Including Imported Electricity in a California Cap-and-Trade Program

June 5, 2009
California Air Resources Board
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<th>Time</th>
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<tr>
<td>1:30 - 1:35</td>
<td>Introductions and Purpose of Meeting</td>
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<td>1:35 - 4:20</td>
<td>Staff Presentation</td>
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<td>Roundtable Discussion</td>
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<td>4:20 - 4:30</td>
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Presentation Outline

- AB 32, Scoping Plan, and Mandatory Reporting Requirements (MRR)
- Issues for Discussion
  - Approaches for electricity imports compliance obligation
  - Identifying obligated entities and sources of imported power
  - Emission factors for unspecified power
- Next Steps
AB 32 Requirements and Scoping Plan Recommendations

• AB 32: California must account for electricity imports

• Scoping Plan
  – California cap-and-trade program includes electricity sector, beginning in 2012
  – California cap-and-trade program linked to WCI
ARB Mandatory Reporting Requirements

• In-State generators:
  – Power plants ≥1MW and emitting ≥2,500 MTCO$_2$ must report CO$_2$ emissions

• Imported and specified electricity:
  – Retail provider or marketer reports quantity measured at the power plant’s sub-station (busbar)

• Unspecified electricity:
  – Electricity measured at the first point of receipt for which reporting entity has information
Power Path for Electricity Imports

California’s Interstate Transmission Capacity
2009 Total Transfer Capability into California

PCORP-PG&E - 80 MW
Pacific-Northwest AC Intertie - 4,800 MW
SPPC-PG&E - 160 MW
Pacific-Northwest DC Intertie - 3,100 MW
IGS, Utah and Nevada 1,920 MW (2,400 MW - 2011)
West of River System 10,623 MW (11,263 MW - 2013)
Mexico - 800 MW

Legend
- 500 KV
- 230 KV
- 115 KV

California Energy Commission
Energy, Transmission and Environmental Protection Division
Cartography Unit
April 2009
www.energy.ca.gov
Approaches for Electricity Imports Compliance Obligation
Approaches for Compliance Obligation for Imported Electricity

- Deliverer Approach
  (CEC/CPUC Joint Decision Recommendation)
  - First deliverer of electricity to the California grid

- “First Jurisdictional Deliverer” (FJD)
  (WCI Design Recommendations)
  - The first entity that delivers imported electricity over which the consuming jurisdiction has regulatory authority
  - Two FJD approaches under consideration by WCI
• Imported power generated from a WCI jurisdiction is covered at point of generation

• Electricity purchaser/seller has compliance obligation if it:
  – Holds title to non-WCI power, and
  – The power is imported into a WCI consuming jurisdiction

• Each WCI jurisdiction monitors transmission paths crossing its own borders and collects GHG allowances from obligated entities
Potential Impacts of Individual Boundary Approach

• Pros
  – Implementation can be handled either as a California only approach or through WCI
  – California is not dependent upon another jurisdiction to monitor and enforce

• Cons
  – More potential points of regulation as electricity travels across jurisdictions
  – Creates market complexity and uncertainty
• Electricity purchaser/seller has compliance obligation if it
  – Holds title for power crossing into first WCI jurisdiction and,
  – Is used for consumption in WCI
Potential Impacts of Common Boundary Approach

• Pros
  – Fewer points of regulation
  – Electricity deliverer is at first point of entry in WCI and doesn’t change regardless of where power is consumed

• Cons
  – Requires coordinated reciprocal monitoring and enforcement by all WCI partners
  – Enforcement challenges
Questions on Approaches Under Consideration by WCI

• Are the potential market impacts significant?
• What mechanisms could be used to diminish any potential market impacts?
• Are there ways state and federal agencies could lessen potential impacts on wholesale markets?
Identifying Obligated Entities and Sources of Imported Power
Approaches to Assist in Identifying Obligated Entities

• ARB Mandatory Reporting Requirements
  – Retail providers and marketers report electricity imports into California

• Proposed AB 32 Cost of Implementation Fee Regulation
  – Applies to in-State retail providers, and marketers importing electricity into California

