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The attached comments are submitted jointly by Avista, PacifiCorp, the Public Generating Pool, and Puget Sound Energy ("Joint Utilities").

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Submitted via Web Portal

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RE: Ecology Requested Feedback on Electricity Imports and Centralized Electricity Markets

On March 6, 2025, the Washington Department of Ecology (Ecology) hosted a Cap-and-Invest Electricity Forum on electricity imports and centralized electricity markets (CEMs) where agency staff posed a number of questions for feedback on the implementation of Washington's Climate Commitment Act (CCA) in the context of real-time and day-ahead markets. The following responses to Ecology's questions are offered jointly by Avista, PacifiCorp, the Public Generating Pool, and Puget Sound Energy ("Joint Utilities").

General Comments

The Joint Utilities greatly appreciate Ecology's continued due diligence in developing institutional knowledge on CEMs in the Western Interconnection through venues such as the Cap-and-Invest Electricity Forums, particularly in advance of the agency's next round of rulemaking to implement the CCA. The questions and issues presently under consideration by Ecology and stakeholders are complex, and in many instances continue to evolve as the Southwest Power Pool (SPP) and California Independent System Operator (CAISO) prepare for go-live of Markets+ and the Extended Day-Ahead Market (EDAM), respectively. The Joint Utilities make an effort to note in the following responses where more information is needed, decisions are still pending, or answers are unknown at this time.

Considerations

The Joint Utilities appreciate Ecology's provision of considerations to weigh in responding to the agency's questions for feedback. We respectfully offer the following minor caveats and clarifications (shown in *red*) to the considerations provided by Ecology in order to shed additional light on the orientation reflected in our responses:

Considerations

- Impart appropriate incentives to achieve state GHG emission limits

    - *Recognize role of the Washington Clean Energy Transformation Act (CETA) relative to the CCA as the primary policy driver of electric sector decarbonization*
- Consistently and appropriately assess emissions and compliance obligations
    - *Avoid duplicative compliance obligations associated with the same unit of emissions*
- Consider risk for emissions leakage
- Cohesive across bilateral transactions and across CEM designs
- Compatibility with potential linkage partners
    - *Acknowledge Washington's unique electric sector context relative to potential linkage partners*
- Implementation and reporting feasibility
    - *Establish clear reporting guidance*
    - *Feasibility in the context of linkage*
- First-jurisdictional approach

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?**

   The Joint Utilities find that existing CCA statute, rules, and guidance are sufficient to allow CEM greenhouse gas (GHG) design to facilitate compliance with the CCA and market participants to appropriately bid resources into and out of Washington. RCW 70A.65.010(43) defines "imported electricity" as electricity generated outside of the geographic boundary of the state with a final point of delivery (POD) within the state, including electricity from centralized electricity markets such as the CAISO's Western Energy Imbalance Market (WEIM), electricity from a system that is marketed by a federal power marketing administration (i.e. the Bonneville Power Administration), and, for multijurisdictional retail providers (MJRPs), electricity, other than from in-state facilities, that contributes to a common system power pool. This "imported electricity" framework is reflected in both Ch. 173-441 WAC (GHG Reporting Rule) and Ch. 173-446 WAC (CCA Program Rule). The March 2023 *Consideration of Electricity Imports and Determination of the Electricity Importer under the Climate Commitment Act* White Paper ("Electricity Imports White Paper"),[1] developed by stakeholders and recognized by Ecology, further delineates an approach for determining when an electricity import into Washington occurs and which entity bears the associated compliance obligation under the CCA. In terms of load, for the Bonneville Power Administration (BPA) Washington utility customer load should be considered internal to Washington, while for MJRPs Washington retail load should be considered external.

   The CAISO and SPP market operators have utilized this policy direction set by Washington to establish state-level GHG Zone boundaries for both EDAM/WEIM and Markets+. In the case of Markets+, our understanding is that the market will be able to assign load and resource nodes as being in or out of a GHG Zone; the onus will be on SPP and market

[1] Retrieved from: https://apps.ecology.wa.gov/publications/documents/2302051.pdf.

participants to collaborate to ensure that nodes are correctly coded to reflect the CCA's framework for what is considered an import into Washington.

