United States
Environmental Protection
Agency

CLEAN POWER PLAN
Meeting State Goals

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Overview of Proposal

- Proposal sets an interim (2020-2029) and final goal (2030) for affected EGUs in each state to reduce carbon pollution
  - Rate-based performance level (lb CO_2/MWh)
  - Goal based on analysis of best system of emission reduction (BSER) and application of BSER to state-specific data
  - Analysis looks at what states are already doing to improve energy efficiency and encourage reliance on low-carbon energy
- Goal is a target level of affected EGU performance state plans have to meet on average in 2020-2029 and by 2030
- EPA is not prescribing measures states need to implement to meet the goal
- States have flexibility to choose what goes into their plan – how and when to get the necessary reductions, provided the goals are met in established timeframe
  - Choose form of goal (rate or translate to mass)
  - Choose what works best in a state, tailored to state needs and policy objectives
  - Opportunity to build on existing energy efficiency and renewable energy programs
  - Flexible over time and place – states can look across the electricity system to achieve reductions from affected EGUs, and have 10 years to meet the interim goal on average basis
  - Option to work with other states through multi-state plan, which can lower costs
  - Fits into existing state and utility electricity sector planning processes

CAA Section 111(d) State Plan Process

- Under CAA Section 111(d), as applied in this context:
  - The state develops emission standards that implement its BSER-derived goal and establishes those standards in its plan, along with implementing and enforcing measures
  - The state applies those emission standards to the appropriate entities
    - EPA recognizes the need for accountability and verifiability of attaining CO_2 emission reductions
  - EPA recognizes states' requests for both flexibility and specificity
    - States can choose to meet rate- or mass-based goal
    - EPA proposal allows and encourages multi-state and regional plans
    - EPA proposal supports building off existing state programs
  - EPA recognizes states' concerns regarding timing for submission of plans
    - Opportunity for phased plan submittals

Potential Approaches for State Plans

- Multiple approaches might be taken for state plans
- These may include emission reduction measures identified in BSER building blocks and other approaches
  - States not limited to measures considered by EPA to be BSER
- Approaches that EPA anticipates include the following, alone or in various combinations:
  - Direct emission limits on EGUs (rate or mass)
  - Regional emission reductions agreements, such as multi-state emission budget trading programs
  - State programs and requirements to deploy new, lower- or non-carbon-emitting generation capacity, such as renewable energy (RE) sources (e.g., solar and wind), nuclear, and new natural gas combined cycle (NGCC)
  - End-use energy efficiency (EE) and renewable energy (RE) deployment programs
  - Legislation or regulations establishing EE resource standards (EERS) and/or renewable portfolio standards (RPS)
  - Integrated Resource Plan (IRP)-type approaches for reducing utility fleet CO_2 emissions
- Seeking feedback on how tribes that don't have affected EGUs, but implement EE/RE and other programs that reduce CO_2 emissions from affected EGUs might play a role

State Plan Pathways

- Two basic state plan approaches:
  - Emission Limits
  - Portfolio Approach
- Four state plan pathways under these two approaches:
  - Rate-based CO_2 emission limits applied to affected EGUs
    - May include adjustment or tradable credits for non- or low-emitting resources (e.g., EE/RE)
  - Mass-based CO_2 emission limits
    - EE/RE could be a state strategy for meeting limit at lesser cost, but complementary to the plan
  - Portfolio Approach
    - Includes emission limits and other enforceable measures (e.g., EE/RE requirements applicable to non-EGU entities) necessary to achieve performance level
    - Could be “utility-driven” or “state-driven” depending on electricity regulatory structure in a state (vertically integrated or restructured)

Illustrative Example: Rate-Based Emission Limits

- State implements rate-based emission limits that apply directly to affected EGUs
  - Limits are sufficient to achieve the state goal
  - Could include averaging or trading, at discretion of the state
- Affected EGUs are responsible for achieving required level of emission performance
- Measures that avoid EGU emissions, such as EE/RE and other low- or non-emitting generation, are incorporated through recognition of avoided emissions or generation
  - Used to adjust the CO_2 emission rate of affected EGUs;
    - EPA taking comment on how to make this adjustment, based on avoided CO_2 emissions or avoided MWh of generation (numerator or denominator adjustment)
  - Requires **evaluation, measurement, and verification** (EM&V) for energy savings and energy generation related to EE/RE
    - May also require provisions for assessing avoided emissions related to EE/RE measures and process for tracking emission reductions
- EE/RE measures are enforceable components of state plan
  - Necessary to provide assurance that sufficient emissions reductions from EE/RE measures are available to enable EGU compliance with rate limits
  - Necessary to assure proper EM&V conducted for EE/RE measures

