Washington State Western Energy Imbalance Market Greenhouse Gas Enhancements

Draft Final Proposal

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1. Executive Summary

This initiative proposes minor enhancements to the Western Energy Imbalance Market (WEIM) to support Washington State WEIM Entity greenhouse gas (GHG) reporting for emissions year 2022 and beyond. These enhancements include: updating GHG reference levels (used in committing resources and mitigating bids) as well as developing reports to support the WEIM Entities with their reporting to the Washington Department of Ecology. As a key change from the Issue Paper / Straw Proposal, the CAISO has removed the enhancement to associate generation with Washington or model the demand forecast in Washington for reporting purposes in emissions year 2023 and beyond.

2. Introduction and Background

Pursuant to Washington's recently revised Clean Air Act and beginning in 2023, Washington will require reporting of emissions associated with WEIM transactions in emissions year 2022 and each subsequent year.[1] This initiative proposes enhancements to recognize Washington-specific reference levels as well as an approach for reporting GHG emissions to the Washington Department of Ecology. As rules related to Washington reporting and cap-and-invest program design continue to develop, we will collaborate with the Washington Department of Ecology and stakeholders to evolve our market design to accommodate those changes.

Washington Administrative Code (WAC) Chapter 173-441 sets forth the requirements for reporting by Washington WEIM entities starting with emissions year 2022, reported in 2023. The regulations specify that energy from the WEIM is considered imported electricity. Specifically, WAC 173-441-124(2)(g) defines "imported electricity" to include "electricity from an organized market, such as the energy imbalance market." The CAISO interprets this to mean that all transactions within the CAISO's WEIM, including real-time market imbalance energy from resources located within the state of Washington, will constitute imported energy for purposes of Washington's reporting regulations.

Washington's cap-and-invest program, which sets a limit on overall carbon emissions in Washington and requires emitters to obtain allowances equal to their covered GHG emissions, similarly begins in 2023.[2] However, the CAISO is limiting the scope of the enhancements proposed to supporting the Washington reporting requirements only. The Washington cap-and-invest proposed rules do not yet contain sufficient details for the CAISO to immediately

[1] Revised Code of Washington (RCW) Chapter 70A.15.2200, under the Washington Clean Air Act. *See* also Washington Administrative Code (WAC) Chapter 173-441-030(3)(a).
[2] Washington's Climate Commitment Act, RCW Chapter 70A.65. Note the Climate Commitment Act directs the Department of Ecology, in consultation with other Washington regulators, to adopt a rule by October 1, 2026 containing a methodology for addressing imported electricity associated with a centralized electricity market. See RCW Chapter 70A.65.080(1)(c).

implement market changes to facilitate compliance by entities participating in a centralized market.[3]

In comments, the Western Power Trading Forum (WPTF) requested additional information on the implications of not implementing market changes, given the uncertainty of the Washington regulations around the first jurisdictional deliverer. The CAISO clarifies that, without an entity identified as responsible for the compliance obligation, the CAISO cannot model the cost of carbon or settle it in its systems. Market design based on the existing broad definition of the "importer of electricity" could result in implementation that ranges from one end of the spectrum, using resource-specific bid adders to collect the costs of GHG compliance from sources of GHG emissions, to the other end of the spectrum, collecting the cost of GHG compliance from load. Without the GHG bid adders, there will also not be either a calculation of GHG transfers into Washington or attribution, as there will not be a mechanism to collect or calculate that information.

The current ambiguity in regulation results in a market design that has an asymmetric treatment of the GHG cost of compliance in and out of Washington. It is the CAISO's understanding that Washington entities intend to include the cost of GHG compliance in their bids. However, as explained earlier, without a clear compliance entity, the CAISO cannot model where GHG costs should be incurred for resources in and out of Washington. As a result, the Washington resources that include their cost of GHG compliance in their energy bids will appear comparatively expensive to resources outside of the state that would otherwise have a cost of carbon but are not reflecting it in their bids into Washington. As the CAISO's market dispatches resources at least cost, it is more likely that outside resources would be dispatched ahead of in-state Washington resources that have a GHG cost of compliance. Once the first jurisdictional deliverer is clarified in Washington's regulations, the CAISO can begin a stakeholder process to develop a market design and associated settlement process to correct for this asymmetric treatment.

Resources in Washington will still be able to submit bid adders to offer supply to California. However, all non-Washington resources, including California, will not be able to submit bid adders for Washington. For Washington resources, it will be up to state air regulators to determine how to address the "double regulation cost" of Washington resources including the GHG cost of compliance in their energy bid and in any bid adder when voluntarily making supply available to California.

