

**Appendix I to California's Proposed Compliance
Plan for the Federal Clean Power Plan:
Record of Public Participation and Outreach**

ARB, PUC, and CEC staff have engaged in extensive outreach activities developing this Proposed Plan. This appendix documents much of that activity. It includes a complete record of public workshops held to discuss elements of the Proposed Plan, separate presentations and meetings with ARB's Environmental Justice Advisory Committee, and a presentation delivered to California Balancing Authority Areas as part of a discussion of electrical system reliability issues.

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Matthew Rodriguez
Secretary for
Environmental Protection

Air Resources Board

Mary D. Nichols, Chairman
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Edmund G. Brown Jr.
Governor

WORKSHOP NOTICE

Public Workshop on U.S. EPA's Clean Power Plan

Dear Sir or Madam:

The California Air Resources Board (ARB or Board) in collaboration with the California Energy Commission (CEC), and California Public Utilities Commission (CPUC) invites you to participate in a public meeting to discuss the United States Environmental Protection Agency's (U.S. EPA) proposed Clean Power Plan, also known as 111(d), to regulate carbon dioxide emissions from existing fossil fueled power plants. The meeting is open to the public and participation by all interested parties is encouraged. The meeting will be held at the following date, time and location:

Date: Tuesday, September 9, 2014

Time: 10:00 a.m. – 3:00 p.m.

Location: California Environmental Protection Agency (Cal/EPA)
Byron Sher Auditorium
1001 I Street, 2nd Floor
Sacramento, California 95814

Directions to the Cal/EPA headquarters building and public transit options can be found at the Cal/EPA website at <http://www.calepa.ca.gov/epabldg/location.htm>.

Background:

As part of President Obama's 2013 Climate Action Plan, U.S. EPA proposed on June 2, 2014 the Clean Power Plan (proposed rule), also known as 111(d), to reduce carbon dioxide emissions from existing fossil fueled power plants. The proposed rule can be found at: <http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule>. Using four general measures called "building blocks", the proposed rule looks beyond traditional source-specific measures, and seeks to reduce carbon emissions from the power sector as a whole through mechanisms such as improved energy efficiency, both on the generation and demand sides, and encourages the development of renewable energy resources. Because of the interconnectedness of the western power grid, the proposed rule allows states the option to work together in developing compliance plans. ARB and state energy agency staff are currently exploring these opportunities for coordination with other western states that participate in the Western

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Interested Parties

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Electricity Coordinating Council and/or Pacific Coast Collaborative. ARB and state energy staff are also having discussions with a broader coalition of states to promote support for U.S. EPA's effort and find common ground on issues that will support a rigorous federal target for emissions reductions while giving states flexibility to innovate as they improve existing programs and develop new ones.

At the Workshop, staff plans to present an overview of U.S. EPA's proposed rule, including a brief discussion of how U.S. EPA applied the four building blocks to establish California's emission limits. In addition, staff will share their analysis of the impacts of the proposed rule on existing energy and AB 32 programs and discuss our preliminary comments on elements of the proposed rule we plan to support and where we have identified concerns. The workshop is an opportunity to hear the views of stakeholders and to reflect/incorporate these views, where possible, in the State's comment letter that will be submitted to U.S. EPA prior to the October 16, 2014 deadline. Potential issues for discussion include enforceability, interstate energy efficiency and renewable energy crediting, and potential strategies for collaboration with other western states as a part of joint compliance options. Staff from the ARB, CEC, and CPUC will be present to answer questions from workshop attendees.

An agenda and presentation material will be posted at <http://www.arb.ca.gov/cc/powerplants/powerplants.htm> prior to the public meeting.

Live Video/Audio Webcast:

The meeting will be webcast for those unable to attend in person. The broadcast can be accessed on the day of the workshop at: <http://www.calepa.ca.gov/Broadcast>. Information on submitting questions or comments will be provided during the webcast for remote participants.

Special Accommodations:

If you require special accommodation for the scheduled meeting or need this document in an alternate format (e.g. Braille, large print) or another language, please contact Mr. Chris Gallenstein, Staff Air Pollution Specialist, at (916) 324-8017 or via e-mail at cgallens@arb.ca.gov as soon as possible, but no later than 5 business days before the scheduled meeting. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Interested Parties

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We welcome and encourage your participation in this public meeting. If you have questions regarding the meeting, please contact me at (916) 322-6026 or via e-mail at mtollstr@arb.ca.gov, or Mr. Tung Le, Manager, at (916) 445-1818 or via e-mail at ttle@arb.ca.gov.

Sincerely,

Michael Tollstrup, Chief
Project Assessment Branch

cc: Tung Le
Manager
California Air Resources Board

California Air Resources Board
CLEAN POWER PLAN PROPOSED RULE (111(d))
DISCUSSION PAPER
September 2014

Introduction

At the 2009 United Nations Climate Change Conference in Copenhagen, President Obama pledged to reduce the United States' greenhouse gas (GHG) emissions to 17 percent below 2005 levels by 2020. In 2013, the president introduced his Climate Action Plan (Plan), which is the Nation's roadmap for attaining the 2020 goal. As a part of the Plan, the President directed the United States Environmental Protection Agency (U.S. EPA) to develop regulations for electric generating units (EGU). EGUs are the largest single source of GHG emissions in the United States, accounting for about one-third of all domestic GHG emissions.

On June 2, 2014, U.S. EPA proposed the Clean Power Plan (proposed regulation) under section 111(d) of the Federal Clean Air Act. The proposed regulation can be found at: <http://www2.epa.gov/carbon-pollution-standards/clean-power-plan-proposed-rule>. Under U.S. EPA's proposed regulation, carbon emissions from existing EGUs are expected to be cut by 30 percent below 2005 levels by 2030.

U.S. EPA is soliciting comments on the proposed regulation. The Air Resources Board (ARB), in collaboration with the California Energy Commission (CEC) and California Public Utilities Commission (CPUC), and in consultation with the California Independent System Operator (CAISO) have been working together to identify potential issues/concerns and will be providing written comments to U.S. EPA by the October 16, 2014 deadline. In addition, because of the interconnectedness of the western power grid, the proposed rule allows states the option to work together in developing compliance plans. ARB and state energy agency staff are currently exploring these opportunities for coordination with other western states that participate in the Western Electricity Coordinating Council (WECC) and/or Pacific Coast Collaborative. ARB and state energy staff are also having discussions with a broader coalition of states to promote support for U.S. EPA's effort and find common ground on issues that will support a rigorous federal target for emissions reductions while giving states flexibility to innovate as they improve existing programs and develop new ones.

The proposed rule under section 111(d) only applies to existing EGUs. New EGUs are subject to a separate rulemaking by U.S. EPA under section 111(b) of the Federal Clean Air Act. Many of these new, more efficient EGUs may, over time, displace existing dirtier plants regulated under 111(d). This may create an incentive in many states to increase the replacement rate as a result of the 111(d) rulemaking.

As a result, we are strongly encouraging U.S. EPA to ensure that 111(b) rules are as rigorous as possible to continue driving down emissions in the power sector. In particular, California has previously urged U.S. EPA to set distinct standards for subcategories based on a natural gas-fired power plant's operational profile (for example, baseload, conventional load-following, fast-start/ramping, and peaking) to ensure the lowest achievable emissions. California is encouraging U.S. EPA to pursue this approach in its final 111(b) rule. A copy of our comment letter can be viewed at: http://www.arb.ca.gov/cc/powerplants/111b_comment_letter.pdf.

Background

The proposed 111(d) rule, which would be codified under 40 CFR Part 60, Subpart UUUU, sets state-specific carbon dioxide (CO₂) emission limits for the energy sector as a whole. The limits were established by comparing CO₂ emissions from all subject EGUs to total electricity generation which includes zero or near-zero carbon renewables, avoided generation due to energy efficiency, and some nuclear power. The requirements are applicable to the following types of EGU units constructed on or before 1/8/2014: steam generating and integrated gasification combined cycle (IGCC) units with a base load rating greater than 73 MW (250 MMBtu/hr) and constructed for supplying one-third or more of its potential output and producing more than 219,000 MWh net on an annual basis; and stationary combustion turbines rated at greater than 73 MW that are supplying greater than one-third of their potential electric output, produces more than 219,000 MWh on a three year rolling average, and combusts more than 10 percent fossil fuel and more than 90 percent natural gas on a heat input basis on a three year rolling average.

The rate calculation includes fossil sector emissions in the numerator and total state energy production (including energy production from zero carbon and energy efficiency resources) in the denominator. The calculation is based on CO₂ emissions from affected units in pounds divided by state electricity generation from fossil-fuel fired power plants and specified low or zero emissions units such as nuclear and renewables, as well as energy savings from energy efficiency programs.

Under Section 111 of the Federal Clean Air Act, U.S. EPA sets emission targets for covered sources in each state based upon the degree of reduction achievable through the Best System of Emissions Reductions (BSER). U.S. EPA's analysis concluded that BSER for existing power plants was best represented by the effect of four sets of measures, called "building blocks." The four building blocks used were:

- 1) Increased energy efficiency at coal-fired plants: U.S. EPA assumed coal plants could increase efficiency and obtain a 6 percent heat rate improvement.
- 2) More effective use of existing natural gas-fired plants: U.S. EPA assumed that natural gas-fired combined cycle plants could operate up to 70 percent of capacity.

- 3) Increased renewable generation and retention of “at risk” nuclear generation: U.S. EPA assumed that renewable generation could be increased. For California, U.S. EPA used a WECC wide renewable energy average of 21 percent and a growth rate of approximately 6 percent per year. In addition, U.S. EPA assumed that six percent of a States’ nuclear capacity, operating as of May 2014, could be factored into the state performance goal.
- 4) Expand energy efficiency programs: U.S. EPA assumed that energy efficiency could ramp up to a 1.5 percent annual savings rate.

Although the emission targets set as a result of these calculations must be met by each state, the particular strategies which inform the building block calculations are not required elements of a state’s compliance strategy. The building blocks are only used to set a state’s target. States are free to use different approaches in creating their own plans as long as the interim and final 2030 emissions targets are achieved.

U.S. EPA set California’s interim goal (the average of years 2020-2029) at 556 lbs CO₂/MWh and the final goal at 537 lbs CO₂/MWh by 2030. This goal is rate-based: while the numerator counts emissions from covered facilities, the denominator also includes avoided generation resulting from energy efficiency and zero-carbon electricity.

CEC, in consultation with ARB and CPUC, performed a preliminary analysis to estimate the expected CO₂ rates in 2020, 2024 and 2030. Based on this analysis, we believe that using the current mix of energy and environmental programs being implemented within the State will bring us into compliance with the U.S. EPA proposed targets for California. In addition, U.S. EPA’s rule, as proposed, will further support existing state policies on energy and air quality.

States have the option to use either the rate-based goal or to convert the rate-based goal to a mass-based goal. If a state chooses to use a mass-based goal, the plan must be developed to identify what the mass-based goals will be and describe the analytical process used to determine the goal. U.S. EPA has proposed that a state can use a simple conversion based on the established state goals and the projected generation or use model runs to determine the mass-based goal. U.S. EPA is taking comment on how to calculate a mass-based goal. California is currently reviewing both rate and mass options and is taking input on which option to use.

The proposed regulation requires each state to submit a SIP-like plan by June 30, 2016. The proposed regulation allows for a single state plan or states can work together and submit a multi-state plan. The state plan can include existing state programs such as the Cap and Trade Regulation (under AB 32), and demand side reductions (energy efficiency (EE) and renewable energy (RE)).

States are required to include in their plan a list of measures and describe how these measures will result in compliance with the interim and final performance goals. States

are to include a “glideslope” that will show for every 2-rolling calendar years from 2020 to 2029 and for 2030 what the expected emissions will be to meet the interim and final goals. A state must include corrective measures in the plan as a backstop and implement these measures if the actual reported emissions are off by more than 10 percent from what was projected in the plan.

Plans must include the following: (1) A list of affected entities and their emissions; (2) A description of the plan approach and the geographic scope of the plan; (3) Identification of the emission performance level to be achieved from 2020-29 and 2030; (4) A demonstration that compliance will be achieved; (5) Emission standards for the affected entities; (6) A demonstration that each standard is “quantifiable, non-duplicative, permanent, verifiable, and enforceable with respect to an affected entity”; (7) Milestones and corrective measures, as necessary; (8) Identification of applicable monitoring, recordkeeping, and reporting requirements for affected entities; (9) Description of the process and schedule for state reporting to U.S. EPA; and (10) Certification that the plan was developed with through a public process.

Discussion

Overall, ARB and our state energy agency partners are supportive of the proposed regulation. Implementing the proposed regulation will reduce emissions of GHGs, criteria, and toxic pollutants providing both public health and climate benefits. In addition, the U.S. EPA has developed a balanced and flexible proposal that will allow states to build on existing programs and develop strategies that reflect individual state needs and goals.

There are a number of key considerations that are critical to ensuring a national program supports individual states progress in establishing and carrying out their own climate programs. These include:

- 1) Ensuring that compliance with the federal program complements compliance efforts now required for California State program. Entities participating in state programs that meet federal requirements should be able to comply with federal programs with minimal additional procedural hurdles, focusing energy on emissions reductions rather than process. In particular, federal enforcement requirements should ensure states and covered entities stay on track, while leaving room for state policy innovation going forward;
- 2) Supporting regional planning, ranging from region-wide agreements to targeted agreements on particular issues, to support integrated carbon reductions across grid regions. The final rule should recognize energy import and export relationships between states as they work together to ensure proper crediting of emissions reductions, encourage increased use of renewable energy and energy efficiency, and lay the groundwork for multi-state partnerships;

- 3) Balancing state policy-making autonomy with the need for accountability by providing clear tools for states to use in assessing programmatic level compliance using existing monitoring, verification, and reporting system requirements when possible;
- 4) Allowing sufficient time for states to transition to a cleaner utility sector with the ultimate goal of decreasing the average emission rate, and total emissions, of the fossil generating fleet on a national basis and bringing higher carbon states in line with more proactive states, such as California.

In developing the proposal, U.S. EPA had to find a balance between many different state policies, programs, and goals to come up with a program that would deliver GHG reductions, provide accountability and enforceability for state plans, allow states the flexibility to choose the mix of technologies and policies that work best for them, and provide the option for regional planning recognizing the interconnectedness of multi-state grids.

ARB will work with U.S. EPA towards the goal to ensure that the final regulation supports flexible state programs to encourage innovation, provides common accounting and measurement systems to support regional planning, and allows states to implement programs with appropriate federal oversight requirements.

ARB is seeking stakeholder input on several areas of particular interest on 111(d) as described below.

1. Balancing federal approval requirements with state flexibility

Under the Clean Air Act, states must be able to demonstrate that the plans submitted under section 111(d) are federally enforceable as a practical matter. However, under the statute, states are given a wide-latitude as to how they demonstrate compliance with the performance goals set by U.S. EPA. Recognizing this fact, it is important that U.S. EPA remain flexible, but also requires states to provide a plan that ensures reductions are achieved with appropriate reporting, and contingency measures if states fall short of projected goals.

Several different federal enforceability structures may be appropriate in section 111 plans and U.S. EPA proposed options in their proposal. ARB seeks stakeholder comment on these options.

(1) Baseline and complementary measures.

U.S. EPA's proposal, and prior guidance on state criteria pollutant planning under section 110 of the Federal Clean Air Act, suggest that certain state measures which are already in force under the status quo, or whose effects complement the effects of other federally-enforceable measures, may not themselves need to be federally enforceable (though discontinuing these policies may trigger plan revisions). ARB is considering

what state policies might appropriately be described as baseline or complementary measures.

(2) Using existing Cap-and-Trade regulations as the basis for meeting section 111(d) emissions limits.

California's economy-wide Cap-and-Trade program limits existing power plant emissions, because all these sources must hold and surrender Cap-and-Trade allowances consistent with their emission compliance obligation. Thus the program accounts for the effects of other policies, including energy efficiency and renewables. ARB is considering whether aspects of the Cap-and-Trade program could help ensure enforceability of section 111(d) limits and, if so, what sorts of analytic demonstration would be required to assure compliance.

(3) State commitment approaches.

U.S. EPA is exploring whether states can make enforceable state commitments to achieve emissions reductions from their programs without making the program themselves federally enforceable. For instance, California might commit, subject to federal law, to achieving certain reductions through the operation of its energy efficiency programs without making provisions of those programs themselves federally enforceable. Similar constructs have been used for plans under section 110, from at least California, Texas, and New York, and have been upheld by the courts. Compliance is monitored through regular reporting and contingency planning is used to ensure states don't get off track. This approach ensures continuous progress towards meeting federal targets, while giving states flexibility to innovate and improve programs. ARB is interested in whether this approach is appropriate here.

Questions for discussion:

Without limiting other topics, ARB solicits stakeholder feedback on the following:

- 1) Which enforceability mechanisms might be most appropriate for a California section 111 plan?
- 2) If ARB designates some programs as complementary or baseline programs, which state programs should these be, and which should be put forward as federally enforceable components of the plan?
- 3) What sorts of demonstrations can ARB use to show that its Cap-and-Trade program, combined with other state programs, will reliably produce compliance with the federal target under a range of best- and worst-case scenarios?
- 4) What components, if any, of the Cap-and-Trade program might be appropriate or inappropriate for federal enforcement? What are the benefits and costs of those arrangements?

- 5) If ARB uses state commitments to support any aspects of its plan, what sort of commitments (in terms of rigor of reduction, time, and program operation) are appropriate, and what data should ARB use to support these commitments?
- 6) What sorts of reporting, from both the state and covered entities, would be appropriate to ensure emissions reductions are met?
- 7) What sort of contingency and backstop measures should ARB consider building into the plan to ensure that it can respond to unexpected events?

2. Accounting for Renewable Energy and Energy Efficiency in Regional Planning

Under U.S. EPA's proposed rule, there are default rules for counting energy efficiency and renewable energy in state plans, though these rules may be adjustable through regional agreements. Under the default rules, states can claim credit only for renewable energy they consume and that is accounted for under their renewable policies; as a result, states exporting renewable energy may not receive credit for these exports without further agreements with importing states. A similar dynamic applies to energy efficiency. States can only take credit for the effects of demand reduction resulting from their state policies at EGUs within their borders. This means that states which import a portion of their power may not receive full credit for emission reductions resulting from their energy efficiency policies that reduce the need for imported power. At the same time, energy exporting states may not be able to claim credit for these emission reductions either. As a result, both of these default rules may not capture all incentives for energy efficiency and renewable energy development in areas, like the West, with many large export and import relationships.

These import/export relationships are particularly important in the West because there are numerous long distance power transfers in the region. California is particularly interested in working with our regional partners to explore joint compliance options and ensure that renewable energy and energy efficiency are accounted for across state lines to strongly encourage further investments. We will continue to work with U.S. EPA to ensure this type of regional planning will be approvable.

Questions for discussion:

- 1) How can regional agreements best incentivize low carbon power in exporting states?
- 2) How can accounting rules for renewables and energy efficiency support regional planning?

- 3) Can multi-state agreements expand opportunities for more cost-effective emission reductions?
- 4) Are there existing programs, such as renewable energy credits, that should be used to account for reductions across state lines?

3. Regional Planning Mechanics

Recognizing that energy regulation may differ significantly between states, California is exploring various approaches to regional planning, including large-scale regional plans and a more focused modular approach that would allow implementing specific elements in a modular fashion. Under this modular approach, states would develop a state-specific plan that could also include common plan elements between states. Such common elements might include, for instance, a common accounting system, which allocates compliance credit among the states, with the bulk of each state's plan then focused on state-specific measures. For instance, states might want to develop regional plans accounting for renewable energy and/or energy efficiency credits. The "module" would contain enforceable commitments and tracking provisions, and be submitted by each state as a common plan element between two or more larger plans, which would ensure no double counting of carbon reductions.

In order to enable states to carry out this type of regional planning, U.S. EPA will need to develop clear guidance on legal responsibilities, as well as common accounting and measurement systems between states. California will continue to work with U.S. EPA and our regional partners to further explore this option.

Questions for discussion:

- 1) What are some of the pros and cons of large scale regional plans versus a modular approach?
- 2) What types of elements (e.g. accountability, enforceability) should be included in any regional plan?
- 3) What sorts of specific issues must accounting and measurement systems address in order to support regional planning?
- 4) What if a state under a regional plan fails to deliver emissions reductions, how should the shortfall be addressed and by whom?
- 5) Plans typically are revisited over time. What should this process look like under a regional plan?
- 6) What legal designs might be available and approvable for a regional plan? Would, for instance, it be appropriate for states to separately adopt

complementary plan language, or would a single, more uniform, document be needed?

- 7) Under a regional plan scenario, should states be required to use the same compliance metric? If they do not, what mechanisms could be used to address any “seam” issues between states using different compliance systems?

4. Rate versus Mass Calculation Metrics

The proposed targets for each state are expressed as a rate (lbs CO₂/MWh). U.S. EPA is allowing states the option to show compliance using a mass-based approach.

ARB and energy agency staffs are currently exploring the pros and cons of using a rate versus mass target. Rate targets may have some advantages: California is unique in that policies are being implemented to greatly increase the deployment of electric vehicles and the infrastructure necessary to support them. In addition, some local air districts are looking at greater electrification of residential, commercial, and industrial sectors to minimize fuel combustion and its associated emissions. These policies are likely to result in the need for more generation capacity. Although some of this capacity will likely be served by new facilities not subject to section 111(d), some may come from existing facilities. A rate-based metric addresses this situation by providing some flexibility, allowing for growth in output while limiting carbon intensity.

On the other hand, the mass-based option would limit overall carbon emissions, consistent with California’s larger climate goals, and would likely be easier to monitor and enforce given many of our existing climate programs are mass-based. Mass-based systems may also help better support regional planning, since ton-based accounting is a relatively straightforward way of addressing effects on emissions from power transfers across state lines. Mass-based accounting may also, as a result, help reduce the need for standardized monitoring and verification systems in regional planning. A careful analysis will be needed to determine the best approach for California.

U.S. EPA provided some guidance on converting rate-based targets to mass-based. However, the language, as proposed, leaves room for multiple interpretations. ARB staff has requested U.S. EPA to provide some specific examples of how they would perform this conversion. ARB is continuing to work with U.S. EPA on acceptable calculation methodologies to ensure that the resulting demonstration is fair and equitable, regardless of the form of the standard.

Questions for discussion:

- 1) The proposed regulation allows states the option of choosing a compliance metric. What are the pros and cons of each metric for California?
- 2) What approaches for converting between rate and mass systems are most appropriate for California?

- 3) Under a mass-based goal should states be allowed to grow the mass-based goal in future years to account for growth?

5. Stringency of Targets

As described above, in establishing each state's target, U.S. EPA used four building blocks. These building blocks included a number of general assumptions, projected growth of electricity demand, states' varying energy mixes, and cost-effective additionality of renewable energy and energy efficiency resources. Some of these assumptions and projections are based on a national or regional basis, instead of an individual state-by-state analysis.

For example, additional renewable energy resources identified in building block 3 of the proposal are based on a regional analysis of existing renewable portfolio standards (RPS). For the west, this means that California's existing state-mandated 33 percent RPS is undervalued in U.S. EPA's 2030 target for California, as many other western states do not have comparably aggressive RPS goals. Using U.S. EPA's current methodology, California is credited with a 20 percent RPS goal by 2030 to meet the proposed target of 537 lbs CO₂/MW-hr.

Questions for discussion:

- 1) Are there ways in which the proposed methodology could be revised to improve the accuracy, and rigor, of the state targets? What would, for instance, be the impacts of a state-by-state analysis of energy mix, anticipated load growth, and resource availability on the targets? Which revisions would produce the most beneficial results?
- 2) In the context of a California-only compliance plan, what are the pros and cons to increasing the stringency of California's target? What about a multi-state compliance approach?

U.S. EPA Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units - 111(d)

Scoping Meeting

September 9, 2014



Outline

- Background
- Proposed U.S. EPA Guidelines
- Estimating California's 2030 Emissions Profile
- California's Perspective: Key Elements of a Compliance Plan
- Discussion Topics
- Next Steps
- Rulemaking Schedule

Background

- June 25, 2013 - President Obama releases Climate Action Plan
- September 20, 2013 - EPA proposes rule for new electric generating units – 111(b)
- June 2, 2014 - EPA proposes rule for existing electric generating units (EGUs) – 111(d)

New Power Plants – 111(b)

- EPA released proposed rule for new electric generating units in September 2013
- Applies to units built/operated after January 8, 2014
- CO₂ limits based solely on fuel type and size

New Power Plants – 111(b)

California's comments:

- EGUs increasingly used to integrate renewable resources
- Subcategorize EGUs by operational type and set appropriate standards
- California to provide data to U.S. EPA to help in setting subcategories and appropriate emission limits
- New EGUs may be used as compliance mechanism for 111(d) rule – emission limits must be stringent
- California agency comments are posted here:
http://www.arb.ca.gov/cc/powerplants/111b_comment_letter.pdf

Modified and Reconstructed Power Plants – 111(b)

- EPA released proposal to regulate modified and reconstructed power plants on June 2, 2014
- Rule applies to EGUs modified or reconstructed on or after January 8, 2014
- Proposed emission limits generally align with those for new EGUs
- EPA does not expect many EGUs will be subject to this regulation

Existing Power Plants – 111(d)

June 2, 2014 - EPA released proposed rule for existing EGUs

- Expected to reduce CO₂ emissions 30% from 2005 levels by 2030
- Limits carbon intensity of a state's electrical grid as a whole
- Credit given for demand-side energy efficiency programs and renewable energy programs

111(d) Building Blocks

Four building blocks to set emissions target:

- Make existing coal-fired EGUs more efficient
- Increase usage of lower-emitting EGUs
- Increase zero and low-emitting power sources
- Increase demand-side energy efficiency

Building blocks are used to set emissions targets, but states have flexibility to comply using any combination of measures

Proposed 111(d) Targets

EPA proposed California's emission baseline was
698 lbs CO₂/MW-hr in 2012

California's targets:

556 lbs CO₂/MW-hr interim target (2020-2029)

537 lbs CO₂/MW-hr final target (2030)

Estimate of GHG Emissions

- Based on 2013 IEPR High Demand Forecast Case
 - Low Prices, plus High Economic and Demographic Forecasts
 - Low AAEE for IOUs, Low EE for POUs
 - In-State Renewables 33% in 2024, Escalated to 2030 Based on CEC RNS Methodology
 - OTC Retirements on 2013 Compliance Schedule
 - Average Hydro Conditions
 - CSI (PV) from High Demand Forecast Case

Estimating California's 2030 Emissions Profile

Projections for California		2012	2020	2024	2030	EPA Targets
1	In-State: BAU Electricity Emissions (MMT)	48	53.9	52	49.3	
2	In-State: BAU Cogen UTO Emissions (MMT)	2.5	2.5	2.5	2.5	
3	In-State: Reductions (MMT)	-	-	-	-	
4	Total In-State Emissions (MMT)	50.4	56.4	54.5	51.8	
5	In-State: Natural Gas and Cogeneration (GWh)	101,500	122,000	119,100	114,900	
6	In-State: Cogeneration UTO (as GWh)	5,500	5,500	5,500	5,500	
7	Sub-Total for Emissions Determination (GWh)	107,000	127,500	124,600	120,400	
8	In-State: Nuclear: Diablo Canyon (GWh)	17,700	17,800	19,000	19,000	
9	In-State: Nuclear: SONGS (GWh)	800	-	-	-	
10	In-State: Clean SONGS Replacement (GWh)	-	-	-	-	
11	In-State: Other Generation: Large Hydro (GWh)	23,200	27,900	27,900	27,900	
12	In-State: Other Generation: Small Hydro (GWh)	4,300	3,900	3,900	3,900	
13	In-State: RPS Eligible Renewables Excl. Small Hydro (GWh)	28,300	72,300	76,800	87,300	
14	In-State: Energy Efficiency (GWh)	-	9,500	14,100	14,100	
15	In-State: California Solar Initiative (PV) (GWh)	-	5,500	7,200	10,900	
16	Total In-State Generation (GWh)	181,300	264,400	273,500	283,500	
17	Total GRID EF (lbsCO2e/MWh)	613	470	439	403	Interim 556 Final 537
18	Average Annual Growth Rate for Natural Gas and Cogeneration 2020-2024		-0.61%			
19	Average Annual Growth Rate for RPS Renewables Excl. Small Hydro 2020-2024		1.50%			
20	Average Annual Growth Rate for California Solar Initiative (PV) 2020-2024		7.20%			

Proposed 111(d) Rule

Compliance Plan Requirements

- Each state must develop a “SIP-like” plan demonstrating compliance with emission targets
- Allows flexibility for plan elements (can include Cap-and-Trade, renewable energy, energy efficiency)
- Can be rate based or mass based
- Can be single state or regional plan

California's Perspective: Key Elements of a Compliance Plan

- Avoids disrupting existing programs
- Minimal additional program requirements
- Maintain state policy-making autonomy
- Ensure consistent accounting of renewable energy and energy efficiency programs
- Allow flexibility for multi-state plans
- Consistent metrics to ensure real reductions nationwide

Discussion Topics

- **Balancing Federal Approval Requirements with State Flexibility**
 - Using a “state commitment”-based approach for “portfolio” type plan
 - Existing state programs achieve required reductions without making those programs federally enforceable

Discussion Topics (cont.)

