



California ISO

Extended Day Ahead Market
Working Group 3 Weekly Report

Week 10 Report
3/7/22 – 3/11/22

Progress Tracker

Topic	Schedule
Accounting: GHG Compliance Area(s)	
Boundaries (State, GHG Compliance Areas, BAA, LSE, International?)	<i>In progress – 3/10/2022</i>
Implications for BAA spanning multiple states	<i>In progress – 3/10/2022</i>
Impacts to EIM	<i>Completed – 3/8/2022</i>
Rules that need to be established for renewable resource dispatch in/out of a GHG zone	<i>In progress – 3/10/2022</i>
Accounting: Availability	
Rules for availability to serve load in GHG compliance area	<i>Completed - 1/13/2022</i>
Resource schedules that could inform capacity available to support transfers with a GHG compliance area	<i>Completed – 3/8/2022</i>
Market Optimization	
Are we optimizing Carbon prices? RPS/CES?	<i>Completed - 1/11/2022</i>
Types of pricing: carbon pricing, clean energy/renewable	<i>Completed - 1/11/2022</i>
Transactions; Generator emissions covered, Delivered emissions covered	<i>Completed – 3/8/2022</i>
Accounting: Emissions rate attribution	
Resource specific, Unspecified	<i>In Progress 1/18/2022; 1/24/2022, 3/10/2022</i>
Transactions/jurisdictions; Generator emissions covered, Delivered emissions covered	<i>In progress – 3/10/2022</i>
Determining emissions rate attribution with different participation options	<i>In Progress 1/13/2022; 2/24/2022, 3/10/2022</i>
Costs: Compliance	
How should GHG costs be calculated?	<i>In progress – 3/10/2022</i>
How should GHG costs be reflected across GHG compliance areas?	<i>1/18/2022; 2/24/2022, 3/8/2022</i>
How are reference level (DEBs and proxy costs) calculated? And how are they used in market power mitigation?	<i>In progress – 3/10/2022</i>
Costs: Settlements	
What implications of GHG settlement must be incorporated into EDAM design?	<i>In progress – 3/8/2022</i>
Costs: Compliance	
Should GHG compliance costs be recovered by a Scheduling Coordinator at a resource specific or marginal resource specific level?	<i>In progress – 3/8/2022</i>
Market Efficiency: EIM (roll over to real Time)	

What allowable changes to either GHG quantity or bid price between DA and RT should be allowed?	<i>In Progress</i> <i>2/24/2022</i>
What are the associated settlement impacts to any variation allowed?	

Accounting: Market Results

What type of information and at what granularity: Settlements	<i>In progress – 3/10/2022</i>
What type of information and at what granularity: State reporting	<i>Completed – 2/8/2022</i>

Renewable Energy Certificates (RECs)

How can EDAM design best interact with current Renewable Portfolio Standards (RPS) and RECs accounting practices?	<i>In progress - 1/13/2022,</i> <i>2/13/2022</i> <i>Completed – 3/1/2022</i>
What is the interplay of e-Tags used to track RECs vs. the role of e-Tags in EDAM and what is an appropriate interplay?	<i>Completed – 2/8/2022</i>
What REC impacts may there be when it comes to EDAM intertie bidding and scheduling points?	

Costs: Bidding to serve demand in the GHG compliance are

How should RPS costs be calculated?	<i>Completed - 1/11/2022</i>
How should RPS costs be reflected?	<i>Completed - 1/11/2022</i>
How should RPS costs be reflected across compliance areas?	<i>Completed - 1/11/2022</i>
How are reference level (DEBs and proxy costs) calculated? And how are they used in market power mitigation?	<i>Completed - 1/11/2022</i>

Note: “**Completed**” indicates that the subject has been reviewed in the WG sessions with substantial discussion time allocated. It does not necessarily mean that all outstanding design elements are resolved.

Weekly Discussion

March 8, 2022

Scope Items Discussed: Foundational Elements

Presenters: Kevin Head, California ISO

The first item for this session was to address two questions from last Thursday's WG session that were not able to be addressed due to time constraints.