2. **What load and what generation resources should be included in the WA GHG Zone for:**
    a. **BAAs located entirely within WA**

    All retail electric load and all generation resources physically located in Washington State should be included in the WA GHG Zone. Pseudo-tied resources located outside Washington are considered outside the state and treated as imports back to the GHG Zone for purposes of the GHG Reporting Rule.

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

    While the CCA establishes that resources marketed by BPA are considered imported electricity (external to the WA GHG Zone), the retail load of BPA's utility customers in Washington should be treated as internal to the WA GHG Zone.

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

    The retail load of MJRPs that also operate multi-state BAAs should continue to be considered outside the GHG Zone because these entities apply a Washington retail load share of the MJRPs' systems as an "import" to Washington, which is inclusive of market transactions, pursuant to existing statutory definitions and Ecology's rules. RCW 70A.65.010(42)(e) and WAC 173-441-124(2)(q)(v) both state that the allocation of specific facilities to Washington's retail load will be allocated based on cost allocation methodology approved by the Washington Utilities and Transportation Commission.

    Similar to load, MJRPs' system resources (excluding in-state facilities) should continue to be considered outside the WA GHG Zone. RCW 70A.65.010(42)(e) and WAC 173-441-124(2)(q)(v) provide that generation from in-state facilities contributing to a common system power pool does not count as "imported electricity" and emitting electric generation is a covered entity under RCW 70A.65.080(1)(a). Generation outside Washington state should not be included in the GHG Zone as those resources are not subject to Washington's laws and may not result in energy being imported into Washington.

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?**

    The Joint Utilities do not have a specific recommendation with respect to this question at this time. However, the Joint Utilities do recommend that Ecology develop a set of options, in consultation with stakeholders and SPP, to determine which unspecified emission factor is most appropriate. Options could include, but are not limited to: (1) Ecology's current default unspecified emissions factor of 0.428 MTCO2e/MWh; (2) e-Grid or other emissions rates established by the U.S. Environmental Protection Agency

(EPA); (3) the residual rate developing through the Markets+ tracking and reporting protocol; or (4) the residual rate developed through the CAISO GHG Coordination Working Group. The Joint Utilities' view is that the different options may drive different incentives and/or levels of accuracy in the market and in Ecology's program and reporting priorities. It would be helpful to assess the options side by side to consider the pros and cons associated with each.

The CAISO's WEIM/EDAM design does not currently include an unspecified source import pathway. However, the issue of how to treat unspecified electricity may become relevant to market-to-market interchange transactions between CEMs as those discussions evolve.

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?

Where possible, the same emission factor should be used for market dispatch and assignment of compliance obligations in order to ensure that the GHG adder sufficiently captures an entity's actual compliance costs. Failure to use the same emission factor could result in a differential between the revenue collected by the market optimization and the compliance costs. The Joint Utilities recommend that Ecology discuss this issue with SPP and market participants.

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

At this time, our understanding is that the respective market attribution frameworks will capture all in-market data needed to report emissions and energy imported into Washington. It is not yet fully clear how emissions associated with interchange import transactions (i.e., a schedule for importing electricity in a CEM market footprint) will be calculated and potentially attributed to Washington until more discussion takes place within each CEM (and potentially between the CEMs) with respect to these transactions. Different types of imports will likely warrant different treatment. In the meantime, the Joint Utilities request further discussion on this and other outstanding questions both within the Ecology rulemaking and within the CAISO and SPP stakeholder processes. Some questions and observations that may help frame those discussions include:

- Different emissions factors may be appropriate for import interchange transactions into a CEM footprint that are:
    - Associated with a specific resource;
    - Bulk CEM-to-CEM transfer; or
    - Bulk/unspecified from a non-CEM BAA.
- Is the market able to register the emissions factors of resources external to its footprint?
- What import interchange transactions will be eligible to be attributed to the WA GHG Zone?
    - Associated with an e-tag that sinks in WA?