- **Accounting for Renewable Energy and Energy Efficiency in Regional Planning**
 - Multi-state compliance flexibility with modular agreements
 - MOUs account for interstate RE/EE to avoid double counting
 - Incentivizing additional RE/EE investments

Discussion Topics (cont.)

- **Regional Planning**

- States develop state-specific plan that includes common plan elements between states
- Further firming of Cap-and-Trade via partial linkages and adjustments to import/export compliance obligations

Discussion Topics (cont.)

- **Rate versus Mass Calculation Metrics**
 - EPA proposes rate metric
 - Increased generation needed as California electrifies transportation and industrial sectors
 - Rate metric provides flexibility to accommodate growth
 - Mass metric considerations
 - Caps emissions consistent with California Cap-and-Trade
 - Aligns with California mass-based programs
 - Easier accounting of program effects
 - Requires consistent calculation methodology to prevent gaming

Discussion Topics (cont.)

- **Stringency of Targets**
 - BSER based on state-by-state analyses instead of as-proposed national/regional analyses
 - Pros and cons of a more stringent CA performance goal
 - Multi-state performance goal considerations

Next Steps

Solicit input from California stakeholders on proposed EPA rules

Continue to evaluate EPA's proposal and prepare joint state agency comments – comments due October 16, 2014

Continue to communicate with other states to evaluate opportunities for regional collaborations

Schedule

EPA must finalize 111(b) rules prior to or concurrently with finalizing 111(d) rule – anticipated in June 2015

States must submit compliance plans by June 2016

States are allowed until June 2018 for multi-state plans

Submit Written Comments

Written comments for state agency consideration
due by 5:00 PM, September 23, 2014

Send comments to:

Chris Gallenstein

by email: cgallens@arb.ca.gov

Contact Information

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This page last reviewed November 24, 2014

Public Comments: U.S. EPA Rule 111(d)

On September 9, the California Air Resources Board (ARB) held a public workshop to discuss U.S. EPA Proposed Carbon Pollution Emission Guidelines for Existing Electric Utility Generating Units - 111(d). During the public workshop, ARB staff announced that it will accept written public comments for state agency consideration and [due by 5:00 PM, September 23, 2014](#).

The comments received are posted below.

Comment Letters Recieved

Date Recieved	Name -or- Organization
9-9-2014	Citizens Climate Lobby
9-11-2014	Susan Vargas, Stanford University (Email Question)
9-23-2014	Marin Clean Energy
9-26-2014	Opower, Inc.
10-15-2014	Western Power Trading Forum
10-28-2014	Energy Producers and Users Coalition
11-24-2014	Calpine Corporation

For information, please contact:

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What's New List Serve Post Display

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CC -- PUBLIC WORKSHOP ON POTENTIAL 2016 AMENDMENTS TO THE CAP-AND-TRADE REGULATION AND CALIFORNIA PLAN FOR 111(D) COMPLIANCE

Posted: 14 Sep 2015 11:14:45

Air Resources Board (ARB or Board) staff invites you to participate in a public workshop on October 2, 2015 to discuss the scope and regulatory schedule for potential amendments to the Cap-and-Trade Regulation (Regulation) and California's plan for compliance with the U.S. Environmental Protection Agency's (U.S. EPA) Clean Power Plan (111(d) rule).

Friday, Oct, 2, 2015

9:00 am - 5:00 pm

Byron Sher Auditorium
CalEPA Headquarters Building
1001 I Street
Sacramento, California 95814
Webcast: <http://www.calepa.ca.gov/broadcast/?BDO=1>

Purpose of Workshop

This workshop will commence the public process to develop 2016 amendments to the Cap-and-Trade Regulation and Clean Power Plan compliance effort, and it will include ARB staff presentations on three topics: (1) general Cap-and-Trade Regulation amendments, (2) cost-containment and market oversight provisions, and (3) California's plan for compliance with the U.S. EPA Clean Power Plan, issued under the federal Clean Air Act.

First, staff will present general goals for the upcoming amendment process and seek input from stakeholders on potential Regulation amendments that will apply to the Program's third compliance period and to the post-2020 Program. Amendments impacting the Program in the third compliance period are expected to address the following areas: streamlining offsets, auctions, and management of information in the Compliance Instrument Tracking System Service (CITSS); updating leakage prevention in response to emissions leakage studies; and including sector-based offset credits. Potential amendments for the post-2020 Program

include the general Program scope, the post-2020 cap, Program linkage, allowance allocation, and the Program's plan for compliance with the U.S. EPA 111(d) rule. Revisions to other areas of the Regulation will be considered to clarify language.

Second, staff will present on cost-containment and market oversight provisions and seek input from stakeholders on possible amendments.

Third, staff will present on initial thinking and options for California's Clean Power Plan compliance plan, focusing on potential interactions with the Cap-and-Trade Regulation, which staff anticipates will play a large role in the compliance plan. A staff white paper on these issues will be available before the workshop.

The expected schedule for the October 2 workshop is as follows:

9 am – 11:30 pm
General Cap-and-Trade Regulation amendments
1 pm – 3 pm
Cost-containment and market oversight provisions
3 pm – 5 pm
Compliance plan for the U.S. EPA 111(d) rule

Following the workshop, stakeholders will have an opportunity to provide written comments during an informal comment period which will conclude at 5:00 p.m. Pacific time on Monday, October 19, 2015. Copies of workshop presentations will be available on ARB's Cap-and-Trade Workshops and Meetings webpage at <http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>, as well as at ARB's Clean Power Plan webpage at <http://www.arb.ca.gov/cc/powerplants/powerplants2.htm>.

All interested stakeholders are invited to attend. A live webcast of the workshop will be available at <http://www.calepa.ca.gov/broadcast/?BDO=1>. Remote participants may e mail questions during the workshop to an address provided in the presentation.

Tentative Schedule for Cap-and-Trade Amendment Workshops
Staff will also hold a series of public workshops to discuss additional specific Program topics in detail. The tentative schedule for these workshops is as follows:

Date and Time
Wednesday, October 28, 2015
10:00 am – 5:00 pm
Thursday, October 29, 2015
10:00 am – 5:00 pm

Monday, November 9, 2015

10:00 am – 5:00 pm

Tuesday, January 12, 2016

10:00 am – 5:00 pm

Tuesday, February 9, 2016

10:00 am – 5:00 pm

These workshops will be held in Byron Sher Auditorium in the Cal/EPA Headquarters Building at 1001 I Street in Sacramento, California. A formal notice to announce each workshop will be issued once the details and topics for that workshop become final. Further workshops are also tentatively planned for 111(d)-related topics as part of the compliance plan development process. These will be announced as they are finalized.

Background

Cap-and-Trade Regulation

ARB first formally adopted the Regulation in October 2011. The Board has subsequently approved limited amendments to the Regulation in June 2012, October 2013, April 2014, September 2014, and most recently June 2015. The upcoming 2016 amendments will seek to improve Program efficiency and chart post-2020 implementation of the Program.

More information about ARB's Cap-and-Trade Program is available at
<http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>.

Clean Power Plan

On August 3, 2015, U.S. EPA's Administrator signed its Clean Power Plan, which sets carbon dioxide emissions limits for many existing electric generating units. These regulations are based on section 111(d) (42 U.S.C. § 7411(d)) of the federal Clean Air Act. States must develop compliance plans to meet these limits and compliance plans are due in September 2016 (with the option to seek extensions). ARB is developing California's compliance plan in consultation with the California Energy Commission and the California Public Utilities Commission, California's air districts, and other partners.

More information about the Clean Power Plan and related rules is available at
<http://www.arb.ca.gov/cc/powerplants/powerplants2.htm>.

California is in a drought emergency.
Visit www.SaveOurH2O.org for water conservation tips.

[ARB What's New](#)

California Air Resources Board
CLEAN POWER PLAN COMPLIANCE
DISCUSSION PAPER
September 2015

California Air Resources Board (ARB) staff is providing this paper at the beginning of the process for developing California's Clean Power Plan submittal. It is intended for all stakeholders to provide an overview of many local, State, and federal considerations bearing on California's compliance plan and to highlight questions that stakeholders may wish to address. At this early stage, no decisions have been made. Instead, this paper is intended to inform an ongoing stakeholder process.

Introduction

California is committed to reducing greenhouse gas emissions from its electric power sector. A wide array of State policies, developed over decades and administered by agencies across state government, support that effort. These include California's Renewables Portfolio Standard, its Emissions Performance Standards, its energy efficiency standards for buildings and appliances, and a suite of measures authorized by the Global Warming Solutions Act, AB 32, including the Cap-and-Trade Regulation. Collectively, these and other State efforts have already helped California develop and maintain one of the lowest-carbon electricity sectors in the country.

The Clean Power Plan (CPP), a set of final emission guidelines for greenhouse gas emissions from existing fossil-fuel-fired power plants issued by the United States Environmental Protection Agency (U.S. EPA) will help extend and build upon this progress.¹ The CPP draws on U.S. EPA's authority under section 111(d) of the federal Clean Air Act, 42 U.S.C. § 7411(d), to set greenhouse gas emission limits for existing fossil-fuel-fired power plants. These limits begin to go into effect in 2022, coming fully into effect in 2030. The states must develop compliance plans for their affected power plants, and submit those plans to U.S. EPA for approval. ARB is charged with developing California's CPP compliance plan.

ARB strongly supports U.S. EPA's efforts to limit emissions from the electric power sector. Nationally, fossil fuel-fired power plants are, by far, the largest stationary source of the greenhouse gases that are causing climate change. Climate change poses an extremely serious threat to public health and prosperity in California, and throughout the world.² Limiting greenhouse gas emissions from existing coal and natural gas-fired power plants is a critical step to reduce the threat. Replacing these polluting sources of power with cleaner energy—including from renewable sources and from energy efficiency—supports job growth, economic development, and a reliable electricity grid.

¹ The full text of the final U.S. EPA rule is available, along with factsheets and supporting materials, at <http://www2.epa.gov/cleanpowerplan>.

² See generally, Kadir et al., *Indicators of Climate Change in California* (2013), available at: <http://oehha.ca.gov/multimedia/epic/pdf/ClimateChangeIndicatorsReport2013.pdf>.

Because the Cap-and-Trade Regulation and the carbon market it creates is designed to ensure California's progress toward the State's greenhouse gas targets, covers the electricity sector, and reflects the benefits of the many complementary energy sector policies noted above, ARB staff anticipates that the Cap-and-Trade Regulation will play a central role in the CPP compliance plan.

The CPP recognizes trading as a compliance pathway, including economy-wide programs. U.S. EPA suggests that economy-wide trading programs may be used for federal compliance via what it calls the "state measures" approach.³ Such a compliance plan would likely be designed to demonstrate that entities complying with ARB's Cap-and-Trade Regulation will also be in compliance with the federal CPP as a result of the operation of the carbon market and complementary energy sector policies. It would likely include federally enforceable emissions standards for covered power plants and a federally enforceable "backstop" to ensure federally-regulated power sector emissions meet the federal targets, if necessary.

A "state measures" compliance approach rooted in the existing Cap-and-Trade Regulation appears to have significant advantages. Such an approach supports and builds upon California's successful carbon market and complementary energy sector policies, minimizes additional regulatory requirements for stakeholders, and can smoothly integrate State and federal climate programs for the sector.

This discussion paper seeks feedback from all parties on a State measures approach, as well as on many program design choices that must be made. As ARB moves forward, it will work together with other government agencies, including California's air districts, the California Energy Commission (CEC), and the California Public Utilities Commission (CPUC), and jurisdictions linked to ARB's carbon market. ARB will also consult with entities charged with ensuring the reliability of the electricity grid. All stakeholders are invited to participate in the process. Members of disadvantaged communities are especially encouraged to participate.

Regulatory Overview

Federal, State, and local programs all have a place in California's CPP compliance planning. This section provides a brief overview of key programs and indicates how they may be integrated to support California's compliance plan.

The Clean Power Plan

Section 111 of the federal Clean Air Act, 42 U.S.C. § 7411, requires U.S. EPA to limit emissions from various economic sectors that cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. U.S. EPA has successfully used section 111 programs, including standards for the electric power sector, for many years to cut air pollution while the economy has continued to grow.

³ See U.S. EPA, Clean Power Plan, Preamble (2015), pp. 1189-1193.

Section 111 establishes distinct processes for new and existing sources. New sources are regulated by U.S. EPA directly under section 111(b) under “standards of performance” for these sources that reflect the application of the best system of emission reduction determined to be adequately demonstrated. Existing sources are ultimately regulated by the states, based on emission guidelines issued by U.S. EPA under section 111(d). States develop compliance plans to achieve these guidelines, including standards of performance for affected existing units.

U.S. EPA issued section 111(b) standards for greenhouse gases (carbon dioxide (CO₂), in particular) for electrical generating units (EGUs)—which are the power generating units within power plants—in August 2015. Those standards, not directly at issue in this discussion paper, apply to new, modified, and reconstructed fossil-fuel-fired EGUs.

At the same time, U.S. EPA issued section 111(d) emission guidelines, CPP, for existing EGUs that commenced construction on or before January 8, 2014. States must submit a compliance plan (or request an extension) addressing these sources by September 2016 and must implement that plan (or be governed by a federal plan) beginning in 2022.⁴

To determine the degree of emission reduction appropriate for these EGUs, U.S. EPA built on the successful systems many states (including California) have used to reduce electric sector emissions. Those systems are characterized by the Clean Power Plan as consisting of three building blocks – efficiency improvements at EGUs, increased use of lower-emitting natural gas-fired units to offset coal-fired units, and increased use of renewable energy to offset fossil-fired units. U.S. EPA used these building blocks to conservatively calculate attainable emissions rates for affected EGUs.

U.S. EPA calculated interim emission rates (applicable in the 2022-2029 period) and final emission rates (applicable from 2030 forward). Those final rates, which are applicable nationally, are 1,305 pounds of CO₂ per megawatt hour (MWh) for steam generating units and integrated gasification combined cycle facilities, and 771 lb CO₂/MWh for combustion turbines. U.S. EPA then calculated equivalent mass emissions goals for the states, based upon a given state’s population of affected EGUs⁵ and the relevant emission rates. States may demonstrate compliance with either rate or mass goals, either in the aggregate or at individual EGUs.

For California, U.S. EPA calculated a final statewide mass goal in the 2030-31 period of 96.8 million short tons of CO₂ (e.g., 48.4 million short tons, approximately, in 2030). In the interim period from 2022–2029, U.S. EPA calculated that affected California EGUs

⁴ With a few exceptions: Alaska and Hawaii and U.S. territories do not yet have CPP targets; Vermont has no covered facilities. U.S. EPA is also working to develop compliance plans with Tribal Nations with covered facilities.

⁵ “Affected EGUs” are those covered by the federal rules. Although some exceptions apply, an affected EGU, generally, is any fossil-fired steam generating unit, integrated gasification combined cycle (IGCC) or stationary combustion turbine that commenced construction on or before January 8, 2014; is capable of selling more than 25 MWs to a utility power distribution system, and has a base load rating of greater than 250 MMBtu/hr heat input. See 40 C.F.R. § 60.5850.

may emit 408 million short tons of CO₂. These calculations were based on information available to U.S. EPA about affected EGUs in California. As ARB reviews data relating to California EGUs, ARB will work with U.S. EPA to adjust the covered EGU list as needed to reflect the status of California facilities, and the mass targets may change accordingly.⁶

California is required to submit a compliance plan to U.S. EPA that will ensure affected EGUs meet these limits. U.S. EPA offers states flexibility to design their plans, while indicating that mass-based emissions trading will often offer a particularly effective compliance approach. U.S. EPA also recognizes that certain trading programs—including California's—extend beyond the affected EGUs addressed in the federal CPP. Accordingly, U.S. EPA has provided for a “state measures” plan type that allows for integration of broader state programs with the federal requirements.⁷

Under that plan type, state programs do not themselves become federally enforceable, with the caveat that certain emission standards within those programs that apply specifically to affected EGUs are federally enforceable. These standards and measures are further supported by a federally enforceable backstop that makes up covered sector emissions if they substantially depart from the state's glidepath to the 2030 target.

Thus, a state measures plan largely allows for continued operation of successful state programs, while providing a critical layer of federal oversight to ensure that those programs deliver on both state and federal targets. ARB staff has identified a state measures plan as the most likely plan type to suit California's needs, given our existing programs, including the economy-wide Cap-and-Trade Regulation.

State plans are to be submitted to U.S. EPA by September 6, 2016. However, states are also allowed to submit a more general “initial submission” and request an extension of up to two years. U.S. EPA has also proposed (but not yet finalized) other plan submission flexibilities, including “parallel processing” options under which state and federal approval processes would move forward jointly over the next few years. It has also proposed “model” state plans that may guide state compliance efforts, and federal compliance plans that will apply in states that choose not to submit their own plans.

State Policies and Programs

California's long-standing commitment to addressing climate change has put it in a very strong position to plan for, and comply with, the CPP.

The success of energy sector programs and policies carried out by the CPUC and the CEC support this progress. These include California's Renewables Portfolio Standard, its energy efficiency standards, and its Emission Performance Standard. In addition, reliability planning and balancing authorities, including the California Independent System Operator, along with power producers, generators, and utilities, have helped to

⁶ See U.S. EPA, Clean Power Plan, Preamble, p. 840 (discussing this recalculation possibility).

⁷ See *supra* fn. 3.

begin decarbonizing the electricity sector while providing a robust and reliable grid and some of the lowest power bills in the nation.

These programs are a critically important complement to the direct emissions reduction measures undertaken by ARB, and required by CPP. ARB's own programs include the Cap-and-Trade Regulation, which plays a central role in supporting the State's emissions reductions efforts.

In the First Update to the AB 32 Scoping Plan, ARB determined that it will need to "keep building on the framework" that California has established, including setting mid-term targets for greenhouse gas emissions.⁸ As California maintains and extends its programs, putting further downward pressure on electricity sector emissions under the overall economy-wide cap, CPP compliance can be achieved as well. Indeed, consistent with AB 32, and with Governor Brown's Executive Order B-30-15, among other authorities, California is aiming for 40 percent emissions reductions below 1990 levels by 2030, and an 80 percent cut below 1990 levels by 2050. Other measures affecting EGU emissions are also underway: California will work to double energy efficiency in existing buildings and to raise its share of renewable power to 50 percent by 2030. As California meets these goals, it will also ensure compliance with the federal targets.

The Cap-and-Trade Regulation is a critical component of California's climate program. The Cap-and-Trade Regulation covers large emitting sectors, which comprise 85 percent of the California economy, including the electric power sector. Consistent with AB 32, the Regulation's carbon market program addresses all power that serves California, including both imported power and native generation. Entities participating in the market must secure compliance instruments (allowances and offsets) sufficient to cover their emissions under a declining overall cap. Entities may trade these instruments, subject to certain limits.

The power sector comprises a large portion of California's emissions. According to ARB's most recent Greenhouse Gas Inventory, emissions associated with the sector were 20 percent of total California emissions in 2013 (11 percent coming from in-state generation, 9 percent from imports).⁹ Accordingly, the power sector is also an important part of the carbon market. Owners and operators of the vast majority of California fossil-fuel EGUs must participate in the market, as must all electricity importers. These entities are also covered by the Mandatory Reporting Regulation, to ensure that the market operates with high-quality verified information.

ARB is now beginning stakeholder processes that will shape these programs in the post-2020 period. In addition to updating the agency's overall Scoping Plan for

⁸ See ARB, First Scoping Plan Update (2014) at ES5, *available at*: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

⁹ See <http://www.arb.ca.gov/cc/inventory/data/data.htm>.

greenhouse gases, ARB will explore amendments to the Cap-and-Trade and Mandatory Reporting Regulations over the next two years.¹⁰

These amendments and planning processes also present the appropriate regulatory mechanism to enact measures necessary for CPP compliance and for integration with California's existing programs. Providing a clear path forward for both State and federal compliance will benefit all stakeholders.

Air District Permitting and Enforcement

California's air districts have authority to regulate criteria and toxic pollutants from stationary sources, and many districts are focused on the climate challenge as well. ARB will work closely with the districts as it develops the CPP compliance plan. One important area of collaboration will concern operating permit programs (also referred to as "Title V" programs after the relevant title of the federal Clean Air Act). Title V permits must reflect all applicable federal requirements for covered sources. As ARB develops federally enforceable compliance conditions for affected EGUs, it will work with the districts, and other stakeholders, to balance workload and resource needs, and to determine appropriate permitting approaches for the compliance plan.

Regional Partnerships

The CPP allows states to develop regional partnerships via trading linkages and via agreements on particular elements within state plans. California statutory authorities also provide for cooperation, including potential linkages between the California carbon market and those in other jurisdictions. California's market is linked with the carbon market of the Canadian Province of Québec.¹¹ As CPP compliance planning continues, California may have the opportunity to link programs with other jurisdictions, or to collaborate in other ways. ARB anticipates an ongoing conversation around options for collaboration, focusing especially on how these options may affect overall greenhouse gas emission trajectories, compliance costs, and many efforts already underway to enhance the functioning of the electricity grid in the West, including renewable energy integration.

Summary

Local, State, and federal programs can be coordinated to meet California's greenhouse gas emissions goals and the CPP compliance targets. Although many programs and policies drive electricity sector emissions reductions in California, ARB staff currently view the Cap-and-Trade Regulation as the central "state measure" for CPP compliance purposes. This is because the capped carbon market ultimately guarantees the State's emissions reduction targets, imposes compliance obligations on each covered electricity

¹⁰ ARB will also continue to pursue transportation strategies that will greatly reduce fossil fuel use in that sector as well, including transport electrification.

¹¹ Information on linkage efforts to date is available at <http://www.arb.ca.gov/cc/capandtrade/linkage/linkage.htm>.

generator, and reflects the operations of complementary measures throughout the energy sector. The carbon market also affords opportunities for regional collaboration. Accordingly, ARB staff believes the continued operation of the carbon market, in concert with its complementary measures, and supported by required federal backstops, provides a good route to ensuring CPP compliance.

Discussion Topics

ARB staff welcomes stakeholder feedback on CPP compliance approaches. This section highlights areas where feedback would be especially useful.

Plan Design Options

The most fundamental question facing ARB is the basic architecture of the compliance plan. For the reasons discussed above, ARB staff is inclined toward a “state measures” plan based on the Cap-and-Trade Regulation, and supported by the State’s energy efficiency and renewable energy programs. The discussion questions in this paper are focused around this plan design.

Broadly speaking, a state measures plan would be rooted in a demonstration that the continued operation of the carbon market will also deliver compliance with the federal CPP mass-based emissions goals. The federally enforceable plan would likely require all affected EGUs to be in compliance with the Cap-and-Trade Regulation (and the underlying Mandatory Reporting Regulation) during the federal compliance period. Affected EGUs would also need to be in compliance with any triggered “backstop” measure required to bring sector emissions back into compliance with the federal goals and the glidepath to them. This backstop would only be triggered if emissions from affected EGUs veered meaningfully from the compliance glidepath established in California’s plan.

ARB staff believes such a plan structure, which would essentially add a limited federally enforceable overlay for affected EGUs to the existing, successful, State carbon market is an effective way to comply with the CPP. No decision, however, has been made and other plan structures, or other State measures, may also be appropriate.

Questions stakeholders might wish to address include:

1. Do stakeholders agree that a mass-based, state measures plan, based primarily on the continued operation of the Cap-and-Trade Regulation, and recognizing the emissions-reducing consequences of the State’s complementary energy sector policies, is an appropriate compliance plan design for California?
2. What other compliance plan designs, if any, hold significant promise?

Applicability

ARB staff is working with stakeholders, including the owners and operators of affected EGUs, to ensure that all relevant EGUs are identified and incorporated into California's compliance plan. This work includes determining whether any exemptions offered by U.S. EPA can be properly applied to any California EGU.

Enforcement and Permitting

If ARB's CPP compliance plan is approved, certain aspects of the plan will become federally enforceable against covered entities. If ARB adopts a state measures plan, with a requirement for covered EGUs to participate in and comply with the Cap-and-Trade and Mandatory Reporting Regulations, these requirements will be federally enforceable in some form; so will the relevant backstop measure(s).

Staff is investigating the appropriate form any federally enforceable requirements might take. This investigation will occur in close coordination with California's air districts and with energy agency staff. Relevant considerations include, but are not limited to (1) ensuring that the compliance plan is readily enforceable by ARB, U.S. EPA, air districts, and citizens; (2) avoiding unnecessary workload and costs for permit-writers and regulated parties; and (3) ensuring that federal enforcement and permit requirements support the ongoing, smooth functioning of ARB programs. Maintaining the confidentiality of market-sensitive data will be a key consideration.

