California ISO

Greenhouse Gas Coordination

Working Group 7

February 22, 2024

Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- These collaborative working groups are intended to stimulate open dialogue and engage different perspectives.
- Please keep comments professional and respectful.

Instructions for raising your hand to ask a question

- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon located on the bottom of your screen.
  Note: #2 only works if you dialed into the meeting.
  - Please remember to state your name and affiliation before making your comment.

- You may also send your question via chat to all panelists.

Notice to Participants

***Please be reminded**, Commissioners and advisors from state public utility commissions may be in attendance.*

Agenda

Time	Topic	Presenter(s)
9:00 – 9:05	Welcome & introductions	Isabella Nicosia
9:05 – 9:30	GHG Coordination working group updates	Isabella Nicosia
9:30 – 10:00	Introduction to evergreen trainings • Attribution • Counterfactual	Sylvie Spewak
10:00 – 10:30	Problem statement sponsorship	Isabella Nicosia
10:30 – 10:40	Average emissions rate data roll out	Kevin Head
10:40 – 11:20	Refined metrics problem statements	Isabella Nicosia
11:20 – 11:50	Emissions reduction policies	Anja Gilbert & Alisa Kaseweter (BPA)
11:50 – 12:00	Next steps	Isabella Nicosia

Working group progress to date

GHG Coordination

WORKING GROUP UPDATES

GHG Coordination working group updates

Prioritization of topics and/or problem statements is determined by:

- Stakeholder interest level
  - Verbal and written comments
  - Surveys
  - Sponsorship
  - Live polling
- Problem statement readiness
- ISO staff bandwidth

GHG Coordination working group updates

- Proposal to consolidate problem statements 1-3.
- Stakeholder feedback indicates that these set of statements all appear to relate to issues within the current attribution methodology, which may result in adverse outcomes including the displacement of internal GHG resources or increased instances of secondary dispatch.

GHG Coordination working group updates

Proposal to form two work streams:

1) Education via evergreen trainings
2) Substantive discussions on distinct problem statements via working group

Introduction to

EVERGREEN TRAINING

Intro to ‘Evergreen’ Trainings

- Evergreen trainings are intended to respond directly or indirectly to stakeholder feedback and requests
  - Giving stakeholders access to important technical information on their own time
- This series is intended to be continuously updated and made relevant to ongoing stakeholder discussions
- ISO will publish answers to commonly asked questions via FAQs on the GHG Coordination working group webpage

Evergreen Training Logistics

- Stakeholder Affairs will notify stakeholders when trainings become available
  - Including instructions for submitting questions
- Links to trainings will be available through the GHG Coordination working group page
  - Links to relevant background found in the Learning Center will be provided
- Beginning in March, time will be set aside in the working groups to discuss trainings posted at least 2 weeks prior

Upcoming Evergreen: GHG Attribution Price Formation

- Training will review basics helpful to understanding price formation with GHG attribution:
  - Least cost dispatch and setting market prices
  - The export allocation constraint
  - Transfer constraints

- Provide explanations of GHG attribution examples in the Western Energy Imbalance Market BPMs

How do the goals of this series support working group problem statements?

Market Operations and GHG Design

- Define and characterize the costs and benefits associated with GHG price formation (PS 1-3)
- Discuss the role of the GHG component of resource bids in price formation (PS 4)

State Coordination

- Explore the interaction between two unlinked price-based GHG areas (PS 5)

Emissions Tracking and Reporting

- Discuss the relationship between the GHG shadow price and reporting metrics (PS 6)

Beyond Price-based GHG policy

- Define and characterize the costs associated with bidding constraints (PS 7)
- Explore the interaction between price-based and non-price-based market policy (PS 7)

Stakeholders also posed recommendations for further exploration (Problem Statement 0):

- How does the EDAM and WEIM baseline/counterfactual work?
- How is attribution determined by the optimization or does it occur after the fact?
- What energy does the WEIM and EDAM consider to be eligible to be attributed to serve demand in a GHG regulation area?
- How much secondary dispatch is occurring both in the WEIM and EDAM?
- What is the associated cost of secondary dispatch?
- What trade-offs occur between limiting secondary dispatch and the GHG costs in the WEIM and EDAM?
- Is there sufficient transparency in the total marginal GHG cost?
- Does the GHG cost in the market reflect actual cost of GH to end use customers?

PROBLEM STATEMENT SPONSORSHIP

What does it mean to be a problem statement sponsor or co-sponsor?

Approaches to consider:

- Ensuring or certifying that a problem statement is sufficiently defined and illustrated
- Proposing or providing illustrative data or information needed to inform or assess the problem statement
- Identifying milestones relevant to prioritization
  - i.e. regulatory deadlines, market changes, etc.
- Proposing a solution to the problem statement

How can the ISO best support problem statement sponsors/co-sponsors?