Lastly, the CAISO emphasizes that the scope of these enhancements is limited to the WEIM real-time market. The CAISO is separately engaging in an Extended Day Ahead Market (EDAM) initiative in order to allow WEIM participants to participate in the day-ahead market. However, EDAM is a separate stakeholder initiative and is out of scope for this initiative.

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[3] The Washington Department of Ecology is proposing a new rule, WAC Chapter 173-446, to implement the new cap-and-invest program. More information is available at https://ecology.wa.gov/Regulations-Permits/Laws-rules-rulemaking/Rulemaking/WAC-173-446. The CAISO's comments on proposed rule language in this rulemaking are available at: https://aq.ecology.commentinput.com/comment/extra?id=6Nx2J

3. Washington WEIM GHG Enhancements Straw Proposal

3.1 Modeling Washington Borders and the Demand Forecast

To move away from the Balancing Authority Area (BAA) construct and to better align with state-level GHG boundaries, the CAISO had planned to associate generation and demand with Washington. The purpose of this enhancement was to differentiate generation and load in and out of Washington for reporting purposes in emissions year 2023. However, based on stakeholder feedback, the initiative will no longer include this enhancement.

Stakeholder Feedback

In stakeholder comments, parties noted that to continue with this enhancement to model demand and generation for reporting would be imposing market design that moved ahead of the Washington Department of Ecology's rulemaking. Stakeholders including BPA, the Washington Utilities, and WPTF flagged the level of accuracy of reporting with this enhancement was not improved due to needed clarity in the Washington Department of Ecology's reporting rulemaking. Specifically, stakeholders sought greater clarity with respect to multi-jurisdictional entities and scenarios for federal power entities, depending on if they reported or not.

3.2 Updating GHG Reference Costs

In the Issue Paper / Straw Proposal, the CAISO proposed to revise the cost-based reference levels for resources inside of Washington. The revised calculation would use Washington-specific GHG allowance prices when calculating a GHG-emitting generating resource's default energy Bid (DEB) and default commitment costs (collectively referred to as reference levels). Currently, the GHG allowance price used in CAISO's market reflects the cost of allowances for CARB's Cap-and-Trade Program. The CAISO will need to adjust this allowance price to include the cost of allowances for Washington's GHG compliance program for resources subject to that program. Depending on the availability of pricing data from vendors, the CAISO expects to use a similar approach to calculate the cost of allowances for Washington's GHG compliance program. However, as pricing data will not be available from external vendors with sufficient lead time to be implemented by January 2023 the CAISO will need to implement an interim approach. One of the reasons for this situation is that the first auction of Washington GHG allowances is expected to occur in 2023, i.e. after the proposed implementation date of this initiative.

Stakeholder Feedback

In stakeholder comments, almost all stakeholders supported the CAISO's proposal to revise the cost-based reference levels for resources inside of Washington to include Washington-specific GHG allowance prices. The exception to this support was BPA, who commented that reference levels would not apply to them as BPA's resources will not be registered with the Washington Department of Ecology as having a GHG compliance obligation as they are not considered in-state generation per the CCA. The CAISO acknowledges and respects the different reporting, and thus market design considerations that will be in place for BPA.

In response to CAISO's open question in the Issue Paper / Straw Proposal of whether there should be a cost calculated ahead of an allowance auction in Washington, WPTF urged the CAISO to develop a proxy price ahead of a Washington allowance auction. The CAISO agrees with this recommendation on the basis that, if the CAISO were to omit this price from being reflected in a Washington resource's reference levels, the reference levels would not reflect the actual costs of the resource if the resource is subject to GHG compliance costs. This would create a situation in which a Washington resource could be unable to fully include the cost of GHG compliance in its bid. Accordingly, the CAISO plans to include a proxy cost ahead of any allowance auction.

Proposal

The proposal is that ahead of an allowance auction in Washington, the CAISO will use the economic and market modeling and analysis conducted by Vivid Economics for the Washington Department of Ecology.[4] Specifically, the CAISO plans to use the assumption that GHG regulation areas will be linked, which assumes $41 per MT CO2e. Once an allowance auction is held in Washington, the CAISO will use the auction clearing price. At a later phase, when index prices are available and implementable by the CAISO, the CAISO will use index prices.

This report serves as an appropriate starting point for the allowance price as:

- The report serves as a better approximation of GHG allowance costs than using California indexed costs, as it reflects Washington-specific assumptions; and
- The report was prepared by a consultant of the entity that will run the auction and is independent of market participants.