Questions stakeholders might wish to address include:

3. How might ARB and air districts ensure that any permit terms developed for federal enforceability reasons are appropriately designed, and protect the confidentiality of market-sensitive data?
4. What lessons may be learned from permit terms enforcing other trading programs?

Backstop and Glidepath Design

The CPP requires state measures plans to have a federally enforceable backstop to ensure that emissions from the affected EGUs meet the federal target. ARB staff believes that it is very unlikely that a backstop will be triggered in California, because the State's science-based climate goals, as advanced through its climate and energy policies, will significantly reduce emissions throughout the CPP compliance period, and California emissions are expected to be well below the federal targets.

Backstop design is sensitive to the shape of the glidepath to 2030, because the backstop will be triggered only if emissions depart more than 10 percent from the relevant emissions goals. U.S. EPA provides states some discretion in designing appropriate emissions reductions trajectories.

ARB staff will also carefully attend to the implications of the backstop for the functioning of the larger carbon market, as well as to the implications for affected EGUs, ratepayers, and members of the public. Staff will focus on designing a backstop and glidepath that operate efficiently and equitably in the context of the State's climate and air pollution goals.

One backstop option being considered would involve identifying a pool of California allowances under the cap that could be purchased and surrendered by affected EGUs to cover any departure (of 10 percent or more) from the glidepath. Another might involve using a modified version of the proposed federal plan as the core of the backstop measure.¹²

Questions stakeholders might wish to address include:

5. Assuming that the Cap-and-Trade Regulation is used to support a state measures plan, what backstop designs might integrate best with the design of the Cap-and-Trade Regulation? If a market response is appropriate, what compliance instruments, or pools of compliance instruments, might be appropriate for use within the backstop?
6. What other backstop design options are available, inside or outside of the market?
7. Are there particular glidepaths that might best integrate the backstop into the larger California carbon market and the economy-wide emissions reductions trajectory?

Analysis and Demonstrations

As part of a state measures plan submission, ARB would need to demonstrate that the relevant state measures and emissions standards in the plan will achieve compliance with the federal targets. ARB staff, working with partners at the CEC and CPUC, are investigating options for this demonstration. Data and analyses contained within ARB's Greenhouse Gas Inventory and within the Integrated Energy Policy Report (and the modeling supporting that report) appear to be especially useful in this regard. The PLEXOS model and other tools used by the CEC, in particular, may be an important part of this demonstration.

U.S. EPA has also added demonstration requirements to address "leakage" between existing and new EGUs. U.S. EPA points out that some plan designs covering only existing EGUs may produce perverse incentives for expanded operations or construction of new EGUs that are not covered by existing source plans. U.S. EPA therefore seeks appropriate demonstrations that this issue has been addressed where relevant. Because both new and existing EGUs are already covered by California's Cap-and-Trade Regulation, and so experience generally the same compliance costs,

¹² U.S. EPA's federal plan proposal is available at: <http://www3.epa.gov/airquality/cpp/cpp-proposed-federal-plan.pdf>.

ARB staff believes these leakage incentives are likely not present in California, but welcome feedback on this point, and any analysis that may be needed.

Questions stakeholders might wish to address include:

8. What data sources, analytic processes, and model types should ARB and its partners consider in developing the required demonstrations? How best might ARB and its partners integrate analysis processes and data used in the Greenhouse Gas Inventory, IEPR, and update to the Scoping Plan?

9. Are there particular scenarios that staff should investigate in the demonstrations? For instance, are there particular “stress” or “policy” cases—including those associated with various IEPR demand forecasts—that should be considered?

Integration Mechanics

ARB staff is interested in the best ways to integrate any federal compliance plan with the Mandatory Reporting and Cap-and-Trade Regulations in ways that ensure compliance without creating unnecessary new obligations.

Reporting requirements between the State and federal programs appear to generally be aligned. EGUs in either program are able to report using techniques first established in U.S. EPA’s “Part 75” Acid Rain Program and reflected in the Mandatory Reporting Regulation. ARB staff believes that most processes, measuring devices, and protocols are already in place. However, staff will be carefully reviewing the relevant reporting and recordkeeping requirements to harmonize them, and welcomes stakeholder feedback on the best way to do so.

Similarly, the Cap-and-Trade Regulation appears to be generally consistent with U.S. EPA’s expectations for trading programs under CPP. Staff is reviewing CPP provisions, however, for relevant differences. These may include the timing of compliance events and the resulting compliance reports. U.S. EPA’s regular reporting requirements for states, including a July 1 reporting deadline, raise some challenges because of the later compliance dates (for both verified data submissions and Cap-and-Trade Regulation compliance) within ARB’s existing program. Reporting and compliance timelines therefore will be further considered, among other integration questions.

Questions stakeholders might wish to address include:

10. Do stakeholders agree that ARB’s Mandatory Reporting Regulation requirements, and incorporated Part 75 requirements, will enable existing reporting to comply with most of CPP’s reporting and recordkeeping requirements? Are amendments to ARB’s reporting regulations appropriate to more fully integrate the programs?

11. What steps might be appropriate to ensure that Cap-and-Trade Regulation compliance processes, periods, and reports sufficiently support compliance with CPP?

In particular, what options does ARB have to align relevant compliance dates, given U.S. EPA's deadlines?

Environmental Justice Issues

Environmental justice is a core priority for ARB. Outreach to vulnerable communities is also a required consideration in CPP compliance. As ARB develops compliance efforts for these federal rules, it will give careful consideration to the implications of its federal compliance programs for these communities.

ARB's ongoing Adaptive Management efforts, which track the effects of the Cap-and-Trade Program, may play a substantive role in ensuring that the Clean Power Plan (if based in part on the carbon market) has positive implications for these communities. U.S. EPA has highlighted these programs as important environmental justice efforts in the preamble of the final Clean Power Plan.

Questions stakeholders might wish to address include:

12. What options should ARB consider for best involving members of affected communities in the CPP compliance planning process?

13. How can existing tools, including the Adaptive Management program, best be used to support California's CPP compliance plan? What other tools might be considered?

Electric Grid Reliability

U.S. EPA requires that ARB demonstrate that reliability issues have been considered in CPP compliance planning. ARB staff regularly coordinates with CEC, CPUC, and California's balancing authorities, including the California Independent System Operator (CAISO) and public power entities. As a result, as California has reduced greenhouse gas emissions from its electricity sector, and grid reliability has been maintained and strengthened. Staff anticipates that this consultative process will continue, and will serve CPP compliance as well. Indeed, staff has already engaged in many state and regional discussions on electricity grid interactions with CPP, and California officials have also participated on Federal Electricity Regulatory Commission (FERC) technical conferences on these interactions.¹³

Staff is considering ways to structure consultations around CPP, and what analyses might be relevant and useful to perform. Given the long timescale of CPP, and the flexibilities inherent in trading systems, it appears appropriate to focus on less granular analyses, coupled with continued consultation during the implementation period. Such initial analyses might include consideration of planning reserve margins under various compliance scenarios. Staff notes that California's own climate and electricity policies

¹³ See, e.g., the statement of ARB Assistant Executive Officer Michael Gibbs to FERC's Western Regional Technical Conference on these issues, available at <http://www.ferc.gov/CalendarFiles/20150220110141-Gibbs,%20CA%20Air%20Resources%20Board.pdf>.

are likely to be more important influences on California's electricity sector than the CPP itself. Accordingly, analyses of those policies, and their effects on reliability and on electricity consumers, will continue to be a priority.

14. How can ARB and its coordinating agencies best use existing processes to ensure reliability during CPP implementation? Are any additional analyses warranted?

Clean Energy Incentive Program

U.S. EPA intends to develop a "Clean Energy Incentive Program" under which the federal government would provide compliance incentives to states that invest in renewable energy and energy efficiency projects that operate in 2020 and 2021. These incentives take the form of matching allowances or emissions reduction credits provided from a federal pool. Incentives are greatest for investments in low-income communities.

ARB staff is considering how and whether California should participate in this program. Among the relevant issues are how such federal incentives could be accounted for within the structure of California's Cap-and-Trade Regulation, which currently does not include a mechanism to accept such federal compliance instruments.

Questions stakeholders might wish to address include:

15. Should California submit a nonbinding statement of interest in participating in the Clean Energy Incentive Program? What advantages and disadvantages do stakeholders see for such participation?

16. If so, what mechanisms might be necessary to integrate the program with California's Cap-and-Trade Regulation? How should compliance instruments associated with the federal program be treated? Are there other options for participating in the Clean Energy Incentive Program that would not require such integration?

Regional Interactions

The CPP, and U.S. EPA's proposal for federal compliance plans and model state plans, allow states to collaborate on compliance plans. These collaborations may take several forms, including linkage between trading regimes.

California State law also provides guidelines for regional cooperation of this sort. State law requires ARB to account for all power consumed by California, including imported power. State law also establishes rigorous requirements for California to link its carbon market to other jurisdictions. State law also requires ARB to design its programs to avoid leakage of emissions from California.

Within these constraints, ARB staff anticipates that California will have opportunities to explore collaborations over the course of the CPP compliance period. Not all of these

opportunities may be realized in the initial plan submission period, but plan revisions would allow the State to explore opportunities as they develop.

Staff is interested in stakeholder feedback on how California can best explore opportunities that will reduce emissions associated with power serving California, and how best to evaluate regional compliance opportunities. Staff is also aware that continuing changes in the western power grid, including potential expansions of CAISO markets, may bear on these analyses.

Questions stakeholders might wish to address include:

17. What analytic tools and venues are appropriate for assessing the emissions and compliance cost opportunities and concerns, including any emissions leakage or accounting concerns, associated with various regional compliance options?

18. What regional compliance options should ARB staff evaluate? Which of these options are more or less consistent with the state measures plan design ARB staff have identified as a strong compliance option?

Federal Plan and Model Plans

U.S. EPA has proposed model state plan designs and federal compliance plan designs. These designs focus on rate and mass trading as compliance options. ARB staff believes that California has considerable experience to offer U.S. EPA in this area, and is interested in ensuring that the final model state plans and federal plans serve emissions reduction goals successfully. ARB staff is also considering how these plans might interact with California's State programs, especially if they are adopted by jurisdictions in the West. ARB intends to comment on the federal proposals.

Questions stakeholders might wish to address include:

19. Are there features of the proposed model state and federal plans that California should highlight as particularly important to retain, or to modify, in the finalized version of these proposals?

20. What potential interactions between these proposed plans and California's compliance strategy should ARB staff consider in the planning process?

Processing Tools

U.S. EPA has proposed adding several state plan review tools to its general 111(d) regulations. These include making clear that U.S. EPA has the authority to partially approve or deny or conditionally approve state compliance plans. The proposed amendments also allow for "parallel processing" of compliance plans, a procedure under which U.S. EPA and state processes move forward in tandem to allow for more expeditious plan review decisions. ARB staff believes that these and related tools in the

proposal provide useful additional flexibilities, but welcome stakeholder feedback on these proposed tools and other tools that might be helpful.

Timing

Because California's CPP compliance plan is strongly related to the post-2020 period of State programs, including the Cap-and-Trade and Mandatory Reporting Regulations, ARB staff believes that stakeholders, including market participants, will benefit from coordinated compliance and regulatory processes that will provide a clear path forward on a reasonable timescale. ARB staff also believes that it is important to provide clear indications of how California intends to comply early in the process. Regulatory certainty is critical to regulated entities and energy entrepreneurs. Meeting U.S. EPA's submission deadline also provides an opportunity for California to continue to play a leadership role in climate policy development.

Accordingly, staff is exploring rulemaking schedules that will allow for consideration of the CPP compliance plan and amendments to relevant regulations on similar timescales, with the majority of these processes taking place between now and 2017, with a goal of beginning the plan approval process within U.S. EPA's September 2106 deadline.

Questions stakeholders might wish to address include:

21. What issues and processes do stakeholders believe to be most important for coordination?

Next Steps

ARB staff looks forward to continuing conversations with stakeholders. A workshop, including CEC and CPUC staff, to explore these issues in general terms is scheduled for October 2, 2015, and staff expect additional, more focused workshops, to be scheduled later in 2015 and early 2016.

Feedback on the questions in these documents may be emailed to Chris Gallenstein (cgallens@arb.ca.gov) or mailed to California Air Resources Board, C/O Chris Gallenstein, P.O. Box 2815, Sacramento, CA, 95814. Feedback by October 19, 2015 would be appreciated to aid in ARB's planning processes.

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.



Workshop Comments Log

[Send Us Your Workshop Comments](#)

BELOW IS THE COMMENT LOG FOR 2016 AMENDMENTS TO THE CLEAN POWER PLAN COMPLIANCE EFFORT (111DCOMPLIANCE-WS).

#	Received From	Subject	Comment Period	Date/Time Added to Database	Additional Form Letters or Attachments
1	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
2	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
3	Ulmer, Andrew, California ISO	Public Workshop on Potential 2016 Amendments to the Cap-and-Trade Regulation and Californi	1st Workshop	2015-10-19 13:13:09	Attachment
4	DeRivi, Tanya, SCPPA	SCPPA Comments on EPA Clean Power Plan Implementation	1st Workshop	2015-10-19 14:28:51	Attachment
5	Rasberry, Tamara,	Oct 2 Workshop on EPA Clean Power Plan	1st Workshop	2015-10-19 16:31:25	Attachment
6	McBride, Barbara, Calpine Corporation	Calpine Comments on Section 111(d) Compliance and Cap-and-Trade Regulation	1st Workshop	2015-10-19 16:34:01	Attachment
7	Parsons, Cindy, LADWP	LADWP's Comments on CARB CPP Discussion Paper	1st Workshop	2015-10-19 16:39:14	Attachment
8	Breidenich, Clare , WPTF	WPTF Comments on 2016 Cap and Trade Amendments and Clean Power Plan Compliance	1st Workshop	2015-10-21 09:11:45	Attachment
		Comments re CARB Clean Power		2015-10-	

9	Berlin, Susie, NCPA	Plan Compliance Discussion Paper	1st Workshop	27 08:11:25	Attachment
10	Blixt, Amber, Independent Energy Producers Association	IEP Comments on CARB's Clean Power Plan Compliance Discussion Paper	1st Workshop	2015-10-27 08:14:57	Attachment
11	Smith, Adam,	JUG Guiding Principles on Clean Power Plan Implementation	1st Workshop	2015-10-27 08:21:31	Attachment
12	Krausse, Mark C., PG&E	Re: PG&E's Comments on the Clean Power Plan Compliance Discussion Paper	1st Workshop	2015-10-27 10:00:44	Attachment
13	Terranova, Karen, EPUC	Clean Power Plan Discussion Paper - EPUC Comments	1st Workshop	2015-11-20 09:28:56	Attachment
14	Schonbrunn, David , TRANSDEF	Comments on the Clean Power Plan Discussion Paper	1st Workshop	2015-12-03 14:54:03	

Comments posted to 111dcompliance-ws that were presented during the Workshop:

There are no comments posted to 111dcompliance-ws that were presented during the Workshop at this time.

We expect that any written comments received during the Workshop will be posted within one week of the Workshop.

[Compilation of all printable comments for 111dcompliance-ws](#)

If you have any questions or comments please contact [Office of the Ombudsman](#) at (916) 327-1266.

[Workshop Comment Logs](#)

[Send Us Your Workshop Comments](#)



Matthew Rodriguez
Secretary for
Environmental Protection

Air Resources Board

Mary D. Nichols, Chair
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov



Edmund G. Brown Jr.
Governor

PUBLIC MEETING NOTICE

Meeting of the **AB 32 Environmental Justice Advisory Committee**

The California Air Resources Board (ARB or Board) is hosting a public meeting for the AB 32 Environmental Justice Advisory Committee (Committee). The Committee will advise the Board on the development of the 2030 Target Scoping Plan Update (Update). Staff intends to bring the Update to the Board by the end of 2016. The meeting will be held at the following date, time and location:

Date: Monday, December 7, 2015

Time: 11:00 a.m. – 4:00 p.m.

Location: California Environmental Protection Agency (Cal/EPA)
Sierra Hearing Room
1001 I Street, 2nd Floor
Sacramento, California 95814

In 2006, the Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill 32 (AB 32); Stats. 2006, chapter 488). AB 32 created a comprehensive, multi-year program to reduce greenhouse gas (GHG) emissions in California.

AB 32 requires ARB to convene an environmental justice advisory committee to advise it in developing the Scoping Plan and any other pertinent matter in implementing AB 32. The First Update to the Climate Change Scoping Plan was approved by the Board on May 22, 2014. In April 2015, Governor Brown set a new interim statewide target to reduce greenhouse gas emissions to 40 percent below 1990 levels by 2030 and directed ARB to further update the Scoping Plan.

The meeting is open to the public and participation is encouraged. The Committee will be discussing their goals over the next year and new members appointed by the Board at the September 25, 2015 Board Hearing will be introduced. Staff intends to provide an overview of the 2030 Target Scoping Plan Update.

Directions to the Cal/EPA headquarters and public transit can be found at the Cal/EPA website at: <http://www.calepa.ca.gov/epabldg/location.htm>.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Live Video/Audio Webcast

For those unable to attend in person, a live internet broadcast (webcast) will be available for the meeting. The broadcast can be accessed on the day of the meeting at: <http://www.calepa.ca.gov/broadcast/>.

Special Accommodation Request

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the meeting;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.
-

To request these special accommodations or language needs, please contact Trish Johnson at (916) 445-3365 or email Trish.Johnson@arb.ca.gov as soon as possible, but no later than 5 business days before the scheduled meeting. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia;
- Documentos disponibles en un formato alternativo u otro idioma;
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, favor de contactar a Trish Johnson al (916) 445-3365 o Trish.Johnson@arb.ca.gov lo más pronto posible, pero no menos de 5 días de trabajo antes de la junta programada. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

Contact

If you have questions regarding the meeting, please contact Ms. Trish Johnson, Staff Committee Lead, at (916) 445-3365 or e-mail Trish.Johnson@arb.ca.gov.

**State of California
AIR RESOURCES BOARD**

**Environmental Justice Advisory Committee Meeting
Cal/EPA Headquarters Building
1001 I Street, 2nd Floor
Sierra Hearing Room
Sacramento, California 95814**

**December 7, 2015
11:00 a.m.**

AGENDA

1. Welcome and Opening Remarks
2. 2030 Target Scoping Plan Update Overview
3. Committee Discussion
4. Public Comment Period
5. Next Steps
6. Closing Remarks



California Environmental Protection Agency

AIR RESOURCES BOARD



2030 Target Scoping Plan Update

December 7, 2015



CALIFORNIA CLIMATE STRATEGY

An Integrated Plan for Addressing Climate Change



VISION

**Reducing Greenhouse Gas Emissions
to 40% Below 1990 Levels by 2030**

GOALS

**50%
reduction
in petroleum
use in vehicles**



**50%
renewable
electricity**



**Double energy
efficiency savings
at existing buildings**

**Carbon
sequestration
in the land base**



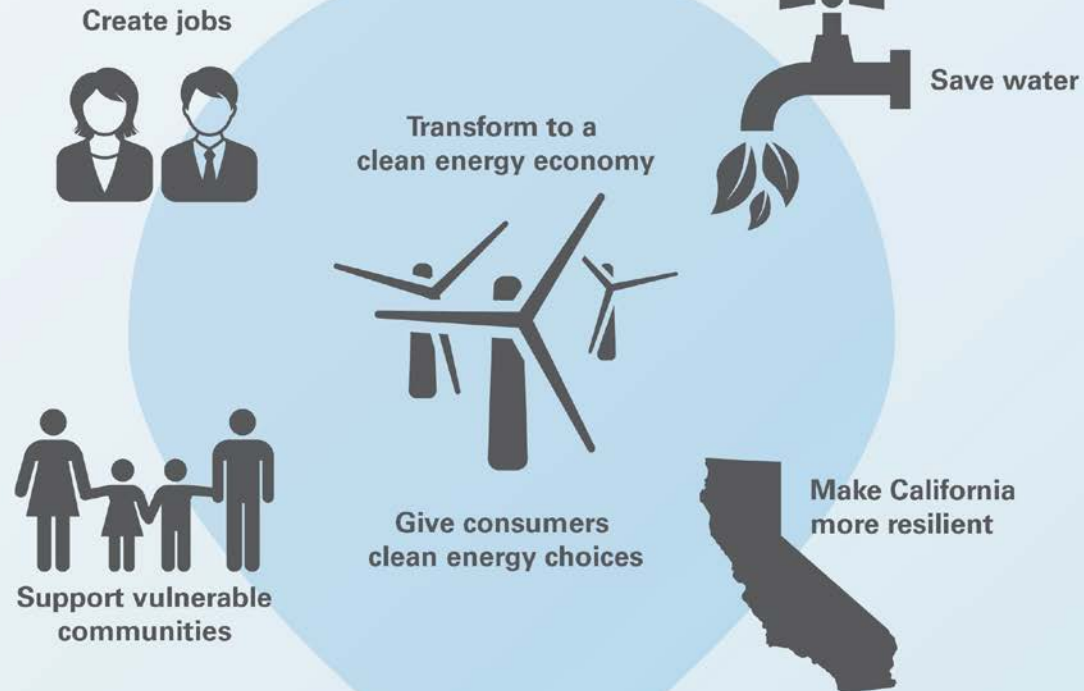
**Reduce
short-lived
climate pollutants**

**Safeguard
California**



CALIFORNIA CLIMATE STRATEGY

PRINCIPLES



AB 32 Objectives

- ▣ Develop a balanced approach to address climate change
- ▣ Improve air quality and public health
- ▣ Provide a consistent policy approach to drive investment in clean technology
- ▣ Provide a model for future national and international climate change efforts
- ▣ Achieve 1990 emissions by 2020; maintain and continue reductions past 2020
- ▣ Coordinate efforts across government agencies

2030 Target Scoping Plan Development

- ▣ Collaborate with State Agencies
- ▣ Engagement with Legislature
- ▣ Coordination with other plans (i.e. 111(d), Cap & Trade, SIP, Freight Strategy, etc.)
- ▣ Environmental Justice Advisory Committee Engagement
- ▣ Environmental Analysis (CEQA)
- ▣ Public Process: Workshops
- ▣ Economic Analysis with Peer Reviewers
- ▣ Draft Report / Final Report (targeted measures and estimated emission reductions)

Guiding Principles

- ▣ Reduce Greenhouse Gas Emissions to 40% Below 1990 Levels by 2030 (Executive Order B-30-15)
- ▣ Create jobs and support a robust workforce
- ▣ Save water
- ▣ Support Disadvantaged Communities
- ▣ Make California more resilient
- ▣ Transform to a clean energy economy
- ▣ Give consumers clean energy choices

Elements of 2030 Strategy

- Focus areas
 - Energy
 - Energy Efficiency
 - Transportation
 - Industry
 - Water
 - Natural and working lands
 - Agriculture
 - Waste management
- Maximize synergies among sectors

Environmental Justice Advisory Committee

- Environmental Justice Advisory Committee (EJAC) to advise the Board in developing the Scoping Plan
 - Representatives from communities in State with the most significant exposure to air pollution, including communities with minority populations or low-income populations, or both
- 13 members representing all regions of the State
- Committee meeting – December 7, 2015
- AB 32 directs EJAC to advise in implementation of Act
- Board engagement:
 - 2 additional Board members
 - Supervisor Serna

Expert Reviewers

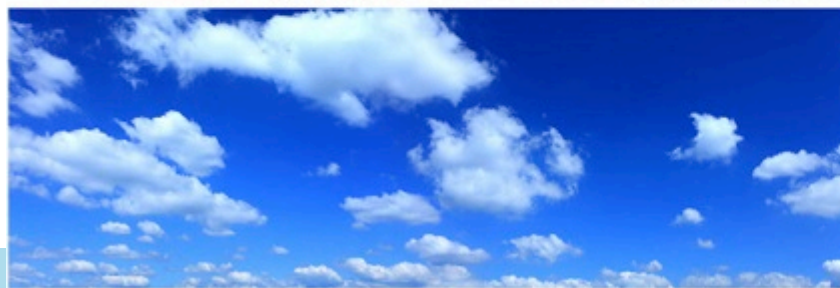
- Core group of experts in economics, modeling, and technology, with insight from additional experts as needed
- Public meetings
- Review the economic and technical assumptions and methods in the technology pathways and macroeconomic analyses
- Review metrics and tools proposed to be utilized

Public Process to Date

- Governor's Climate Change Strategy Pillar Workshops
 - July 8, 2015: Public Symposium to Discuss Cutting Petroleum Use in Half by 2030
 - July 9, 2015: CPUC/CEC/ARB/CalSO Renewables Symposium
 - August 5, 2015: CDFA/CNRA/ARB Natural and Working Lands Symposium
- 2030 Target Scoping Plan Update Kickoff Workshop - October 1, 2015
- Multi-agency participation
- Public comments (oral and written)
 - Over 30 written comments received
- Continued opportunity for robust public process

Next Steps: Tentative Schedule

- ▣ EJAC Meeting –December 7, 2015
- ▣ Regional workshops – Winter 2015 to Spring 2016
 - ▣ Bay Area, Los Angeles, Central Valley
- ▣ Technical and Econ Workshops – Winter 2015 to Mid 2016
 - ▣ Economic/environmental analyses
- ▣ Draft 2030 Target Scoping Plan – Spring 2016
 - ▣ 45-day informal comment period prior to Board hearing on draft
- ▣ Final 2030 Target Scoping Plan presented to Board – Fall 2016



Short Lived Climate Pollutant Reduction Strategy

*Environmental Justice Advisory Committee Meeting
December 7, 2015*

California Environmental Protection Agency

 **Air Resources Board**

Development of a SLCP Strategy

- Recommended action in the 2014 Scoping Plan Update
- Required by Senate Bill 605
- One of Governor's five pillars to meet 2030 GHG emissions goal of 40 percent below 1990 levels
- Concept Paper released in May 2015
- Draft Strategy released in September 2015

Approach to Strategy

- Includes 2030 emission targets for methane, black carbon, and fluorinated refrigerants
- Targets methane emission reductions from dairy manure management; diverting organics; and oil and gas processing, production, and pipeline system
- Targets black carbon reductions from biomass combustion, including forestry related
- Targets reductions from high GWP refrigerants.

