Feedback of the Western Power Trading Forum
To the Washington Department of Ecology
On Questions Related to Electricity Imports and Centralized Electricity Markets

April 18, 2025

The Western Power Trading Forum[1] (WPTF) appreciates the opportunity to provide input to the Washington Department of Ecology (Ecology) on its questions related to electricity imports and centralized electricity markets (CEMs).

Defining GHG Zone and treatment of system power

1. ***Central question: How should the WA GHG Zone be defined within CEMs and how does this interface with existing reporting frameworks?***

In general, CEM market operators should design and implement parameters within their markets in accordance with Ecology rules. Where the Climate Commitment Act (CCA) provides clear direction as to what is considered inside and outside the GHG Zone (for instance, electricity from BPA's federal resources must be construed as imports) or how imports will be calculate (for instance electricity imports from Multijurisdictional Retail Providers (MJRPs) to serve Washington retail load), the market operators must accommodate these provisions in their market design. Our comments below are in line with this general perspective.

2. ***What load and what generation resources should be included in the WA GHG Zone for:***

a. ***BAAs located entirely within WA***

All generation resources within BAAs located *entirely* within Washington should be considered withing the WA GHG Zone in the CEM specifications. However, if output from resources located in Washington is committed to load-serving entities outside Washington or attributed to another GHG pricing program, the market operator should not treat that energy as serving Washington load. This will ensure that energy from some other resource, or unspecified imports are attributed to Washington.

b. ***BPA BAA (multi-state BAA federal power marketing administration)***

Federal resources located inside Washington should *not* be considered within the WA GHG zone, in keeping with the CCA.

However, non-federal resources (i.e. generation owned by other entities) located within Washington inside the BPA BAA should be considered inside the WA GHG zone for CEM specification. These resources will have a compliance obligation under the CCA for any GHG emissions at a facility level.

c. ***multi-state BAAs that are also multijurisdictional retail providers***

Generation resources located inside Washington within a multistate BAA of an MJRP should be considered to be inside the WA GHG zone for CEM specification. These resources will have a compliance obligation under the CCA for any GHG emission at a facility level and are taken into account in MJRP import calculations.

d. ***multi-state BAAs that do not have load in WA***

Generation resources located inside Washington within other multistate BAAs should be considered to be inside the WA GHG zone for CEM specification, regardless of whether the entity that operates the BAA has load in Washington. These resources will have a compliance obligation under the CCA for any GHG emission at a facility level and are thus within the GHG Zone.

Understanding CEMs and BPA interactions

1. ***How are BPA's system generation resources represented in a CEM model? Are distinct generation resources represented at distinct nodes and can be separately scheduled or awarded by a CEM?***

By BPA's system, we interpret this question to refer to the federal resources. In accordance with the CCA, these must be modeled as outside of Washington. We understand that in the Western Energy Imbalance Market (WEIM), these are currently modeled as 3 separate aggregations of resources (Upper Columbia, Lower Columbia and Snake) and can be separately scheduled and attributed by a CEM. We also understand when attributed, these resources are assigned BPA's ACS (system) emission factor. However, we would defer to discussions between BPA and the CEM operator about the legality and feasibility of maintaining these modeling practices within the day-ahead markets.

2. ***What EF should be used in the GHG bid adder for BPA system energy or generation resources for CEM attribution to the WA GHG Zone?***

To date under the CCA, BPA has qualified for an Asset Controlling Supplier (ACS) emission factor (EF), which is used by both BPA and other entities that import specified power from BPA to Washington (or California). The ACS EF is an administratively assigned emission factor that simplifies reporting of BPA specified imports. Although most of BPA's system is non-emitting, BPA makes some purchases of energy to balance its system. Because BPA sells energy from its system as whole, the ACS EF was intended to reflect the carbon emissions associated with any market purchases that BPA may make. The ACS is an averaged EF (i.e. emissions associated with all BPA non-federal purchases across a given calendar year) with an inherent 2-year lag between the calendar year for which the ACS EF is calculated and the year in which it is used for reporting. Accordingly, use of ACS EF does not result in reporting of actual emissions for the calendar year in which those emissions occurred.

The evolution of CEMs in the West and the GHG accounting frameworks being

developed in both CEMs provide the opportunity to consider whether there are alternative options for accurate GHG accounting of BPA energy and emissions associates with any market energy needed to balance BPA's system.