In addition, the CAISO believes that using the $41 per MT CO2e and transitioning to the auction clearing price prior to the availability of index prices is a reasonable approach for several reasons:

- Through the inclusion of the GHG prices in Washington resource's reference levels, the CAISO is attempting to approximate the wider market's expectations about the cost of compliance. The CAISO believes it is reasonable to assume that market participants will use independent price estimates developed by well-qualified, independent consultants such as Vivid Economics in the absence of auction or index prices.
- The $41 per MT CO2e estimate falls near the midpoint between the cap-and-invest program's allowance price floor of $19 per MT CO2e and the allowance price ceiling of $71 per MT CO2e. This indicates that the estimate is not overly conservative or overly aggressive.
- The proposed approach of using the auction price once available will allow the CAISO's calculation of reference levels to respond to actual allowance trading market information once it is available.

[4] Vivid Economics for the Washington Department of Ecology. "Summary of market modeling and analysis of the proposed Cap and Invest Program." June 2022. Accessible at: https://ecology.wa.gov/DOE/files/4a/4ab74e30-d365-40f5-9e8f-528caa8610dc.pdf

The CAISO believes that the price estimate achieves a reasonable balance between the competing factors of using an estimate that is too high versus an estimate that is too low. On one hand, the estimate will be a component in Washington resources' reference levels which themselves are effectively used to limit those resources' bids with the goal of limiting the exercise of market power. The CAISO has an obligation to limit the exercise of market power by not allowing bids that are substantially beyond a resource's costs. Because of the reasons mentioned above, the CAISO believes that the $41 per MT CO2e estimate achieves this goal.

On the other hand, the CAISO also doesn't want to use a value that is too low thus limiting a resource's ability to reflect their costs in their bids and negatively affecting market participation. If the scheduling coordinator believes that their compliance cost is lower than the price estimate, they will have the ability to bid lower than the bid cap. Indeed, due to the features of a marginal-cost based market, the scheduling coordinator would be incented to not bid beyond their compliance cost.

The CAISO welcomes feedback on this approach from stakeholders.

Background

As background, DEBs are used in the local market power mitigation process and default commitment costs limit the bids that scheduling coordinators can submit. The DEB mitigation system seeks to mirror competitive outcomes when participants might have the ability to exercise local market power. In such cases, the CAISO may adjust a resource's submitted energy bid downward to the resource's DEB or the competitive locational marginal price, whichever is higher. Default commitment costs serve a similar purpose but function differently in practice. Instead of applying only when the potential for the exercise of market power exists, default commitment costs always serve as the cap of the values that scheduling coordinators may submit for minimum load cost bids, start-up cost bids, and transition cost bids. These bids are then used by the CAISO's market processes in its determination of whether to commit the resource.

The CAISO's tariff (Section 29.7) outlines various DEB options but, through this initiative, the proposal is to only modify the Variable Cost option which estimates a generating resource's costs based on Master File parameters and other more dynamic inputs such as natural gas price indices. The CAISO's tariff (Section 30.4.4) also outlines two methodologies for the calculation of default commitment costs: the Proxy Cost and Registered Cost methodologies. The current proposal is to update the calculation of default commitment costs under both methodologies.

Specifically, the proposed updates will apply to generating resources registered with Washington Department of Ecology as having a GHG compliance obligation. The proposed calculations will be consistent with the Variable Cost DEB and default commitment cost calculations for resources subject to the California Air Resources Board's (CARB) Cap-and-Trade Program, with the primary exception that the GHG allowance price will differ. For the changes to the Variable Cost DEB, the proposal is to calculate a GHG cost adder as the product of the resource's incremental heat rate, the GHG emissions rate authorized by the Washington

Department of Ecology, and the applicable GHG allowance price. This adder will then be combined with the other components of the DEB (*e.g.* fuel costs, variable operations and maintenance costs) to arrive at the final DEB value. The default commitment cost calculations will include a similar GHG cost adder.

3.3 WEIM GHG Reporting

In the Issue Paper / Straw Proposal, the CAISO proposed two different reporting approaches: one for emissions year 2022, and a second approach for emissions year 2023 and beyond. The rationale for the difference in approaches was that, for emissions year 2022, the CAISO did not have sufficient time from a stakeholder engagement, IT, or implementation perspective to take a different approach other than providing an approximation of WEIM transactions used to serve load within the state of Washington. For emissions year 2023, with enhancements to model generation and the demand forecast in and out of Washington, the CAISO could come up with a more accurate means of reporting, particularly for the entities whose operations were both in Washington and outside of Washington.