Timeline and Next Steps

February 2016:	Release Proposed Strategy and draft EA
October 30, 2015	Due date for comments on Draft Strategy
March 2015:	Present Proposed Strategy to Board
February 2016	<ul style="list-style-type: none"> • Release Proposed Strategy • Release draft EA
Summer 2016:	Present final Strategy and responses to EA comments to Board for approval
March 2015	Present Proposed Strategy to Board
Summer 2016	Present final Strategy and responses to EA comments to Board for approval



Update on Cap-and-Trade Regulation & 2016 Amendments

*Environmental Justice Advisory Committee Meeting
December 7, 2015*

California Environmental Protection Agency

 **Air Resources Board**

Cap-and-Trade Program Overview

- One of a suite of measures adopted under AB 32
- The “cap” limits total greenhouse gas (GHG) emissions from all regulated sources- covers 85 percent of state’s emissions
- Cap declines over time and acts as a backstop to other measures to ensure GHG emissions reductions occur
- Participants are allowed to “trade” State-issued GHG emission allowances
 - Creates flexibility, allows covered entities to find most cost-effective reductions
 - Spurs innovation in lower emissions and efficient technologies
- Complements existing programs (including command-and-control measures) to reduce smog and air toxics

Cap-and-Trade Program Update

- Program began January 2012
- Linked with Québec January 2014
- First annual compliance event November 2014
 - 100% of covered entities surrendered sufficient compliance instruments
- 13 auctions to date
 - \$2.87 million in state proceeds (from first 12 auctions)
 - $\geq 25\%$ for investments to benefit disadvantaged communities
- Phased in transportation fuel and natural gas suppliers in January 2015
- First compliance period compliance event Nov. 2, 2015
 - Compliance instruments surrendered to meet 99.8% of 2013-2014 covered emissions
 - Compliance status of each entity will be published later this month

Rulemaking objectives

- Reflect latest data and information
- Improve program efficiency where possible
 - Streamline regulation requirements and implementation
 - Remove unnecessary requirements
- Maintain environmental and market integrity

Potential Scope of 2016 Amendments for Third Compliance Period

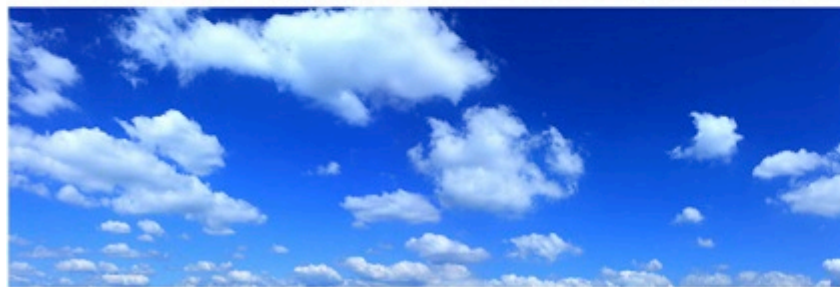
- Streamlining Cap-and-Trade Program elements
 - Management of information
 - Auctions
 - Compliance offset program
- Incorporate sector-based offset credits into Program
 - Initial public workshop on this topic held October 28, 2015
 - ARB staff interest in EJAC feedback on white paper
- Incorporate results of leakages studies for third compliance period allowance allocation
- Linkage with Ontario, Canada

Potential Scope of Cap-and-Trade Amendments for Post-2020 Program

- Continuation of program post-2020
- Post-2020 cap on emissions
- Program scope
- Revised or additional cost-containment provisions
- Market oversight
- Program role for compliance with U.S. EPA Clean Power Plan
- Allowance allocation
- Continue linkage with Québec and Ontario

Tentative Schedule for Cap-and-Trade Amendment Process

Date	Event
October 2015 to May 2016	Public workshops on specific topics
May 2016	45-day Regulation and Initial Statement of Reasons published
June 2016	First Board hearing
April 2017	Second Board hearing
July 2017	Final Regulation and Final Statement of Reasons to Office of Administrative Law
October 2017	Adopted Regulation becomes effective



Cap-and-Trade

Adaptive Management

Environmental Justice Advisory Committee Meeting
December 7, 2015

California Environmental Protection Agency

 **Air Resources Board**

Background

- Process for tracking and responding to emission trends under Cap-and-Trade Program
- ARB concluded that Cap-and Trade is unlikely to contribute to increased localized emission impacts
- Board approved Adaptive Management (AM) Plan in 2011; AM process under development would implement the Plan

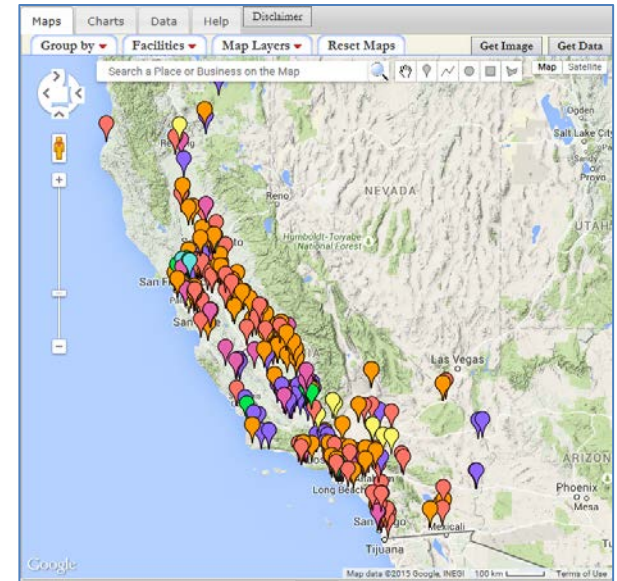
Systematic & Transparent Process

- Emissions tracking, analytics, and decision-making for responses to address emission changes
- Draft adaptive management process released for public comment



GHG Emissions Mapping Tool

- Publicly available tool *
- Stakeholders can replicate staff's analyses
- Track GHG emissions and trends in California communities
- Mapping tool is a first-order screening
 - GHG increases may suggest potential increase in criteria or toxic emissions
 - GHG changes may trigger more detailed analysis



*<http://www.arb.ca.gov/ei/tools/ghgfacilities/>

Data Collection &
Screening

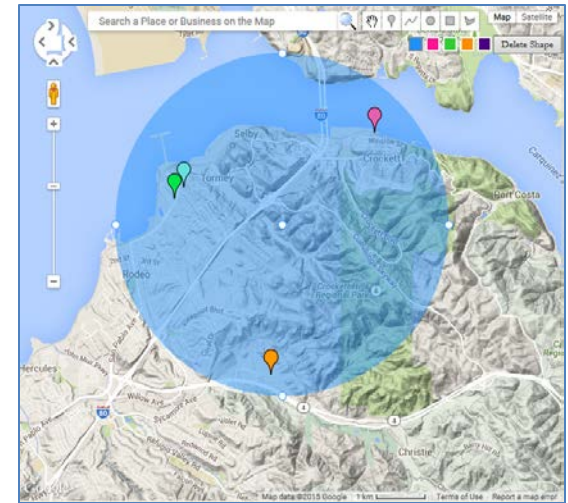
Data Analysis

Review

Decision Making

Opportunities for Continuing Public Participation

- Interactive Greenhouse Gas Emissions Mapping Tool allows stakeholders to:
 - Track greenhouse gas changes at individual facilities, in California communities, and across industrial sectors
 - Follow and replicate staff's analysis
- On annual basis, ARB will:
 - Post Results from Analysis
 - Consider Public Comments Received
 - Present Results at Public Board Meeting



Data Collection & Screening

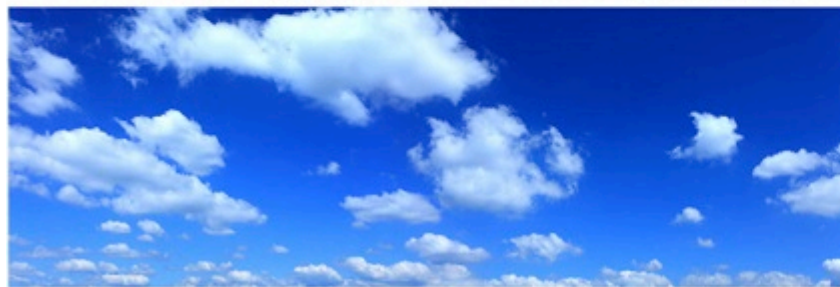
Data Analysis

Review

Decision Making

Next Steps

- Revise draft Adaptive Management Process, release early 2016
- Additional statewide public meetings in 2016
- Present final Adaptive Management Process to Board in 2016



Overview of U.S. EPA's Clean Power Plan Rules

*Environmental Justice Advisory Committee Meeting
December 7, 2015*

California Environmental Protection Agency

 **Air Resources Board**

Clean Power Plan Overview

- Central component of President Obama's "Climate Action Plan."
- Rules issued this August under Section 111 of the federal Clean Air Act create GHG emission limits for power plants.
- Today's focus is on the section 111(d) emission guidelines for existing power plants– the "Clean Power Plan" or "CPP."
- 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.

Implications for California

- Federal targets are well above emissions level California power sector is likely to achieve by 2030 under state programs.
- CPP is likely to reinforce progress towards cleaner energy throughout the West.
- State programs, including the Cap-and-Trade Regulation, are likely to be used to assure compliance through a “State Measures”-based compliance plan.
- Option of pursuing the “Clean Energy Incentive Program” for further disadvantaged community investments.

Timeline and Next Steps

- Compliance plans are due in September 2016, with an optional extension to 2018.
- California's compliance plan will be coordinated with the Cap-and-Trade Regulation, Scoping Plan, and post-2020 planning. We are planning on a June 2016 Board meeting on these items.
- ARB is participating in regional discussions as other western states prepare compliance plans. There is significant interest in carbon pricing and trading. As these discussions mature, we will consider regional options.

Affected Units

- As of 12/3/15 there are::
 - 96 facilities (251 units)
 - 69 separate different companies
 - Representing 37,486 MWs of generation capacity (ARB)
 - 100.5 Million MWhs (U.S. EPA)
 - 43.6 million MTCO₂ (U.S. EPA)
- 12 facilities (20 units) have not responded
- ARB is considering them “affected units” for this exercise

Affected Units

- Located in 15 different air districts
- Most facilities located in:
 - SCAQMD - 73 Units; 24 facilities
 - SJVAPCD - 46 units facilities; 22 facilities
 - BAAQMD - 36 Units; 13 Facilities
 - MDAQMD - 24 units; 12 facilities
 - SDAPCD - 20 Units; 7 facilities



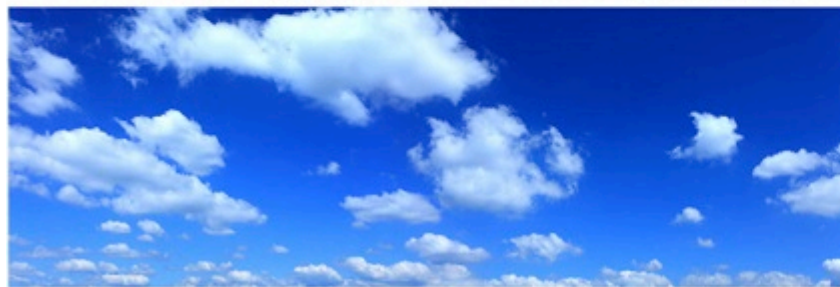
Engaging Disadvantaged and EJ Communities

- Plans for engagement include:
 - Continued consultation with the EJAC.
 - Invitations to community groups in affected communities to participate in the process, with translation services.
 - Outreach to tribal representatives.
 - Regional workshops as appropriate.

Identifying EJ Groups for engagement

- Organizations represented by EJAC Members

Region	Organization
Bay Area	<ul style="list-style-type: none">• APEN• GAIA• Greenlining Institute• Urban Releaf
Imperial Valley	<ul style="list-style-type: none">• Comite Civico Del Valle
Inland Empire	<ul style="list-style-type: none">• Incredible Edible Community Garden
Los Angeles	<ul style="list-style-type: none">• End Oil• PSR-LA
Sacramento	<ul style="list-style-type: none">• Environmental Justice Coalition for Water• Oak Park Neighborhood Association
San Joaquin Valley	<ul style="list-style-type: none">• Association of Irrigated Residents• Clinica Sierra Vista• Valley LEAP



Suggested Questions & Topics for Focused Review

*Environmental Justice Advisory Committee Meeting
December 7, 2015*

California Environmental Protection Agency

 **Air Resources Board**

Focus Questions for EJAC

- Additional resources or EJ organizations ARB should consider to further engage individuals in vulnerable communities?
- Increase involvement of disadvantaged communities in refining Adaptive Management tool and process?
- Are there specific EJ concerns with potential SLCP Strategy measures
 - e.g., increased deployment of digesters at dairies, landfills, wastewater treatment;
 - accelerated high-GWP refrigerant replacement at supermarkets serving EJ communities)?
- For the Scoping Plan, how do we address EJ concerns in large sectors of energy and transportation?

Contact Information

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Short-Lived Climate Pollutant Strategy <ul style="list-style-type: none"> • Dave Mehl Dave.Mehl@arb.ca.gov 916-323-1491 • Marcelle Surovik Marcelle.Surovik@arb.ca.gov 916-327-2951 	Cap-and-Trade Program <ul style="list-style-type: none"> • Rajinder Sahota Rajinder.Sahota@arb.ca.gov 916-323-8503 • Jason Gray Jason.Gray@arb.ca.gov 916-324-3507
Cap-and-Trade Adaptive Management <ul style="list-style-type: none"> • Johnnie Raymond Johnnie.Raymond@arb.ca.gov 916-445-8279 • Trish Johnson Trish.Johnson@arb.ca.gov 916-445-3365 	U.S. EPA's Clean Power Plan <ul style="list-style-type: none"> • Craig Segall Craig.Segall@arb.ca.gov 323-9609 • Chris Gallenstein Chris.Gallenstein@arb.ca.gov 916-324-8017



What's New List Serve Post Display

BELOW IS THE LIST SERVE POST YOU SELECTED TO DISPLAY.

ARBCOMBO -- DEC 14: PUBLIC WORKSHOP ON CA PLAN FOR COMPLIANCE WITH THE CLEAN POWER PLAN AND POTENTIAL 2016 AMENDMENTS TO THE CAP-AND-TRADE PROGRAM

Posted: 01 Dec 2015 15:21:34

Air Resources Board (ARB or Board) staff invites you to participate in a public workshop on December 14, 2015, to discuss California's plan for compliance with the U.S. Environmental Protection Agency's (U.S. EPA's) Clean Power Plan, and the scope and regulatory schedule for potential amendments to the Cap-and-Trade Regulation (Regulation or Program) relating to electricity sector emissions.

DATE: Monday, December 14, 2015

TIME: 9:30 a.m. to 5:00 p.m.

PLACE:

CalEPA Headquarters Building
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This workshop is part of the public process to develop the State's Clean Power Plan compliance proposal and 2016 amendments to the Cap-and-Trade Regulation related to the electricity sector.

Staff will present policy options and modeling results and seek stakeholder input regarding California's potential strategy for Clean Power Plan compliance. The staff presentation will include initial approaches and results for electricity sector carbon emissions analysis consistent with the Clean Power Plan, and options for continued analysis, as well as initial discussion for how California's compliance plan may interact with regional electricity and carbon markets.

Staff will also discuss potential modifications to the Cap and Trade and Mandatory Greenhouse Gas Reporting Regulations, including modifications which may be effective in the post-2020

Program, and to permitting programs, which may be proposed in 2016 to enable Clean Power Plan compliance. Staff anticipates that the Cap-and-Trade Regulation will play a large role in the Clean Power Plan compliance plan. These amendments may include changes to reporting and verification deadlines, compliance periods, changes needed to address federal plan “backstop” requirements, and treatment of imported electricity. A staff white paper on many of these issues is available on ARB’s Power Plants webpage at:

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

Staff will also present Cap and Trade Regulation goals for the upcoming amendment process and seek input from stakeholders on potential Regulation amendments that will apply to the Program’s third compliance period and to the post 2020 Program. Third compliance period amendments to be discussed by staff at this meeting will include changes to the Renewable Portfolio Standard adjustment for compliance obligations. Staff does not plan to discuss proposals for post 2020 electrical distribution utility allocation until early 2016.

Finally, staff will discuss potential amendments or processes related to the electricity sector including the recent mandates of SB 350 for the electricity sector.

Environmental Analysis

Pursuant to the California Environmental Quality Act (CEQA) and ARB’s Certified Regulatory Program (Cal. Code Regs., tit. 14, §15251(d); Cal. Code Regs., tit. 17, §§ 60000–60008), staff is reviewing the Clean Power Plan and Cap and Trade Regulatory Amendments to determine if the proposed project will result in any potentially significant adverse environmental impacts. An environmental analysis (EA) will be released for a 45-day public review and comment period with the proposed Clean Power Plan and Cap and Trade Regulatory Amendments to be released in the spring.

Comments received at this public workshop will be considered when preparing the CEQA document.

A copy of the presentation and other workshop materials will be available on ARB’s Power Plants webpage at:

<http://www.arb.ca.gov/cc/powerplants/powerplants.htm> and Cap and Trade Workshops and Meetings webpage at:

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

Materials will be posted by December 14, 2015, at 8:00 a.m.

All interested stakeholders are invited to attend. A live webcast of the workshop will be available at:

<http://www.calepa.ca.gov/broadcast/?BDO=1>

Remote participants will be able to submit e-mail questions

during the workshop at an address provided in the presentation.

Background

Cap-and-Trade Regulation

The Board first formally adopted the Regulation in October 2011, and subsequently approved limited amendments to the Regulation in June 2012, October 2013, April 2014, September 2014, and most recently June 2015. The upcoming 2016 amendments will seek to improve Program efficiency, update the Regulation using the latest information, and chart post-2020 implementation of the Program.

More information about ARB's Cap-and-Trade Program is available at: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

Clean Power Plan

On August 3, 2015, U.S. EPA's Administrator signed its Clean Power Plan, which sets carbon dioxide emissions limits for many existing electric generating units. These regulations are based on section 111(d) (42 U.S.C. § 7411(d)) of the federal Clean Air Act. The Plan was published in the Federal Register on October 23, 2015. States must develop compliance plans to meet these limits and compliance plans are due in September 2016 (with the option to seek extensions). ARB is developing California's compliance plan in consultation with the California Energy Commission and the California Public Utilities Commission, California's air districts, and other partners.

More information about the Clean Power Plan and related rules is available at:
<http://www.arb.ca.gov/cc/powerplants/powerplants.htm>

California is in a drought emergency.
Visit www.SaveOurH2O.org for water conservation tips.

You are receiving this single arbcombo email because you are a subscriber to or have made a public comment to one or more of the following lists: capandtrade, cc, ej, ghg-rep, ghg-ver.

[ARB What's New](#)

This list of affected EGUs reflects the best information available to ARB to date, including information submitted and attested as correct, by representatives of the EGUs. This list is not final, and feedback is welcome. ARB will submit a final list of affected EGUs to U.S. EPA along with its Clean Power Plan compliance plan.

List is as of 12/10/14

EIA Plant Code	CEC ID	ARB MRR ID	COUNTY	DISTRICT	Plant Name	Utility Name	Generator ID	CEC Unit ID	Status	Prime Mover	Nameplate Capacity (MW)
10002	C0001	100001	San Bernardino	MOJ	ACE Cogeneration Facility	ACE Cogeneration Co	GEN1	GEN 1	In, Shutdown	ST	108.0
315	G0011	101321	Los Angeles	SC	AES Alamitos LLC	AES Alamitos LLC	1	AL 1	In	ST	174.6
315	G0011	101321	Los Angeles	SC	AES Alamitos LLC	AES Alamitos LLC	2	AL 2	In	ST	175.0
315	G0011	101321	Los Angeles	SC	AES Alamitos LLC	AES Alamitos LLC	3	AL 3	In	ST	332.2
315	G0011	101321	Los Angeles	SC	AES Alamitos LLC	AES Alamitos LLC	4	AL 4	In	ST	335.7
315	G0011	101321	Los Angeles	SC	AES Alamitos LLC	AES Alamitos LLC	5	AL 5	In	ST	498.0
315	G0011	101321	Los Angeles	SC	AES Alamitos LLC	AES Alamitos LLC	6	AL 6	In	ST	495.0
335	G0274	100194	Orange	SC	AES Huntington Beach LLC	AES Huntington Beach LLC	1	1	In	ST	225.8
335	G0274	100194	Orange	SC	AES Huntington Beach LLC	AES Huntington Beach LLC	2	2	In	ST	225.8
356	G0490	100257	Los Angeles	SC	AES Redondo Beach LLC	AES Redondo Beach LLC	5	5	In	ST	178.9
356	G0490	100257	Los Angeles	SC	AES Redondo Beach LLC	AES Redondo Beach LLC	6	6	In	ST	175.0
356	G0490	100257	Los Angeles	SC	AES Redondo Beach LLC	AES Redondo Beach LLC	7	7	In	ST	506.0
356	G0490	100257	Los Angeles	SC	AES Redondo Beach LLC	AES Redondo Beach LLC	8	8	In	ST	495.9
50748	G0221	101426	Santa Clara	BA	Agnews Power Plant	OLS Energy-Agnews Inc.	GEN1	AG1JT1	In	CT	22.8
50748	G0221	101426	Santa Clara	BA	Agnews Power Plant	OLS Energy-Agnews Inc.	GEN2	AG1ST1	In	CA	7.7
10650	G0040	100897	Kern	SJU	Badger Creek Cogen	Juniper Generation LLC	GEN1	LM5000	In	GT	47.0
10649	G0428	100890	Kern	SJU	Bear Mountain Cogen	Juniper Generation LLC	GEN1	LM5000	In	GT	47.0
55295	G0787	100342	Riverside	MOJ	Blythe Energy Inc	AltaGas Blythe Operations Inc	CT1	CT11	In	CT	176.0
55295	G0787	100342	Riverside	MOJ	Blythe Energy Inc	AltaGas Blythe Operations Inc	CT2	CT12	In	CT	176.0
55295	G0787	100342	Riverside	MOJ	Blythe Energy Inc	AltaGas Blythe Operations Inc	ST1	ST10	In	CA	185.0
420	G0061	100179	Los Angeles	SC	Broadway	City of Pasadena - (CA)	B3	B3	In	ST	71.0
10168	G0080	100128	Santa Clara	BA	Cardinal Cogen	Cardinal Cogen Inc	GTG1	GTG1	In, Shutdown 2012	CT	42.1
10168	G0080	100128	Santa Clara	BA	Cardinal Cogen	Cardinal Cogen Inc	STG1	STG1	In, Shutdown 2012	CA	10.7
10169	G0084	100129	Los Angeles	SC	Carson Cogeneration	Carson Cogeneration Co	GEN1	Unit 1	In	CT	49.5
10169	G0084	100129	Los Angeles	SC	Carson Cogeneration	Carson Cogeneration Co	GEN2	-	In	CA	10.5
7527	G0085	100130	Sacramento	SAC	Carson Ice-Gen Project	Sacramento Municipal Util Dist	1	Unit CT	In	CT	54.0
7527	G0085	100130	Sacramento	SAC	Carson Ice-Gen Project	Sacramento Municipal Util Dist	2	Unit 2	In	CA	17.5
50003	G0429	101520	Kern	SJU	Chalk Cliff Cogen	Juniper Generation LLC	GEN1	LM5000	In	GT	47.0
56356	G0923	100387	Riverside	SC	Clearwater Power Plant	City of Riverside - (CA)	CT1	CT1	In	CT	21.0
56356	G0923	100387	Riverside	SC	Clearwater Power Plant	City of Riverside - (CA)	ST1	ST1	In	CA	8.0
56532	G0934	101758	Colusa	COL	Colusa Generating Station	Pacific Gas & Electric Co	A	336	In	CT	172.0
56532	G0934	101758	Colusa	COL	Colusa Generating Station	Pacific Gas & Electric Co	B	337	In	CT	172.0
56532	G0934	101758	Colusa	COL	Colusa Generating Station	Pacific Gas & Electric Co	C	166	In	CA	324.0
228	G0147	101223	Contra Costa	BA	Contra Costa	NRG Delta LLC	6	CCPP6	In, Shutdown	ST	340.0
228	G0147	101223	Contra Costa	BA	Contra Costa	NRG Delta LLC	7	CCPP7	In, Shutdown	ST	340.0
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	1	CLW-1	In, Shutdown	ST	65.3
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	2	CLW-2	In, Shutdown	ST	81.6
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	30	CLW-3-ST	In, Shutdown	CA	120.0