Illustrative Example: Mass-based Emission Limits

- State implements mass-based limits that apply directly to affected EGUs
  - Limits are sufficient to achieve the state goal
- Affected EGUs are responsible for achieving required level of emission performance
- Measures that avoid EGU CO_2 emissions, such as EE/RE, are:
  - Complementary programs that help the state achieve the mass emission limit at lower cost
    - Not included in the state plan
    - No need for special EM&V and tracking of these program effects on avoided CO_2 emissions
- EE/RE measures (i.e., complementary measures) are not enforceable components of a state plan
  - May be part of state strategy for meeting state plan emission goal at lower cost, but do not need to be included in a plan
  - Assurance of plan performance based on enforceable emissions budget
    - States assess need for complementary measures as part of budget setting

Illustrative Example: Portfolio Approach

- A portfolio of requirements and programs are used to reduce affected EGU CO_2 emissions
  - Could take a rate-based or mass-based approach
  - Includes emission limits that apply to affected EGUs, but these limits alone are not sufficient to achieve the state goal
  - Also includes other enforceable measures, such as RPS, EERS, utility EE/RE deployment programs, etc.
- Mix of entities is responsible for achieving the required level of emissions performance
  - Affected EGUs
  - EE/RE program administrators (if responsibility assigned by state); distribution utility required to meet EERS or RPS or administer EE/RE deployment programs; other
- State-driven approach more likely in states with restructured electricity sector, where state regulated utilities do not own EGUs
- Utility-driven approach more likely in vertically integrated, “cost-of-service” states, where state regulated utilities own affected EGUs
  - Same company takes actions that apply directly to affected EGUs it owns, and is also responsible for other enforceable actions
  - Portfolio of measures likely developed through Integrated Resource Planning (IRP)-type process and approved by state PUC

Evaluating the Sufficiency of Plans

- The EPA will evaluate the sufficiency of each plan based on the plan addressing the twelve required plan components (next slide) and on four general criteria to determine whether a state's plan is "satisfactory" under CAA section 111(d)(2)(A).
- Four general criteria
  1. A state plan must contain enforceable measures that reduce CO_2 emissions from affected EGUs.
  2. Measures in the plan must be projected to achieve emission performance equivalent to or better than the applicable state-specific CO_2 goal on a timeline equivalent to that in the emission guidelines.
  3. EGU CO_2 emission performance under the state plan must be quantifiable and verifiable.
  4. The state plan must include a process for state reporting of plan implementation (at the level of the affected entity), CO_2 emission performance outcomes, and implementation of corrective measures, if necessary.

