



Pathways, Options, and Opportunities for Energy Efficiency and Renewable Energy

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The Clean Power Plan Provides Many Opportunities for Energy Efficiency and Renewable Energy

- The Clean Power Plan (CPP) puts energy efficiency and renewable energy (EE/RE) front and center as compliance options that avoid or reduce CO₂ from affected EGUs and can help states meet their CPP goal for affected EGUs.
- EE is an important, proven strategy widely used by states that can substantially and cost-effectively lower CO₂ emissions from the power sector across all state plan pathways.
 - While the final state goals don't include energy efficiency as a Best System of Emission Reduction (BSER) building block, this does not limit the ability of states to use energy efficiency to meet their CPP goals for affected EGUs.
- RE will serve a critical role in lowering CO₂ emissions in the long run



What Measures Can Be Used to Lower CO₂?

- Heat rate improvements
- Fuel switching to a lower carbon content fuel
- Integration of renewable energy into EGU operations
- *Combined heat and power*
- *Qualified biomass co-firing and repowering*
- *Renewable energy (new & capacity uprates)*
 - *Wind, solar, hydro, waste-to-energy, wave and tidal power*
- *Nuclear generation (new & capacity uprates)*
- *Demand-side EE programs and policies, including water system efficiency*
- *Demand-side management measures*
- *Electricity transmission and distribution improvements (e.g. conservation voltage reduction)*
- Carbon capture and utilization for existing sources
- Carbon capture and sequestration for existing sources



Examples of EE/RE Mentioned in the CPP

- Demand-side EE policies, programs and measures called out in the CPP include, but are not limited to, those that:
 - **Lower electricity use in buildings and facilities** (e.g. residential/commercial buildings; industrial, water and wastewater treatment facilities)
 - **Are installed as individual EE projects** (e.g. by energy service companies (ESCOs)) **or through an EE deployment program** (e.g. appliance replacement and recycling programs, and behavioral programs, administered by electric utilities, state entities and other private and non-profit entities).
 - **Impose requirements that result in MWh savings** (e.g. state or local requirements, such as building energy codes, energy efficiency resource standards (EERS), state appliance/equipment standards)
 - **May be provided by a variety of parties**, including but not limited to: Owners or operators of affected EGUs, electric distribution companies, independent power producers, energy service companies, administrators of state EE programs, and administrators of industrial EE programs among others
- RE Policies, programs, measures called out in the CPP include:
 - **Requirements for renewable generation** (e.g. Renewable portfolio standards)
 - **Utility and state-administered incentive programs** for RE technologies



Incentives for Early Action

- All EE/RE that achieves energy savings or generation during the plan performance period (2022-2030) helps states meet their CPP goals for affected EGUs, either as a formal part of a state’s plan or as a complementary effort.
 - Efforts in place today are already working to help states achieve their goals for affected EGUs
- Under a mass-based plan approach, states can reward EE/RE efforts, including for early action, through allowance allocation provisions
- Under a rate-based approach, eligible EE/RE put in place after 2012 that achieves electricity savings or generation during the compliance period may be issued Emission Rate Credits (ERCs).
- The Clean Energy Incentive Program (CEIP) provides additional incentives for solar, wind and low income EE investments in 2020-2021 both rate-based and mass-based approaches.
- How EE and RE are “credited” varies based on the state plan pathway



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 CO₂ 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 CO₂ mass-based goal
- includes federally enforceable measures as a backstop



How Does EE/RE fit in the Clean Power Plan?

Type of Approach

Role of EE/RE in State Plan

How states can advance EE/RE

EM&V Req'd?

Considerations

Emission Standards

Mass

EE reduces cost, EE/RE lowers CO₂ emissions but are not enforceable or written into the state plan

- Allocate CO₂ allowances for EE/RE (e.g. through a set aside)
- Auction allowances, use \$ for EE/RE
- Secure matching allowances for solar, wind and low-income EE from Clean Energy Incentive Program (CEIP)

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- Unlimited flexibility with EE/RE implementation
- * EM&V generally not required for CPP purposes, except for CEIP and set asides specifically created to meet the leakage requirement

Rate

Explicitly written into state plan; Used to generate ERCs and directly adjust reported CO₂ emissions rate of affected EGUs

- Include EE/RE ERC tracking, trading, and issuance provisions in the state plan
- Issue ERCs for quantified and verified MWhs from eligible EE/RE measures
- Secure matching ERCs from CEIP for solar, wind, low-income EE