EIA Plant Code	CEC ID	ARB MRR ID	COUNTY	DISTRICT	Plant Name	Utility Name	Generator ID	CEC Unit ID	Status	Prime Mover	Nameplate Capacity (MW)
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	31	CLW-3-CT1	In, Shutdown	CT	85.0
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	32	CLW-3-CT2	In, Shutdown	CT	85.0
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	40	CLW-4-ST	In, Shutdown	CA	120.0
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	41	CLW-4-CT1	In, Shutdown	CT	85.0
329	G0767	100333	San Bernardino	MOJ	Coolwater	NRG California South LP	42	CLW-4-CT2	In, Shutdown	CT	85.0
10635	G0149	100150	Riverside	SC	Corona Cogen	Juniper Generation LLC	GEN1	Unit 1	In	GT	47.0
55970	G0889	100365	Sacramento	SAC	Cosumnes	Sacramento Municipal Util Dist	1	STG 1	In	CA	166.6
55970	G0889	100365	Sacramento	SAC	Cosumnes	Sacramento Municipal Util Dist	2	CTG 2	In	CT	166.7
55970	G0889	100365	Sacramento	SAC	Cosumnes	Sacramento Municipal Util Dist	3	CTG 3	In	CT	166.7
55084	G0161	101263	Contra Costa	BA	Crockett Cogen Project	Crockett Cogeneration	GE1	GE1	In	CS	240.0
55333	G0783	101526	Contra Costa	BA	Delta Energy Center	Delta Energy Center LLC	CTG1	DE1CT1	In	CT	212.0
55333	G0783	101526	Contra Costa	BA	Delta Energy Center	Delta Energy Center LLC	CTG2	DE1CT2	In	CT	212.0
55333	G0783	101526	Contra Costa	BA	Delta Energy Center	Delta Energy Center LLC	CTG3	DE1CT3	In	CT	213.5
55333	G0783	101526	Contra Costa	BA	Delta Energy Center	Delta Energy Center LLC	STG1	DE1ST1	In	CA	306.0
56026	G0169	101436	Santa Clara	BA	Donald Von Raesfeld Power Plant	City of Santa Clara - (CA)	CTG1	CT1	In	CT	50.0
56026	G0169	101436	Santa Clara	BA	Donald Von Raesfeld Power Plant	City of Santa Clara - (CA)	CTG2	CT2	In	CT	50.0
56026	G0169	101436	Santa Clara	BA	Donald Von Raesfeld Power Plant	City of Santa Clara - (CA)	STG	SG	In	CA	47.0
259	G0371	101341	San Luis Obispo	SLO	Dynegy Morro Bay LLC	Dynegy Morro Bay LLC	1	1	In, Shutdown 2/4/14	ST	156.0
259	G0371	101341	San Luis Obispo	SLO	Dynegy Morro Bay LLC	Dynegy Morro Bay LLC	2	2	In, Shutdown 2/4/14	ST	156.0
259	G0371	101341	San Luis Obispo	SLO	Dynegy Morro Bay LLC	Dynegy Morro Bay LLC	3	3	In, Shutdown 2/4/14	ST	300.0
259	G0371	101341	San Luis Obispo	SLO	Dynegy Morro Bay LLC	Dynegy Morro Bay LLC	4	4	In, Shutdown 2/4/14	ST	300.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	6	6	In	ST	705.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	7	7	In	ST	702.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	CT1A	CC1	In	CT	180.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	CT1B	CC1	In	CT	180.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	CT2A	CC2	In	CT	180.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	CT2B	CC2	In	CT	180.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	ST1	CC1	In	CA	180.0
260	G0372	100221	Monterey	MBU	Dynegy Moss Landing Power Plant	Dynegy -Moss Landing LLC	ST2	CC2	In	CA	180.0
389	G0190	100162	Imperial	IMP	El Centro	Imperial Irrigation District	2	2-1	In	CA	34.5
389	G0190	100162	Imperial	IMP	El Centro	Imperial Irrigation District	2A	2-2	In	CT	89.9
389	G0190	100162	Imperial	IMP	El Centro	Imperial Irrigation District	30	30	In	CA	65.9
389	G0190	100162	Imperial	IMP	El Centro	Imperial Irrigation District	31	31	In	CT	43.2
389	G0190	100162	Imperial	IMP	El Centro	Imperial Irrigation District	32	32	In	CT	43.2
57901	G0053	100164	Los Angeles	SC	El Segundo Energy Center LLC	NRG El Segundo Operations Inc	5	UNIT 5	In	CT	202.0
57901	G0053	100164	Los Angeles	SC	El Segundo Energy Center LLC	NRG El Segundo Operations Inc	6	UNIT 6	In	CA	61.0
57901	G0053	100164	Los Angeles	SC	El Segundo Energy Center LLC	NRG El Segundo Operations Inc	7	UNIT 7	In	CT	202.0
57901	G0053	100164	Los Angeles	SC	El Segundo Energy Center LLC	NRG El Segundo Operations Inc	8	UNIT 8	In	CA	61.0
330	G0194	100164	Los Angeles	SC	El Segundo Power	NRG El Segundo Operations Inc	3	UNIT 3	In, Shutdown	ST	335.0
330	G0194	100164	Los Angeles	SC	El Segundo Power	NRG El Segundo Operations Inc	4	UNIT 4	In, Will be Shutdown 12/31/15	ST	335.0
55400	G0799	104014	Kern	SJU	Elk Hills Power LLC	Elk Hills Power LLC	CTG1	CTG1	In	CT	171.0
55400	G0799	104014	Kern	SJU	Elk Hills Power LLC	Elk Hills Power LLC	CTG2	CTG2	In	CT	171.0
55400	G0799	104014	Kern	SJU	Elk Hills Power LLC	Elk Hills Power LLC	STG	STG	In	CA	225.0
302	G0196	101534	San Diego	SD	Encina	NRG Cabrillo Power Ops Inc	2	Encina 2	In	ST	104.0
302	G0196	101534	San Diego	SD	Encina	NRG Cabrillo Power Ops Inc	3	Encina 3	In	ST	110.0
302	G0196	101534	San Diego	SD	Encina	NRG Cabrillo Power Ops Inc	4	Encina 4	In	ST	300.0
302	G0196	101534	San Diego	SD	Encina	NRG Cabrillo Power Ops Inc	5	Encina 5	In	ST	330.0

EIA Plant Code	CEC ID	ARB MRR ID	COUNTY	DISTRICT	Plant Name	Utility Name	Generator ID	CEC Unit ID	Status	Prime Mover	Nameplate Capacity (MW)
302	G0196	101534	San Diego	SD	Encina	NRG Cabrillo Power Ops Inc	ST1	Encina 1	In	ST	107.0
331	G0201	100393	San Bernardino	SC	Etiwanda Generating Station	NRG California South LP	3	UNIT 3	In	ST	333.0
331	G0201	100393	San Bernardino	SC	Etiwanda Generating Station	NRG California South LP	4	UNIT 4	In	ST	333.0
10156	G0384	101544	Fresno	SJU	Fresno Cogen Partners	Wellhead Services Inc	GEN2	UNIT 2	In	CA	8.3
10156	G0384	101544	Fresno	SJU	Fresno Cogen Partners	Wellhead Services Inc	GEN4	UNIT 4	In	CT	50.0
56476	G0950	101741	Contra Costa	BA	Gateway Generating Station	Pacific Gas & Electric Co	A	334	In	CT	175.0
56476	G0950	101741	Contra Costa	BA	Gateway Generating Station	Pacific Gas & Electric Co	B	335	In	CT	175.0
56476	G0950	101741	Contra Costa	BA	Gateway Generating Station	Pacific Gas & Electric Co	C	165	In	CA	230.0
10034	G0229	100178	Santa Clara	BA	Gilroy Power Plant	Calpine Gilroy Cogen LP	GEN1	GI1CT1	In	CT	85.4
10034	G0229	100178	Santa Clara	BA	Gilroy Power Plant	Calpine Gilroy Cogen LP	GEN2	GI1ST1	In	CA	38.0
54749	G0233	100180	San Diego	SD	Goal Line LP	Goal Line LP	CTG	Unit 1	In	CT	40.0
54749	G0233	100180	San Diego	SD	Goal Line LP	Goal Line LP	STG	Unit 1	In	CA	9.9
377	G0236	100181	Los Angeles	SC	Grayson	City of Glendale	1	1	In	CA	20.0
377	G0236	100181	Los Angeles	SC	Grayson	City of Glendale	2	2	In	CA	20.0
377	G0236	100181	Los Angeles	SC	Grayson	City of Glendale	4	4	In	ST	44.0
377	G0236	100181	Los Angeles	SC	Grayson	City of Glendale	5	5	In	ST	44.0
377	G0236	100181	Los Angeles	SC	Grayson	City of Glendale	8A	8-A	In	CT	30.0
377	G0236	100181	Los Angeles	SC	Grayson	City of Glendale	8BC	8-B/C	In	CT	60.0
10350	G0238	101496	Sutter	FR	Greenleaf 1 Power Plant	Calpine Corp-Yuba City	GEN1	GL1JT1	In	CT	46.0
10350	G0238	101496	Sutter	FR	Greenleaf 1 Power Plant	Calpine Corp-Yuba City	GEN2	GL1ST1	In	CA	26.0
10349	G0239	100182	Sutter	FR	Greenleaf 2 Power Plant	Calpine Corp-Yuba City	GEN1	GL2JT1	In	GT	50.0
399	G0245	100185	Los Angeles	SC	Harbor	Los Angeles Department of Water & Power	10A	Unit #1	In	CT	95.6
399	G0245	100185	Los Angeles	SC	Harbor	Los Angeles Department of Water & Power	10B	Unit #2	In	CT	95.6
399	G0245	100185	Los Angeles	SC	Harbor	Los Angeles Department of Water & Power	5	Unit #5	In	CA	86.0
50541	G0246	100186	Los Angeles	SC	Harbor Cogen	Harbor Cogeneration Co.	GEN1	HCC GT-1	In	CT	84.9
50541	G0246	100186	Los Angeles	SC	Harbor Cogen	Harbor Cogeneration Co.	ST1	HCC ST-1	In	CA	12.5
50541	G0246	100186	Los Angeles	SC	Harbor Cogen	Harbor Cogeneration Co.	ST2	HCC ST-2	In	CA	11.5
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	1	Unit #1	In	ST	230.0
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	10	Unit #10	In	CT	170.0
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	2	Unit #2	In	ST	230.0
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	5	Unit 5	In, Shutdown 6/12/13	ST	324.6
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	6	Unit 6	In, Shutdown 6/12/13	ST	324.6
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	8	Unit #8	In	CA	257.0
400	G0249	100187	Los Angeles	SC	Haynes	Los Angeles Department of Water & Power	9	Unit #9	In	CT	170.0
55518	G0778	101478	San Bernardino	MOJ	High Desert Power Plant	High Desert Power Project LLC	CTG1	CTG1	In	CT	177.3
55518	G0778	101478	San Bernardino	MOJ	High Desert Power Plant	High Desert Power Project LLC	CTG2	CTG2	In	CT	177.3
55518	G0778	101478	San Bernardino	MOJ	High Desert Power Plant	High Desert Power Project LLC	CTG3	CTG3	In	CT	177.3
55518	G0778	101478	San Bernardino	MOJ	High Desert Power Plant	High Desert Power Project LLC	STG1	ST	In	CA	323.0
55853	G0868	101686	Riverside	SC	Inland Empire Energy Center	Inland Empire Energy Ctr LLC	1	Unit 1	In	CS	405.0
55853	G0868	101686	Riverside	SC	Inland Empire Energy Center	Inland Empire Energy Ctr LLC	2	Unit 2	In	CS	405.0
10496	G0293	101514	Kern	SJU	Kern River Cogeneration	Kern River Cogeneration Co	GTAG	UNIT 1	In	GT	75.0
10496	G0293	101514	Kern	SJU	Kern River Cogeneration	Kern River Cogeneration Co	GTBG	UNIT 2	In	GT	75.0
10496	G0293	101514	Kern	SJU	Kern River Cogeneration	Kern River Cogeneration Co	GTCG	UNIT 3	In	GT	75.0
10294	G0019	101300	Monterey	MBU	King City Power Plant	Calpine King City Cogen LLC	GTG	KC1CT1	In	CT	90.8
10294	G0019	101300	Monterey	MBU	King City Power Plant	Calpine King City Cogen LLC	STG	KC1ST1	In	CA	42.4
10405	G0286	100199	Fresno	SJU	Kingsburg Cogen	KES Kingsburg LP	GEN1	GEN 1	In	CT	23.1
10405	G0286	100199	Fresno	SJU	Kingsburg Cogen	KES Kingsburg LP	GEN2	GEN 2	In	CA	13.1

EIA Plant Code	CEC ID	ARB MRR ID	COUNTY	DISTRICT	Plant Name	Utility Name	Generator ID	CEC Unit ID	Status	Prime Mover	Nameplate Capacity (MW)
55151	G0781	100339	Kern	SJU	La Paloma Generating LLC	La Paloma Generating Co LLC	GEN1	Gen-1	In	CS	300.0
55151	G0781	100339	Kern	SJU	La Paloma Generating LLC	La Paloma Generating Co LLC	GEN2	Gen-2	In	CS	300.0
55151	G0781	100339	Kern	SJU	La Paloma Generating LLC	La Paloma Generating Co LLC	GEN3	Gen-3	In	CS	300.0
55151	G0781	100339	Kern	SJU	La Paloma Generating LLC	La Paloma Generating Co LLC	GEN4	Gen-4	In	CS	300.0
54768	G0315	101044	Kern	SJU	Live Oak Cogen	Juniper Generation LLC	GEN1	LM5000	In	GT	47.0
57978	G1009	104172	San Joaquin	SJU	Lodi Energy Center	Northern California Power Agny	CT1	1	In	CT	187.0
57978	G1009	104172	San Joaquin	SJU	Lodi Energy Center	Northern California Power Agny	ST1	2	In	CA	105.2
55748	G0866	101143	Santa Clara	BA	Los Esteros Critical Energy Center	Los Esteros Critical Energy Facility LLC	CTG1	LE1JT1-RP	In, beginning 2013	CT	49.9
55748	G0866	101143	Santa Clara	BA	Los Esteros Critical Energy Center	Los Esteros Critical Energy Facility LLC	CTG2	LE1JT2-RP	In, beginning 2013	CT	49.9
55748	G0866	101143	Santa Clara	BA	Los Esteros Critical Energy Center	Los Esteros Critical Energy Facility LLC	CTG3	LE1JT3-RP	In, beginning 2013	CT	49.9
55748	G0866	101143	Santa Clara	BA	Los Esteros Critical Energy Center	Los Esteros Critical Energy Facility LLC	CTG4	LE1JT4-RP	In, beginning 2013	CT	49.9
55748	G0866	101143	Santa Clara	BA	Los Esteros Critical Energy Center	Los Esteros Critical Energy Facility LLC	CAG5	LE1ST1	In, beginning 2013	CA	126.1
55217	G0780	100338	Contra Costa	BA	Los Medanos Energy Center	Los Medanos Energy Center LLC	CTG1	LM1CT1	In	CT	172.0
55217	G0780	100338	Contra Costa	BA	Los Medanos Energy Center	Los Medanos Energy Center LLC	CTG2	LM1CT2	In	CT	172.0
55217	G0780	100338	Contra Costa	BA	Los Medanos Energy Center	Los Medanos Energy Center LLC	STG3	LM1ST1	In	CA	250.0
56046	G0329	104077	Los Angeles	SC	Magnolia Power Project	City of Burbank Water and Power	1	GT	In	CT	198.9
56046	G0329	104077	Los Angeles	SC	Magnolia Power Project	City of Burbank Water and Power	2	ST	In	CA	188.7
56041	G0894	100314	Los Angeles	SC	Malburg	Colorado Energy Management LLC	M1	M1	In	CT	50.0
56041	G0894	100314	Los Angeles	SC	Malburg	Colorado Energy Management LLC	M2	M2	In	CT	50.0
56041	G0894	100314	Los Angeles	SC	Malburg	Colorado Energy Management LLC	M3	M3	In	CA	58.8
345	G0330	100210	Ventura	VEN	Mandalay	NRG California South LP	1	UNIT 1	In	ST	217.6
345	G0330	100210	Ventura	VEN	Mandalay	NRG California South LP	2	UNIT 2	In	ST	217.6
50612	G0339	100296	Kern	SJU	McKittrick Cogen	Juniper Generation LLC	GEN1	LM5000	In	GT	47.0
55393	G0794	100343	Santa Clara	BA	Metcalf Energy Center	Calpine Corp - Metcalf Energy Center	CTG1	MF1CT1	In	CT	200.0
55393	G0794	100343	Santa Clara	BA	Metcalf Energy Center	Calpine Corp - Metcalf Energy Center	CTG2	MF1CT2	In	CT	200.0
55393	G0794	100343	Santa Clara	BA	Metcalf Energy Center	Calpine Corp - Metcalf Energy Center	STG1	MF1ST1	In	CA	235.0
52169	G0358	100215	Kern	SJU	Midway Sunset Cogen	Midway-Sunset Cogeneration Co	A	A	In	GT	78.0
52169	G0358	100215	Kern	SJU	Midway Sunset Cogen	Midway-Sunset Cogeneration Co	B	B	In	GT	78.0
52169	G0358	100215	Kern	SJU	Midway Sunset Cogen	Midway-Sunset Cogeneration Co	C	C	In	GT	78.0
10850	G0366	100218	Kern	KER	Mojave Cogen	Energy Operation Group	GEN1	Unit 1	In, Shutdown 8/13	CT	39.6
10850	G0366	100218	Kern	KER	Mojave Cogen	Energy Operation Group	GEN2	Unit 1	In, Shutdown 8/13	CA	15.4
358	G0795	100344	San Bernardino	SC	Mountainview Generating Station	Southern California Edison Co	MV3A	Unit 3	In	CT	167.3
358	G0795	100344	San Bernardino	SC	Mountainview Generating Station	Southern California Edison Co	MV3B	Unit 3	In	CT	167.3
358	G0795	100344	San Bernardino	SC	Mountainview Generating Station	Southern California Edison Co	MV3C	Unit 3	In	CA	209.2
358	G0795	100344	San Bernardino	SC	Mountainview Generating Station	Southern California Edison Co	MV4A	Unit 4	In	CT	167.3
358	G0795	100344	San Bernardino	SC	Mountainview Generating Station	Southern California Edison Co	MV4B	Unit 4	In	CT	167.3
358	G0795	100344	San Bernardino	SC	Mountainview Generating Station	Southern California Edison Co	MV4C	Unit 4	In	CA	209.2
10811	G0626	101390	San Diego	SD	Naval Station Energy Facility	Applied Energy Inc	GEN1	GEN 1	In	CT	38.3
10811	G0626	101390	San Diego	SD	Naval Station Energy Facility	Applied Energy Inc	GEN2	GEN 2	In	CA	11.6
10811	G0626	101390	San Diego	SD	Naval Station Energy Facility	Applied Energy Inc	GEN3	-	In	CA	5.2
10427	G0280	100195	San Bernardino	SC	New-Indy Ontario Mill	New-Indy Ontario LLC	GEN1	GEN1	In	GT	34.0
10812	G0399	100234	San Diego	SD	North Island Energy Facility	Applied Energy Inc	GEN1	GEN 1	In	CT	42.2
10812	G0399	100234	San Diego	SD	North Island Energy Facility	Applied Energy Inc	GEN2	GEN 2	In	CA	4.1
54371	G0409	100891	Kern	SJU	Oildale Energy LLC	Oildale Energy LLC	ODC1	ODC1	In	GT	40.0
6013	G0410	104077	Los Angeles	SC	Olive	City of Burbank Water and Power	O1	Olive 1	In	ST	50.0
6013	G0410	104077	Los Angeles	SC	Olive	City of Burbank Water and Power	O2	Olive 2	In	ST	59.8
50851	G0403	100235	Ventura	VEN	OLS Energy Camarillo	CSUCI Site Authority	GEN1	Unit GTG	In	CT	23.6

EIA Plant Code	CEC ID	ARB MRR ID	COUNTY	DISTRICT	Plant Name	Utility Name	Generator ID	CEC Unit ID	Status	Prime Mover	Nameplate Capacity (MW)
50851	G0403	100235	Ventura	VEN	OLS Energy Camarillo	CSUCI Site Authority	GEN2	Unit STG	In	CA	7.6
50850	G0404	100236	San Bernardino	SC	OLS Energy Chino	OLS Energy-Chino	GEN1	GEN 1	In	CT	23.6
50850	G0404	100236	San Bernardino	SC	OLS Energy Chino	OLS Energy-Chino	GEN2	GEN 2	In	CA	7.6
350	G0421	101357	Ventura	VEN	Ormond Beach	NRG California South LP	1	UNIT 1	In	ST	806.4
350	G0421	101357	Ventura	VEN	Ormond Beach	NRG California South LP	2	UNIT 2	In	ST	806.4
55345	G0785	101746	San Diego	SD	Otay Mesa Generating Project	Otay Mesa Energy Center LLC	1-01	OM1CT1	In	CT	199.0
55345	G0785	101746	San Diego	SD	Otay Mesa Generating Project	Otay Mesa Energy Center LLC	1-02	OM1CT2	In	CT	199.0
55345	G0785	101746	San Diego	SD	Otay Mesa Generating Project	Otay Mesa Energy Center LLC	1-03	OM1ST1	In	CA	291.0
55985	G0861	100362	San Diego	SD	Palomar Energy	San Diego Gas & Electric Co	CTG1	CTG1	In	CT	167.0
55985	G0861	100362	San Diego	SD	Palomar Energy	San Diego Gas & Electric Co	CTG2	CTG2	In	CT	167.0
55985	G0861	100362	San Diego	SD	Palomar Energy	San Diego Gas & Electric Co	STG	STG	In	CA	230.0
55656	G0797	100345	Kern	SJU	Pastoria Energy Facility, LLC	Calpine Corp - Pastoria Energy Center	CT01	PA1CT1	In	CT	167.0
55656	G0797	100345	Kern	SJU	Pastoria Energy Facility, LLC	Calpine Corp - Pastoria Energy Center	CT02	PA1CT2	In	CT	167.0
55656	G0797	100345	Kern	SJU	Pastoria Energy Facility, LLC	Calpine Corp - Pastoria Energy Center	CT04	PA2CT4	In	CT	167.0
55656	G0797	100345	Kern	SJU	Pastoria Energy Facility, LLC	Calpine Corp - Pastoria Energy Center	ST03	PA1ST3	In	CA	185.0
55656	G0797	100345	Kern	SJU	Pastoria Energy Facility, LLC	Calpine Corp - Pastoria Energy Center	ST05	PA2ST5	In	CA	92.0
271	G0450	100248	Contra Costa	BA	Pittsburg Power	NRG Delta LLC	5	PPP5	In	ST	325.0
271	G0450	100248	Contra Costa	BA	Pittsburg Power	NRG Delta LLC	6	PPP6	In	ST	325.0
271	G0450	100248	Contra Costa	BA	Pittsburg Power	NRG Delta LLC	7	PPP7	In	ST	720.0
7307	G0487	100256	Shasta	SHA	Redding Power	City of Redding - (CA)	4	4	In	CA	28.0
7307	G0487	100256	Shasta	SHA	Redding Power	City of Redding - (CA)	5	5	In	CT	43.0
7307	G0487	100256	Shasta	SHA	Redding Power	City of Redding - (CA)	6	6	In	CT	42.5
10768	C0018	100892	Kern	SJU	Rio Bravo Jasmin	Rio Bravo Jasmin	UP9	Unit 1	In, Shutdown 2014	ST	38.3
10769	C0022	100893	Kern	SJU	Rio Bravo Poso	Rio Bravo Poso	UP8	1	In, Shutdown 2014	ST	38.3
56298	G0213	101270	Placer	PLA	Roseville Energy Park	City of Roseville - (CA)	0001	CT1	In	CT	50.0
56298	G0213	101270	Placer	PLA	Roseville Energy Park	City of Roseville - (CA)	0002	CT2	In	CT	50.0
56298	G0213	101270	Placer	PLA	Roseville Energy Park	City of Roseville - (CA)	0003	STG1	In	CA	100.0
56467	G0935	104456	Alameda	BA	Russell City Energy Center	Russell City Energy Company LLC	CTG1	CTG1	In	CT	195.0
56467	G0935	104456	Alameda	BA	Russell City Energy Center	Russell City Energy Company LLC	CTG2	CTG2	In	CT	195.0
56467	G0935	104456	Alameda	BA	Russell City Energy Center	Russell City Energy Company LLC	STG1	ST1	In	CA	250.0
7551	G0467	100252	Sacramento	SAC	SCA Cogen 2	Sacramento Municipal Util Dist	CCST	CCST	In	CA	49.8
7551	G0467	100252	Sacramento	SAC	SCA Cogen 2	Sacramento Municipal Util Dist	CT1A	CT1A	In	CT	49.8
7551	G0467	100252	Sacramento	SAC	SCA Cogen 2	Sacramento Municipal Util Dist	CT1B	CT1B	In	CT	49.8
404	G0549	101004	Los Angeles	SC	Scattergood	Los Angeles Department of Water & Power	1	Unit #1	In	ST	112.0
404	G0549	101004	Los Angeles	SC	Scattergood	Los Angeles Department of Water & Power	2	Unit #2	In	ST	185.0
404	G0549	101004	Los Angeles	SC	Scattergood	Los Angeles Department of Water & Power	3	Unit #3	In	ST	460.0
404	G0000	101004	Los Angeles	SC	Scattergood	Los Angeles Department of Water & Power	4	Unit #4	In, Beginning 2016	CT	213.0
404	G0000	101004	Los Angeles	SC	Scattergood	Los Angeles Department of Water & Power	5	Unit #5	In, Beginning 2016	CA	109.0
10438	S0070	101671	San Bernardino	MOJ	SEGS II	Sunray Operating Services LLC	GEN1	Unit 1	In	ST	30.0
10439	S0071	100682	San Bernardino	MOJ	SEGS III	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	34.2
10440	S0072	100682	San Bernardino	MOJ	SEGS IV	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	34.2
10446	S0073	101291	San Bernardino	MOJ	SEGS IX	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	108.2
10441	S0074	100682	San Bernardino	MOJ	SEGS V	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	34.2
10442	S0075	100682	San Bernardino	MOJ	SEGS VI	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	35.0
10443	S0076	100682	San Bernardino	MOJ	SEGS VII	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	35.0
10444	S0077	101291	San Bernardino	MOJ	SEGS VIII	FPL Energy Operating Services Inc - SEGS	GEN1	GEN1	In	ST	108.2
7552	G0076	100125	Sacramento	SAC	SPA Cogen 3	Sacramento Municipal Util Dist	CCCT	Unit CT	In	CT	118.0

EIA Plant Code	CEC ID	ARB MRR ID	COUNTY	DISTRICT	Plant Name	Utility Name	Generator ID	CEC Unit ID	Status	Prime Mover	Nameplate Capacity (MW)
7552	G0076	100125	Sacramento	SAC	SPA Cogen 3	Sacramento Municipal Util Dist	CCST	Unit ST	In	CA	56.0
10640	C0021	100014	San Joaquin	SJU	Stockton Cogen	Air Products Energy Enterprises LP	GEN1	GEN1	In, Shutdown 2012	ST	55.1
55182	G0784	100948	Kern	SJU	Sunrise Power LLC	Sunrise Power Co LLC	STG	ST	In	CA	237.6
55182	G0784	100948	Kern	SJU	Sunrise Power LLC	Sunrise Power Co LLC	X718	X718	In	CT	167.2
55182	G0784	100948	Kern	SJU	Sunrise Power LLC	Sunrise Power Co LLC	X719	X719	In	CT	167.2
55112	G0779	101496	Sutter	FR	Sutter Energy Center	Calpine Corp-Sutter	CT01	ST1CT1	In	CT	182.4
55112	G0779	101496	Sutter	FR	Sutter Energy Center	Calpine Corp-Sutter	CT02	ST1CT2	In	CT	182.4
55112	G0779	101496	Sutter	FR	Sutter Energy Center	Calpine Corp-Sutter	ST01	ST1ST1	In	CA	187.0
50134	G0590	100886	Kern	SJU	Sycamore Cogeneration	Sycamore Cogeneration Co	GTBG	UNIT 2	In	GT	75.0
50134	G0590	100886	Kern	SJU	Sycamore Cogeneration	Sycamore Cogeneration Co	GTDG	UNIT 4	In	GT	75.0
55933	G0838	100358	San Joaquin	SJU	Tracy Combined Cycle Power Plant	GWF Energy LLC	TCC1	TCC 1	In	CA	167.0
55933	G0838	100358	San Joaquin	SJU	Tracy Combined Cycle Power Plant	GWF Energy LLC	TPP1	TPP 1CT	In	CT	83.0
55933	G0838	100358	San Joaquin	SJU	Tracy Combined Cycle Power Plant	GWF Energy LLC	TPP2	TPP 2CT	In	CT	83.0
408	G0648	101325	Los Angeles	SC	Valley	Los Angeles Department of Water & Power	6	Unit #6	In	CT	178.0
408	G0648	101325	Los Angeles	SC	Valley	Los Angeles Department of Water & Power	7	Unit #7	In	CT	178.0
408	G0648	101325	Los Angeles	SC	Valley	Los Angeles Department of Water & Power	8	Unit #8	In	CA	223.5
56078	G0900	100371	Stanislaus	SJU	Walnut Energy Center	Turlock Irrigation District	1	Unit 1	In	CT	80.0
56078	G0900	100371	Stanislaus	SJU	Walnut Energy Center	Turlock Irrigation District	2	Unit 2	In	CT	80.0
56078	G0900	100371	Stanislaus	SJU	Walnut Energy Center	Turlock Irrigation District	3	Unit 3	In	CA	90.0
7266	G0679	101028	Stanislaus	SJU	Woodland	Modesto Irrigation District	2	Woodland 2-12	In	CA	33.4
7266	G0679	101028	Stanislaus	SJU	Woodland	Modesto Irrigation District	3	Woodland 2-12	In	CT	53.6



Workshop on Clean Power Plan Rules and Electricity Topics in the Cap-and-Trade Regulation

December 14, 2015

California Environmental Protection Agency

 **Air Resources Board**

Approximate Schedule

- 9:30-10: Overview and CEQA Scoping Highlight
- 10-11:30: Clean Power Plan Analysis and Options
- 11:30-1: Regional Considerations (Clean Power Plan and Cap-and-Trade)
- 1-1:45: Lunch
- 1:45-3:15: Options for Integrating Federal and State Programs
- 3:15-4:45: Cap-and-Trade Electricity Issues
- 4:45-5: Time for Additional Comments

Environmental Analysis to be Prepared

- Environmental Analysis (EA) developed for proposed actions that may result in significant impacts on the environment.
- EA prepared according to the requirements of ARB's certified program under the California Environmental Quality Act (CEQA).
- The CEQA Environmental Checklist (CEQA Guidelines Appendix G) is used to identify and evaluate potential impacts to the environment.
- ARB will prepare an Environmental Analysis, as an appendix to the Clean Power Plan compliance strategy and the Cap-and-Trade amendments package, according to the requirements of its certified regulatory program under the California Environmental Quality Act (CEQA).
- Because staff currently expects that these two efforts will be closely intertwined, we expect to prepare a single Environmental Analysis that will address both efforts.

