



Extended Day-Ahead Market Working Group 3: *Greenhouse Gas Accounting and Costs*

Facilitator: Kevin Head

Scribe: Brian Jacobsen

January 27, 2022

Meeting Cadence: Tuesdays and Thursdays, 1 – 3 p.m.

Agenda:

Time:	Topic:	Presenter:
1:00 – 1:05	Welcome/introductions	Kristina Osborne
1:05 – 1:15	Brief recap of unspecified approach presented on 1/26	Kevin Head
1:15 – 2:00	Working group discussion of unspecified approach	Kevin Head
2:00 – 2:45	E-Tags, data reporting and CAISO markets	Kevin Head
2:45 – 2:55	Recap of discussion	Brian Jacobsen
2:55 – 3:00	Upcoming topics	Kevin Head

Reminders:

- These collaborative working groups are intended to foster open dialogue and sharing of ideas and perspectives
- Please raise your hand if you have a question or comment at any time during the meeting and the facilitator will call on you
 - Please start by stating your name and affiliation
- Meetings are recorded and video files posted on corresponding working group webpages
- Stakeholders are welcome to present perspectives at these meetings
 - Please submit a request to present using the link located on the EDAM Resources slide at the end of this presentation

Today's Objectives

- Working group to share qualitative impressions of unspecified approach that was presented on 1/26
- Level-set on E-Tags and what other data is currently reported out from CAISO markets and how it's used

Summary of Unspecified Approach

Issue	Key Market Design Question	Detailed Market Design Element
What are we optimizing?	Which costs are included in the market optimization?	GHG Costs: Yes RPS/CES: No
Accounting: Availability: Eligibility to serve demand in the GHG compliance area	What rules for availability need to be developed for EDAM for GHG?	Optional: Potentially a moot point because individual resources aren't deemed to load in GHG zones. However, a separate method/criteria may need to be developed to allow non-emitting resources in non-GHG zones to opt to serve GHG zones directly [TBD – full opt-in? verifiable clean output?]. Frequency (of election to serve GHG zone): TBD Can supply elect not to serve GHG zones: See above. Can demand elect to not receive GHG-intensive energy: TBD
Accounting: Area Identify GHG Compliance Area(s)	Are entities aligned that state boundaries are the GHG compliance area?	Geographic: GHG compliance area. Separates the BAA transfer from GHG transfer. International considerations: TBD
Accounting: Emissions rate attribution: Associating resources to loads in the EDAM	How should GHG emission rate attribution be determined?	Emissions rate attribution: Unspecified Determining emissions attribution with different participation options: <ul style="list-style-type: none"> - Imports at EDAM boundaries: TBD - Pseudo-ties: Depends on whether resource is considered part of a GHG zone - Wheels through GHG compliance area: TBD - Virtual bids/Energy storage/Jointly-owned units: TBD Requires second optimization run: TBD How are commitment decisions made: TBD Can handle multiple zones: TBD. Conceptually, yes it can but complexity increases.
Bidding: Bidding to serve demand in the GHG compliance area	How will GHG costs be reflected to EDAM within, between, and outside a GHG zone?	How should GHG costs be calculated/reflected: Two calculations: 1) GHG price applied within GHG zone [TBD: minimum, maximum or other?] and 2) GHG price and intensity used in calculation of hurdle rate [TBD: marginal or average?] How are cost reference level (DEBs and proxy costs) calculated and used in MPM: TBD
Costs: Settlements	How are GHG costs settled?	How does settlement work: TBD, open questions about how hurdle rate revenue is distributed
Market Efficiency: EIM: Roll over to Real Time (EIM)	What GHG bid and settlement implications arise from DA vs. RT deviation?	What allowable changes to either GHG quantity or bid price between DA and RT should be allowed: TBD
Accounting: Market Results	How will EDAM provide transparency to the emissions intensity and market results to market participants?	What type of information and at what granularity will GHG information be reported: TBD

Note: this is meant to be descriptive of the approach outlined on 1/26 and not a fully-fledged proposal

Working group “homework”

- The working group’s evaluation of the different market optimization approach will most effective and efficient if they are well-informed
- Please take the next 1.5 weeks to prepare a response to the question below. On Feb 8, we will start to compile these responses.
- See the working group webpage for a Word document with more details

