



California ISO

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

Facilitator: Kevin Head

Scribe: Brian Jacobsen

January 4, 2022

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

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Agenda:

Time:	Topic:	Presenter:
1:00 – 1:10	Welcome/introductions	Kristina Osborne
1:10 – 1:15	Working group participation/logistics	Kristina Osborne
1:15 – 1:25	High-level background	Kevin Head
1:25 – 1:40	Review Principles for this work group	Kevin Head
1:40 – 2:40	Review and prioritize initial list of scope items	Kevin Head
2:40 – 2:50	Recap of discussion	Brian Jacobsen
2:50 – 3:00	Upcoming topics	Kevin Head

Goals:

- 1) Discuss WG3 Common Design Principles and refine as appropriate
- 2) Develop a list of scope items for WG3 and order them

Working Group Meeting Participation/Logistics

- These collaborative working groups are intended to foster open dialogue and sharing of ideas and perspectives
 - Active participation is critical to meet objectives
- The intent is to have constructive and inclusive discussions
 - Please respect the opinions of others
- Participant phone lines will remain open throughout the meetings to enable open dialogue
 - To help manage the discussion, please raise your hand if you have questions/comments
- Stakeholders are welcome to present perspectives at these meetings
 - The next slide includes a link for how to notify the ISO if you are interested in presenting

EDAM Resources

- List of [Common EDAM concepts and principles](#)
- Initiative and working webpage links:
 - [EDAM initiative webpage](#)
 - [Working Group 3 – GHG Accounting and Costs](#)
 - The working group webpages include the initial scope items and weekly summary reports
- EDAM WG questions and inquiries may be submitted [here](#).
 - Please use this process if your organization would like to present at an upcoming meeting
 - Presentations due 5 business days prior to the meeting where they are scheduled to present
- [Register](#) for working groups to help the ISO gauge interest and facilitate communication throughout process.

High level background

- Wholesale electricity markets match supply and demand at the least costs
 - The market clearing process, typically referred as market optimization, uses mathematical methods to attain a least-cost solution through a security constrained unit commitment and economic dispatch
 - Costs are “bid in” (offered) into the market by scheduling coordinators
- CAISO currently operates two markets:
 - Day-ahead market (DAM)
 - Runs one day before electricity is generated/consumed
 - Currently, only operates for CAISO balancing area including small parts of Nevada
 - Real-time market (RTM)
 - Operates closer temporally to when electricity is generated and consumed: 60-min, 15-min, and 5-min beforehand
 - Includes the CAISO’s Energy Imbalance Market (EIM)

High level background (cont.)

- Carbon pricing policies increase marginal cost of electricity to the extent that its generation produces greenhouse gas (GHG) emissions
- Currently, only one state in West has a carbon pricing policy – California – though Washington state is also in the process of designing its cap-and-invest program
- The California Air Resources Board (CARB) administers California’s cap-and-trade program which covers:
 - Electricity generated within California (for resources that emit more than 25,000 tons CO₂e per year)
 - All emissions associated with electricity imported to California
 - Includes electricity imported through the EIM
 - EIM Participating Resource Scheduling Coordinator is responsible for holding/retiring allowances as the “jurisdictional first deliverer”

High level background (cont.)

- Today, CAISO's EIM allows for out-of-state generators to voluntarily elect to serve demand in California
 - Facilities outside of CAISO include a GHG bid adder (\$/MWh) based on facility-specific GHG emissions rate multiplied by secondary CA market price
 - If there is not a GHG bid adder or if they bid zero quantity (0 MW), out-of-state resource will not be deemed dispatched to California

Transfer from	➔	Transfer to	GHG Pricing	Participation
CA Generator		CAISO	Implicit	Mandatory
CA Generator		EIM	Implicit	Mandatory
Outside CA Generator		CAISO	GHG Bid Adder	Voluntary
Outside CA Generator		EIM	None	Voluntary

High level background (cont.)

- Western state policy landscape includes a number of renewable energy policies including Renewable Portfolio Standards (RPS) and Clean Energy Standards (CES)
- These policies rely on mechanisms such as Renewable Energy Certificates (RECs) to validate compliance with RPS goals
- RECs had traditionally relied on bilateral transactions but the proliferation of wholesale energy markets have complicated how RECs are created, verified, and retired
 - Bilateral transactions can utilize e-Tags for tracing source-to-sink delivery of energy thus verifying the REC
 - Wholesale markets may or may not generate e-Tags at a sufficiently granular level to be useful in verifying RECs

High level background (cont.)

- Thus there are two main components of GHG accounting that could be considered in the market design of an EDAM

- 1) Whether and how an EDAM market optimization should factor in GHG costs in arriving at an efficient dispatch while balancing state policy objectives and not inappropriately impacting resources in non-GHG zones.

Example: whether and how a market optimization would factor in GHG costs associated with CARB's cap-and-trade program and, potentially, Washington's cap-and-invest program.

- 2) Whether and how information about the carbon intensity of energy transacted through the CAISO's market is affected by the implementation of an EDAM.

Example: whether and how information from an EDAM will enable or disrupt the existing mechanisms states use to ensure compliance with state RPS and CES programs.

EDAM Common Design Principles – GHG Accounting

The GHG framework should strive to meet the following principles:

- 1) To the maximum extent possible, market design should fairly reflect and be consistent with state policy objectives.
- 2) Jurisdictions that have not adopted a GHG or renewable procurement policy should not be improperly affected, directly or indirectly, by policies adopted by other jurisdictions.
- 3) The entity responsible for the output of a resource, as defined by a jurisdiction's policy, should receive the full greenhouse gas or renewable benefit and bear the full greenhouse gas cost of that resource.
- 4) The market design should allocate costs and benefits consistent with the applicable (i.e., state) greenhouse gas regulation policies.
- 5) Renewable and non-emitting resources outside of jurisdictions with greenhouse gas policies should not be unfairly disadvantaged compared to renewable and non-emitting resources inside jurisdictions with greenhouse gas programs.

Initial list of scope items

- The initial set of proposed scope items located here:
<http://www.caiso.com/InitiativeDocuments/InitialandDraft/ScopeItems-ISOProposed-EDAMWorkingGroup3-GreenhouseGas-GHG-AccountingandCosts.pdf>
- As the working group, we will now propose and agree on modifications to the scope items
- We will also work on a logical order to the discussions while allowing time for working group members to prepare their proposals

Debrief and next steps

Goals:

- 1) Discuss WG3 Common Design Principles and refine as appropriate
- 2) Develop a list of scope items for WG3 and order them

Next steps:

- 1) Facilitator to prepare for discussion on Jan 6
- 2) Working group members can begin formulating proposals and requesting timeslots to present