    - Associated with an e-tag that sinks elsewhere, but attributed to WA through the CEM attribution?
- Should import interchange transactions into the CEM that are attributable to WA include a GHG adder in their economic offers?
- How should import interchange transactions into Markets+ that are not directly attributed to WA impact the unspecified GHG adder?

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

In general, a dynamic emission factor may provide a more accurate representation of the emission intensity of a CEM at the time of dispatch, thereby resulting in improved accuracy of dispatch and accounting. The design of any emission factors will have tradeoffs for simplicity, accuracy, and other factors. As noted above, the Joint Utilities recommend the development of several emission factor options along with their associated pros and cons for stakeholders to consider. At that point, each option can also be evaluated for whether a realistic data source is available and can be used to generate the emission factor at the desired granularity and time frequency. Whatever data is used, it should be aggregated and in other ways anonymized to prevent inadvertent publication of sensitive information.

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

Answering this question depends in part on the emission factor that will be used for unspecified imports into WA from within CEMs. For instance, if Ecology decides to use the current default emission factor for unspecified electricity, there is not a need to consider null power because the default emission factor is not calculated using actual generation. To the extent Ecology is considering using a residual emission factor, careful consideration of whether and how null power should be used in the calculation of the residual emission factor will be warranted. In general, it is likely problematic for entities external to Washington if the emission factor used includes the non-power attributes of energy where the associated renewable energy certificates (RECs) have been retained by another party. The Joint Utilities recommend that Ecology first develop a set of options for the emission factor as suggested in response 1(a) above and include potential considerations of null power as part of the discussion of any options that incorporate a residual emission factor.

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

Not necessarily. The relatively greater accuracy and granularity of information made available through a CEM could be sufficient to justify differentiations in the treatment of unspecified imports through a CEM as compared to the regulatory emission factor of 0.428 MTCO2e/MWh applied to unspecified imports from bilateral transactions.

More discussion is needed as to whether there are any unintended consequences associated with having different EFs for unspecified bilateral imports vs. CEM unspecified imports.

4. **What entity(s) should be responsible for reporting and compliance obligations associated with unspecified source imports attributed to the WA GHG Zone?**

   The Joint Utilities recommend that the compliance obligation for unspecified imports be allocated to load-serving entities (LSEs) within Washington. As there may be different methods for allocating compliance obligations to WA LSEs on a pro-rata basis, the Joint Utilities recommend further discussion on the appropriate method. If the LSEs are the covered entities for unspecified CEM imports, then any no-cost allowance allocation for those entities under the CCA will need to appropriately account for the emissions associated with those imports.

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?**

   With respect to CEMs broadly, the Joint Utilities believe Ecology will be able to rely on CEM GHG attribution and tracking and reporting information to capture electricity imports into Washington that are a result of in-market transfers, although some of the details associated with CEM tracking and reporting frameworks remain to be resolved. With respect to import interchange transactions, some combination of physical e-tags and in-market attribution and tracking may be needed to accurately identify the importer of electricity into Washington.

   With respect to Markets+, the Joint Utilities do not recommend the use of e-tags for the purposes of GHG accounting of transfers that occur within the CEM. These e-tags represent flows for various reporting and accounting purposes, such as representing contractual obligations, measuring deviations from day-ahead schedules, or other administrative purposes. Often, energy transferred into the CEM is aggregated on e-tags between BAAs. However, these e-tags do not necessarily reflect quantities of electricity generated, dispatched, attributed, or settled. For transactions within the CEM, the Joint Utilities believe the Markets+ attribution and tracking and reporting framework captures imports to Washington that occur within the CEM. Markets+ stakeholders are still discussing how external transactions, outside the CEM – called *interchange transactions* - interact with the Markets+ optimization and attribution framework. Theoretically, the Markets+ tracking and reporting framework should be able to identify import interchange attribution to the GHG Zone and import interchange that is self-scheduled to the GHG Zone. However, e-tags may still be needed to discern who the importer is in some circumstances.