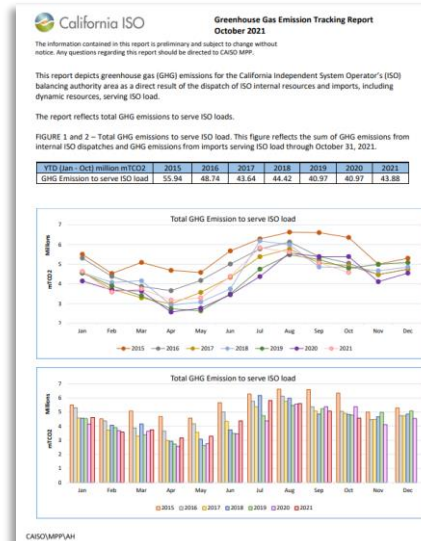
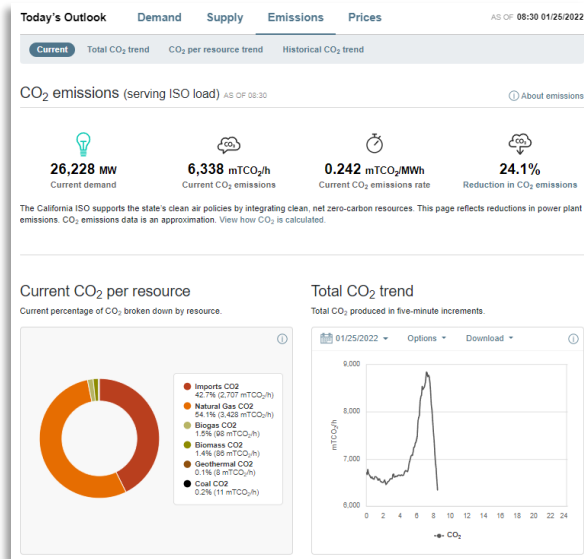
For each approach, what are the top three questions that you would need to have answered such that you could evaluate the approach effectively?

Reporting in CAISO markets

- The next few meetings will cover various topics relating to data reporting from CAISO markets, including what data could be published from an extended day ahead market
- To set the stage for these conversations, we will discuss some background on the current data that is published from the CAISO markets and how it's used in state compliance programs
- This is meant to be a descriptive conversation but working group participants should feel free to raise questions, concerns, and edits

Relevant data that is generated by CAISO

- Market awards
 - MW and Price values
 - For non-CA EIM entities delivering to CA, market awards include MW awards deemed delivered to CA
- GHG intensity of CAISO generation on CAISO.com: informational in nature and not used for compliance purposes



E-Tags

- NERC E-Tags report the source of energy and the load that is ultimately served (i.e. the sink)
- As E-Tags are widely used and track – at least on paper – the flow of energy, states use them as a part of their GHG, RPS, and CES compliance programs
- In most cases, CAISO does not create E-Tags, rather scheduling coordinators and purchasing-selling entities submit them to the CAISO and the CAISO market will factor them into the market optimization
- More background on tagging and responsibilities can be found in CAISO operating procedures:
<https://www.caiso.com/Documents/2510.pdf>

Are E-Tags generated for these transactions?

Source		Sink	Generator-specific E-Tag created?
CAISO generation	->	CAISO load	No
CAISO generation	->	External BAA (non-EIM transaction)	Yes
CAISO generation	->	External BAA (EIM transaction)	No, tag is not generator-specific, instead the tag is BA/ETSR-level
External BAA (non-EIM transaction)	->	CAISO load	Yes
External BAA (EIM transaction)	->	CAISO load	No, tag is not generator-specific, instead the tag is BA/ETSR-level
External BAA (non-EIM BAA)	->	External BAA (EIM BAA)	Yes
External BAA (EIM BAA)	->	External BAA (non-EIM BAA)	Yes

Data used in compliance programs

CAISO market data
Data not created by CAISO

- CARB's cap-and-trade program
 - Electricity imports via bilateral transactions:
 - Specified imports: Uses **E-Tag and meter data**. Also requires certain contracts to be in place.
 - Unspecified imports: Also uses **E-Tag data**. Applies when no specified source contract is in place.
 - Electricity imports via EIM:
 - Resource-specific **MWh data (both FMM and RTD) from EIM algorithm** that deems imports to be delivered to CA.
 - Uses **MWh data from EIM RTM used** for calculation of EIM Outstanding Emissions.
 - E-Tags not used to validate compliance for EIM imports.
 - EIM attribution is net imports, not gross imports.
 - In-state generation: uses **alternative tracking mechanisms**

Data used in compliance programs (cont.)

CAISO market data
Data not created by CAISO

- Other states' GHG compliance programs
 - Washington – no CAISO market data used currently for compliance
 - Carbon pricing: none but cap-and-invest has been passed by state legislature and rulemaking processes are currently ongoing
 - Other states/provinces in WECC – no CAISO market data used for compliance
- RPS/CES compliance programs
 - California
 - RPS certification:
 - Most categories: relies on meter/E-Tag data
 - Dynamic transfers: requires execution of certain CAISO contracts but uses meter/E-Tag data
 - Other states/provinces in WECC – no CAISO market data used for compliance

EDAM Resources

- List of [*Common EDAM design principles and concepts*](#)
- Initiative and working webpages:
 - EDAM initiative webpage: <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-day-ahead-market>
 - Working Group 3 webpage: <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-Day-Ahead-Market-Working-Group-3-Greenhouse-Gas-Accounting-Costs>
 - The working group webpages include meeting materials, initial scope items, and weekly summary reports
- Please submit EDAM WG inquiries and/or requests to present at <https://www.surveymonkey.com/r/EDAMWG-Inquiries>
 - Presentations due 5 business days prior to the meeting where they are scheduled to present, if time allows
- [Register](#) for working groups to help the ISO gauge interest and facilitate communication throughout process.
- Nov 30, 2021 Day-Ahead Market Overview Training: <https://youtu.be/lbXRsfVbCg>