting the state goals, such as: demand-side energy efficiency, transmission upgrades, and nuclear and hydropower uprates.



### Increasing efficiency at existing coal plants

- Power plants can make heat rate improvements to reduce the amount of CO2 they emit per megawatt-hour of electricity generated



### Increasing renewable generation

- Substituting increased electricity generation from new zero-emitting renewable energy sources (like wind and solar) for reduced generation from existing coal-fired power plants
- Generation from under-construction nuclear facilities and nuclear plant upgrades can still be incorporated into state plans, counting and count towards compliance.



### Energy Efficiency

- Generation and demand-side initiatives



### Shifting coal generation to lower emitting resources

- Natural gas-fired generation

### **The difference between the “Proposed Draft” and the “Final Rule”**

- ❖ Increasing efficiency at existing coal plants by 2.1 percent to 4.3 percent, depending upon the region. At proposal, the assumption was 6 percent improved efficiency at all coal and oil units.
- ❖ Phased-in increase of existing natural gas combined cycle (NGCC): from 70 percent nameplate capacity (designed capacity of power that a unit can generate) to real operating conditions- 75 percent net summer capacity (observed data about how a unit has actually performed).
- ❖ The CPP analysis does include more use of new renewable energy than at proposal based on up-to-date information clearly demonstrating the lower cost and greater availability of clean generation than was evident at proposal. It takes into account recent and future projections of reductions in the cost of clean energy technology.
- ❖ The Final Rule gives states more time to develop a State CPP. States that do not meet the September 2016 final plan deadline can request an extension to submit final plans either alone or in cooperation with other states by September 2018.
- ❖ Under the Final Rule, states have an opportunity to demonstrate how they are actively engaging with communities in their initial and final plans through:
  - Sharing with all communities state strategies that might work best to tackle climate pollution;
  - Allowing avenues for all communities to provide input on where possible impacts to vulnerable groups could occur and strategies to mitigate those impacts; and
  - Understanding how state plans may impact low-income communities.

### **Energy Efficiency**

Energy Efficiency is still a very important tool for compliance purposes. [Clean Energy Incentive Program](#) is an added optional program for early reductions in low-income communities – but all energy efficiency will count towards compliance.

Due to its low costs and potential, demand-side EE will be a significant component of state plans under the Clean Power Plan. EE is an important, proven strategy that states are already widely using that can substantially and cost-effectively lower CO<sub>2</sub> emissions from the power sector, as well as reduce electric bills. The Clean Power Plan’s flexible compliance options provide ample opportunity to fully deploy EE to meet state goals to reduce carbon pollution from power plants.



Kansas has one of the least stringent CO2 emission rates in the nation, with only 7 states and tribes having higher CO2 rate allotments

### Interim and Final CO2 Emission Goals by States and Tribes