Problem statement sponsor/co-sponsor volunteers

Problem statement	Sponsor or co-sponsor
Consolidated PS 1-3	Vistra
PS 1 (optimization and secondary dispatch)	PG&E
PS 4 (GHG price formation)	No sponsor/co-sponsor
PS 5 (reporting requirements)	No sponsor/co-sponsor
PS 6 (metrics)	PGE, WRA
PS 7 (emissions reduction policies)	PGE, WRA

Roll out plan for

AVERAGE EMISSIONS RATE DATA

The ISO plans to provide average emissions rate data on an ongoing basis

- In previous meetings, the ISO has discussed our intention to publish an average emissions rate (AER) metric
- The ISO has published an example AER dataset using 2022 values and, just recently, 2023 data using the same methodology on the Reports and Bulletins site
- Going forward, the ISO will publish AER data on a monthly basis onto our Reports and Bulletins site

How the ISO calculated the AER metric published on the ISO website

1) Which resources the AER would reflect:
   - Supply resources - Included
   - Demand response resources - Excluded
   - Energy storage resources - Included
   - Resources that were attributed to serve California (or, post-EDAM, Washington) - Included
2) Whether the AER would measure all schedules or only those schedules relative to the WEIM base schedule – All schedules were included
3) How bilateral transactions between BAs would be treated – Bilateral transactions were included
4) How missing data would be treated – CAISO filled in missing data by using weighted averages from existing data

The ISO also plans to continue the conversation about AER methodology

- Stakeholders requested that the ISO provide various permutations of an AER, rather than just one that uses a set methodology
- Examples include:
  - AER by fuel type
  - AER of schedules relative to the base schedule
- In future months, the ISO will explore the different permutations of AERs requested by stakeholders and provide an update to stakeholders as appropriate

Problem statements derived from

STAKEHOLDER-REQUESTED GHG METRICS

Overview

- These draft problem statements represent a synthesis of stakeholder feedback and suggestions received to date.

- These draft problem statements are intended to serve as a starting point for discussion and policy development. Stakeholders are encouraged to:
  - Iterate on, edit, or provide alternative perspectives
  - Help illustrate the size and scope of problems described through data or experience
  - Suggest alternative metrics or solutions, given that not all metrics suggested may be feasible to develop

Problem statement 6: The ISO does not provide all metrics desired by market participants.

- 6a) Entities with annual reporting obligations associated with emissions reductions targets require reporting of total emissions to serve load.

- 6b) LSEs in jurisdictions with emissions reduction policies must fulfill reporting obligations with state policy such as market imports to serve load or total emissions to serve load.

Problem statement 6: The ISO does not provide all metrics desired by market participants.

- 6c) The unspecified emissions rate used by states with an absolute reduction program fails to reflect the accuracy of generation and consumption at a local level.

- 6d) There is no requirement that the generation/tag data reported to WREGIS and the data arising from the ISO's GHG attribution be consistent with each other. This leads to the potential for double-counting of the same MWh of energy when jurisdictions deem GHG attribution as a claim on MW attributes. This might have negative implications for state energy programs.

Problem statement 6: The ISO does not provide all metrics desired by market participants.

- 6e) Entities in jurisdictions that fulfill compliance obligations through retail claims may not cover 100% of their real-time load obligation with owned or contracted power. In jurisdictions where LSEs are responsible for both owned/contracted power and real-time imbalance transfers, entities do not have sufficient information to report on the emissions intensity of net transfers.

- 6f) There is a lack of transparency into the emissions intensity of the marginal resource. Publication of a marginal emissions rate for the GHG area and EDAM footprint may provide insight on the cost of emitting resources, which can be used to help shape how organizations bid resources into the market.

Problem statement 6: The ISO does not provide all metrics desired by market participants.

- 6g) Backfilled dispatch is defined as potentially higher-emitting resources backfilling to serve load in non-GHG areas because clean resources that would otherwise be serving those areas are instead attributed to GHG areas. There is no current metric that accurately assesses whether the ISO's GHG attribution process leads to resource backfilling and/or secondary dispatch. Using base schedules to estimate backfilled and/or secondary dispatch may be inaccurate and misleading, because resources' base schedules are not optimized and are not reflective of optimized transfers between non-GHG areas. As a result, stakeholders are unable to assess the relative benefit of reducing secondary dispatch via the optimized counterfactual compared to using base schedules as the baseline.

EMISSIONS REDUCTION POLICIES

Context

Stakeholders have requested the EDAM/WEIM markets reflect, or help facilitate, meeting climate policies that are not based on a price.