Discussion:

The first item was in response to the WG process as we begin to wrap up the planned WG sessions, and also in response to the Resource Specific review and participant survey (poll) of how well the design relates to the established Design Objectives. The concern expressed was that neither of the primary design approaches, Resource Specific and Unspecified (zonal), should be eliminated at this point. The request expressed last week was reiterated; to conduct an analytical assessment of these two approaches using load/generation modeling scenarios to evaluate potential impacts to (i) LMP in and out of GHG zone(s), (ii) transfers zones, and (iii) emissions attributions transferred between zones.

The second item was in regards to the decision making process for the development of the straw proposal. Similar to the first item above, the concern is that there is currently insufficient details to rule out one or the other approach, but more so for the Unspecified (zonal) approach. The question/request was proposed; if the Unspecified (zonal) approach is ultimately not implementable, the CAISO should provide reasoning.

Conclusion:

These two items conclude the preface to the Design Objectives review related to the Resource Specific approach.

Scope Items Discussed: Resource-Specific Approach

Presenters: Kevin Head, California ISO

The next item was the completion of the review and survey of the remaining 2 items in the WG-3 Design Objectives document; (1) review/discuss the stated evaluate criteria, and amend as necessary, and (2) conduct a poll from the WG participants on the current level of alignment (low, medium, high) between the Resource Specific approach elements discussed so far and the Design Objectives.

Discussion:

Design Objective #6: 6) Balancing precision and implementation feasibility and simplicity.

- As discussed last Thursday, this objective has overlap with Design Objectives #1 (No inappropriate or unacceptable GHG impact in non-GHG zone) and #2 (Leakage should be minimized). Particularly related to the "accuracy" of the calculation of the baseline schedules and GHG zone attribution (deeming) algorithm.

Results of poll: fairly even distribution from Low to High alignment, slightly overweight to the medium/low side.

Design Objective #7: Durability of the market design (as it relates to support of existing and potential future GHG policies)

- Need to consider the impact of the proposed EDAM design approach on the scenario when all or most BAA/states adopt some form of GHG policy and with potentially different compliance obligation costs. For the Resource Specific approach having potentially different GHG bid costs specific to each GHG zone, and for the Unspecified approach having multiple hurdle rates.
- This scenario of eventual high saturation of BAA/states with GHG compliance policies received substantial discussion. While this may lead to a challenge of limited market clearing availability of clean resources not otherwise obligated to serve specific LSE's (either it's native BAA/state, or contracted to another), this may be offset by the extent to which such resources are self-scheduled.
- In addition to the challenge of variation in GHG bid adder costs or hurdle rates to reflect the multiplicity of GHG policies, need to account for the durability of accounting (GHG attribution) deeming mechanism for this scenario as a potential challenge for LSE's to plan for GHG compliance through the market mechanisms.

Results of poll: fairly even distribution from Low to High alignment, slightly overweight to the medium/low side.

Conclusion:

These two items conclude the review and survey of the Design Objectives related to the Resource Specific approach.

Scope Items Discussed: Unspecified Resource (Zonal) Approach

Presenters: Kevin Head, California ISO

It was proposed and accepted by the WG that the remainder of this session (and as needed, to be continued in the remaining WG sessions) to focus on closing out remaining discussion topics/question on the Unspecified Resource or Zonal approach. Kevin Head presented his summary write-up (posted on the EDAM web page) of 4 areas for continued discussion:

1. Source-specific pathways to the GHG zone
 - a. Path 1 : Define the GHG zone to include resources outside of physical state boundaries
 - b. Path 2 : Once the GHG zone is defined, some imports may be treated on specified- or entity-specific basis
2. Defining hurdle rate
3. Compliance and reporting
4. Settlement of GHG hurdle revenue

Discussion:

Discussion in this WG session was limited to Item #1 Source-Specific pathways due to time constraints.

- Need to work out eligibility (types of contracts) and related transmission capacity would be recognized in the market for Path 1; acknowledging that the nature of the contractual obligation will be determined by each GHG policy (state).
- Proposed idea for path 1: perform a preliminary market run, like the RSE discussed in the Resource Specific approach, using a GHG bid adder that is based on each resources emissions rate.
- Another idea for Path 1: resources pre-submit something similar to a self-schedule, for specific market intervals, as a demonstration of availability to serve GHG load. Discussion on this option raised that without E-Tags (in the forward market) there would be no transmission backing to base the self-schedule on, and thus potentially re-optimized.

