

Comments on Greenhouse Gas Coordination 9-13-2023 Working Group

Department of Market Monitoring

September 28, 2023

The Department of Market Monitoring (DMM) appreciates the opportunity to comment on the *Greenhouse Gas Coordination 9-13-2023 Working Group*.¹

During the September 13, 2023 greenhouse gas (GHG) working group, the ISO discussed drafting a problem statement which states “the ISO’s market does not provide the complete reporting metrics desired by all market participants. This undermines the transparency and accuracy desired by market participants”.² Some stakeholders have requested metrics focused on energy dispatched in the Western Energy Imbalance Market (WEIM) that is incremental to base schedules. Stakeholders requested these metrics in order to better understand the implications of the current GHG attribution process, including issues with secondary dispatch.³

DMM recognizes that the GHG attribution process in the WEIM does not prevent secondary dispatch. However, simply comparing the fuel mix of incremental energy in the WEIM to the fuel mix of GHG attribution may not accurately represent secondary dispatch. WEIM incremental energy is the amount by which the real-time dispatch exceeds resources’ base schedules. However, these base schedules do not provide a reasonable counterfactual for what market outcomes would be in the absence of a GHG attribution process. This is because base schedules are not optimized and do not account for optimal transfers between non-GHG areas. As a result, in many plausible scenarios, the quantity of energy with a GHG attribution up to a resource’s base schedule would be an inaccurate and misleading measure of secondary dispatch.

Below we illustrate a theoretical example where non-incremental, low emissions energy receives the GHG attribution for the amount of power serving California, while high emissions resources that receive incremental dispatches above their base schedules for the amount of the transfers do not receive GHG attributions. In this example, there is no secondary dispatch because the low emissions energy only receives a dispatch above zero and up to its base schedule because California assigns costs to GHG emissions and because the WEIM allows GHG attribution to non-incremental real-time dispatches.

Consider three BAAs where each has 10 MW load and each BAA has one generator with a Pmax of 30 MW with a base schedule of 10 MW to serve its own load.

- (i) BAA A has one coal resource with a \$20 energy bid and a \$30 GHG adder.
- (ii) BAA B has one hydro resource with a \$42 energy bid and a \$0 GHG adder.

¹ <https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/Greenhouse-gas-coordination-working-group>

² GHG Coordination Working Group Presentation, slide 38:
<http://www.caiso.com/InitiativeDocuments/Presentation-GHGCoordination-Sep13-2023.pdf>

³ See Vistra’s public comment in February 2023 EDAM Board Meeting:
<http://www.caiso.com/Documents/VistraPublicComment-DecisiononExtendedDay-AheadMarket-Jan30-2023.pdf>

- (iii) BAA CA (California) has a gas resource with a \$45 energy bid (which includes the cost of GHG).

Market outcomes are discussed for four different scenarios:

(1) Counterfactual 1 – No net transfers to CA: Coal = 20 MW, Gas = 10 MW

If there are no transfers in and out of California, the gas generator would provide 10 MW to serve CA's load. Because coal (without GHG adder) is less expensive than hydro, the coal generator would displace hydro and provide 20 MW to serve both BAA A's and BAA B's load.

(2) Counterfactual 2– Net transfers allowed to CA, but CA does not assign costs to emissions: Coal = 30 MW

If the market did not consider GHG adders, then coal would be the least expensive resource and would provide 30 MW to serve all load.

(3) Current GHG attribution framework - CA transfers (w/ GHG adders): Coal = 20 MW, Hydro = 10 MW

Including GHG adders, hydro is the least expensive generation for California. However, for BAA A and B, coal is still less expensive than hydro. Therefore, the coal resource would provide 20 MW to serve both BAA A and BAA B's load. The coal would displace the 10 MW base schedule of BAA A's hydro. The WEIM market and its current GHG attribution design *allows* the zero emissions hydro resource to be dispatched at 10 MW in order to displace the 10 MW of relatively high emissions gas generation that would have served CA's load in the absence of WEIM transfers to California.

(4) Potential alternative GHG attribution framework – CA transfers (w/ GHG adders, and GHG attribution limited to energy incremental to WEIM base schedules): Coal = 20 MW, Gas = 10 MW

This GHG attribution design would prevent the WEIM from dispatching low emissions hydro to displace relatively high emissions California gas generation. Hydro cannot serve CA's 10 MW load unless the hydro gets dispatched to 20 MW. However, this would entail 10 MW of non-CA load being served by expensive hydro (\$42) instead of less expensive coal (\$20). As a result, the extra resource level constraint causes the optimization to view dispatching hydro to serve CA as more expensive than leaving CA's gas generators dispatched up to serve CA's load:

Coal = 10 MW, Hydro = 20 MW, total cost = \$1040

Coal = 20 MW, Gas = 10 MW, total cost = \$850

Counterfactual scenarios (1) and (2) are much more reasonable counterfactuals than WEIM base schedules for determining what the dispatch would have been in the absence of transfers to California or in the absence of a GHG program. In both of these counterfactual scenarios, the 10 MW base schedule for hydro in BAA B would be displaced by coal. Therefore, it is appropriate for the WEIM market design to give a GHG attribution to the 10 MW of dispatched hydro because this hydro resource would have been dispatched down to 0 MW had the CA BAA not been willing to pay more for cleaner generation.

The 10 MW of hydro dispatch under the current WEIM GHG attribution market design (scenario 3) is not incremental to WEIM base schedules, but it receives a GHG attribution. There is 10 MW of coal dispatched that is incremental to WEIM base schedules that does not receive a GHG attribution.

However, it would be incorrect and misleading for a metric to imply that the 10 MW of incremental coal represents secondary dispatch.

Metrics requested by some stakeholders for assessing secondary dispatch by comparing the fuel mix of incremental dispatches (10 MW of coal) to the fuel mix of resources receiving GHG attributions (10 MWs of hydro) would incorrectly indicate that there was 10 MW of secondary dispatch of coal in the above scenario. However, in this scenario the WEIM and its existing GHG attribution design has allowed 10 MW of low emissions hydro to displace 10 MW of higher emissions gas. Therefore, the GHG attribution is appropriate, and there is no secondary dispatch.

DMM recognizes that the current WEIM GHG attribution process may still allow some secondary dispatch. However, metrics that simply compare the fuel mix of GHG attribution to the fuel mix of WEIM energy dispatch incremental to base schedules would not accurately measure secondary dispatch. Such metrics would be too simplified to accurately assess secondary dispatch under the current WEIM design because resources' base schedules are not reasonable counterfactuals from which to measure secondary dispatch.

DMM believes analysis of dispatches incremental to the counterfactual may provide less misleading insights into potential secondary dispatch in EDAM because the EDAM GHG reference pass is a more appropriate counterfactual than WEIM base schedules. The EDAM GHG reference pass optimizes energy bids and allows for transfers between non-GHG areas.

DMM supports further discussion between stakeholders and the ISO about more sophisticated metrics that could better measure potential secondary dispatch under the current WEIM GHG attribution design. DMM agrees with the ISO that all data analysis should be tied to problem statements and encourages further discussion to refine requested metrics to help ensure that they do not provide potentially misleading or inaccurate insights.⁴

⁴ GHG Coordination Working Group Discussion Paper, p. 16:
<http://www.caiso.com/InitiativeDocuments/DiscussionPaper-GreenhouseGasCoordination-Sep12-2023.pdf>