The goals of this presentation are to:

1. Reflect and hear feedback on the four scenarios, applicable to current western state climate policies, that are not based on a price of carbon
2. Discuss if these scenarios could be addressed though a market or post-dispatch accounting framework
3. Understand if any stakeholders want to present at the March 2023 meeting to discuss either relevant climate policies or solutions
    - Doug Howe will present a potential solution to Scenario A: States with a declining cap

Current Problem Statement: Beyond price-based GHG policy

#	Problem statement	Former PS
7	There is not a market mechanism in states with a declining cap on emissions for: a. Utilities to ensure load is served by generation and wholesale market transfers that meet those emission reduction targets b. Utilities to offer generation to the market on a portfolio basis (regardless of point of consumption) that meets the state's emissions target over a given time period c. Reflecting both the declining cap and a price on carbon in the market for states that have both requirements	PS 7 PS 14 PS 15 Verbal feedback

Considerations: Market vs. Accounting

- Which of these scenarios needs a market mechanism and by when?
- Which of these scenarios could be addressed though a post-dispatch accounting framework?
  - Could a framework be developed for entities to claim:

Owned & contracted for resources
+
Market-driven default emission factor for any remainder

  - Coordinated across all market participants and states in the market footprint

Scenario A: States with a declining cap

Objective: Limit emissions intensity of generation serving load in a state with a declining cap. Targets are generally load-based: X% reduction of GHG emissions in utility portfolio serving load by year Y relative to a base year.

Examples:

- Oregon "Clean Energy Targets" (HB2021)
  - 80% by 2030, 90% by 2035, 100% by 2040 relative to average 2010-2012 baseline
- Colorado "Climate Action Plan" (SB 19-096):
  - 80% by 2030, 100% by 2050 relative to 2005 baseline.
- Nevada (SB 448)
  - 80% by 2030, 100% by 2050 relative to 2005 baseline.
- New Mexico "Energy Transition Act" (SB-489)
  - Aggregate generation portfolio for load should meet an emission standard of no more than 400 lbs CO_2/MWh by 1/2023 and 200 lbs CO_2/MWh by 1/2032
- Washington "Clean Energy Transformation Act" (SB-5116)
  - 2025 (no coal); 2030 (GHG neutral), 2045 (100% clean standard)

Scenario B: Optimize a utility's portfolio, when operating in a state with a declining cap

- Objective: For a utility operating in a state that has an absolute reduction target, limit the emissions intensity of the utility's resources that are dispatched over the course of the year so that it does not exceed their allotment associated with a cap.

- Example:
  - Utility in NM to meet an emission standard of no more than 400 lbs CO_2/MWh by 1/1/2023 and 200 lbs CO_2/MWh by 1/1/2032

Scenario C: States with a declining cap and price on carbon

Scenario C1: State Targets

- Objective: At the state level, limit the emissions intensity of what gen serves load in a state with BOTH an absolute reduction limit and price on carbon (e.g., WA)

Scenario C2: Utility Targets

- Objective: At a utility level, limit the emissions intensity of what gen serves that utility's load
- Example: LADWP zero carbon by 2035

Scenario D: States with provisions to exclude resources

- Objective: Exclude high emitting resource like coal (e.g., WA) from serving a state with an absolute reduction target/price on carbon

- Example: Washington:
  - CETA: By the end of 2025, utilities must eliminate coal-fired resources from their allocation of electricity.

NEXT STEPS

Working group schedule

Date	Topic(s)
March 14, 2024 (Hybrid)	Emissions reduction policies (PS 7) • Doug Howe presentation • Stakeholder presentations
April 17, 2024	Stakeholder determined
May 29, 2024	Stakeholder determined
June 26, 2024	Stakeholder determined

Note: Working group topics will be informed by problem statement readiness, stakeholder feedback, staff bandwidth, and stakeholder presentation timing.

Next steps

- Comments due by end of day March 7.
  - Submit using the template provided on the working group webpage

- Next working group:
  - Date: Thursday, March 14, 2024
  - Time: 9 a.m. – 4 p.m.
  - Location: Attendees may choose to participate in-person at the ISO, or virtually.

- Submit requests to present to ISOStakeholderAffairs@caiso.com

- Relevant information: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Greenhouse-gas-coordination-working-group

Annual Policy Initiatives Roadmap Process 2024

Please submit potential discretionary initiatives to the 2024 annual policy catalog.

Submission deadline is Wednesday, **February 28, 2024**

- comment template here
- information on this process here.

Any questions or concerns email us at ISOStakeholderaffairs@caiso.com

- Welcome reception for all attendees the evening of Oct. 29.
- Additional information, including event registration and sponsorship opportunities, will be provided in a future notice and on the ISO's website.

Please contact Symposium Registration at **symposiumreg@caiso.com** with any questions.