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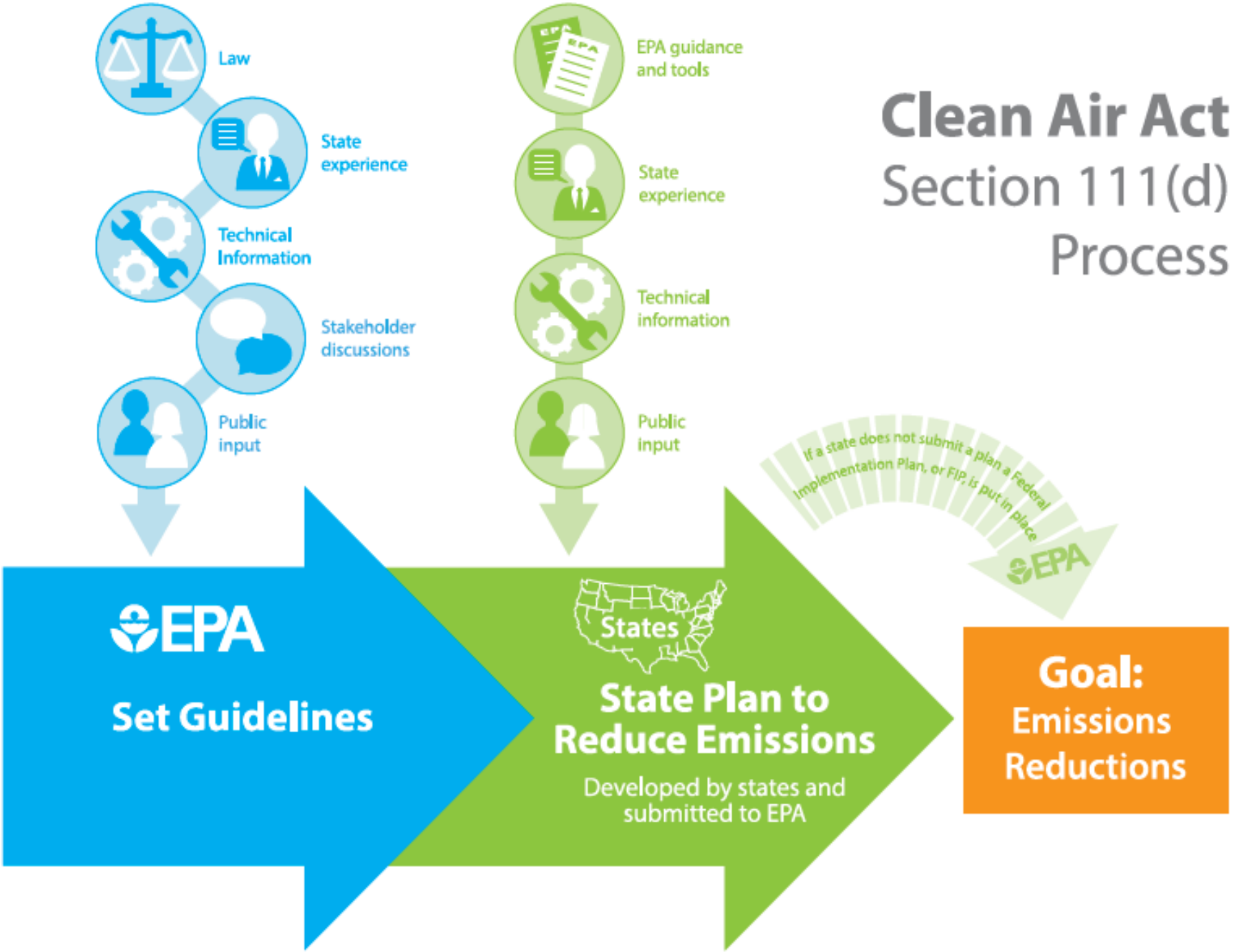
The Clean Power Plan

Overview

- Relies on a federal-state partnership under the Clean Air Act
- Sets carbon dioxide emissions performance rates that reflect the "best system of emission reduction" (BSER)
  - Power plants are subject to the same standards no matter where they are located. In general, a standard for:
    - Power plants fueled by natural gas
    - Power plants fueled by coal
  - Based on 3 "building blocks"
- Each state assigned a "state goal" based on the state's unique mix of power plants; energy efficiency is a key part of achieving the goals
- Allows states to develop their own plans for power plants to achieve either the performance rate or the state goal
- States can also choose to develop a "multi-state" plan