Environmental Analysis to be Prepared

- The EA will include:
 - Beneficial impacts
 - Foreseeable methods of compliance
 - Potential for adverse impacts
 - Feasible alternatives and mitigation measures to reduce/avoid significant impacts
- Input welcomed on appropriate scope and content of EA.
- Draft EA will be released for 45 day public comment period.



Clean Power Plan Analysis and Options

December 14, 2015

California Environmental Protection Agency

 **Air Resources Board**

CPP Analytic Requirements Overview

- Core elements are listed in 40 CFR 60.5740 and 40 CFR 60.5745. These include:
 - Identification of affected EGUs
 - Identification of applicable emission standards
 - Identification of applicable state measures and backstop
 - Demonstration that EGUs will achieve all applicable emissions goals
 - Projections of EGU emissions and future operating characteristics
 - Applicable schedules and compliance milestones

Progress to date – Affected EGUs

- All potentially affected EGUs have been contacted and we are reviewing responses.
- We are calculating applicable state targets based on updated EGU list.
- Final EGU list and target will be included for review in state plan submission.

Affected Units

- As of 12/10/15 there are:
 - 93 facilities
 - 240 units
 - 67 companies
 - 36,872 MWs of nameplate capacity
 - ~100 Million MWhs
 - ~43.3 Million MTCO₂

Note: 8 facilities have not responded; ARB is considering them “affected units” at this time.

Affected Units

- Located in 15 different air districts
- Facilities located throughout California
- List is posted on CPP website
- Most facilities are located in:
 - SCAQMD - 69 Units; 23 Facilities
 - SJVAPCD - 46 Units ; 22 Facilities
 - BAAQMD - 31 Units; 12 Facilities
 - MDAQMD - 24 Units; 12 Facilities
 - SDAPCD - 18 Units; 6 Facilities



Progress to date – Compliance Demonstration

- CEC/CPUC/ARB team is considering scenarios for this demonstration.
- Scenarios are likely to be based on those developed in the Integrated Energy Policy Report (IEPR) process now nearing conclusion.
- Modifications may be appropriate to reflect CPP needs, Scoping Plan analyses, SB 350 policies, etc.
- Scenarios and initial results presented today are based on the draft IEPR demand forecasts released earlier this year.

California Energy Demand Forecast Scenarios

The California Energy Demand Forecast includes three cases designed to capture a reasonable range of demand outcomes over the next 10 years:

- The low energy demand case includes lower economic/demographic growth, higher assumed rates, and higher self-generation impacts
- The mid case uses input assumptions at levels between the high and low cases
- The high energy demand case incorporates relatively high economic/demographic growth and climate change impacts, and relatively low electricity rates and self-generation impacts
- A “stress case” scenario is added for purposes of addressing the Clean Power Plan and is not part of the official California Energy Commission demand forecast

Low Demand Case Scenario

Moody's Analytics Below-Trend Long Term Growth Scenarios

- Unemployment rate stays higher than in the baseline, at nearly 6%, until early 2018
- The Eurozone recovery is slower than expected. Gains in U.S. exports are slow
- National light-duty vehicle sales decline to 16.2 million in 2016
- National housing starts decline to 1.3 million units by 2016
- GHG Allowance Price Projection: \$76/ton in 2026
- Natural Gas Price \$6.33 per Thousand Cubic Feet at Malin, Oregon in 2026 (2014 Real Values)
- Oil and gasoline prices are expected to trend higher at just above the overall rate of inflation. Prices are expected to top \$100 per barrel early in the next decade
- The Federal Reserve raises short-term interest rates in the fourth quarter of 2015

Mid Demand Case Scenario

Moody's Analytics Baseline Scenario

- National unemployment rate stays below 5 percent through 2018
- The Federal Reserve will normalize U.S. monetary policy by late 2017, but the European Central Bank will not be able to normalize policy until near decade's end. While the long run fair value euro/dollar exchange rate is an estimated \$1.25, the euro is expected to fall as low as parity with the dollar
- National light-duty vehicle sales are above 16.5 million in 2016
- National housing starts break 1.4 million units by 2016
- Oil and gasoline prices are expected to trend higher at just above the overall rate of inflation. Prices are expected to top \$100 per barrel early in the next decade
- The Federal Reserve raises short-term interest rates in mid-2015

Mid Demand Case Scenario (continued)

Moody's Analytics Baseline Scenario

- Annual growth from 2013–2026 is 1.2 percent
- CED 2014 Mid AAEE Forecast (30,658 GWh by 2026)
- 33% RPS continues through forecast period (78,949 GWh in 2026)
- GHG Allowance Price Projection (\$38/ton in 2026)
- Natural Gas Price \$4.71 per Thousand Cubic Feet at Malin, Oregon in 2026 (2014 Real Value)
- Average Hydro Generation (2000-2013)
- Generate 2030 results by extrapolating average annual growth rate between 2025-2026 simulation results

High Demand Case Scenario

IHS Global Insight Optimistic Scenario

- Unemployment rate falls to 4.1 percent by 2018
- European Central Bank's (ECB) quantitative easing successfully steers the Eurozone away from its current economic malaise. Eurozone growth strengthens more than in the baseline as fiscal conditions improve, credit conditions ease, and pent-up demand is released
- National light-duty vehicles sales reach more than 18.2 million in 2016
- National housing starts break 1.4 million units by 2016
- GHG Allowance Price Projection (\$25/ton in 2026)
- Natural Gas Price \$3.79 per Thousand Cubic Feet at Malin, Oregon in 2026 (2014 Real Value)
- The current drivers of the oil price decline continue: OPEC producers protecting market share, U.S. production gains continue, and non-U.S. economic growth improves. Oil prices start to pick up gradually, starting in late 2015
- Federal Reserve raises short-term interest rates in the second half of 2015

Stress Case Scenario

Drought Hydroelectric Conditions and Diablo Canyon Nuclear Generation Plant Retires

- Developed to identify a worst-case emissions scenario. Assumptions still under discussion.
- Based on Preliminary High Demand Scenario - California Energy Commission Preliminary CED 2015-2026 with Modifications:
 - High Economic and Demographic Growth
 - Lower Electricity Rates
 - Lower self-generation impacts
 - Strong climate change impacts and
 - More electrification
- Annual growth from 2013–2026 for the CED 2015 Preliminary High Demand Case is 1.45 percent

Stress Case Scenario (continued)

- CED 2014 Low AAEE Forecast (17,980 GWh by 2026)
- 33% RPS continues through forecast period (89,711 GWh in 2026)
- GHG Allowance Price Projection (\$25/ton in 2026)
- Natural Gas Price \$3.79 per Thousand Cubic Feet at Malin, Oregon in 2026 (2014 Real Value)
- Ratio of 2013 actual to average 2000-2013 hydro generation (~32% decrease in annual hydro generation)
- License Expires in 2025 for both units at Diablo Canyon Nuclear Generating Station
- Generate 2030 results by extrapolating average annual growth rate between 2025-2026 simulation results

Transportation Electrification

- Transportation electrification is primarily driven by growth in the light duty vehicle sector
- In the mid and high energy demand cases Plug-in Electric Vehicles (PEV) will exceed the PEVs in the ARB's Zero Emission Vehicles (ZEV) most likely scenario, to 2026
- In the low energy demand case, PEV demand falls below the ARB's ZEV most likely scenario after 2022
- Accordingly, IEPR-based results bracket the "most likely" scenario.

Drivers & Assumptions: ZEV

- ZEV vehicle prices converge with gasoline vehicle prices in 2030, in the high demand case, and in 2050 in the mid demand case
- In the low demand case, ZEV vehicle price increments, over gasoline vehicles, remains the same to 2026
- “ARB’s ZEV regulation compliance scenarios do not consider vehicle prices explicitly, but instead project possible vehicle technology sales that result in compliance with the regulation”
- Consumer preferences for ZEV vehicles continue to increase over time, in the mid and high energy demand cases
- Current Federal and state purchase incentives remain in place to 2026
- ARB ZEV regulations apply to automakers offering vehicles for sale in California market

Clean Power Plan Forecast

- Uses the CEC PLEXOS model of the power grid to forecast the generation and emissions of included units.
- Included units are removed from the model based on known shutdown/retirement dates or based on unit age (40+ year old units are assumed to retire).
- On-site consumption of generation (excluded by PLEXOS) is added using CEC 2014 generation and PLEXOS emission factors.
- Useful Thermal Output (UTO), cogeneration heat not used for generation, is included using EIA 2014 data and Mandatory Reporting Regulation (MRR) emission factors.
- Finally, the few units missing from PLEXOS but included in the CPP are added in based on EIA 2014 data & MRR EFs.

Initial Results

- Staff continue to review model run results.
- Initial results for both mid and stress cases confirm CA compliance in 2030 with CPP. CA emissions appear to be well below (~10 or more million short tons (MST)) below federal targets for some plausible policy cases, and compliance is maintained even in the stress case.
- Note that final 2030 target – now ~48.4 MST according to EPA -- will increase from EPA target as affected EGU list grows. Calculations are based on expanded EGU list.
- Stress case results in 2030 indicate emissions of ~48-49 MST.
- Mid-case results in 2030 indicate emissions of ~26-29 MST.
- Further results will be released as appropriate.

Leakage Demonstration

- US EPA generally requires state plans to address potential for emissions “leakage” to new sources. (40 CFR 60.5790).
- California covers new and existing sources under the Cap-and-Trade Regulation, so all units face the same state-level price signals for emissions.
- Economic implication is that there is no incentive for leakage.
- Other options identified by EPA include a “new source complement” or allocation methodologies.

Next Steps and Areas for Comment

- Modeling and analysis will continue in 2016.
- Stakeholder feedback sought on issues including:
 - Appropriate scenarios, sensitivities, and assumptions for the CPP demonstration
 - Components of stress and policy cases
 - Role of SB 350 and other post-2020 policies in demonstrations
 - Contents of leakage demonstration (and any other tools needed to address market dynamics)
 - Sensitivities and analyses to address regional issues

Regional and Linkage Considerations

December 14, 2015

Climate Policy Overview

- California economy-wide cap-and-trade program ensures state achieves the AB 32 2020 statewide target of 1990 level and staff preferred policy to achieve 40 percent below 1990 levels by 2030
- US EPA Clean Power Plan goal is to reduce power sector emissions by 32 percent below 2005 levels by 2030

California Linkage Status

- Today, Western Climate Initiative (WCI) regional market includes linked California and Québec programs
- April 2015, Ontario announces plans to implement an economy-wide carbon market to link with WCI linked market
- December 2015, Manitoba announces plans to implement an economy-wide carbon market to link with WCI linked market

Considerations for California

- Evaluate the potential to use the Cap-and-Trade Program to pursue State Measures approach for CPP
- Implications for a WCI linked carbon market
- Different program scopes
- Structural program differences

Clean Power Plan Regional Options and Constraints

- Regional linkages and trading choices may affect both plan approval demonstration and plan operations. See, e.g., 80 Fed. Reg. at 64,893, and 40 CFR 60.5740(a)(3)
- Many possible regional options available, including:
 - Links between EGU-only plans (including via “trading-ready” plans)
 - Links between EGU-only and “broader coverage” markets
 - Links between multiple plans with broader coverage
- For demonstrations: US EPA has indicated an interest in evaluating linkage effects on EGU emissions. (80 Fed. Reg. at 64,893)

Clean Power Plan Import/Export Accounting

- The CPP import/export accounting for links between a broader market and a CPP EGU-only market is described at 80 Fed. Reg. at 64,894. (See also 40 C.F.R. 60.5740). Under this framework, at the end of a CPP compliance period:
 - Net allowance imports from EGUs in an EGU-only market are subtracted from reported CO₂ emissions in the importing state (the state with a broader market)
 - Net allowance exports from EGUs in the broader market state are added to reported CO₂ emissions in the exporting state (the state with the broader market)
- These adjustments are reflected in compliance reports and may trigger backstop obligations

Clean Power Plan Issues for Further Exploration

- The CPP is less clear about accounting frameworks and demonstrations to be used for allowance flows between entities which both have economy-wide markets
 - Stakeholder feedback on this point is welcome
- Staff also seeks stakeholder feedback on ways the CPP import/export accounting framework may affect the current California/Québec carbon market, and any potential future linkages, including with CPP EGU-only markets

Questions and Comments

- Comment webpage available at:
http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=capandtradecpplan-ws&comm_period=1

Clean Power Plan & Cap-and-Trade

December 14, 2015

Clean Power Plan & Cap-and-Trade Interactions

- There may be several ways for the CPP and the Cap-and-Trade Regulation to relate to one another. These include:
 - Use of Cap-and-Trade as a “state measure” under the CPP, with a federally-enforceable backstop
 - Use of Cap-and-Trade as a “state measure” with federally-enforceable “emission standards” for affected EGUs, plus a federally-enforceable backstop
 - Separate state measures or CPP regimes that are accounted for in Cap-and-Trade to ensure environmental integrity
- The appropriate federal enforceability of Cap-and-Trade (and Mandatory Reporting Regulation) requirements is a key factor in determining plan structure (Other structural shifts may also be necessary for integration)

Clean Power Plan & Cap-and-Trade Interactions, cont.

- US EPA describes considerations for “emission budget trading programs with broader source coverage and other flexibility features” at 80 Fed. Reg. 64891. These considerations include the treatment of offsets and other flexibility mechanisms.
- Decisions on plan structure may be relevant to:
 - Operation of current Cap-and-Trade Regulation
 - Possible amendments to the Regulation
 - Relationship between the California/Québec market to markets that may develop under the federal CPP, or other federal, Canadian, and state programs
- This presentation explores implications of some of these design choices

“State Measures” Plan Design

- Integrating CPP requirements into Cap-and-Trade and Mandatory Reporting Regulations could support state measures plan design
- Areas of ARB Regulations that may require amendments or additions to accomplish this:
 - Deadlines for reporting, verification, and Cap-and-Trade Compliance
 - Compliance periods
 - Allowance borrowing
 - Backstop

Comparison of Annual Deadlines

Cap-and-Trade		Clean Power Plan (111(d))
EGU Emissions Reporting (for previous year)	January	Emissions Reporting (for previous year)
	May	
	April	
	July	State Report to U.S. EPA (after compliance periods)
Emissions Verification	September	
Cap-and-Trade Compliance	November	

Potential changes to align annual deadlines

- California's program designed to allow time from certification of emissions reports (April 10) to obtain third-party verification services
- Verification and annual/triennial compliance deadlines are currently the same for all entities covered by Cap-and-Trade
- Alignment of California reporting periods and compliance deadlines to CPP would require Cap-and-Trade Regulation changes, along with complementary Mandatory Reporting Regulation changes
 - Changes would need to be coordinated with linked partner(s)
 - If alignment changes were proposed only for EGUs, potential market and implementation impacts would need to be assessed
 - These impacts may vary based on whether compliance periods, reporting periods, or both were changed
- Note that some additional information (including compliance information) may need to be reported

Comparison of Compliance Periods

California and Quebec Linked Cap and Trade	Date	Clean Power Plan (111(d))
2021-2023 Compliance Period	2021	2022-2024 Compliance Period
	2022	
	2023	
2024-2026 Compliance Period	2024	2025-2027 Compliance Period
	2025	
	2026	
2027-2029 Compliance Period	2027	2028-2029 Compliance Period
	2028	
	2029	
2030-2032 Compliance Period	2030	2030-2031 Compliance Period
	2031	
	2032	

Potential changes to align compliance periods

- California adopted three-year compliance periods to provide covered entities flexibility in acquiring compliance instruments
 - This reflects recognition of annual and multi-year variability in electricity sector (e.g., low hydro, drought, etc.)
- Alignment of California compliance periods to CPP (for EGUs or for all entities) would require Cap-and-Trade Regulation changes
 - Changes would need to be coordinated with linked partner(s) to ensure similar periods or result in different compliance period lengths and compliance dates
 - Staggered compliance periods were initially contemplated in WCI design, but were not adopted because of additional implementation complexity and potential program impacts

Allowance Borrowing

- The Cap-and-Trade Regulation allows implicit borrowing (use of future vintages) for compliance in several cases
 - EGUs satisfying 4:1 Adjusted Emissions Obligation
 - Use of allocation true-ups in compliance
 - Entities becoming covered in the last year of a compliance period
 - Purchase of “unvintaged” allowances from the Allowance Price Containment Reserve (APCR)
 - Purchase of future vintage allowances from APCR when the top tier has been exhausted

CPP Prohibits Borrowing

- CPP does not allow borrowing of allowances from future compliance periods. Further analysis is needed to determine which Cap-and-Trade “borrowing” provisions are implicated by this prohibition.
- Potential implications of prohibiting this for the Cap-and-Trade Regulation
 - Entities may be unable to find “current” vintage allowances to fulfill Adjusted Emissions Obligation
 - The Adjusted Emissions Obligation could further tighten the market, creating chances for exercise of market power
 - Could reduce the size of the existing APCR since some allowances in the APCR are issued under future budget years
 - Could eliminate use of future vintages to replenish the APCR
 - Could eliminate source of allowances for Allocation True-up
 - Could increase compliance burden on late entrants

CPP Backstop Requirement

- Backstops are required for plans that rely on “state measures”
- Backstops triggered by a departure of more than 10% from state glide path
- Must bring units into compliance to make up any emissions shortfall
- Backstops are triggered after state compliance reports; and CPP seems to require they be implemented with results within 18 months of the trigger
- Backstops could require California entities to draw from a pool of California allowances that would yield emissions reductions reestablishing State glide path
- Obligations under a backstop could be derived from sector-wide noncompliance, or adjusted based on unit performance, or other factors

Imported Power

- Cap-and-Trade Program covers in-state generated and imported power
 - All imported power to California holds a compliance obligation
- Clean Power Plan applies to instate electricity generation units, so does not speak to imported power
- Western power market continues to evolve and integration is increasing (EIM, etc.)
- Are there any policy reasons to adjust the policy for “accounting” for imported power post 2022?

Clean Power Plan & Cap-and-Trade Covered Units

- US EPA and ARB use different metrics to determine which units are covered by the CPP and by Cap-and-Trade. U.S. EPA focuses on operating characteristics; ARB focuses on emissions
- The result is that a small number of units may be covered by the CPP, but may not currently be covered by Cap-and-Trade
- Other units may be included in Cap-and-Trade, but do not have compliance obligations because of treatment of “but-for” cogeneration units
- ARB is considering how best to account for both classes of units if Cap-and-Trade is used for CPP compliance
- Note, for all covered units, that cessation from Cap-and-Trade could be affected, because CPP applies indefinitely

Title V Permitting

- Title V permits are required for major sources of emissions - includes power plants
- These permits are required to contain conditions showing emissions unit compliance with federal requirements
- Applicable emissions standards established by California's CPP plan will be federal requirement
- Power plant permits will need to include CPP conditions for any applicable emissions standards.

Title V Permitting, cont.

ARB, CEC and CAPCOA are working together to:

- ▣ Ensure CPP compliance strategy harmonizes with air district requirements
- ▣ Develop model CPP conditions to ensure consistency
- ▣ Ensure CPP conditions are enforceable
- ▣ Ensure that any CPP emission standards can be enforced without disrupting the carbon market, while appropriately protecting market confidential information

Stakeholder Input

- ▣ Compliance Period Timing and Deadlines
 - ▣ If amendments are made to align with CPP compliance periods and deadlines, should all sectors within California's Cap-and-Trade Program be required to adjust to the same schedule, or just EGUs covered by the CPP?
 - ▣ Is alignment with CPP compliance periods and deadlines necessary for all linked programs?
- ▣ Backstop (Pool of allowances, backstop application sector-wide or specific unit(s))
- ▣ Imported Power Policy
- ▣ Currently Non-Covered Units
- ▣ Permitting Implications
- ▣ Other?

Next Steps

- ARB plans to submit comments on model federal and state plans
- ARB will review stakeholder feedback on plan design options and move towards proposals in early 2016
- ARB will continue to participate in regional and national working groups and stakeholder discussions

Questions and Comments

- Comment webpage available at:
http://www.arb.ca.gov/lispub/comm2/bcsubform.php?listname=capandtradecpplan-ws&comm_period=1



Workshop Comments Log

[Send Us Your Workshop Comments](#)

BELOW IS THE COMMENT LOG FOR PUBLIC WORKSHOP ON CA PLAN FOR COMPLIANCE WITH THE CLEAN POWER PLAN AND POTENTIAL 2016 AMENDMENTS TO THE CAP-AND-TRADE PROGRAM (CAPANDTRADECPPLAN-WS).

#	Received From	Subject	Comment Period	Date/Time Added to Database	Additional Form Letters or Attachments
1	Rasberry, Tamara, San Diego Gas and Electric	Comments on CPP Modeling	1st Workshop	2015-12-18 12:20:32	Attachment
2	Smutny-Jones, Robin, Iberdrola Renewables	Request extension of deadline for comments	1st Workshop	2015-12-18 16:42:25	
3	Rasberry, Tamara ,	Proposed Amendments to the Cap-and-Trade Regulation	1st Workshop	2016-01-04 14:11:34	Attachment
4	Roberts, Tiffany,	WSPA Comments on State's Proposed Compliance Plan with CPP	1st Workshop	2016-01-04 16:16:04	Attachment
5	Cherkas, Lisa , Morgan Stanley Capital Group Inc.	MSCG Comments	1st Workshop	2016-01-11 13:29:18	Attachment
6	Halbrook, Claire, Pacific Gas and Electric Company	PG&E Comments on SB 350 IRP Targets	1st Workshop	2016-01-11 13:31:03	Attachment
7	Halbrook, Claire , Pacific Gas and Electric Company	PG&E Comments on CPP and Linkage from 12/14 Workshop	1st Workshop	2016-01-11 13:48:01	Attachment
8	Rader, Nancy, California Wind	Comments on Cap-and-Trade Regulation re Electric Sector	1st Workshop	2016-01-11	Attachment

	Energy Association	Emissions		14:36:18	
9	Morsony, Katy,	EPUC Comments on 12/14/15 Workshop	1st Workshop	2016-01-11 14:58:53	Attachment
10	Carr, Matt, Algae Biomass Organization	Role of Algae Carbon Capture and Utilization in Meeting Clean Power Plan Targets	1st Workshop	2016-01-11 15:02:25	Attachment
11	Blixt, Amber, IEP	IEP Comments on CARB's December 14, 2015 Workshop on Clean Power Plan and Cap and Trade	1st Workshop	2016-01-11 15:31:27	Attachment
12	DeRivi, Tanya, SCPPA	SCPPA Comments on December 14, 2015 Workshop	1st Workshop	2016-01-11 15:49:04	Attachment
13	Breidenich, Clare, Western Power Trading Forum	WPTF Comments on Possible Amendments to the Cap and Trade Program	1st Workshop	2016-01-11 15:56:30	Attachment
14	Griffiths, Dan, CMUA	CMUA Comments on December 14, 2015 Workshop and RPS Adjustment	1st Workshop	2016-01-11 16:01:19	Attachment
15	Smutny-Jones, Robin, Iberdrola Renewables	Comments on CARB December 14, 2015 Workshop	1st Workshop	2016-01-11 16:41:38	Attachment
16	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
17	Berlin, Susie, Law Offices of Susie Berlin	NCPA Comments on December 14 Workshop	1st Workshop	2016-01-11 16:54:05	Attachment
18	Booth , Ellie ,	Covanta comments to Clean Power Plan	1st Workshop	2016-01-11 16:57:22	Attachment
19	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
20	Luckhardt, Jane, Day Carter Murphy LLP	Cap-and-Trade/CPP Workshop Comments	1st Workshop	2016-01-12 12:35:33	Attachment
21	Biering, Brian,	RPS Adjustment Comments	1st Workshop	2016-01-12 12:35:33	Attachment
22	McBride, Barbara, Calpine Corporation	Comments of Calpine Corporation on December 14, 2015 Public Workshop	1st Workshop	2016-01-12 15:49:42	Attachment
23	Gallo, Michael D.,	Draft 2016 Cap and Trade	1st	2016-01-13	Attachment

	Joseph Gallo Farms	Program Regulation Amendments	Workshop	12:41:04	
24	Breidenich, Clare,	Comments of the Western Power Trading Forum	1st Workshop	2016-01-15 14:53:19	Attachment
25	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
26	Milner, Marcie , Shell Energy North America (US), L.P.,	Comments on the Renewable Portfolio Standard Adjustment	1st Workshop	2016-01-21 12:09:38	Attachment
27	Gowans, Kelsey , Modesto Irrigation District	Comments on the Renewable Portfolio Standard Adjustment	1st Workshop	2016-01-21 12:19:25	Attachment
28	Giese, Jodean , LADWP	Comments on EPA Clean Power Plan/CARB Cap-and-Trade Issues	1st Workshop	2016-01-21 12:19:25	Attachment
29	Jackson, Alex, NRDC	NRDC CPP comments	1st Workshop	2016-01-21 12:19:25	Attachment
30	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
31	Jones, Todd, Center for Resource Solutions	Informal Comments of Center for Resource Solutions	1st Workshop	2016-01-22 12:35:01	Attachment
32	Benn, Mike, Powerex Corp.	Comments of Powerex Corp. on Potential Amendments to the Cap and Trade Regulation	1st Workshop	2016-01-27 12:40:45	Attachment
33	Giese, Jodean, LADWP	Comments on the RPS Adjustment	1st Workshop	2016-01-27 13:04:26	Attachment
34	Halbrook, Claire,	PG&E Comments on CPP and Linkage	1st Workshop	2016-01-27 14:25:25	Attachment
35	Looney, Nicole, SMUD	Comments Re: December 14, 2015 Workshop on Cap and Trade Changes	1st Workshop	2016-01-29 15:47:50	Attachment

Comments posted to capandtradeccplan-ws that were presented during the Workshop:

There are no comments posted to capandtradeccplan-ws that were presented during the Workshop at this time.