   With respect to the CAISO, e-tag data may be necessary to identify imports in certain scenarios: (1) when validating base transfers for WEIM-only entities; and (2) when validating transfers from non-market areas for either WEIM-only or EDAM entities. In either scenario, there should not be a risk for double counting.

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

As noted above, e-tags are generally not used in CEMs to identify the source or sources of electricity generation. While the Joint Utilities articulate below the various uses of e-tags in a day-ahead and real-time market using the example of Markets+, we reiterate that e-tags are not generally a reliable tool for identifying electricity importers or the electricity source in the context of CEMs, and that our understanding is that the respective market attribution frameworks will capture all in-market data needed to report emissions and energy imported into Washington. The market design and attribution frameworks were originally developed for the WEIM for this reason.

i. Bilateral transactions between Markets+ participants: Markets+ participants may author e-tags associated with bilateral transactions between market participants within the Markets+ footprint. These e-tags may include e-tags to reflect contractual obligations for deliveries of Specified Source Energy to an entity within the GHG Zone. These tags do not impact SPP's market optimization, and are not updated by SPP. These tags may be used by SPP to settle contractual quantities of specified source electricity based on SPP's Internal Energy Schedule Settlement Adjustments (IESSA) system. These e-tags are not necessary for GHG reporting purposes.
ii. Administrative tags representing market awards and flows: In addition to e-tags created by market participants for BA-BA transfers discussed under (i) above, Markets+ participant BAAs will create administrative e-tags for representation of market flows. The market operator will update these e-tags with market flows resulting from the day-ahead market and real-time balancing markets solutions. The sum of these administrative e-tags and e-tags described under (i) above results in a net BAA-BAA transfer.
iii. Interchange transactions: Markets+ participants may use import interchange transactions to self-schedule or economically bid a resource from a source location outside the Markets+ footprint to a sink within the footprint. Markets+ participants may use export interchange transactions to self-schedule or economically bid a resource from a source location within the Markets+ footprint to a sink location external to the footprint. The market participant authors these tags and SPP consumes them as inputs into its day-ahead and real-time market optimization software; for economically bid imports/exports (which is currently only available in the day-ahead market), the market operator will update the e-tag based on the quantity of electricity that clear in the market. It is undetermined at this time if e-tags will be necessary for GHG reporting purposes given evolving discussions around interchange transactions.
iv. Internal BAA tagging: Market participants may use e-tags to reflect internal transfers within their systems. These e-tags may be desired for BAAs to capture deviations from internal schedules to understand a BAA's balancing obligations under its Open Access Transmission Tariff (OATT). These e-tags are authored by the market participant in the day-ahead timeframe and may be updated in real-time. Additionally, original e-tags may be authored in real-time by a market participant for certain purposes. The SPP market operator does not interact with these e-tags and these e-tags do not represent new

sources of electricity transferring into or out of a BAA, or into or out of WA. These e-tags are not necessary for GHG reporting purposes.

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

With respect to the CAISO, it is the Joint Utilities' understanding that e-tags may need to be updated with award information following GHG awards. This update would be performed by the awarded resource's Scheduling Coordinator after the power flows. With respect to Markets+, as described above, the administrative e-tags specifically identify total market flows between BAAs resulting from the day-ahead market and real-time balancing market solutions. In addition, e-tags relating to day-ahead import and export transaction awards from the day-ahead market may be updated by the market operator based on day-ahead market results. There may be information in the tag update history that would reflect who updated the tag and when, but information about why the tag was updated may not be available.