Clean Air Act
Section 111(d) Process

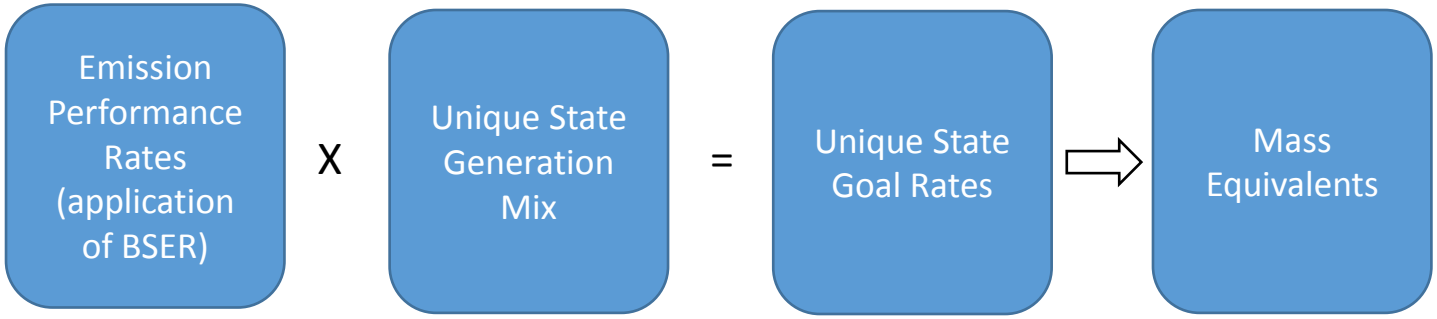


Best System of Emission Reduction: Three Building Blocks

Building Block	Strategy EPA Used to Calculate the State Goal	Maximum Flexibility: Examples of State Compliance Measures
1. **Improved efficiency at power plants**	Increasing the operational efficiency of existing coal-fired steam EGUs on average by a specified percentage, depending upon the region	-Boiler chemical cleaning -Cleaning air preheater coils -Equipment and software upgrades
2. **Shifting generation from higher-emitting steam EGUS to lower-emitting natural gas power plants**	Substituting increased generation from existing natural gas units for reduced generation at existing steam EGUs in specified amounts	Increase generation at existing NGCC units
3. **Shifting generation to clean energy renewables**	Substituting increased generation from new zero-emitting generating technologies for reduced generation at existing fossil fuel-fired EGUs in specified amounts	Increased generation from new renewable generating capacity, e.g., solar, wind, nuclear, and combined heat & power

Category-Specific Performance Rates

Power plants are subject to the same standards no matter where they are located.



EPA is establishing carbon dioxide **emission performance rates** for two subcategories of existing fossil fuel-fired electric generating units (EGUs):

1. Fossil fuel-fired electric generating units (generally, coal-fired power plants)
   - 1,305 lb/MWh
2. Natural gas combined cycle units
   - 771 lb/MWh

Emission performance rates have been translated into equivalent state goals. In order to maximize the range of choices available to states, EPA is providing state goals in three forms:

- rate-based goal measured in pounds per megawatt hour (lb/MWh);
- mass-based goal measured in short tons of CO_2
- mass-based goal with a new source complement (for states that choose to include new sources) measured in short tons of CO_2

Pennsylvania's Goal

Pennsylvania's Interim (2022-2029) and Final Goals (2030)

PENNSYLVANIA			
	CO_2 Rate (lbs/Net MWh)	CO_2 Emissions (short tons)	
2012 Historic [1]	1,682	116,657,632	
2020 Projections (without CPP)	1,486	106,682,061	
	Rate-based Goal	Mass-based Goal (annual average CO_2 emissions in short tons)	Mass Goal (Existing) & New Source Complement
Interim Period 2022-2029	1,258	99,330,827	100,588,162
Interim Step 1 Period 2022-2024 [2]	1,359	106,082,757	106,598,711
Interim Step 2 Period 2025-2027 [3]	1,232	97,204,723	98,945,311
Interim Step 3 Period 2028-2029 [4]	1,146	92,392,088	94,036,616
Final Goal 2030 and Beyond	1,095	89,822,308	90,931,637