✓

- EM&V plans and M&V reports required
- EE/RE is explicitly tracked & credited
- Trading-ready plans facilitate broad access to ERCs
- EE/RE implemented after 2012 can generate credits starting in 2022

State Measures

State Demonstration Based on Mass

Explicitly included as supporting material for state plan – enforceable under state law; State EE/RE policies and measures can be used to help affected EGUs meet mass goal

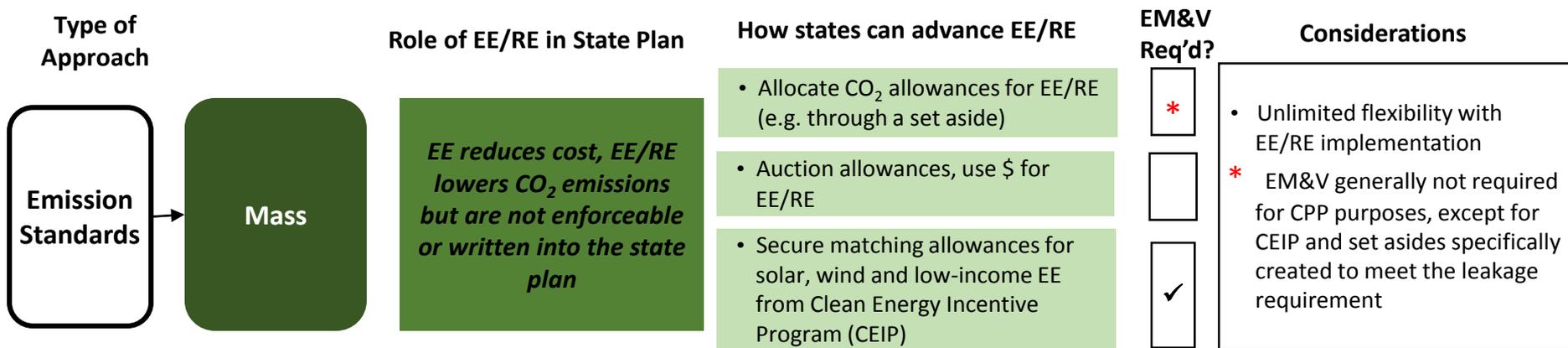
- Implement state EE/RE policies and programs (e.g., EERS, RPS, building codes) that are enforceable under state law, either to meet goal or in conjunction with federally enforceable limits
- Secure matching allowances from CEIP for solar, wind and low-income EE

✓*

- Projection of EE/RE impacts required and EGU CO₂ performance required
- ✓* EM&V Plan for EE/RE measures must be included as supporting material for state plan
- Backstop emission standards for affected EGUs if CO₂ reductions don't materialize



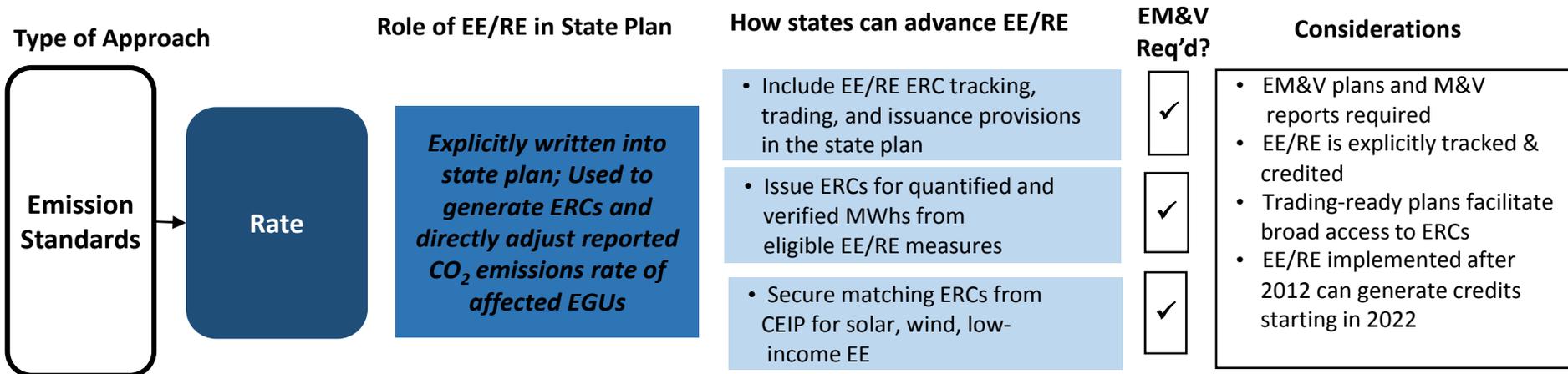
Mass-based emission standards approach



- Any EE/RE measure achieving savings or generation during the plan performance period, regardless of when it was installed, automatically “counts”
 - It displaces fossil generation and helps meet the CO₂ emission cap
- States have many opportunities to advance EE/RE as a complement to their state plan, through allowance allocation as part of a state plan, and can get matching allowances from EPA through the Clean Energy Incentive Program
- Generally doesn’t require EM&V as part of state plan – stack CO₂ emissions are the key criteria for showing that state goals for affected EGUs have been met.