Stakeholder Feedback

In comments, stakeholders supported the proposed approach for emissions year 2022 and suggested extending this approach for future years. The approach was supported on the basis that it was sufficient until further clarity came from the Washington Department of Ecology. Conversely, stakeholder comments largely disagreed with the CAISO's proposed approach for emissions year 2023 on the basis that moving ahead with the enhancements to facilitate 2023 reporting could be premature ahead of clarification from the Department of Ecology. Stakeholders cited examples where without clarity, the CAISO's intention of greater accuracy, would not materialize as a result of the current reporting rules. Stakeholders raised scenarios particularly in the cases of a multi-jurisdictional entity reporting or if a BPA did or did not decide to voluntarily report under Washington's reporting rules. (Note that if BPA did not report it would impact both the BPA, as well as any utilities served by BPA.)

WPTF also requested clarification on two topics: (1) if the CAISO will determine if a WEIM entity's load is served by a generation from Washington or a non-Washington BAA and (2) how the CAISO will treat California attributed Washington resources in determining the volume of net WEIM transfers into Washington and how this would compare to the volumetric quantity under California's Cap-and-Trade Program.

- In response to the first question, the CAISO will not separate what is served by a Washington or non-Washington BAA. The CAISO will calculate the WEIM market dispatches based upon instructed imbalance energy, the difference between the market real time market dispatch and base schedule of BAA generation and net schedule interchange. From a settlements perspective this is the net positive instructed imbalance energy quantity (Fifteen Minute Market Instructed Imbalance Energy + Real Time Market Instructed Imbalance Energy) which captures instances when a supply resource increased its output to serve load based on a forecast with a base schedule reference.

- In response to the second question, Washington resources attributed to California will not impact volume of net WEIM transfers into WA, as the GHG transfers will not be calculated. There will not be a change to how the CAISO treats Washington resources that are attributed to California. Also, as mentioned earlier, as there will not be the ability to indicate a GHG bid from a non-Washington resource, total GHG transfers to Washington are unable to be calculated. Thus, while GHG transfers will be calculated for California's program, they cannot be calculated for Washington's program until further clarity is obtained on the first jurisdictional deliverer and a stakeholder process begins at the CAISO.

Approach for Emissions Year 2022 and Beyond

The CAISO understands that under its reporting rules, the Department of Ecology will treat all transactions in the WEIM used to serve load within Washington as imported energy. It is also the CAISO's understanding that Washington Department of Ecology will develop an Excel-based tool to support GHG reporting, in line with WAC 173-441-124.[5]

The CAISO plans to calculate the market dispatches, based on instructed imbalance energy, on an annual basis for WEIM Entities to meet the reporting requirements to the Washington Department of Ecology. Real-time instructed imbalance energy reflects WEIM transactions used to serve electricity demand. WEIM Entities operating in the state of Washington with BAAs that extend to other states would need to calculate a load ratio to estimate the volumes that served their Washington demand. This approach will only provide a rough approximation of WEIM transitions used to serve load with the state of Washington.

4. WEIM Governing Body Role

The WEIM Governing Body has joint authority with the Board of Governors over all of the proposed changes, as this initiative proposes to:

1. Update GHG reference levels to reflect Washington allowance prices; and
2. Develop reports to support the WEIM Entities.

The Board and the WEIM Governing Body have joint authority over any proposal to change or establish any CAISO tariff rule(s) applicable to the WEIM Entity balancing authority areas, WEIM Entities, or other market participants within the WEIM Entity balancing authority areas, in their capacity as participants in EIM. This scope excludes from joint authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the CAISO-controlled grid. Charter for EIM Governance § 2.2.1.

The proposed tariff changes to implement the first element is "applicable to EIM Entity balancing authority areas, EIM Entities, or other market participants within EIM Entity balancing authority areas, in their capacity as participants in EIM." It would not be applicable "only to the CAISO

[5] https://app.leg.wa.gov/WAC/default.aspx?cite=173-441-124&pdf=true

balancing authority area or to the CAISO-controlled grid." Accordingly, the proposed changes to implement the first element would fall within the scope of joint authority.

Stakeholders are encouraged to submit a response in their written comments to the proposed classification of as described above, particularly if they have concerns or questions.

5. Stakeholder Engagement Plan

Date	Milestone
September 22, 2022	Draft Final Proposal Posted
September 29, 2022 8:00-9:00 AM	Stakeholder Meeting
October 7, 2022	Stakeholder Comments Due
Week of October 10, 2022	Draft Tariff Posted
October 25-26 2022	Joint CAISO and WEIM Board of Governors Meeting and WEIM Board of Governors Meeting
Early 2023	Implementation

6. Next Steps

In this Draft Final Proposal the CAISO has attempted to capture and describe enhancements to reflect the costs of GHG compliance and to support reporting WEIM transactions by WEIM Entities to the Washington Department of Ecology. The CAISO will hold a stakeholder call on September 29, 2022 to review this Draft Final Proposal. The CAISO encourages all stakeholders to submit comments by October 7, 2022.