Clean Power Plan Timeline

Summer 2015	• August 3, 2015 - Final Clean Power Plan
1 Year	• September 6, 2016 – States make initial submittal with extension request or submit Final Plan
3 Years	• September 6, 2018 - States with extensions submit Final Plan
7 Years	• January 1, 2022 - Compliance period begins
15 Years	• January 1, 2030 - CO_2 Emission Goals met

Two State Plans Designs:

- States are able to choose one of two state plan types:

Emission Standards Plan – state places federally enforceable emission standards on affected electric generating units (EGUs) that fully meet the emission guidelines

- can be designed to meet the CO_2 emission performance rates or state goal (rate-based or mass-based goal)

State Measures Plan - state includes, at least in part, measures implemented by the state that are not included as federally enforceable emission standards

- designed to achieve the state CO_2 mass-based goal
- includes federally enforceable measures as a backstop

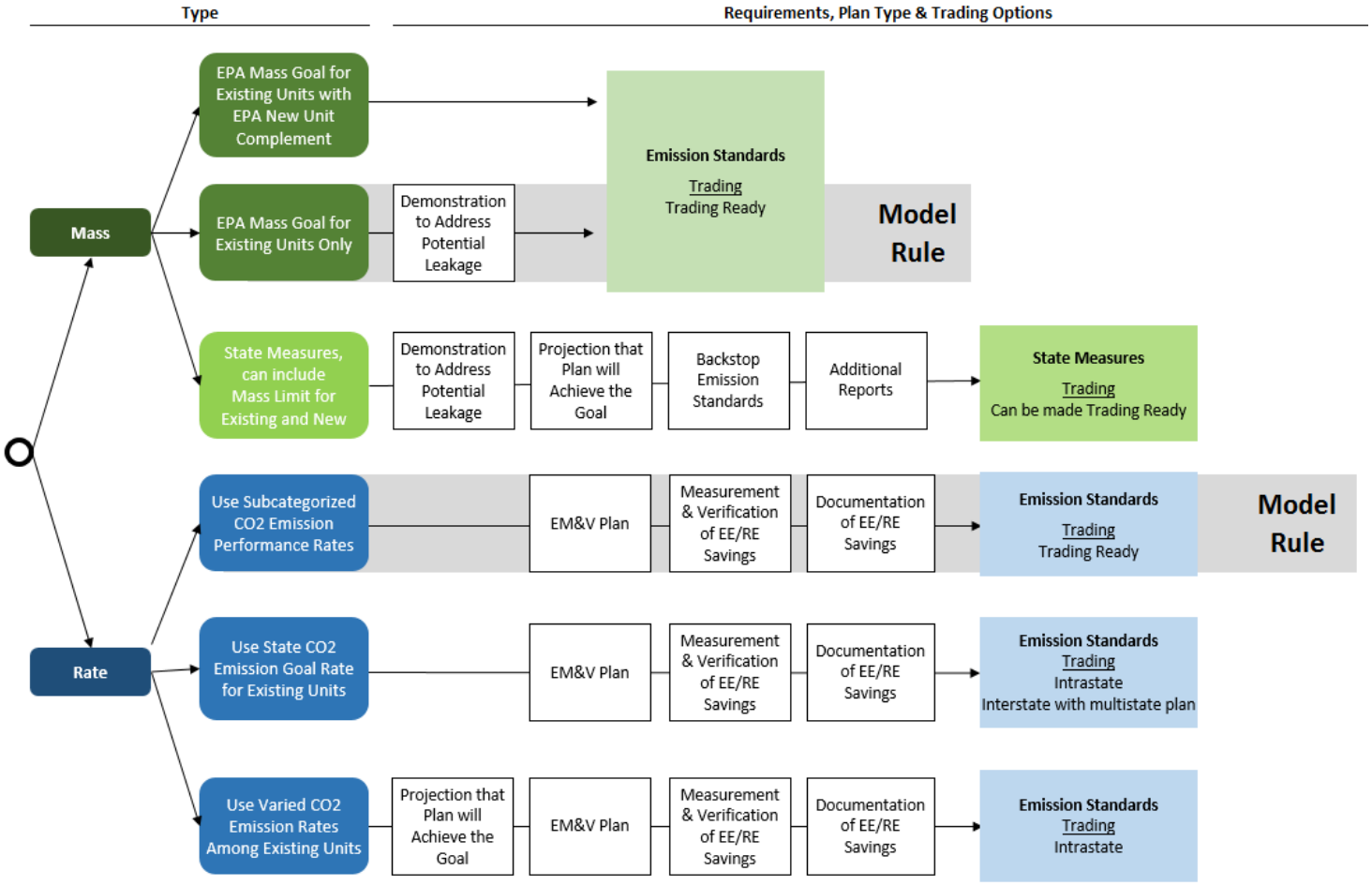
State Plan Development

- Many states are discussing plans that would enable them to collaborate with other states, including multi-state plans or linking plans through common administrative provisions (i.e. “trading ready”)
  - Trading-ready mechanisms allow states or power plants to use creditable, out-of-state reductions to meet their goal without the need for up-front interstate agreements
  - If states elect to collaborate, EPA can support the option for trading as a suitable choice for both EPA and states to implement the CPP
    - Examples of trading in NOx SIP and CSAPR, Acid Rain program
    - Appropriate for carbon emissions
    - Eases administrative burdens
    - Reduces costs to electricity consumers and utilities
- In the CPP, EPA is finalizing state plan designs that suit state needs
  - Pathways for existing programs to reduce carbon emissions, individual state plans and multi-state trading approaches
- Federal plan proposes option for model trading program a state may then implement
  - Invites comment on mass and rate based model trading programs for EGUs
  - Invites comment on idea that all types of state plans can participate in trading

More State Options, Lower Costs

- This chart shows some of the compliance pathways available to states under the final Clean Power Plan. Ultimately, it is up to the states to choose how they will meet the requirements of the rule
- EPA's illustrative analysis shows that nationwide, in 2030, a **mass-based approach is less-expensive** than a rate-based approach ($5.1 billion versus $8.4 billion)

- Under a mass-based plan, states that anticipate continuing or expanding investments in energy efficiency have unlimited flexibility to leverage those investments to meet their CPP targets. EE programs and projects do not need to be approved as part of a mass-based state plan, and EM&V will not be required