Rate-based emission standards approach



- Quantified and verified MWhs from eligible EE/RE during the plan performance period (2022 and beyond) may be eligible for tradable Emission Rate Credits (ERCs), zero-emission MWh credits that can be used by affected EGUs to lower their reported CO₂ emissions rate during the plan performance period.
 - EE/RE eligible for ERCs includes measures implemented/installed after 2012 that are achieving MWh savings or generation during the compliance period.
 - Must be grid-connected and tied to a state plan.
 - No interstate discounting of EE impacts required.
- ERCs require EM&V for all MWhs; states must include ERC issuance and tracking provisions in state plans.
 - CPP proposed model rule includes presumptively approvable provisions for ERC issuance. Draft EM&V Guidance for EE is also available for comment.
- States that opt into the Clean Energy Incentive Program may award early action ERCs to EE/RE project providers that achieve MWh savings/generation in 2020 and/or 2021.



State measures approach

Type of Approach

State Measures

State Demonstration Based on Mass

Role of EE/RE in State Plan

Explicitly included as supporting material for state plan – enforceable under state law; State EE/RE policies and measures can be used to help affected EGUs meet mass goal

How states can advance EE/RE

- Implement state EE/RE policies and programs (e.g., EERS, RPS, building codes) that are enforceable under state law, either to meet goal or in conjunction with federally enforceable limits
- Secure matching allowances from CEIP for solar, wind and low-income EE

EM&V Req'd?



Considerations

- Projection of EE/RE impacts required and EGU CO₂ performance required
- ✓* EM&V Plan for EE/RE measures must be included as supporting material for state plan
- Backstop emission standards for affected EGUs if CO₂ reductions don't materialize

- States implement EE/RE programs and requirements (e.g. EERS, RPS) to help affected EGUs meet their mass goal – either alone or in conjunction with federally enforceable limits on affected EGUs
- EE/RE programs and policies must be enforceable under state law but are not federally enforceable
- Requires a projection of EE/RE impacts and EGU CO₂ emission performance, and an EM&V plan related to EE/RE policies and programs that must be included as supporting material for the state plan
- State Measures plan must include federally enforceable backstop emission standards for affected EGUs in the event state measures don't achieve required CO₂ emission reductions



Information and Resources

How can I learn more?

After two years of unprecedented outreach, the EPA remains committed to engaging with all stakeholders as states implement the final Clean Power Plan.

- For more information and to access a copy of the rule, visit the **Clean Power Plan website**: <http://www2.epa.gov/carbon-pollution-standards>
- For a factsheet on Energy Efficiency in the Clean Power Plan, see: <http://www2.epa.gov/cleanpowerplan/factsheet-energy-efficiency-clean-power-plan>
- Through graphics and interactive maps, the **Story Map** presents key information about the final Clean Power Plan. See: <http://www2.epa.gov/cleanpowerplan>
- For community-specific information and engagement opportunities, see the **Community Portal**: <http://www2.epa.gov/cleanpowerplan/clean-power-plan-community-page>
- For additional resources to help states develop plans, visit the **CPP Toolbox for States**: <http://www2.epa.gov/cleanpowerplantoolbox>
- For a graphical and detailed walk through of the EGU category-specific CO₂ emission performance rate and state goals, see **State Goal Visualizer**: <http://www2.epa.gov/cleanpowerplantoolbox>
- EPA provides **webinars** and **training** on CPP related topics at the air pollution control learning website. See: <http://www.apti-learn.net/lms/cpp/plan/>
- **Federal programs and activities** to support renewable energy and energy efficiency in low- and moderate-income communities: https://www.whitehouse.gov/sites/default/files/low-income_and_energy_efficiency_programs.pdf
- Federal initiative to **increase solar access** for all Americans: <https://www.whitehouse.gov/the-press-office/2015/07/07/fact-sheet-administration-announces-new-initiative-increase-solar-access>