

Discussion Workshop for Clean Power Plan Compliance Strategy

California Air Resources Board
October 2, 2015

Submitting Workshop Materials and Comments

- This presentation is posted at:

<http://www.arb.ca.gov/cc/powerplants/powerplants.htm>

- Written comments may be submitted until 5 pm (PDT) on Monday, October 19, 2015:

http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=111dcompliance-ws&comm_period=1

- During this workshop, e-mail questions to:

auditorium@calepa.ca.gov

Workshop Agenda

- Clean Power Plan Overview
- Areas for Discussion
 - Plan Design Options – State Measures Plans
 - Enforcement and Permitting
 - Analysis and Demonstrations
 - Environmental Justice
 - Reliability
 - Regional Interactions
- Schedule and Next Steps

Clean Power Plan Overview

- Central component of President Obama’s “Climate Action Plan,” developed after extensive outreach to states and other stakeholders.
- Several rules issued this August under Section 111 of the federal Clean Air Act create GHG emission limits for new, modified, reconstructed, and existing power plants.
- Today’s focus is on the emission guidelines for existing power plants – the “Clean Power Plan” or “CPP.”

Clean Power Plan Overview

- The CPP would yield 32% reductions from 2005 levels of CO₂ from covered plants by 2030 nationally.
- According to U.S. EPA, the CPP generates up to \$45 billion in net climate and public health benefits by 2030.
- The CPP will support continued progress towards GHG reductions required to stabilize the climate.
- The CPP is consistent with California's climate goals, and strongly supported by California.

Clean Power Plan Structure

The CPP sets “emission guidelines” for existing power plants reflecting the “best system of emission reduction,” recognizing the interconnected nature of the grid.

U.S. EPA’s calculations are based on three building blocks:

- Coal-fired EGU heat rate improvements
- Generation substitution (Replace higher emitting resources with lower emitting ones)
- Expanded use of renewable energy

States have flexibility to comply using any combination of measures.

Clean Power Plan Targets

The CPP establishes GHG targets in several forms; states may select an appropriate form.

Rate targets for each electricity generating unit (EGU) in 2030 are:

- 1,305 lb CO₂/MWh for steam generation and IGCC units
- 771 lb CO₂/MWh for combustion turbines
- California's "blended" final rate target is **828 lb/MWh**.
- California's corresponding mass target is **96.8 million short tons** in the 2030-31 period (e.g., ~ 48.4 **million short tons** in 2030).
- Target *mass* limits depend on affected EGU list, so may vary in state plan. Including a "new source" complement can also increase target.

Clean Power Plan Coverage

Applies to “affected EGUs” which:

- Are fossil-fueled fired steam generating units, integrated gasification combined cycle (IGCC) units, or combustion turbine units
- Commenced construction on or before January 8, 2014
- Are capable of selling more than 25 MW to a utility power distribution system
- Have baseload heat input ratings (heat rate) of greater than 250 MMBtu/hr
- Do not fall into exceptions for certain smaller facilities

ARB has contacted potentially affected EGUs for further information.

CPP Compliance Plan Design Options

U.S. EPA has offered several plan designs. Options include:

- Plans setting rate limits, plant-by-plant or statewide
- Plans setting mass limits
- Trading-based plans (for rate or mass)
- Plans including “state measures” that are not federally enforceable, with a federally-enforceable “backstop.”

CPP Compliance Deadlines

- State Plans are due September 6, 2016.
- Optional extensions to 2018 with an “initial submission” in 2016.
- Compliance begins in 2022. Interim targets and compliance periods in federal rule apply in 2024, 2027, and 2029. Final compliance must be maintained after 2030.
- Regional plan submissions are available.
- U.S. EPA is considering additional processing tools and flexibilities, including “parallel processing” and conditional or partial approval of plan submittals.

Discussion Topics

- Areas for Discussion
 - Plan Design Options – State Measures Plans
 - Enforcement and Permitting
 - Analysis and Demonstrations
 - Environmental Justice
 - Reliability
 - Regional Interactions

Plan Design Options – “State Measures” Plans

State Measures Plans:

- Are identified by U.S. EPA as an option for states with economy-wide programs that include affected EGUs.
- Require identifying “state measures” that collectively achieve emissions targets (possibly with emissions standards).
- Require a federally enforceable backstop to true-up emissions automatically if necessary.
- Are viewed by ARB staff as a strong option for California compliance.

