

CLEAN POWER PLAN

Meeting State Goals

June 26, 2014

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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 CO₂/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 CO₂ 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 CO₂ emissions
- ▶ Seeking feedback on how tribes that don't have affected EGUs, but implement EE/RE and other programs that reduce CO₂ 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 CO₂ emission limits applied to affected EGUs
 - May include adjustment or tradable credits for non- or low-emitting resources (e.g., EE/RE)
 - ▶ Mass-based CO₂ 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 CO₂ emission rate of affected EGUs;
 - EPA taking comment on how to make this adjustment, based on avoided CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ goal on a timeline equivalent to that in the emission guidelines.
 3. EGU CO₂ 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), CO₂ emission performance outcomes, and implementation of corrective measures, if necessary.

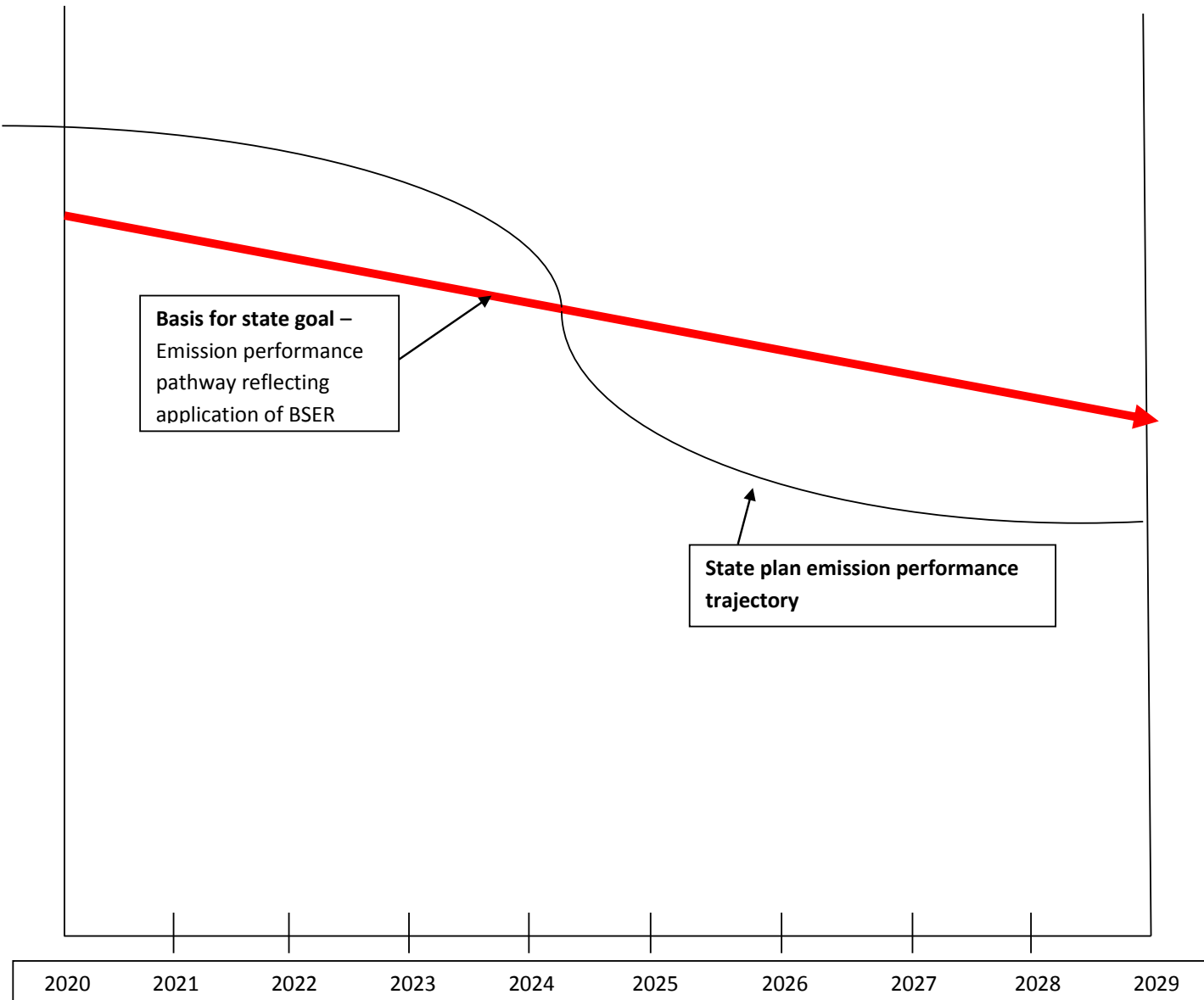
State Plan Components

- ▶ 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 CO₂ 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 CO₂ 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 CO₂ 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 CO₂ emission reductions from EE programs among states in the multi-state area
 - ▶ States could jointly demonstrate CO₂ 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 CO₂ emission 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 CO₂ emission reductions among states in the multi-state area.
 - ▶ States could jointly demonstrate CO₂ 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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