Background:

As these working groups are meant to give a broader group a chance to take part in the early-stage policy development process, I'm asking working group participants to put yourselves in the shoes of the policy developer. Now that we have two approaches on the table – the resource-specific approach presented on 1/18 and the unspecified approach presented on 1/26 – you find yourselves with a question often faced by the CAISO policy developers in the early stages of a project: what now? The answer typically lies in identifying areas that need further development.

To do so, I'm suggesting a "homework assignment" below with a requested due-date of Feb 10, 2022. Please take some time to return to your organizations, brainstorm on the question below, and come back to the group with your contribution. These don't need to be – and likely won't be – your organization's formal positions on which approach is preferred. This exercise is meant to avoid folks entrenching themselves on separate sides and move towards addressing questions around which the working group can hold substantive conversations. We will use the Feb 17 meeting to compile and organize these questions.

Please submit your responses to ISOStakeholderAffairs@caiso.com

Question:

For each approach, what are the top three questions that you would need to have answered such that you could evaluate the approach effectively? While the presentations from 1/18 and 1/26 provided the framework of each approach, each presenter acknowledged that there were open design elements that need to be addressed to arrive at a formal workable solution. As a working group, we can't perform a well-informed evaluation of either topic without understanding the key issues. I've put together some examples below for each proposal, see below. For additional reference, I've added my summary of each approach at the bottom of the document (if there are any mischaracterizations, all mistakes are my own).

Kevin Head
EDAM Working Group 3 Facilitator

Example Response:

Question #	Resource-specific	Unspecified
1	The approach relies on the RUC D+1 results with no transfers to provide the "baseline" for GHG attribution, similar to how base schedules are used as the baseline in the EIM today. What, if any, market improvements (e.g. increased forecasting accuracy, additional bidding requirements) need to be made to improve the accuracy of the RUC D+1 result?	It does not appear that the carbon pricing programs of California and Washington will be linked at the onset of the Washington program in 2023. If not, what GHG price would be used for the purposes of dispatching resources within the GHG zone?
2	It does not appear that the carbon pricing programs of California and Washington will be linked at the onset of the Washington program in 2023. Is it feasible for the optimization model to be adjusted to account for the lack of reciprocity between these two programs?	The approach provides for the ability for certain resources to serve load within the GHG zone directly, without needing to overcome the hurdle rate. One of the criteria mentioned to create this ability is that the resource may have "Verifiable surplus clean/renewable output". What would "verifiable" mean in this context and which entity would be doing the verification?
3	How would day-ahead market GHG awards be used in the real-time markets?	How would day-ahead market GHG awards be used in the real-time markets?

Resource Specific Attribution Approach Summary (see 1/18 presentation: http://www.caiso.com/InitiativeDocuments/CAISOPresentation-ApplyingEIMGreenhouseGasRegulationModeltotheExtendedDay-AheadMarket-Jan18-2022.pdf)

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?	Can supply elect not to serve GHG zones: Yes Frequency (of election to serve GHG zone): TBD Can demand (LSEs) 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: Resource-specific Determining emissions attribution with different participation options: - Imports at EDAM boundaries: TBD - Pseudo-ties: TBD - Wheels though GHG compliance area: TBD - Virtual bids: Excluded from GHG transfer (transfer is limited by physical supply) - Energy storage: TBD - Jointly-owned units: TBD Requires second optimization: Yes, proposes to use RUC D+1 Solution w/o transfers How are commitment decisions made: TBD Can handle multiple GHG zones: TBD
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: TBD How should GHG costs be reflected: TBD 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, though revenue neutrality was discussed
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 What are the associated settlement impacts to any variation allowed: TBD

Unspecified Approach Summary (see 1/26 presentation: http://www.caiso.com/InitiativeDocuments/EIMEntitiesPresentation-PotentialExtendedDay-AheadMarket-GreenhouseGasTwo-ZoneApproach-UpdatedJan26-2022.pdf)

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?	Can supply elect not to serve GHG zones: 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 demand elect to not receive GHG-intensive energy: TBD
Accounting: Area Identify GHG Compl. 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: - Imports at EDAM boundaries: TBD - Pseudo-ties: Depends on whether resource is considered part of a GHG zone - Wheels though 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 GHG 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 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