• NERC E-tags
  – Covers purchasers/sellers of power between control areas
Alternative Approaches to Track Sources of Imported Power

• Tracking using NERC E-tags which list source balancing authority/point of receipt
• Contracts and settlements data
• Tracking by emission attributes
  – Similar to WREGIS, but would include non-renewable generators
Questions for Stakeholders

• Which approach for including imports best lends itself to cap-and-trade?
• Are there other options that staff should consider for identifying obligated entities, and what criteria should we consider in determining the best approach?
• What criteria should ARB use in selecting a tracking method for imported power?
• If ARB develops an attribute tracking system, would non-WCI generators participate?
Emission Factors for Unspecified Power
Specified v. Un-Specified Power

- Electricity purchased for consumption may be:
  - Specified Power: Electricity linked to specific generating facilities or units by ownership or contract
  - Unspecified Power: Electricity not linked to specified generation facilities or units
Emission Factors for Unspecified Power

CPUC/CEC Recommendations

• Single regional default emission rate
  – 1,100 lbs CO2e/MWh for all unspecified purchases between 2005-2008

• Replace value with “values derived from a common set of rules that will be developed by WCI”
Default Emission Factor Options – Marginal Source Concept

• Marginal Sources
  – Generation sources that are dispatched to serve incremental additions to load
  – Surplus power used for export is usually generated by marginal sources
Option 1:
• Single number for all power imported from non-WCI jurisdictions

Option 2:
• Regional variations based on:
  – Local resource mix
  – Within a balancing authority, or other defined region
Option 3:

- Establish an emissions factor based on emission rate of a typical coal-fired facility
  - Would avoid potential under-reporting of actual emissions where coal plants are in the mix of resources
  - Would provide incentive for marketers and retail providers to track electricity from cleaner sources, to the extent they can
Questions for Stakeholders

• Is there enough of a locational difference in the resource mix in non-WCI imported power to warrant multiple default emission factors? If so, how could “contract shuffling” be prevented?

• Are there additional approaches to consider in setting emissions factors to calculate unspecified power?

• Should a reporting threshold apply to imported power? If so, why?

• What criteria should be used in determining a default emission factor?
Next Steps

• Written comments encouraged and accepted through June 206 to:
  http://www.arb.ca.gov/cc/capandtrade/comments.htm

• Staff Concept Papers
  – August 2009: Preliminary thinking on identifying obligated entity, sources of imported power, and methodology for tracking imported power
  – October 2009: Discussion of alternative methods for calculating default emission factor for unspecified power
## Team Leads for Cap & Trade Rulemaking

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<tr>
<td>Sam Wade, Mary Jane Coombs</td>
<td>Cap setting and allowance distribution</td>
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<tr>
<td>Ray Olsson</td>
<td>Market operations and oversight</td>
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<tr>
<td>Brieanne Aguila</td>
<td>Offsets and cap-and-trade project manager</td>
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<tr>
<td>Claudia Orlando</td>
<td>Electricity</td>
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<tr>
<td>Joshua Cunningham</td>
<td>Transportation</td>
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<tr>
<td>Manpreet Mattu</td>
<td>Reporting and energy efficiency</td>
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<tr>
<td>Bruce Tuter, Mihoyo Fuji</td>
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<td>Stephen Shelby</td>
<td>Offsets</td>
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<tr>
<td>Karin Donhowe</td>
<td>Natural gas for residential and commercial</td>
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<tr>
<td>Mihoyo Fuji</td>
<td>Marginal abatement costs and leakage related issues</td>
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<tr>
<td>David Kennedy, Stephen Shelby, Barbara Bamberger, Mihoyo Fuji, Jeannie</td>
<td>Impact analyses (environmental, economic, localized, small business, public health)</td>
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<td>Blakeslee, Judy Nottoli, Jerry Hart</td>
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For More Information…

• ARB’s Cap-and-Trade Web Site
  – http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm

• To stay informed, sign up for the Cap-and-Trade listserv:

• Western Climate Initiative
  – http://www.westernclimateinitiative.org