- The tracking and reporting constructs being developed by CEMs can identify on a real time or hourly basis when there is a shortfall in the output of federal resources to meet retail load within BPA's BAA (and any other BAA). For BPA load within the GHG area, this shortfall will be met via attribution of energy from federal and non-federal resources on a specified basis, and/or by attribution of unspecified (market) energy. In either case, a more accurate emission factor can be assigned, i.e. the emission factor of the specified resource, or the residual emission rate for market energy.
- Specified energy from BPA's system of federal resources can also be attributed to the WA GHG Zone pursuant to contracts to entities outside of the BPA BAA.
- Any unspecified energy needed to support WA GHG Zone load outside of the BPA BAA should be considered market energy, not BPA system energy.

Thus, it is not clear to us that the ACS reporting as it exists today is the only way to provide GHG accounting for BPA in the CEMs, once the day ahead markets have launched and the GHG accounting framework established; other approaches may be better suited.

With respect to which emission factor should be assigned, we note that Ecology has no role in determining the GHG bid adder. Rather, Ecology simply needs to determine the EF to be used for reporting and compliance purposes. The entity bidding in the market can then use that emission factor and appropriate allowance price to determine the bid adder in any given market interval.

3. ***What EF should be used to determine Cap-and-Invest compliance obligations for BPA system energy or generation resources attributed to the WA GHG Zone?***

As explained in question 2, Ecology should determine the emission factor assigned for various types of import attributions via the CEMs. Market participants can then consider those emission factors in determining the GHG bid adders for their resources.

4. ***When attribution to the WA GHG Zone is enabled by CEMs, how should BPA system energy supplied to WA and associated emissions be accounted for within the Cap-and- Invest Program?***

See WPTF's response to questions 2 and 3 above.

a. ***Should BPA participation in a day-ahead or real-time only CEM impact the usefulness or calculation of the BPA ACS EF?***

Yes. As explained in question 2, WPTF is not convinced that the ACS concept as used in the bilateral market today is relevant or useful for the CEMs.

b. ***If BPA participates in a day-ahead CEM, would all energy and emissions associated with BPA system imports to WA be accounted for by attribution of BPA generation to the WA GHG Zone?***

It is conceivable that BPA could continue to sell power from its system bilaterally to entities outside of its BAA (and outside the CEM footprint), which then sinks in Washington. Regulatory provisions would still be necessary to capture these energy transactions and associated emissions.

c. ***Would BPA export energy from the CEM to WA customers outside the market footprint?***

Possibly, see response to a above. Note that the CEM operators and stakeholders are still discussing provisions for energy exported from the market footprints.

Understanding CEMs and MJRP interactions

1. ***How does an MJRP represent load in a CEM? Should WA retail load for an MJRP be represented as within the WA GHG Zone?***

The CCA provides that MJRPs calculate emissions associated with serving Washington retail load by apportioning emissions from their system as a whole (i.e. emissions from its common pool of resources and market purchases) to Washington load.

While it is conceivable that an MJRP could work with a CEM operator to delineate its Washington load within the CEM, we are not aware that any of the MJRPs have expressed interest in this approach.

2. ***When attribution to the WA GHG Zone is enabled by CEMs, how should imported MJRP system energy and emissions be accounted for within the Cap-and-Invest Program?***

Emissions associated with energy allocated to an MJRP by the CEM tracking and reporting framework, including both dedicated (owned and contracted resources) and market energy should factor into the calculation of the entity's system emissions/emission factor.

We believe that the CEM post-dispatch GHG allocation frameworks being developed would also support the MJRP setting up a sub-level GHG accounting for Washington load, if desirable. This would enable the MJRP to ensure that energy from specific resources could be allocated to Washington load, rather than its system as a whole.

a. ***Should MJRP participation in a day-ahead or real-time only CEM impact the***

usefulness or calculation of emissions associated with imported system power serving WA retail load?

The CEM tracking and accounting framework could enable calculation of the emissions associated with serving Washington retail load on a more granular basis, i.e. hourly.

b. ***If an MJRP participates in a day-ahead CEM, would all energy and emissions associated with MJRP system imports to WA retail load be accounted for by attribution of MJRP generation to the WA GHG Zone?***

Yes, assuming that all the entity's Washington retail load is served within the CEM.

Unspecified imports from CEMs

1. ***Central question: Considering potential pathways listed by Ecology***

a. ***What emission factor should be used to determine the compliance obligation associated with unspecified source imports attributed to the WA GHG Zone?***

WPTF supports application of the hourly market residual emission factor to determine the compliance obligation of unspecified source imports attributed to Washington.