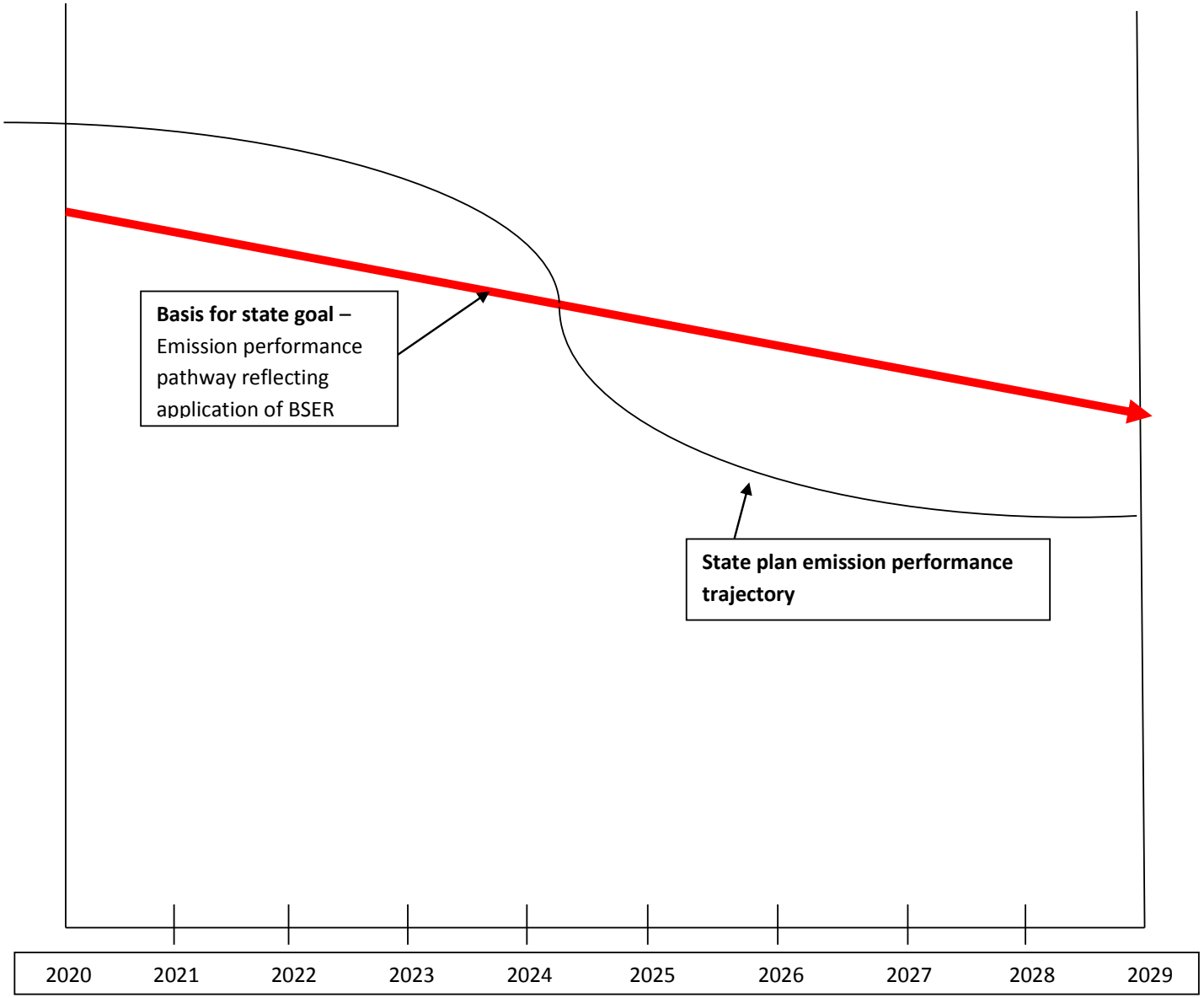
State Plan Components

- Emission guidelines include a list of 12 components that must be included in a state plan:
  - Identification of affected entities (affected EGUs and other responsible parties)
  - Description of plan approach and geographic scope
  - Identification of state emission performance level
  - Demonstration that plan is projected to achieve emission performance level
  - Identification of milestones
  - Identification of corrective measures
  - Identification of emission standards and any other measures
  - Demonstration that each emission standard is quantifiable, non-duplicative, permanent, verifiable, and enforceable (recognizing non-traditional nature of some potentially affected entities)
  - Identification of monitoring, reporting, and recordkeeping requirements
  - Description of state reporting
  - Certification of hearing on state plan
  - Supporting material

Timing of State Plan Emission Performance

- Timing of emission reductions can vary, depending on a state's situation
  - Some states have existing programs that are achieving results
  - Some measures are more easily implemented and/or may obtain reductions promptly; others may require longer to implement and/or realize reductions
  - New multi-state programs (or additions to existing multi-state programs) would need time to achieve goals
- State plans must be designed to achieve and maintain affected EGU emission performance consistent with interim 2020-2029 goal and final 2030 goal
  - Goal represents the average CO_2 emission rate of all affected EGUs in a state (adjusted to reflect the potential to achieve emissions reductions by avoiding fossil generation); a state may translate its rate goal into a mass-based goal
  - Interim emission performance goals apply during the years 2020-2029 on a 10-year average rate basis (or cumulative tonnage basis, if applicable), as states ramp up programs to meet their final goals
    - This 10-year interim performance period provides timing flexibility for states to recognize specific implementation differences; milestone requirements and emissions reporting are proposed to track interim progress and enable corrective action if necessary
  - States must achieve and maintain final goal after 2029; a three-year rolling average period (beginning with 2030-2032) is proposed for demonstration that final goal is achieved
  - States must maintain the final-goal level of performance over time
    - Preamble takes comment on alternate mechanisms for maintaining performance