We expect that any written comments received during the Workshop will be posted within one week of the Workshop.

[Compilation of all printable comments for capandtradecpplan-ws](#)

If you have any questions or comments please contact [Office of the Ombudsman](#) at (916) 327-1266.

[Workshop Comment Logs](#)

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Subject: February 24 - Workshop on Potential Amendments to the Greenhouse Gas Mandatory Reporting and Cap-and-Trade Regulations

Air Resources Board (ARB or Board) staff invites you to participate in a public workshop on February 24, 2016, to discuss potential revisions to ARB's Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (title 17, California Code of Regulations, sections 95100-95157) (MRR) and the Cap-and-Trade Regulation (title 17, California Code of Regulations, sections 95800-96022) (C&T Regulation).

SUBJECT: Workshop on Potential Amendments to MRR and Cap-and-Trade Regulation

DATE: **Wednesday, February 24, 2016**

TIME: 9:30 a.m. to 4:00 p.m.

LOCATION: Sher Auditorium, Cal/EPA Headquarters
1001 "I" Street, Sacramento

The potential revisions would support alignment of the MRR and C&T Regulation, and clarify and update several sections of the regulations. In addition, staff will discuss potential modifications to the MRR and the C&T Regulation to support California's plan for compliance with the U.S. Environmental Protection Agency's (U.S. EPA's) Clean Power Plan, and the regulatory schedule for potential amendments to both regulations. These amendments may include changes to reporting and verification deadlines and compliance periods, and changes needed to address federal plan "backstop" requirements.

The following workshop materials will be made available:

A staff discussion paper on the draft proposal for compliance with the Clean Power Plan will be made available on February 17, 2016, at 12 p.m. on the Cap-and-Trade Program (C&T Program) main page: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

The workshop agenda and presentations for the workshop will be available on February 23, 2016, at 12 p.m. on the MRR main webpage:

<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm> and the C&T Program main webpage: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

All interested stakeholders are invited to attend. A live webcast of the meeting will be available at: <http://www.calepa.ca.gov/broadcast/?BDO=1>

More information on the Mandatory Reporting Program may be found on the MRR website: <http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>

More information on the C&T Program may be found on the Cap-and-Trade website: <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

Special Accommodation Request

Special accommodation or language needs can be provided for any of the following:

- An interpreter to be available at the meeting;
- Documents made available in an alternate format or another language;
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Stationary Source Division at (916) 322-2037 as soon as possible, but no later than 10 business days before the scheduled meeting. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

BACKGROUND

Mandatory Greenhouse Gas Emissions Reporting Regulation

The California Air Resources Board (ARB) first approved the MRR in 2007, with revisions in 2010, 2012, 2013, and 2014. The upcoming 2016 amendments will clarify and update the regulation, including changes to support the C&T Program and for compliance with the U.S. EPA's Clean Power Plan.

Cap-and-Trade Regulation

The Board first formally adopted the C&T Regulation in October 2011, and subsequently approved limited amendments to the C&T Regulation in June 2012, October 2013, April 2014, September 2014, and most recently June 2015. The upcoming 2016 amendments will seek to improve C&T Program efficiency, update the C&T Regulation using the latest information, and chart post-2020 implementation of the C&T Program.

More information about ARB's Cap-and-Trade Program is available at:

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

Clean Power Plan

On August 3, 2015, U.S. EPA's Administrator signed its Clean Power Plan, which sets carbon dioxide emissions limits for many existing electric generating units. These regulations are based on section 111(d) (42 U.S.C. § 7411(d)) of the federal Clean Air Act. The Plan was published in the Federal Register on October 23, 2015. States must develop compliance plans to meet these limits and compliance plans are due in September 2016 (with the option to seek extensions). ARB is developing California's compliance plan in consultation with the California Energy Commission and the California Public Utilities Commission, California's air districts, and other partners.

More information about the Clean Power Plan and related rules is available at:

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

Staff Proposal
**Addressing Clean Power Plan Compliance Through the
Cap-and-Trade and Mandatory Greenhouse Gas Emissions Reporting
Regulations**

Introduction

The federal Clean Power Plan (CPP), which requires states to achieve greenhouse gas reductions from many existing power plants by 2030, supports state compliance plans that use emissions trading systems. Many states are exploring this option. California is already implementing an economy-wide Cap-and-Trade Program (Program), which supports emission reductions from the electric power sector, as well as other industrial and fuel supplier sources. California also has a rigorous mandatory greenhouse gas (GHG) emissions reporting program (MRR) that supports the Cap-and-Trade Program. MRR and the Program are well positioned to provide compliance structures for the State's CPP compliance plan.

In developing this proposal, staff evaluated the best way to balance several important objectives. These objectives include continuing to rely on the linked California and Québec cap-and-trade programs to reduce GHG emissions while promoting additional economy-wide program linkages, supporting CPP, and supporting continued integration of grid operations and power markets in the Western Electricity Coordinating Council. There are additional benefits of the proposed approach, such as minimizing the administrative and regulatory burden for entities already covered by the Program and allowing for the possibility of future linkage with other trading systems developed for CPP compliance.

Although CPP generally accommodates California's Program, for the Program to be used in a CPP compliance plan, certain changes would likely be required to both the Cap-and-Trade Regulation (Regulation) and MRR. Principally, these include changes to the Cap-and-Trade Regulation's compliance periods, along with changes to some reporting requirements. Because both the Cap-and-Trade Regulation and MRR will have proposed amendments this year, including in several instances for the post-2020 period, CPP-related changes will be included with those amendment packages. This Air Resources Board (ARB) staff paper outlines these and other potential regulatory changes.

Requirements of CPP

CPP allows economy-wide trading systems to be used for CPP compliance if they are submitted as "state measures" plans.¹ This plan type allows for continued operation of the state program with the economy-wide scope, provided that the state includes certain federally enforceable emission standards for CPP-covered electricity generating units (affected EGUs) at the outset, as well as a "backstop" standard that guarantees compliance with federal targets if the broader program underperforms.²

¹ See, e.g., 80 Fed. Reg. 64,662, 64,851-53 (Oct. 23, 2015).

² See 40 C.F.R. § 60.5740(a)(2)-(3).

These immediately federally-enforceable standards ensure that affected EGUs remain in compliance with the larger economy-wide program. As the United States Environmental Agency (US EPA) explains:

“Where an emissions budget trading program addresses affected EGUs and other fossil fuel-fired EGUs, the requirements that must be included in the state plan are the federally enforceable emission standards in the state plan that apply specifically to affected EGUs, and the requirements that specifically require [them] to participate in and comply with the requirements of the emission budget trading program.”³

Sources are free to use any instruments trading in the existing state program to comply with these emission standards. These instruments may include offsets and linked program compliance instruments, incorporated within the state measure and emission standard.⁴

Within the larger economy-wide program, requirements of the state program on sources not regulated by the CPP (i.e., other industrial sectors) are *not* federally enforceable.

A federally enforceable “backstop” standard is also required. That standard must bring affected EGU smokestack emissions into compliance with the federal standard if the combination of the “state measure” (the economy-wide program) and the emission standard (the requirement that EGUs participate in that market) does not perform as expected when compared to a glide path established by the state that is consistent with the federal targets.⁵ Notably, the backstop standard must ensure that smokestack emissions reductions from affected EGUs are achieved.⁶ The backstop can be triggered by emissions exceedances above interim targets that the state sets for each compliance period, consistent with the overall federal targets.

In addition to these fundamental structural requirements, state measures plans must comply with several other CPP requirements. These include:

Compliance Periods. Both the emissions standards and state measures must have compliance periods that end no later than the compliance periods defined by the CPP.⁷ These CPP periods are:⁸

- January 1, 2022 – December 31, 2024;
- January 1, 2025 – December 31, 2027;
- January 1, 2028 – December 31, 2029; and
- January 1, 2030 – December 31, 2031, and every two years thereafter.

³ 80 Fed. Reg. at 64,891.

⁴ See also 40 C.F.R. § 60.5880 (defining tradable instruments, for CPP purposes, capaciously).

⁵ See 40 C.F.R. § 60.5740(a)(3). See also 80 Fed. Reg. at 64,891 n. 922 (discussing the backstop standard, and explaining that it must reduce “stack CO₂ emissions from affected EGUs”).

⁶ See *id.*

⁷ 40 C.F.R. § 60.5770.

⁸ 40 C.F.R. § 60.5880.

Requirements for Allocation, Banking, and Borrowing. CPP contains certain minimum standards for mass-based trading programs.⁹ These include requirements that plans:¹⁰

- Allocate allowances (as appropriate) prior to the beginning of each compliance period, and be able to adjust allocations as necessary
- Allow or restrict banking as necessary
- Prohibit “borrowing” of allowances for compliance purposes from future compliance periods for affected EGUs

Reporting Requirements for EGUs. State plans must include reporting requirements *no less stringent* than those set out in the CPP. These requirements, which are based on the federal Acid Rain Program (40 CFR Part 75) and federal GHG reporting program (40 CFR Part 98), generally require affected EGUs to record hourly carbon dioxide (CO₂) emissions using either continuous emissions monitors (CEMS) or, for plants combusting exclusively liquid or gaseous fuels, fuel flow rate measurements coupled with gross calorific value measurements.¹¹ Plants must also record hourly net electric output using watt meters.¹² Owners and operators must submit reports recording CO₂ emissions and net electricity output to the state at the end of each compliance period, and demonstrate compliance with all applicable emission standards.¹³ Records supporting compliance must be maintained on site for 2 years, and for 5 years total.¹⁴

Reporting Requirements for the State. By July 1 of the year following each compliance period, the state must demonstrate to EPA that affected EGUs complied with the federal target levels, and that the EGUs are in compliance with emission standards.¹⁵ The state must also submit an annual report confirming implementation of all state measures.¹⁶

Permitting Requirements. Although not directly required by the CPP, federally-enforceable requirements of state plans, like all other applicable Clean Air Act-based requirements, must be reflected in Title V operating permits for affected EGUs.¹⁷

Address Leakage. Because the CPP focuses on existing EGUs, US EPA is concerned that it may create incentives to use EGUs constructed after the CPP was proposed, thereby undermining emissions reductions. States must demonstrate that their plans address this potential “leakage.” US EPA has suggested that adding a complementary limit for emissions from new EGUs may address this problem, though other mechanisms are possible.

⁹ ARB staff understands that U.S. EPA intends these standards to apply to all mass-based trading programs, including those submitted under state measures plans.

¹⁰ See 40 C.F.R. § 60.5815.

¹¹ 40 C.F.R. § 60.5860.

¹² See *id.*

¹³ See *id.*

¹⁴ See *id.*

¹⁵ See 40 C.F.R. § 60.5870. See also 40 C.F.R. § 60.5790 (describing compliance obligations for the CPP).

¹⁶ See *id.*

¹⁷ See 80 Fed. Reg. at 64,920.

Staff notes that other CPP requirements may become relevant if California later considers linkage to a CPP market. In particular, US EPA requires states operating programs that include non-CPP sources to apply certain adjustments to emissions figures to reflect new allowance imports and exports to and from the State with participants in the CPP market from other states.¹⁸ Staff does not intend to include this import/export adjustment in California's compliance plan, or state rules, at this time, because no such linkages are currently under formal consideration. As state plans mature, such linkages may become a possibility. If a linkage is formally considered in the future, staff would hold public workshops to discuss linkage, and amendments to both MRR and the Regulation would be necessary.

It is also important to observe that the CPP contains a market-based "Clean Energy Incentive Program," which is a market-based program intended to encourage early investments in certain renewable energy and energy efficiency projects. Because this program remains under development by US EPA, staff does not anticipate amendments addressing it at this time, though staff plans to express continued interest in the program to US EPA.

In sum, the CPP's structural requirements necessitate some changes to the Cap-and-Trade Regulation and the Mandatory GHG Emissions Reporting Regulation if California uses its carbon market to demonstrate CPP compliance, as we discuss below.

Addressing CPP in the California Program

Staff proposes to address CPP requirements in the following ways:

Cap-and-Trade Regulation

The Cap-and-Trade Regulation could address the CPP as follows:

Compliance Periods. To match the CPP compliance periods, the Regulation would be amended for all covered sectors. This amendment would likely occur in the California, Québec, and other linked Western Climate Initiative partner programs. Because the federal program begins in 2022, and the most recent Cap-and-Trade Regulation compliance period ends in 2020, staff is proposing the following schedule to align the existing state and CPP programs:

- January 1, 2021 – December 31, 2022 ("bridge" period);
- January 1, 2023 – December 31, 2024 (remainder of first CPP period);
- January 1, 2025 – December 31, 2027 (second CPP period);
- January 1, 2028 – December 31, 2029 (third CPP period); and
- January 1, 2030 – December 31, 2031, and every two years thereafter.

Backstop Requirement. Generally, staff believes CPP-covered EGUs in aggregate will be able to comply with the federal limits. Modeling conducted to date projects that the

¹⁸ See 40 C.F.R. § 60.5740(a)(2)(ii)(H).

State would be several million short tons¹⁹ below the 2030 federal target even under conditions that would be expected to increase GHG emissions (i.e., continued drought, high electricity demand, and low carbon pricing). Scenarios more consistent with existing policies show affected EGU emissions of 10-20 million short tons below federal targets, and policies now being explored (including a tighter 2030 GHG cap, and increased renewable energy and energy efficiency use) will likely reduce emissions even further.²⁰

Regardless, the CPP requires states to identify a backstop measure. At this time, staff is proposing to maintain a set-aside pool of allowances available only to affected EGUs from within the post-2020 caps equal to approximately 10 million metric tons CO₂ equivalent. In the unlikely event this initial pool of allowances is depleted, staff is proposing to recharge the pool by redirecting allowances from the Program's Allowance Price Containment Reserve (APCR) proportional to the EGU aggregate share of the Program's reported and verified emissions for the most recent compliance period. As all of these allowances are from within the cap, retiring them would reflect real reductions under the Cap-and-Trade Program.

In the event the backstop is triggered, staff is proposing that all affected EGUs would be required to take action to bring the State back into compliance with the CPP. This would include a requirement that each affected EGU purchase and retire allowances proportional to their share of the aggregate sector's GHG emissions that exceed the federal limit. In order to recognize the potential for annual variability, staff is proposing that each individual EGU's proportion be established as the average of its annual emissions for the most recent three years of reported and verified data. Affected EGUs would need to purchase and retire allowances from the CPP backstop pool to bring the State back into compliance with the CPP, including a revised glide path. Staff is evaluating the CPP to understand if these allowances could be tradable once purchased, but staff does not believe these allowances could be used for general compliance under the state's Cap-and-Trade Program by the affected EGUs or other market participants. This will ensure the backstop mechanism is binding, results in direct emission reductions solely from affected EGUs, and ensures that the State is in compliance with the CPP.

The following equation describes how each affected EGU would calculate the amount of additional allowances they would be required to purchase and retire under this proposal:

$$\text{EGU}_{\text{Backstop}} = (\text{AvgEGU}/\text{AvgSector}) * \text{Gap}$$

Gap = amount of emissions that need to be mitigated to come into compliance with CPP (mitigation to make up for exceedance of the target in the last compliance period and ensure continued CPP compliance)

¹⁹ Most GHG emissions in this paper are introduced as short tons because that is the unit used by US EPA for CPP.

²⁰ See <http://www.arb.ca.gov/cc/capandtrade/meetings/20151214/cppmodeling.pdf>

$EGU_{Backstop}$ = amount of allowances an individual EGU needs to purchase and retire

AvgSector = average of sector emissions for all covered EGUs for the most recent 3 years of reported and verified emissions

AvgEGU = average individual EGU emissions for the most recent 3 years of reported and verified emissions

Stakeholder feedback will be especially important as backstop design decisions move forward, and the proposal is refined.

Glide Path. States must select appropriate targets for each interim period. Because modeling to date suggests that California EGU emissions will generally be below the final federal limit even in early years, staff is considering setting the interim targets at or near the final federal limit for each compliance period. Continued modeling will further inform this process.

Requirements for Allocation, Banking, and Borrowing. At this time, staff anticipates no changes as a result of these CPP requirements. Allocation would not be altered in response to CPP, and banking requirements now in effect would not be altered either. Although CPP does prohibit “borrowing” from future periods, staff believes that this prohibition does not affect the limited instances (i.e., true-up allocation, vintage-less allowances used for APCR, and allowances used in untimely surrender contexts) in which future vintage or vintage-less allowances may be used in the Cap-and-Trade Regulation. Specifically, staff believes this CPP provision is intended to prevent deferring compliance obligations to future periods, which the Cap-and-Trade Regulation also does not allow, and which is one of the design principles already included in the Design Recommendations for the Western Climate Initiative Regional Cap-and-Trade Program.²¹

Reporting Requirements for EGUs and for the State. The CPP requires allowance surrender reports after each compliance period, and requires a state report to US EPA on compliance on July 1 after the compliance period. ARB will be able to report complete emissions compliance information relative to federal emission targets, as well as compliance information on emission standards to date, by July 1 after the compliance period. Staff is examining the July 1 CPP reporting requirements relative to the current program. Staff will also explore the potential need to provide any supplemental information based on verified data, and relating to final surrender events, to US EPA after the November surrender deadlines, but prior to the end of the calendar year.

Coverage and Cessation. Nearly all CPP-affected EGUs already participate in the Cap-and-Trade Program. Staff proposes to incorporate the CPP applicability requirements

²¹ <http://www.westernclimateinitiative.org/component/remository/general/design-recommendations/Design-Recommendations-for-the-WCI-Regional-Cap-and-Trade-Program/>

into the Regulation, and require these affected EGUs to continue this participation as long as they remain affected EGUs under the CPP. For the very few units not currently covered under the Regulation, staff is considering whether it is appropriate to require them to participate, or whether other options are available, given their limited impact on overall sector and statewide GHG emissions. One option under consideration is to make clear that these EGUs are required (as a federally enforceable matter) to participate in the program if their emissions rise above current program thresholds.

Leakage Demonstration. Because California's Cap-and-Trade Regulation covers both new and existing EGUs, and because state-reduction requirements are likely to be significantly more stringent than those of the CPP, staff does not believe that there is any incentive to shift emissions from existing to new EGUs in California as a result of the CPP. In essence, all EGUs covered by the Cap-and-Trade Regulation experience the same compliance costs, and these costs are above those that the CPP alone would impose. Therefore, staff does not intend to formally add a new source complement, since these sources are already covered in California's economy-wide program.

Mandatory Reporting Regulation

MRR could address the CPP as follows:

Coverage and Cessation. All affected EGUs must record and report information relevant to the CPP. Staff believes that all California affected EGUs are already reporting under MRR. Under the CPP, EGUs may only cease reporting if they cease all operations and shut down. This CPP provision requires minor applicability and cessation changes to MRR. There are also a few EGUs subject to MRR and CPP with emissions below the verification threshold. Staff is considering whether to extend verification requirements to these sources, which would be required if they are included in the Cap-and-Trade Program as a result of the CPP.

Disaggregation of Affected EGUs. Most generating facilities reporting under MRR currently disaggregate their individual generating units, although aggregation is allowed. Under CPP, reporting must be performed at the generating unit level (with some exceptions for units using common stacks). Therefore, MRR would need to be amended to require disaggregated reporting for affected EGUs within a facility, and to clarify that affected EGUs must continue reporting, regardless of unit emissions level.

Data Collection Changes. MRR reporting for EGUs is based on the federal GHG reporting program, with modifications that typically increase the stringency and rigor for State purposes. Staff believes that this reporting is at least as stringent as CPP reporting. However, to be consistent with CPP requirements, an amendment could be required to MRR that would disallow use of the federal GHG stationary combustion methods (Subpart C of Part 98) for units that are subject to the Acid Rain Program or Part 75 (Subpart D). This change could affect nearly half of the California CPP units that are already subject to Part 75 but used a non-Part 75 method for estimating their emissions for MRR.

Recordkeeping. MRR already requires records to be retained for ten years for entities with Cap-and-Trade Regulation compliance obligations, and for five years for all other entities. These requirements meet the CPP's requirements, but because they do not require onsite recordkeeping, as the CPP does, MRR would need to be amended to require onsite recordkeeping for CPP-relevant records for affected EGUs for two years, consistent with the CPP requirement.

Calibration. Meter calibration is currently generally required once per three-year compliance period. To avoid complicating this requirement during a transition to new post-2020 compliance period timing, staff is considering simply requiring calibration of covered meters once every thirty-six months.

Permitting Issues

Staff recognizes that state compliance plan elements that create emission standards for affected EGUs are federally enforceable, and so must be reflected in Clean Air Act Title V operating permits. Staff will work with the Air Districts to develop appropriate permitting conditions that ensure enforceability while avoiding any unwarranted disruptions to the economy-wide cap and trade program and reporting program.

Conclusion and Next Steps

Staff looks forward to stakeholder feedback on these topics, and requests feedback by Friday, March 11, 2016.



Amendments to Mandatory Reporting and Cap-and-Trade Regulations

February 24, 2016

Workshop Materials and Submitting Comments

- ▣ This presentation is posted at:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ▣ The presentation webcast is available at:
<http://www.calepa.ca.gov/broadcast/?BDO=1>
- ▣ Written comments may be submitted until 5 pm (PDT) on Friday, March 11, 2016, at a link found here:
<http://www.arb.ca.gov/cc/capandtrade/meetings/meetings.htm>
- ▣ During this workshop, e-mail questions to:
auditorium@calepa.ca.gov

Workshop Agenda

- ▣ Introduction
- ▣ Potential revisions to Mandatory Greenhouse Gas Reporting Regulation (MRR)
 - ▣ Questions and Comments
- ▣ Amendments to MRR and Cap-and-Trade Regulation for alignment with Clean Power Plan
 - ▣ Questions and Comments
- ▣ Adjourn

Potential Regulatory Updates for GHG Mandatory Reporting Rule

Presentation Outline

- ▣ Potential Revisions to MRR
- ▣ Next Steps
- ▣ Questions and Comments

General Revisions (1)

- ▣ Align with Cap-and-Trade Regulation
 - ▣ Support 3rd compliance period and post-2020 Program
 - ▣ Clarify product data definitions as needed
- ▣ Updates to support U.S. EPA Clean Power Plan
 - ▣ Presentation to follow later today
- ▣ Modify applicability threshold to include oil and gas flaring emissions for abbreviated reporters
- ▣ Clarify cessation provisions for reporting & verification and streamline requirements with Cap-and-Trade Regulation

General Revisions (2)

- Clarify requirements for temporary and alternative methods
- Clarify requirements for GHG monitoring plans and require schematics for refineries and oil and gas production facilities
- Require reporters to indicate whether purchased natural gas is pipeline quality or non-pipeline quality

Verification Deadline

- Change verification deadline from September 1 to August 1
 - Better supports Cap-and-Trade Regulation allocation and compliance
- Reporters and verifiers can more effectively use time leading up to verification deadline
 - On average, 50% of conflict of interest assessments not submitted until June or later, and 50% of site visits not conducted until July or August

	Total 2011 2014 Data Years (%)					
	March	April	May	June	July	Aug
COI Submittals	1%	16%	33%	25%	19%	6%
Site Visits	0%	4%	14%	32%	36%	14%

Petroleum and Natural Gas Systems

- Clarify methods used to convert volumes to standard conditions
- Clarify that, when using Equations 35 and 36, the default factor of 0.995 for “fraction of gas combusted” should be used for all combustion devices
- Correct typographical errors and make minor clarifications
- Staff is considering eliminating the use of engineering estimates for quantifying flare gas (and fuel gas)
 - Quantification would be subject to 95103(k) measurement accuracy requirements
 - Staff believes most reporting entities are already not using engineering estimates and is requesting feedback from stakeholders

Refineries and Hydrogen

- Report CWB liquid hydrocarbon volume throughputs at standard temperature of 60 degrees F
- Allow for isomerization unit recycled feed to be reported as covered product data
- Consolidate finished product and primary refinery product reporting
- Clarify requirements for reporting hydrogen sales data
- Fix typographical errors

Transportation Fuel Suppliers

- Clarify that first deliverer across a rack is required to report fuel in cases where fuel is delivered across multiple racks
- Require suppliers to report volume of fuel excluded from emissions due to export out-of-State or marine/aviation use
- ARB must ensure ethanol and biodiesel is not double counted by enterers/producers and downstream position holders
- Staff is considering removing the requirement for enterers and in-State producers of ethanol and biodiesel to report those volumes
 - Under this approach would ARB be missing any fuel volume that should be captured?
 - Staff is requesting feedback from stakeholders

Natural Gas Suppliers

- Clarify the definition of intrastate pipeline suppliers
 - All operators delivering natural gas (including associated gas) to end-users must report as an intrastate pipeline operator
 - Includes gas plants and oil/gas producers
 - Clarify what constitutes a “pass-through” situation with respect to deliveries from utilities and interstate pipelines
- Staff is considering allowing gas utilities to report biomethane delivered on behalf of biomethane vendors to non-regulated end users as an optional provision
 - The purchaser of the biomethane contract (e.g., CNG fueling station) could provide necessary documentation to the utility to verify biomethane eligibility
 - Staff is requesting feedback from stakeholders

Suppliers of LPG and LNG

- Change point of regulation for imported liquefied petroleum gas (LPG) and liquefied natural gas (LNG)
 - Reporting entity would be “importer”
 - Change will ensure more complete reporting of California’s LPG and LNG emissions
 - Aligns with Cap-and-Trade Regulation
 - Some existing consignee reporters may drop out, and some new importers may be required to report
- Clarify requirements for in-State producers of LNG
 - Report LNG sold to gas utility customers and covered facilities to prevent double counting
 - Require imported LNG to be reported separately from LNG produced in-state

Electric Power Entities (1)

- ▣ Clarify requirements for the lesser of analysis
 - ▣ Remove energy imbalance market (EIM) exception
 - ▣ Allow analysis to be conducted voluntarily
- ▣ Clarify requirements for reporting sales into CAISO
- ▣ Clarify definitions for “first point of receipt”
 - ▣ Generation source as shown on e-tag
- ▣ RPS adjustment
 - ▣ Discussed at December 14, 2015 workshop

Electric Power Entities (2)

- Clarify specified power reporting requirements for generation providing entities (GPE)
 - If GPE is the importer, they must report the power as specified
- Energy Imbalance Market (EIM)
 - Working with CAISO to ensure EIM market design and information supports MRR and Cap-and-Trade Program
- Potential CAISO market expansion
 - Working with CAISO to ensure accurate accounting of imported electricity emissions in potential expanded day-ahead and real-time markets