“State Measures” Plan Design

- Several state policies support compliance, including:
 - Cap-and-Trade Regulation
 - Renewable Portfolio Standard
 - Energy Efficiency Standards
 - Emission Performance Standards
- The Cap-and-Trade Regulation ensures GHG reductions, and applies to affected EGUs, and so is a strong candidate “state measure.”
- Some requirements for EGUs would be federally enforceable.
- Backstop required to true-up emissions as necessary. Stakeholder process will inform backstop design.

“State Measures” Plan Design

- Integrating CPP requirements into Cap-and-Trade Regulation and Regulation for the Mandatory Reporting of Greenhouse Gases would support state measures plan design.
- Staff will review the CPP and the Regulations for potential amendments that may be necessary to include, such as
 - Alignment of reporting requirements
 - Backstop measures

Enforcement and Permitting

- Federally “Applicable” Requirements are reflected in Title V permits.
- Considerations for permit design include appropriate scope of enforceability, relationship to market operations and confidential data, district workload and resources.
- ARB is working with air districts and energy agencies on these issues.

Analysis and Demonstrations

- California will be required to show that affected EGUs will be on track to meet federal targets as a result of state measures and emissions standards. Leakage demonstration is also necessary.
- ARB is collaborating with the California Energy Commission and California Public Utilities Commission on possibilities for this demonstration.
- Production cost modeling (PLEXOS) from Integrated Energy Policy Report will likely be used.
- ARB will seek feedback on forecast scenarios relevant to the CPP from stakeholders.

Environmental Justice

- Environmental justice is a core priority for ARB.
- U.S. EPA includes meaningful engagement with vulnerable communities as a CPP planning requirement.
- ARB will consider potential environmental justice issues and work with ARB's Environmental Justice Advisory Committee on outreach opportunities.
- Cap-and-Trade Adaptive Management program may play a role in addressing any potential impacts.
- U.S. EPA's proposed "Clean Energy Incentives Program" may provide opportunities for communities.

Electrical System Reliability

- California regulators and planners successfully collaborate to maintain reliability.
- ARB must demonstrate that reliability has been considered in the CPP plan; this collaboration is one vehicle to do so.
- ARB will consult with energy and reliability regulators to discuss any additional analyses that may supplement ongoing processes.

Western Regional Issues

- The CPP allows for regional collaborations, including trading systems in some circumstances (for either mass allowances or rate-based “ERCs”).
- ARB will evaluate these consistent with existing requirements, including:
 - AB 32 requires California to account for GHG emissions associated with all electricity consumed in California (both imported power and power generated instate).
 - ARB must avoid emissions leakage and resource shuffling.
 - SB 1018 allows California to link with other jurisdictions with programs of equivalent stringency.
 - CPP provides certain trading designs and limitations.

Tentative Schedule

Date	Event
November 10, 2015	Workshop on modeling approach
November 19, 2015	Informational update to Board
December 10, 2015	Workshop on permitting and backstop design
Spring 2016	Further workshops as needed
June 2016	Draft compliance plan released; comment period follows
July 2016	First Board hearing
September 2016	Draft Plan or Initial Submission forwarded to U.S. EPA
Spring 2017	Second Board hearing; U.S. EPA Decision

Next Steps

- Workshops on more focused issues will be scheduled and noticed over the next months.
- ARB will continue to review data from potentially affected EGUs.
- ARB may submit comments on model federal and state plans.
- ARB will continue to participate in regional and national working groups and stakeholder discussions.

Additional Information

- California Clean Power Plan webpage:
<http://www.arb.ca.gov/cc/powerplants/powerplants.htm>
- Contact information:

Craig Segall, Senior Staff Counsel
Craig.Segall@arb.ca.gov

Chris Gallenstein, Staff Air Pollution Specialist
cgallens@arb.ca.gov

Supplemental Technical Slides

Affected Unit Exemptions

- Units subject to TTTT
- Steam Generating units and IGCC that have federally enforceable permit that limits annual net-electric sales to one-third or less of potential electric output or 219,000 MWh or less
- Non-fossil units capable of burning greater than 50% non fossil fuel and historically burned less than 10% fossil fuel or which are subject to permit reflecting this 10% limit
- Stationary combustion units not capable of combusting natural gas
- CHP units that have historically limited annual net-electric sales to design efficiency times potential electric output or 219,000 MWh (whichever is greater), or which are subject to permit reflecting this limit.

Affected Unit Exemptions

(Continued)

- Multiple units where effective generation capacity is 25 MWs or less
- Municipal Waste Combustors subject to 40 CFR Part 60, Subpart Eb.
- Commercial Industrial Solid Waste Incinerators subject to 40 CFR Part 60, Subpart CCCC.