Given that a market operator has access to real time dispatch and transfer data, WPTF recommends that rather than use the current default emission rate for unspecified imports, Ecology should instead request the market operator to calculate a dynamic unspecified emission factor for unspecified imports. This emission factor should represent the generation-weighted, average emission factor of residual energy in that interval. That is, the emission factor would be calculated based on the actual emission and generation of all dispatched energy outside Washington that has not been imported to Washington as specified nor allocated to load-serving entities by the CEM GHG Accounting and Tracking framework.

The appropriate residual emission factor would then be multiplied by each utility's unspecified purchase in that hour and summed across the year to calculate the utility's annual compliance obligation for unspecified market purchases. Compliance emissions under this approach would be far more accurate than if calculated based on a single, static and dated default emission factor.

b. ***What emission factor should be used in the GHG adder for unspecified source imports in the M+ optimization? Should any pathway listed by Ecology be considered?***

Because the emission factor used in the M+ optimization will determine the volume of unspecified imports, this number should be set as accurately as possible. If the emission factor is too low, unspecified imports will be greater than they should be because they

would displace more economic internal generation or specified imports. In contrast, if the emission factor is too high, unspecified transfers will be lower than they should be. This would increase energy prices within Washington, and would not necessarily reduce emissions, but could also lead to higher emissions due to the need to call upon a less efficient, higher emitting resource inside Washington.

To avoid these unintended consequences, the emission factor used in the market optimization should be dynamic and reflect actual market conditions as closely as possible. WPTF believes that the ideal emission factor would represent the emission factor of the marginal emitting resource within the entire market footprint for each interval, if the entire market were dispatched on energy prices alone (i.e. without consideration of GHG costs). A market design solution that gets close to this ideal emission factor for use in the GHG hurdle is best able to maintain the correct dispatch order for resources both inside and outside Washington when carbon is included.

WPTF believes that it should be possible to use a dynamic emission factor that changes close to real time (for instance, it could be determined based on a preceding market interval.) However, if there are concerns about the technical feasibility of this approach, the market operator could instead apply a set of 3-4 'shaped' emission factors that are representative of typical market conditions and period, so that the emission factor is close to the actual emission rate of the marginal emitting resource in each interval.

WPTF recommends that Ecology consult with the CEM market operator and stakeholders to consider the technical feasibility of dynamic unspecified emission factor(s) for the market optimization and the interaction with the emission factor(s) used to assign compliance emissions for unspecified market purchases.

c. ***What emission factor should be used for interchange import transactions (bulk market-to-market transfers)?***

WPTF would encourage the market operators to coordinate so that the residual emission rate of the exporting market can be used in adding this energy and associated emissions to the market residual energy in the importing market.

2. ***If a calculated (annual or dynamic) emission factor is suggested, what data should be used?***

The determination of the emissions factors for both the value used in the market optimization, as well as those applied for determining compliance emission factor should be based on market data collected by the market operator.

a. ***What considerations should be made for "null power" in a calculated EF if any?***

WPTF believes that the emission factor used for determining compliance emissions

should be based on the actual emissions and output of all energy in the residual market supply in a given interval. The concept of null power is derived from renewable procurement style programs, such as CETA, that rely on REC retirements. Because RECs have no role in GHG accounting under the CCA and other cap and trade programs, null power should have no bearing on the calculation of the residual emission factor for determining compliance emissions associated with unspecified imports.

3. ***Must unspecified emission factors used to account for electricity imports from CEMs match the unspecified emission factor used for bilateral unspecified transactions?***

No. For bilateral unspecified transactions, Ecology will not have access to granular data on resources supporting the transfer. For this reason, it will be necessary to continue to use a different unspecified emission factor than those used in the market. However, we would urge Ecology to coordinate with the California Air Resources Board and other regulators to update the default emission factor and explore the possibility of developing shaped default emission factors that more accurately reflect resources supporting transfers at different periods.

Potential CEMs and e-tag interactions

1. ***Central question: Given use of e-tags to support reporting of electricity imported via bilateral transactions, is there potential for electricity imported via a CEM to be "double counted" due to creation of e-tags accounting for transfers between BAAs scheduled by a CEM?***

   a. ***Must market participants create e-tags for both day-ahead and real-time market awards that result in imports/exports between BAAs?***

   No, in general e-tags reflecting *individual* transactions are not used in CEMS.

   b. ***Are e-tags documenting transfers resulting from CEM awards clearly identifiable as associated with a CEM result or award?***

   The market dispatch determines awards for specified imports and provides this information to the market participant. These awards are not based on e-tags.

