

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

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**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
- CO<sub>2</sub> 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](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 CO<sub>2</sub> 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 CO<sub>2</sub>/MW-hr** in 2012

California's targets:

**556 lbs CO<sub>2</sub>/MW-hr** interim target (2020-2029)

**537 lbs CO<sub>2</sub>/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<sup>0</sup>% 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	<i>In-State: BAU Electricity Emissions (MMT)</i>	48	53.9	52	49.3	
2	<i>In-State: BAU Cogen UTO Emissions (MMT)</i>	2.5	2.5	2.5	2.5	
3	<i>In-State: Reductions (MMT)</i>	-	-	-	-	
4	<b>Total In-State Emissions (MMT)</b>	<b>50.4</b>	<b>56.4</b>	<b>54.5</b>	<b>51.8</b>	
5	<i>In-State: Natural Gas and Cogeneration (GWh)</i>	101,500	122,000	119,100	114,900	
6	<i>In-State: Cogeneration UTO (as GWh)</i>	5,500	5,500	5,500	5,500	
7	<b>Sub-Total for Emissions Determination (GWh)</b>	<b>107,000</b>	<b>127,500</b>	<b>124,600</b>	<b>120,400</b>	
8	<i>In-State: Nuclear: Diablo Canyon (GWh)</i>	17,700	17,800	19,000	19,000	
9	<i>In-State: Nuclear: SONGS (GWh)</i>	800	-	-	-	
10	<i>In-State: Clean SONGS Replacement (GWh)</i>	-	-	-	-	
11	<i>In-State: Other Generation: Large Hydro (GWh)</i>	23,200	27,900	27,900	27,900	
12	<i>In-State: Other Generation: Small Hydro (GWh)</i>	4,300	3,900	3,900	3,900	
13	<i>In-State: RPS Eligible Renewables Excl. Small Hydro (GWh)</i>	28,300	72,300	76,800	87,300	
14	<i>In-State: Energy Efficiency (GWh)</i>	-	9,500	14,100	14,100	
15	<i>In-State: California Solar Initiative (PV) (GWh)</i>	-	5,500	7,200	10,900	
16	<b>Total In-State Generation (GWh)</b>	<b>181,300</b>	<b>264,400</b>	<b>273,500</b>	<b>283,500</b>	
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](mailto:cgallens@arb.ca.gov)

# Contact Information

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