10-year State Plan Performance



State Plan Considerations

- Key State Plan Considerations include:
  - Enforceability for measures that apply to non-EGU affected entities
  - Treatment of existing state programs
  - Monitoring and verification of actions implemented by non-EGU entities (e.g., evaluation, monitoring, and verification of EE/RE measures)
  - Process for adjusting CO_2 emission rate, based on non-emitting or low-emitting resources (e.g., EE/RE)
  - Treatment of interstate emission effects
  - Process for converting from a rate-based goal to a mass-based goal, and projecting EGU emission performance that will be achieved under a plan

Treatment of Existing State Programs

- Existing state requirements, programs, and measures could be recognized in a state plan
  - Only the **emission reductions** from these existing programs **occurring during a plan period** would be recognized (i.e., emissions reductions occurring as of 2020)
- **Actions** taken under existing state programs from the date of the proposal of the emission guidelines (June 2014) could be recognized during a plan period
  - For example, emission reductions in 2020 from energy-efficient refrigerators installed under a utility EE program in June 2014 could be recognized
  - Allows states to get a "rolling start" in meeting emission goals and recognizes states that have already taken action to reduce emissions
- Note: the June 2014 start date limitation **does not apply to renewable energy** measures
  - RE generating capacity installed prior to June 2014 could be recognized if reducing emissions in 2020 and subsequent years
  - Treatment recognizes construction of building block #3

Monitoring and Verification for EE/RE

- EPA's proposal builds from current state EM&V practices
  - Rigorous and transparent Evaluation, Measurement, and Verification (EM&V) is an important element of state plans that incorporate demand-side energy efficiency (EE) and renewable energy (RE) requirements, programs, and measures
  - Current practice with EM&V in the U.S. is primarily defined by state public utility commission (PUC) requirements
    - Leading states have decades of experience with EM&V
    - States getting started can leverage industry-standard approaches, resources, and infrastructure already in place
    - Significant ongoing effort to enhance EM&V consistency among states with EE programs
  - EPA's proposed EM&V approach seeks to:
    - Build from and leverage current practices and existing resources
    - Establish a clear and consistent EM&V path for including EE/RE in state plans
    - Appropriately consider and balance key criteria (e.g., accuracy, cost, flexibility, etc.)

Monitoring and Verification for EE/RE

- Proposed EM&V approach – four key provisions:

- **1. EM&V Guidance:** EPA is proposing to develop guidance that specifies acceptable EM&V approaches and minimum requirements
  - Applies to states and other entities with enforceable obligations under a state plan
- **2. EM&V Plan:** EPA is proposing that state plans that include enforceable EE/RE measures must include an EM&V plan
  - Explains how EE/RE impacts will be determined during plan implementation
  - Specifies the methods, assumptions, and data sources that will be used
  - Is subject to EPA review and approval
- **3. Eligible EE/RE Programs:** EPA is proposing not to limit the types of EE/RE programs and measures that can be included in a state plan
  - All EE/RE measures in a state plan must be evaluated per EPA's EM&V guidance
  - Accommodates differences among EE/RE programs and measures:
    - Implementation history and experience
    - Existence of applicable EM&V protocols and methods
    - Nature and type of program oversight (e.g., PUC review)
- **4. Impacts Reporting:** EPA is proposing reporting and recordkeeping requirements for entities implementing enforceable EE/RE measures in a state plan

- EPA is seeking comment on key aspects of each of these EM&V provisions
  - For details, see discussion in Section VIII.F.3-4 of the Preamble and in State Plans Considerations TSD

Treatment of Interstate Emission Effects

- For Energy Efficiency (EE) programs and measures:
  - A state may take into account in its plan only those CO_2 emission reductions from affected EGUs occurring in the state that result from demand-side energy efficiency programs and measures implemented in the state
  - States participating in multi-state plans would have the flexibility to attribute the CO_2 emission reductions from EE programs among states in the multi-state area
  - States could jointly demonstrate CO_2 emission performance by affected EGUs through a multi-state plan in a contiguous electric grid region, in which case attribution among states of emission reductions from demand-side energy efficiency measures would not be necessary
- For Renewable Energy (RE) programs and measures:
  - Consistent with existing state RPS policies, a state could take into account all of the CO_2 emision reductions from affected EGUs due to renewable energy programs and measures implemented by the state, whether they occur in the state and/or in other states
  - States participating in multi-state plans would have the flexibility to attribute the CO_2 emission reductions among states in the multi-state area.
  - States could jointly demonstrate CO_2 emission performance by affected EGUs through a multi-state plan in a contiguous electric grid region, in which case attribution among states of emission reductions from renewable energy measures would not be necessary
- See discussion in State Plan Considerations TSD for more information

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