Conclusion:

Item #1 of the four Unspecified Resource (Zonal) approach outstanding items was discussed, but not concluded. This discussion will be continued in the next WG session, on Thursday March 10.

March 10, 2022

Scope Items Discussed: Unspecified Resource (Zonal) Approach

Presenters: Kevin Head, California ISO

This WG started with the continuation of where we left off on Tuesday's discussion on the 4 areas for continued discussion on the Unspecified Resource (Zonal) approach.

1. Source-specific pathways to the GHG zone
 - a. Path 1 : Define the GHG zone to include resources outside of physical state boundaries
 - b. Path 2 : Once the GHG zone is defined, some imports may be treated on specified- or entity-specific basis
2. Defining hurdle rate
3. Compliance and reporting
4. Settlement of GHG hurdle revenue

Discussion:

Topic #1, source-specific Path 1 discussion topics included:

- Review of the ideas put forward in Tuesday's WG session:
 - a) Submit self-schedules with E-Tags ahead of the EDAM run
 - b) Submit GHG bids into the EDAM and then some form of ex-post audit to verify contractual obligations were adequately reflected in the bids.
- It is recognized that there is cross-over from these approaches for path 1 to the Path 2 scenario. There was discussion of creating a "Path 3" that combined elements of Path 1 and Path 2, but

this was ultimately found not necessary as it was not intended by the introduction of the two original paths that they be necessarily exclusive of one another, but rather two concepts that may be combined.

- The question of whether CAISO should even take on the responsibility of verifying (contractual or other regulatory) GHG obligations was raised. Functionally, this could be implemented in CAISO's Master File and validated in the market. The alternative is to have a third party or the regulators themselves take this ex-post verification responsibility.
- On the question of defining the nature of the obligations, general statements were made that it should be "any form of long term commitment", but ultimately is defined by state regulators.
- A scenario discussed at length: a resource is 70% committed with long term obligation (to serve a particular GHG zone) and 30% available for additional GHG attribution, or any other market award.
 - a) Should the market treat this as a stacked (prioritized) dispatch?
 - b) CAISO said that this scenario may best be supported by the Joint Owned Unit (JOU) model, the 70% and 30% portions represented as independent "children" resources, each with respective schedules/bids. But, cautioned that this model is currently in pilot status, and likely not fully implemented in alignment with the EDAM timeline.
 - c) But, without breaking this hypothetical 70% GHG obligated resource into independent bids, there is a challenge of how to treat it in the optimization; the bid would either have a GHG cost component or not.
 - d) At the conclusion of this discussion, the concepts presented for this 70%/30% hypothetical scenario appear to have support from several participants, but implementation challenges were identified that might lead to only the 100% obligated resource being feasible for the Path 1 scenario.

Topic #1, source-specific Path 2 discussion topics included

- A concern was expressed that the Path 2 scenario within the over-all Unspecified (Zonal) approach may be problematic from market design perspective. A back-and-forth exchange went on at length on this concern. No clear conclusions were achieved, but the challenges were identified, mainly on how the optimization would treat such a schedule as exempt from the hurdle rate and be carved out from power transfer calculations.

Topic #3, Compliance and Reporting (Topic #2 deferred to next week) discussion topics included

- For resources using the Source-Specific Pathway, Kevin presented discussion topics (1) what changes would be needed to leverage the e-Tags, and (2) what validation provisions are necessary in EDAM.
- Multiple participants expressed that this (reporting) obligation lies with the LSE's. As discussed in previous WG sessions, EDAM design should be focused on what data is required to be produced by the market to support LSE reporting obligations.
- It was recognized that with this Unspecified approach, there will need to be substantial changes to the real time market (WEIM), and potential implications on the RUC reliability run. These may (will) lead to bidding incentives that need to be further examined.

The final discussion topic in this session was regarding the challenges (discussed in this WG session and previous sessions) on the over-all Unspecified approach. Multiple participants expressed that although discussion on several of the fundamental design elements of this approach have led to challenging implementation details, there is sufficient interest in the approach to warrant continued inclusion in the EDAM initiative.

Conclusion:

This completes the review of the 2 Design Objectives will be covered in the next WG session.