2. ***Should the lesser-of-analysis (WAC 173-441-124(3)(b)(ii)(B)(VI)) be applied to imported electricity from a specific resource that is attributed to WA by a CEM? Does this depend on whether the BAA participates in a day-ahead CEM or a real-time only CEM?***

   Actual metered output of generation within the market footprint is used for resource settlement. Thus, to our knowledge, resource-specific attribution to the GHG Zone is also based on metered generation so that a lesser-of-analysis is not needed for these resources.

3. ***Do the stated assumptions and outcomes for day-ahead and real-time CEMs below hold if market participants bid in resources external to the market footprint, also referred to as import interchange transaction offers?***

No, if a resource external to the market offers in specified energy which is then attributed by the CEM to WA, the delivery to the market and resulting attribution may be greater than the actual dispatch from the resource. This is because the resource delivery schedule is balanced by an external BAA and is not visible to the CEM. A lesser-of analysis should be required for these transactions.

Day-ahead CEMs and e-tags

Are the following assumptions and outcomes accurate?

For BAAs participating in a day-ahead CEM (WEIM-EDAM, M+):

<u>Assumptions</u>

- ***All generation resources and load within BAA are registered, scheduled, and settled through the CEM***.

This is incorrect. CEMs do not require that all generation resources and loads within participating BAAs must also participate in the CEM.

- ***Any energy transferred into a BAA is a result of CEM schedules or dispatch.***

CEM market rules may also provide for interchange transfers into a BAA. Such an transfer would be the result of a CEM interchange award and settlement, which may be the result of an economic bid or self-scheduled by the entity. While the resource or resources supporting the transfer would not be dispatched by the CEM, per se, the volume of energy transferred would be known to the CEM.

<u>Reporting and Cap-and-Invest Outcomes</u>

- ***All imported electricity for BAAs participating in a day-ahead CEM will be determined based on market attribution to the GHG-zone.***

Market attribution will determine imported energy to Washington load of BAAs participating in the CEM. For electricity imported to a BAA via an interchange transfer, the CEM would be aware of this energy. However, CEM design provisions would be needed to ensure that the energy is appropriately attributed to the GHG Zone.

- ***Market attribution of MWh from non-GHG zone resources to GHG zone determines MWh of specified imports and entity responsible for reporting and associated***

emissions.

This is correct for resources participating in the CEM.

- ***E-tags should not be used to report imports for any electricity sinking to a participating BAA. Doing so would result in double-counting of imported electricity delivered through the CEM.***

If the CEM allows for specified imports from an external resource to a participating BAA, it may be appropriate for these tags to be considered to verify the source and direct delivery to that CEM/BAA. However, e-tags are not needed to identify the import into the CEM/BAA and would result in double counting if the volume was reported for both the e-tag and the CEM attribution.

Real-time only CEMs and e-tags

Are the following assumptions and outcomes accurate?

For BAAs participating only in a real-time CEM (WEIM only)

Assumptions

- ***Only "balancing" energy is scheduled and dispatched through the CEM.***

While the WEIM is referred to as an imbalance market, this term is different than the concept of 'balancing energy' provided by BAAs to generating resources to maintain their schedule. The WEIM dispatches and schedules energy in response to any real time imbalance between pre-scheduled generation and load in participating BAAs. However, it is worth noting that for BAAs outside of CAISO, generation is not optimized prior to the market run. Thus, the market run itself may result in changes to dispatched generation relative to the BAA's planned pre-schedules for those resources.

- **A participating BAA's load is primarily met through scheduled generation and transfers made outside of the CEM.**

Correct**,** only a small percentage of the generation needed to meet load is dispatched through the WEIM.

- ***Transfers into the BAA made outside the CEM will be documented by e-tags.***

Correct, transfers from resources outside the market, or within the market but scheduled prior to the market run, would be scheduled on e-tags.

Reporting and Cap-and-Invest Outcomes

- ***For BAAs participating only in a real-time CEM, only a fraction of imported electricity may be determined based on market attribution to the GHG-zone.***

Correct**.**

- ***Market attribution of MWh from non-GHG zone resources to GHG zone determines MWh of specified imports and entity responsible for reporting and associated emissions*.**

Yes, for resources participating in, and volumes of energy dispatched by, the market**.**

- ***E-tags may also be necessary to support reporting of electricity imports which occur outside the CEM for any electricity sinking to a participating BAA.***

Yes.

Emissions Leakage

- ***ECY welcomes additional comment on addressing emissions leakage informed by updated understanding or progress in EDAM and M+ market development.***

As WPTF has provided extensive comments previously on the topic of emissions leakage, we do not repeat those here.