



California ISO

# EIM GHG Enhancements 2<sup>nd</sup> Revised Draft Final Proposal

Don Tretheway

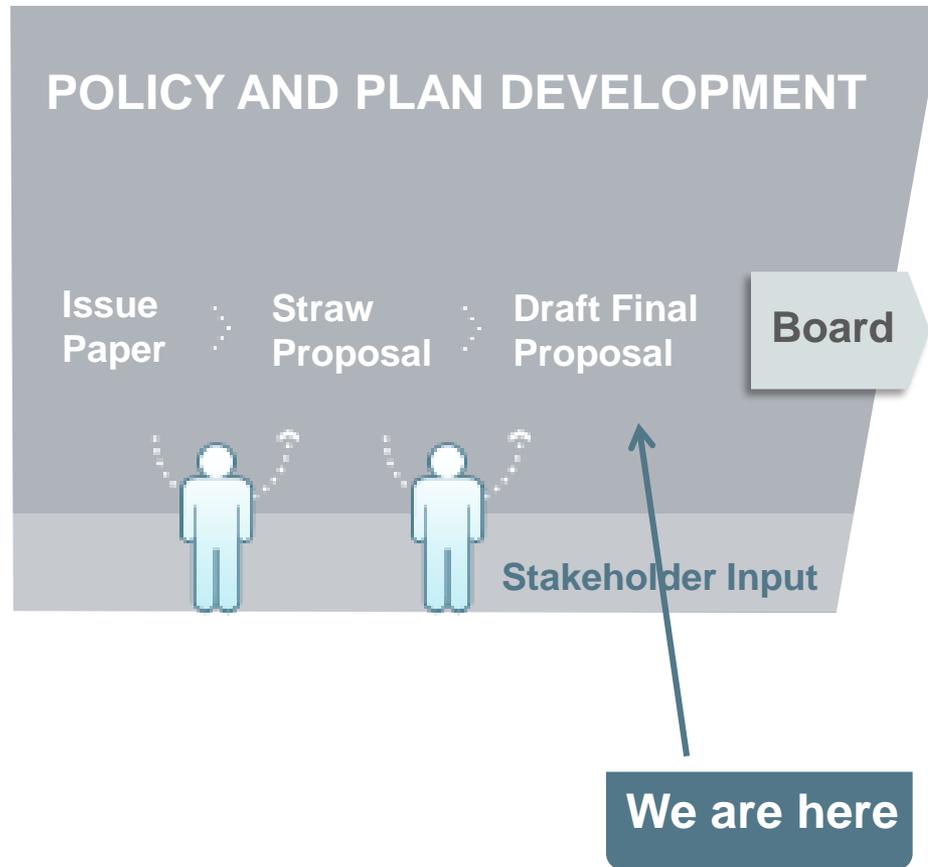
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February 22, 2018

# Agenda

Time	Topic	Presenter
1:00 – 1:10	Introduction	Kristina Osborne
1:10 – 2:50	Proposed GHG Market Design Changes	Don Tretheway
2:50 – 3:00	Next Steps	Kristina Osborne

# ISO Policy Initiative Stakeholder Process



## EIM Governing Body –E1 classification (Primary Authority)

- EIM Governing Body has primary authority for considering and approving policy changes to market rules that would not exist but for the EIM.
- “For a policy initiative involving market rules changes that fall **entirely** in the EIM Governing Body’s primary authority, the matter goes to the EIM Governing Body for approval, and then to the consent agenda of the next Board meeting.”

<http://www.caiso.com/Documents/GuidanceforHandlingPolicyInitiatives-EIMGoverningBody.pdf>

## Two pass market optimization to address secondary emissions is problematic

- Can introduce pricing inconsistency
- Can create perverse bidding incentives
- Identified issues above can undermine principle that when load outside CAISO is served by generation outside CAISO, the cost of GHG should not be reflected in non-CAISO prices

# GHG design has changed since go-live, but market optimization algorithm has not changed to date

	GHG Bid Quantity	GHG Bid Price
At outset of EIM	Pmax of resource	$\leq$ \$1,000 less Energy bid
Year One Enhancement	0 MW to Pmax	$\leq$ Resource daily GHG cost plus 10%
Current Proposal	0 MW to (Upper economic limit less base schedule)*	$\leq$ Resource daily GHG cost plus 10%  But, subject to minimum bid price at secondary emission GHG cost.

\* If day-ahead market extended to EIM entities will use self-schedules

Address emission for secondary dispatch through changes in GHG bidding rules

## Limiting bid quantity reduces the secondary emissions rate which will benefit non-emitting resources

- Reduces potential to backfill non-emitting resources with emitting resources
- Which reduces the average emission above base schedules
- Which lowers the secondary emission rate applied to non-emitting resources
- Incentives in place to ensure accurate base schedules
  - Also, changing base schedule does not cause a pricing issue

# GHG bidding rules for EIM participating resources

Resource Type	GHG Bid Quantity	GHG Bid Emission Rate
California supply	Upper economic level less base schedule	Resource-specific emission rate
Solar/Wind	Upper economic level less base schedule	Secondary dispatch emission rate
Hydro	Upper economic level less base schedule	Secondary dispatch emission rate
Asset controlling suppliers (if emission rate is less than bid floor)	Upper economic level less base schedule	Secondary dispatch emission rate
Asset controlling suppliers (if emission rate is higher than bid floor)	Upper economic level less base schedule	Asset controlling supplier rate
System imports	Upper economic level less base schedule	Unspecified source emission rate
Natural gas	Upper economic level less base schedule	Resource-specific emission rate
Coal	Upper economic level less base schedule	Resource-specific emission rate

Secondary dispatch emission rate can be between 0 MtCO<sub>2</sub>/MWh and calculated rate, one proposal...

- Use prior quarters market results
- Use only intervals with an EIM transfer into the CAISO
- Calculate intervals emission rate relative to base schedule of EIM resources less the attributed emissions
- Calculate weighted average emissions over the quarter

# Next steps

Date	Milestone
February 16, 2018	Post 2 <sup>nd</sup> Revised Draft Final Proposal
February 22, 2018	Stakeholder conference call
March 1, 2018	Stakeholder comments due
April 24, 2018	EIM Governing Body Decision
May 16-17, 2018	Board of Governors Consent Agenda

# THANK YOU

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