- For states currently implementing mass-based trading programs, the "state measures" approach offers a ready path forward
- Demand-side energy efficiency is an important, proven strategy that states are already widely using and that can substantially and cost-effectively lower CO2 emissions from the power sector



How EE and RE fit into State Plans in the CPP

- Under a **mass-based approach**, energy efficiency (EE) and renewable energy (RE) automatically "count" toward compliance and states can use an unlimited amount to help achieve their state goals.
  - EE/RE efforts are naturally incentivized and states may also use the allowance commodity to further monetize the value of the EE.
  - States can use proven mechanisms related to allowances, such as auctioning allowances and using the proceeds to fund EE/RE programs, or directly allocating them to EE/RE providers – including, but not just, to reward early action
- Under a **rate-based approach**, the CPP enables states to get credit for all eligible EE/RE projects installed after 2012, a longer time frame than what was proposed.
  - The incentive for EE/RE is created through the entirely new commodity of an Emission Rate Credit (ERC), which requires the development of a process and system to ensure the integrity of the ERCs
- Under a **state measures approach**, the CPP allows state EE/RE policies and programs to be used to meet the emissions guidelines, without requiring the state measures to be federally enforceable.

Incentives for Early Investments

- EPA is providing the Clean Energy Incentive Program (CEIP) to incentivize early investments that generate wind and solar power or reduce end-use energy demand during 2020 and 2021
- The CEIP is an optional, "matching fund" program states may choose to use to incentivize early investments in wind or solar power, as well as demand-side energy efficiency measures that are implemented in low-income communities
- EPA will provide matching allowances or Emission Rate Credits (ERCs) to states that participate in the CEIP, up to an amount equal to the equivalent of 300 million short tons of CO_2 emissions. The match is larger for low-income EE projects, targeted at removing historic barriers to deployment of these measures. Also, states with more challenging emissions reduction targets will have access to a proportionately larger share of the match
- The CEIP will help ensure that momentum to no-carbon energy continues and give states a jumpstart on their compliance programs
- EPA will engage with stakeholders in the coming months to discuss the CEIP and gather feedback on specific elements of the program