Verification (1)

- Streamline processes to support August 1 verification deadline
 - Improvements to timeline and review process for conflict of interest (COI) and Notice of Verification Services (NOVS)
 - Facilitate expedient communication between ARB and verification body regarding potential adverse verification statements and ARB audits
 - Implement timeline to prevent last-minute reporting and facilitate verification completion
 - Staff is considering requiring reporting entities to certify reports at least 7 days prior to the verification deadline

Verification (2)

▣ Impartiality provisions

- ▣ Staff is considering including medium COI risk consulting services in assessment of 6-year time limit on providing verification services to the same reporting entity
- ▣ Clarify consequences for emerging potential for conflict of interest during and up to one year after verification services

▣ Accreditation requirements

- ▣ Clarify that verifier upgrade to a lead position may be considered after general verifier exam is taken when experience requirements are met
- ▣ Allow for accreditation to be extended to a fourth year if corrective action plans have been effective during the current accreditation period

Additional Information

- Main GHG Mandatory Reporting Program page:
<http://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep.htm>

Q&A

Meeting Break

- CPP schedule:
 - Cap-and-Trade Regulation and MRR – Revisions for Clean Power Plan alignment
 - Questions and Comments
 - Adjourn



Amendments to Mandatory Reporting and Cap-and-Trade Regulations for Alignment with Clean Power Plan

February 24, 2016

Introduction

- California economy-wide Cap-and-Trade Program is one of a suite of measures to achieve the AB 32 statewide target of 1990 emissions levels by 2020
- US EPA Clean Power Plan (CPP) goal is to reduce power sector emissions by 32 percent below 2005 levels by 2030
- Today's presentation provides staff proposal on using the Cap-and-Trade Program to comply with CPP requirements

State Measures Plan

- CPP allows economy-wide trading systems to be used for CPP compliance if submitted as “state measures” plans
 - Allows for continued operation of economy-wide program, including linkages, provided that there are federally enforceable emissions standards for covered units and a “backstop”
- Cap-and-Trade Program and MRR are well-positioned to provide compliance structures for CPP
 - Minimizes administrative and regulatory burden for entities already covered by the Program
 - Allows for future linkage with other trading systems developed for CPP compliance

California Linkage Status

- ▣ Existing and planned linkages:
 - ▣ Linked California and Québec programs
 - ▣ Ontario (4/15) and Manitoba (12/15) announced plans to implement economy-wide carbon markets to link with Western Climate Initiative (WCI) market
- ▣ California is not in formal discussions to link with other states' CPP programs at this time

Staff Proposal for CPP

- Use Cap-and-Trade Program to pursue State Measures approach for CPP
 - CPP covered electricity generation units (EGU) may use allowances and offsets for compliance with both the Cap-and-Trade Program and CPP
- Proposal includes amendments to both the Cap-and-Trade Regulation & MRR
- Changes to Cap-and-Trade Regulation must be coordinated with Western Climate Initiative partners

Proposed Mandatory Reporting Regulation Amendments to Align with Clean Power Plan

Proposed Mandatory Reporting Regulation Amendments

- Requirement for EGUs to record & report information relevant to CPP
 - Under CPP, EGUs must report unless all operations cease and shut down – requires minor MRR applicability and cessation changes
 - May extend verification requirement to the few EGUs with emissions below verification threshold
 - Staff considering whether or not to include
 - Must include if these EGUs become regulated under the Cap-and-Trade Program

Other Proposed MRR Amendments

- Unit-Level Reporting – Most, but not all, EGUs already opt to report disaggregated unit-level emissions
 - Required under CPP
 - MRR is proposed to be amended to reflect this requirement
- Data collection – CPP units must change emissions reporting methods from Subpart C of Part 98 method to Subpart D of Part 75 method
 - Reporting would still be subject to existing missing data requirements in MRR
- EGUs will need to report hourly Watt meter data and thermal and mechanical output

Other Proposed MRR Amendments

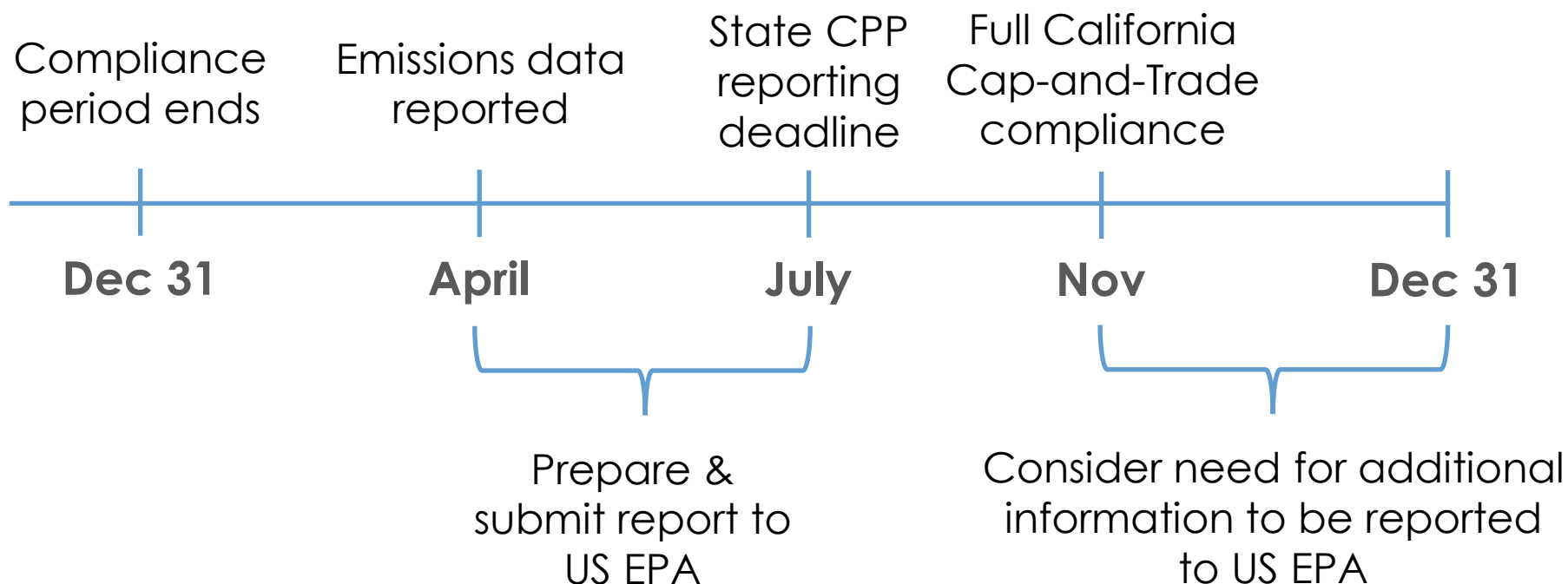
- Recordkeeping – Modify MRR to require 2 years of onsite recordkeeping of CPP-relevant records for affected EGUs
 - Does not change length of existing MRR record retention requirements
- Calibration – Meter calibration transition from once per compliance period to once every 36 months

Proposed Cap-and-Trade Regulation Amendments to Align with Clean Power Plan

Proposed Compliance Periods

- Post-2020 compliance period alignment with CPP for *all* covered entities
 - Jan 1, 2021 – Dec 31, 2022 (Bridge Period)
 - Jan 1, 2023 – Dec 31, 2024
 - Jan 1, 2025 – Dec 31, 2027
 - Jan 1, 2028 – Dec 31, 2029
 - Jan 1, 2030 – Dec 31, 2031
- After 2030-2031, each compliance period will have duration of two years

State CPP Reporting Requirement



Emissions Forecast and Federal Backstop

- State modelling shows that the Cap-and-Trade Program achieves CPP compliance for EGUs even under combination of drought, high electricity demand, and low carbon prices
 - Thus, staff proposes interim “Glide Path” emissions targets at or near federal targets
 - Modeling continues to develop State targets
- Must have backstop measure for CPP compliance if EGU emissions exceed targets
 - Unlikely California EGUs will exceed Federal limits

Staff Proposal for CPP Backstop

- Set-aside pool of allowances from within post-2020 caps that are available only to CPP EGUs
 - Initial proposal is 10 million allowances
 - Use of offsets is not allowed for backstop purposes
- If pool is depleted, recharge with allowances from the Allowance Price Containment Reserve (APCR)
 - The portion of allowances redirected from the APCR would be proportional to the EGU sector's aggregate share of overall Program reported and verified emissions

Staff Proposal for CPP Backstop

- If the backstop is triggered, each affected EGU must purchase and retire allowances proportional to their share of sector emissions

$$\mathbf{EGU_{Backstop} = (AvgEGU / AvgSector) * Gap}$$

- **EGU_{Backstop}**: Amount of allowances individual EGU must purchase and retire
- **AvgEGU**: Average of most-recent 3 years of individual EGU's reported and verified emissions
- **AvgSector**: Average of most-recent 3 years of all covered EGU reported and verified emissions
- **Gap**: Previous compliance period's EGU sector emissions exceedance

Allocation, Banking, and Borrowing

- California anticipates no changes to these provisions
- CPP prohibits borrowing from future periods
 - Staff believes this provision addresses deferral of compliance to future periods, which the Cap-and-Trade Regulation also does not allow
 - Staff believes this provision does not apply to the limited uses of vintage-less or of other vintage under linked California-Québec cap-and-trade programs (i.e., true-up allocation, vintage-less APCR, and untimely surrender)

Leakage Prevention

- Concern with CPP regulation of leakage from existing EGUs to new sources (new EGUs)
 - In California, new and existing generators are all covered by the economy-wide cap and face the same allowance price
 - California caps and resulting allowance prices are more stringent than Federal CPP, so CPP does not change incentives
 - Staff does not believe formal “new source complement” is necessary to address leakage
 - California system already provides uniform incentives

Regulatory Schedule for Amendments to Cap-and-Trade Regulation and MRR

Date	Event
March 18, 2016	SRIA to Department of Finance
Late May, 2016	45-day Regulation and Initial Statement of Reasons released
July 21, 2016	First Board Hearing
Spring 2017	Second Board Hearing
Summer 2017	Final Regulation and Final Statement of Reasons to Office of Administrative Law & CPP Final Plan Submission
October 2017	Adopted Regulation becomes effective

Tentative Workshop Schedule

Date	Expected Workshop Topic
February 24	Alignment of MRR and Cap-and-Trade Regulation
mid- to late-March (tent. March 22)	Sector-based offsets (scope, reference level, crediting baseline, reporting)
March 29	Cap-setting and allocation
April 5	Cost-containment and sector-based offsets (reversals, registries, verification)
April 25	Leakage studies
Late April (tent. April 29)	Linkage process (Ontario and sector-based offsets) Sector-based offsets – safeguards

Scoping Plan Schedule

Date	Event
May 2016	Discussion draft of Scoping Plan released
June 23, 2016	First Board Hearing
August 2016	Public release of draft Scoping Plan with full CEQA and economic analyses
November 2016	Second Board Hearing

Standardized Regulatory Impact Assessment (SRIA)

- Due to Department of Finance March 18th
- Provide best estimate economic analysis of “major regulations”
- Requesting alternatives for the preferred proposal
 - Known proposed alternatives
 - Carbon fee
 - Prescriptive Regulations
 - Others?

Additional Information

- Cap and Trade Program:
<http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>
- Clean Power Plan:
<http://www.arb.ca.gov/cc/powerplants/powerplants.htm>
- Mandatory Greenhouse Gas Reporting Regulation (MRR):
<http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr-regulation.htm>

Q&A



Workshop Comments Log

[Send Us Your Workshop Comments](#)

BELOW IS THE COMMENT LOG FOR WORKSHOP ON POTENTIAL AMENDMENTS TO MRR AND CAP-AND-TRADE REGULATION (MRR-CPP-CT-AMEND-WS).

#	Received From	Subject	Comment Period	Date/Time Added to Database	Additional Form Letters or Attachments
1	Alvarado, Erica, Tetra Tech	Concern over proposed verification deadline	1st Workshop	2016-02-25 12:35:58	
2	Jones, Todd, Center for Resource Solutions (CRS)	Comments of Center for Resource Solutions (CRS) in response to February 24, 2016 Workshop	1st Workshop	2016-03-04 09:17:47	Attachment
3	Mahony, Neil,	the CO2 hoax	1st Workshop	2016-03-07 08:51:14	
4	Quinn, Erin ,	Change of verification due date	1st Workshop	2016-03-07 10:40:37	
5	Wood, Patrick , Ag Methane Advisors	C&T Amendment Comments	1st Workshop	2016-03-08 19:12:32	Attachment
6	Six, Derek, ClimeCo Corporation	Cap and Trade Regulation Comments	1st Workshop	2016-03-10 15:45:31	Attachment
7	Tillman, Dan, Valley Electric Association, Inc.	VEA Comments on 2/24 Workshop	1st Workshop	2016-03-11 08:10:52	Attachment
8	Purshouse, Charles,	Camco Comments to ARB C&T	1st	2016-03-11	Attachment

	Camco	Protocol Revision 2016	Workshop	09:13:46	
9	Maas, Daryl,	Comments Regarding Cap and Trade Regulation Amendments	1st Workshop	2016-03-11 09:24:24	Attachment
10	Weisberg, Peter, The Climate Trust	Cap and trade regulation comments	1st Workshop	2016-03-11 10:29:03	Attachment
11	Townsend, Kevin, Blue Source, LLC	Proposed Changes to the Cap and Trade Program	1st Workshop	2016-03-11 10:30:17	
12	Dillard, Joyce,	Comments ARB MRR and Cap-and-Trade Regulation due 3.11.2016	1st Workshop	2016-03-11 11:56:35	Attachment
13	Wintergreen, Jay, First Environment, Inc.	Proposed August 1st MRR verification deadline	1st Workshop	2016-03-11 12:35:25	
14	Berlin, Susie, Northern California Power Agency (NCPA)	Comments on Feb 24 Workshop	1st Workshop	2016-03-11 15:16:18	Attachment
15	DeRivi, Tanya, Southern CA Public Power Authority	SCPPA's Comments on 2/24 Workshop on MRR and C&T Alignment with CPP	1st Workshop	2016-03-11 14:47:42	Attachment
16	Mendoza, Jerilyn Lopez, SoCalGas and SDG&E	Comments on Proposed Changes to GHG Mandatory Reporting Program	1st Workshop	2016-03-11 15:47:36	Attachment
17	Larrea, John, CA League of Food Processors	Regulation Revision	1st Workshop	2016-03-11 15:51:01	Attachment
18	Townsend, Kevin, Compliance Offset Developers Association	Amendments to the Cap and Trade Program	1st Workshop	2016-03-11 15:59:46	Attachment
19	Facciola, Nick, Origin Climate	Amendments to the Cap and Trade Program	1st Workshop	2016-03-11 16:01:44	Attachment
20	Sullivan, Katie, IETA	IETA Comments on Potential C&T Regulation Amendments	1st Workshop	2016-03-11 16:00:47	Attachment
21	Giese, Jodean, LADWP	LADWP Comments on Cap-and-Trade, MRR, Clean Power Plan	1st Workshop	2016-03-11 16:03:58	Attachment
		NRDC comments on Feb 24	1st	2016-03-	

22	Jackson, Alex, NRDC	workshop	Workshop	11 16:13:22	Attachment
23	Gowans, Kelsey, Modesto Irrigation District	MID Comments on Amendments to Mandatory Reporting and Cap & Trade Regulations	1st Workshop	2016-03-11 16:18:39	Attachment
24	Halbrook, Claire, Pacific Gas and Electric Company	PG&E Comments on February 24 MRR and Cap-and-Trade Workshop	1st Workshop	2016-03-11 16:20:31	Attachment
25	Kaminer, Curt,	Comments MRR-CPP-CT-Amend-WS	1st Workshop	2016-03-11 16:23:41	Attachment
26	Sullivan, Shelly, Climate Change Policy Coalition	MRR Cap-and-Trade Alignment with CPP Alignment Workshop	1st Workshop	2016-03-11 16:28:38	Attachment
27	Buckenham, N Ross,	Comments Re: 2016 Cap and Trade Regulation Amendments "regulatory compliance"	1st Workshop	2016-03-11 16:22:43	Attachment
28	Feldman, Erik, Rincon Consultants, Inc	Amendments to mandatory Reporting Regulation	1st Workshop	2016-03-11 16:39:45	
29	Markolf, Derek ,	LRQA Verification Deadline Comment	1st Workshop	2016-03-11 16:36:59	Attachment
30	Gertler, Lara, Ashworth Leininger Group	Concern about Proposed Verification Deadline	1st Workshop	2016-03-11 16:53:35	
31	Breidenich, Clare, Western Power Trading Forum	WPTF Comments to CARB on Potential Cap and Trade Changes	1st Workshop	2016-03-18 07:58:23	Attachment
32	Reheis-Boyd, Catherine, WSPA	WSPA Comment Letter on pre-regulatory MRR amendments	1st Workshop	2016-03-18 07:58:23	Attachment
33	Secundy, Gerald, CCEEB	CCEEB Comment Letter RE: Potential 2016 Amendments to Cap-and-Trade Regulation	1st Workshop	2016-03-21 13:18:18	Attachment
34	Reheis-Boyd, Catherine, WSPA	Comments on ARB-Proposed Cap & Trade Regulation Amendments to Align With Clean Power	1st Workshop	2016-03-21 13:18:18	Attachment
35	This comment was posted then deleted because it was unrelated to the Workshop or it was a duplicate.				
36	Zierman, Rock ,	CIPA Comments on MRR Feb 24 Workshop	1st Workshop	2016-03-29	Attachment

				12:48:49	
37	Breidenich, Clare,	Joint Letter on a Trading-Ready Program	1st Workshop	2016-03-30 09:07:07	Attachment
38	Hampton, Therese , Public Generating Pool	Consideration of 'Trading-Ready' Requirements	1st Workshop	2016-04-06 15:10:55	Attachment
39	Looney, Nicole, SMUD	SMUD Comments Re: February 24, 2016 Workshop on Mandatory Reporting and C&T	1st Workshop	2016-04-06 15:10:55	Attachment

Comments posted to mrr-cpp-ct-amend-ws that were presented during the Workshop:

There are no comments posted to mrr-cpp-ct-amend-ws that were presented during the Workshop at this time.

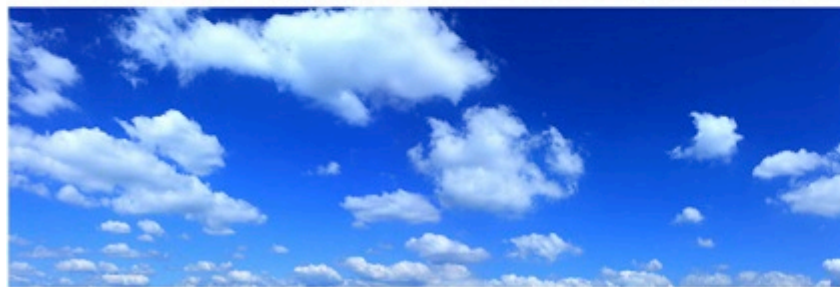
We expect that any written comments received during the Workshop will be posted within one week of the Workshop.

[Compilation of all printable comments for mrr-cpp-ct-amend-ws](#)

If you have any questions or comments please contact [Office of the Ombudsman](#) at (916) 327-1266.

[Workshop Comment Logs](#)

[Send Us Your Workshop Comments](#)



Overview of U.S. EPA's Clean Power Plan Rules

Environmental Justice Advisory Committee Deep Dive
March 11, 2015

California Environmental Protection Agency

 **Air Resources Board**

Clean Power Plan Overview

- Central component of President Obama's "Climate Action Plan."
- Rules issued this August under Section 111 of the federal Clean Air Act create GHG emission limits for power plants.
- Today's focus is on the section 111(d) emission guidelines for existing power plants– the "Clean Power Plan" or "CPP."
- The CPP would yield 32% reductions from 2005 levels of CO₂ from covered plants by 2030 nationally.
- Rule encourages states to consider trading programs and other flexible approaches because it applies to many different plants in the sector.

Clean Power Plan Benefits (from US EPA)

- Nationally, reduces SO₂ by 280,000 short tons by 2030; NO_x by 278,000 short tons, and CO₂ by 413,000,000 short tons.
- Nationally, translates to avoiding 3,600 premature deaths, 1,700 heart attacks, 90,000 asthma attacks, 300,000 missed workdays and schooldays
- Underlines national shift towards cleaner energy, renewable power, and energy efficiency, and supports jobs in those sectors.
- Encourages engagement with disadvantaged communities to realize these benefits.
- Effects more limited in California, because we have already made much progress compared to nation as a whole.

Affected Units

- Located in 15 different air districts
- Most facilities located in:
 - SCAQMD - 73 Units; 24 facilities
 - SJVAPCD - 46 units facilities; 22 facilities
 - BAAQMD - 36 Units; 13 Facilities
 - MDAQMD - 24 units; 12 facilities
 - SDAPCD - 20 Units; 7 facilities
- Units continue to be controlled by federal, state, and local regulations for toxics and criteria pollutants. Any emissions increase above relevant thresholds would trigger appropriate action.



Implications for California

- Federal targets are well above emissions level California power sector is likely to achieve by 2030 under state programs.
- California EGUs are likely to be below federal targets by over 10 million short tons by 2030. This means that the CPP, alone, will likely not drive emissions reductions in California – state programs do that.
- State programs, including the Cap-and-Trade Regulation, are likely to be used to assure compliance through a “State Measures”-based compliance plan.
- Option of pursuing the “Clean Energy Incentive Program” for further disadvantaged community investments.

Implications for the Region

- CPP is likely to reinforce progress towards cleaner energy throughout the West.
- Successful implementation will likely support major regional and national emissions reductions.
- Because California is ahead of the game, we benefit most when we integrate the CPP into our own successful programs and when we support national implementation to cut emissions.

Progress and Timeline

- ARB has issued a white paper describing potential compliance pathways:

<http://www.arb.ca.gov/cc/capandtrade/meetings/022416/arb.cpp.feb2016.pdf>

- California's compliance plan will be coordinated with the Cap-and-Trade Regulation, Scoping Plan, and post-2020 planning. We are planning on a July 2016 Board meeting on these items.
- We expect to submit a final plan to US EPA in spring or summer 2017.

Likely Compliance Plan Structure

- Proposed plan uses Cap-and-Trade system for enforceability purposes, and to show compliance with the federal requirements. Requires CPP affected EGUs to participate (as essentially all do), and to monitor emissions.
- If reductions do not fully materialize from the sector, a “backstop” measure ensures that the sector makes up those emissions in the next compliance period.
- Federal enforceability of these provisions would include EPA, ARB, and citizen enforcement.

Engaging Disadvantaged and EJ Communities

- Plans for engagement include:
 - Continued consultation with the EJAC. Informal comments from members always welcome. Formal comments welcome as well. Most helpful before May.
 - Invitations to community groups (including those recommended by EJAC) in affected communities to participate in the public process, with translation services.
 - Outreach to tribal representatives.
 - Regional workshops as appropriate.

Identifying EJ Groups for engagement

- Organizations represented by EJAC Members

Region	Organization
Bay Area	<ul style="list-style-type: none">• APEN• GAIA• Greenlining Institute• Urban Releaf
Imperial Valley	<ul style="list-style-type: none">• Comite Civico Del Valle
Inland Empire	<ul style="list-style-type: none">• Incredible Edible Community Garden
Los Angeles	<ul style="list-style-type: none">• End Oil• PSR-LA
Sacramento	<ul style="list-style-type: none">• Environmental Justice Coalition for Water• Oak Park Neighborhood Association
San Joaquin Valley	<ul style="list-style-type: none">• Association of Irrigated Residents• Clinica Sierra Vista• Valley LEAP

EJAC Feedback from 12/7/15

- SB535 Coalition's Energy Committee
 - APEN
- CA Environmental Justice Alliance Energy Committee
 - APEN, Committees for a Better Environment, CAUSE (Oxnard), Environmental Health Coalition
- Tribes – American Indian Education Centers via CA Dept. of Education, Superintendent of public instruction

Questions for the EJAC

- What additional resources should ARB consider to further engage individuals in vulnerable communities?
- Can you identify any additional Environmental Justice Organizations that we should specifically contact?
- Are there specific choices ARB should consider in designing its CPP Compliance Plan to address potential environmental justice concerns?



Updated Information on Clean Power Plan Modeling and Reliability

April 28, 2016

California Environmental Protection Agency

 **Air Resources Board**

CPP Analytic Requirements Overview

- Core elements are listed in 40 CFR 60.5740 and 40 CFR 60.5745. These include:
 - Identification of affected EGUs
 - Identification of applicable emission standards
 - Identification of applicable state measures and backstop
 - Demonstration that EGUs will achieve all applicable emissions goals
 - Projections of EGU emissions and future operating characteristics
 - Applicable schedules and compliance milestones

Modeling Approach (1)

- CEC/ARB/PUC are collaborating on production cost modeling (via PLEXOS) of California power fleet, including affected EGUs.
- We are calculating applicable state targets based on updated affected EGU list.
- Results are tentative. Final EGU list and target will be included for review in state plan submission.

Modeling Approach (2)

- Modeled scenarios include a “mid” case scenario and a “stress” scenario. Please see December workshop slides for detailed scenario descriptions.
- “Mid” scenario is based on mid-case IEPR from the CEC. It does not include more recent SB 350 policy measures, and so is a conservative case.
- “Stress” scenario includes higher economic and demographic growth, lower electricity rates, more vehicle electrification, lower carbon prices, extended drought conditions, and Diablo Canyon retirement. The stress scenario is intended to test the system, not as a likely forecast.
- Reserve margins were calculated for both scenarios.

Draft Results

- Staff continue to review model run results. Sample years are shown. Note that EPA targets have been recalculated and interim targets are illustrative – they reflect an even division of target requirements by year. ARB may adjust targets.

Year	US EPA CPP Target Emissions (Short Ton)	Mid Case Emissions Estimates (Short Ton)	Mid Case Reserve Margin	Stress Case Target Emissions (Short Ton)	Stress Reserve Margin
2022	~ 57,319	37,051	24.2%	45,695	21.0%
2026	~ 52,251	34,868	17.3%	48,394	13.1%
2031	~ 50,442	33,296	15-17%	48,184	15-17%

Interpreting the Draft Results

- California will comply with CPP emissions levels, even under the conservative assumptions used for the mid and stress cases.
- Reserve margin is maintained in healthy range in mid-case. Reserve margin after Diablo is retired is somewhat tighter in the highly unlikely stress case.
- In reality, capacity additions, transmission planning, and other measures would likely further anticipate and account for any emerging reserve margin issues.
- The CPP itself does not appear to be affecting reserve margin results because state policies and modeling assumptions, not the CPP, are driving generation behavior (emissions remain below CPP targets).

Next Steps

- Full results will be presented with draft plan release in July.
- Feedback is welcome.