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?**

It is the Joint Utilities' understanding that the purpose of the lesser-of analysis is to ensure the accuracy of the quantity of electricity identified as being imported into the GHG Zone. In the context of the bilateral market, the quantity of electricity e-tagged could be different from the quantity of electricity actually generated; the lesser-of analysis ensures that an accurate amount is reported. In the context of CEMs, it is the understanding of the Joint Utilities that the amounts attributed to the GHG Zones will generally be consistent with the amounts generated. Therefore, there should be no need to apply a lesser-of analysis in either a day-ahead or real-time only CEM. We reiterate that additional consideration may be needed regarding the treatment of import interchange transactions.

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?**

Neither market has yet defined the mechanisms for import interchange transactions and treatment with respect to GHG attribution. The Joint Utilities recommend deferral of this topic for a later time when the market design details have undergone further development.

Day-Ahead CEMs and E-Tags

- **Are the following assumptions and outcomes accurate? For BAAs participating in a day-ahead CEM (WEIM-EDAM, M+):**
    - Assumptions:
        - All generation resources and load within a BAA are registered, scheduled, and settled through the CEM.
            - *The Joint Utilities defer to SPP and CAISO, but believe this assumption to be largely true. Markets+ requires registration for all*

load within the footprint, all resources 0.1 MW or greater and capable of injecting into the transmission system (i.e. not behind-the-meter), and all behind-the-meter resources 10 MW or greater unless pseudo-tied. The CAISO markets require that each participating resource and non-participating resource of 10 MW or greater in a participating BAA is registered.

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

- Reporting and Cap-and-Invest Outcomes:
  - All imported electricity for BAAs participating in a day-ahead CEM will be determined based on market attribution to the GHG Zone.
    - *No. All electricity imported to a GHG Zone is based on market attribution (including imports from outside the market footprint). The energy is not attributed to BAAs individually or to any zones other than designated GHG Zones.*
  - Market attribution of MWh from non-GHG Zone resources to GHG Zone determines MWh or specified imports and the entity responsible for reporting and associated emissions.
    - *Yes, for all transfers that occur inside 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.

    E-tags are not needed to identify that the import into the CEM/BAA occurred and would result in double counting if the volume was reported for both the e-tag and the CEM attribution. However, 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. E-tags may also be needed to identify the importer for bilateral transactions.

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.
      - *No. The imbalance market dispatches and schedules energy every five minutes to respond to real-time imbalances between the energy that was scheduled prior to the operating hour and the real-time. There may be "balancing energy" (i.e., energy provided by BAAs to generating resources to maintain their schedule) needed by a BAA to respond to changes within each five-minute interval that is not dispatched through the CEM. In addition, the imbalance market can dispatch based on price as well (even if there is no imbalance) up to the bid range of the resource.*

        - A participating BAA's load is primarily met through scheduled generation and transfers made outside of the CEM.
            - *Yes. The imbalance portion is a small increment compared to all energy bought and sold in the wholesale electricity market.*
        - Transfers into the BAA made outside the CEM will be documented by e-tags.
            - *Yes.*
    - 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.
            - *Yes.*
        - Market attribution of MWh from non-GHG Zone resources to the GHG Zone determines MWh of specified imports and the entity responsible for reporting and associated emissions.
            - *Yes.*
        - 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

While emissions leakage is an important consideration for Ecology's implementation of the CCA in the context of CEMs, the Joint Utilities do not believe there will be sufficient data or operational experience to support specific rules addressing leakage until go-live of both EDAM/WEIM and Markets+. To avoid unnecessary and potentially costly unintended consequences, the Joint Utilities recommend that specific rules be developed at a future time when more operational data is available that can be evaluated against established criteria or principles determining: (1) Whether leakage is occurring or has the potential to occur in any CEM; and (2) how that leakage might be appropriately mitigated.

Conclusion

The Joint Utilities appreciate the opportunity to respond to Ecology's questions for feedback relating to electricity imports and CEMs. We look forward to continuing to engage with Ecology on these issues through future Cap-and-Invest Electricity Forums and CCA rulemaking.

Sincerely,

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