CARBON PRICING IN CALIFORNIA, CAISO, & THE EIM

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* I am speaking only for myself, not the IEMAC
KEY QUESTIONS

• How does the CAISO Energy Imbalance Market (EIM) incorporate California’s carbon price?

• How does the California Air Resources Board (CARB) incorporate electricity imports into its climate policy and manage greenhouse gas emissions leakage from the EIM?

• What legal and policy issues arise when states manage climate policy under a FERC-approved regional tariff structure?
Real-time energy market

No mandatory dispatch to serve core CAISO load

Modest trading volume, but big future potential

Divergent energy policy preferences across states

Divergent climate policy preferences across states

Figure source: CAISO
GHG EMISSIONS LIABILITY IN CALIFORNIA

• Unlike RGGI, CARB uses a “first deliverer” liability structure in which electricity importers must surrender compliance instruments in the state’s cap-and-trade program.

  — Cal. Code Regs., title 17 § 95811(b); id. at § 95852(b).

• Unspecified electricity sources assigned an emissions factor of 0.428 tCO$_2$e/MWh, similar to a natural gas power plant.

  — Cal. Code Regs., title 17 § 95111(h); see also Kaatz & Anders (2016); Schivley et al. (2018); de Chalender et al. (2019).
## CARBON PRICING MECHANISMS

<table>
<thead>
<tr>
<th>Transaction</th>
<th>Carbon price</th>
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<tbody>
<tr>
<td>California to CAISO (*)</td>
<td>Implicit, Mandatory</td>
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<tr>
<td>California to EIM (*)</td>
<td>Implicit, Mandatory</td>
</tr>
<tr>
<td>EIM to CAISO</td>
<td>Explicit GHG Bid Adder, Voluntary</td>
</tr>
<tr>
<td>EIM to EIM</td>
<td>None, Voluntary</td>
</tr>
</tbody>
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(*) Analogous to interactions between RGGI and non-RGGI states
GHG BID ADDER – VOLUNTARY

• Out-of-state generators include a GHG bid adder ($/MWh) based on facility-specific GHG emissions rate multiplied by secondary California market price.

• If the out-of-state generator includes no GHG bid adder or bids zero quantity (0 MW), the out-of-state resource will not be deemed dispatched to California.

— See CAISO Fifth Replacement Tariff § 29.32; CAISO, 147 FERC ¶ 61,213 (2014); CAISO, 149 FERC ¶ 61,058 (2014).
EMISSIONS LEAKAGE

• “Secondary dispatch” in EIM leads to emissions leakage

• CAISO’s “two-pass” proposal and final approach

• CARB’s cap-and-trade leakage adjustments: EIM imports ultimately treated as “unspecified emissions” (0.428 tCO$_2$e/MWh)

— See Chapter 4 in IEMAC (2018); Chapter 3 in IEMAC (2019); Hogan (2017); see also Cal. Code Regs., title 17, § 95852(l) (liability); id. at § 95111(h) (accounting).
LEGAL AND POLICY ISSUES

Consistency between:

• State and federal emissions accounting
• Facility-specific vs. universal emissions factors
• Wholesale markets and bilateral contracts

For cap-and-trade programs, does a market-wide cap adjustment resolve leakage issues with minimal legal risks?
THANKS! QUESTIONS?

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REFERENCES


