

Stakeholder Feedback and IESO Response

Market Renewal Program: Energy Project Implementation Market Settlements – September 21, 2023

On September 21, 2023, the IESO presented on three design updates which were correction to the DAM Balancing Credit formulas to align with design intent, modification to the Inertia Failure charges to address potential gaming issues, and aligning ORA with MRP design. The IESO received written feedback from:

Evolugen by Brookfield Renewable

Ontario Power Generation

Workbench Energy

Related presentation materials and recorded sessions have been posted on the IESO [stakeholder engagement webpage](#). If interested, please visit the webpage to reference the feedback submissions directly as the below uses excerpts and/or a summary of the stakeholder feedback for the purposes of providing an IESO response.

Please contact IESO Engagement at engagement@ieso.ca if you have any questions.

Table 1 | Electricity Distributors Association Feedback and IESO Responses

Feedback	IESO Response
<u>Correction to Day-Ahead Balancing Credit Formula to Align with Design Intent</u>	
Evolugen by Brookfield Renewable appreciates the opportunity to provide feedback.	
1. Please confirm if there is a report that records and publishes all situations when market participants are constrained on or off due to a SEAL event.	1. The IESO does not publish reports on SEAL events as these are confidential market participant specific events.
2. Please confirm if the results of RT LOC EOP calculations are published. If yes, in which report?	2. The final RT LOC EOP output will be available in the settlement data files.
3. Can the Operating Profit function be represented by a simpler formula in the Market Rules for DAM Balancing Credit? We are happy to explore ways to simplify formulas and equations with the IESO.	3. Thank you for your comments. The Operating Profit function is a standard function that is used in all relevant settlement calculations both in the current and future market. The DAM Balancing Credit formulas are defined using the standard operating profit function in the simplest form.
4. Can Scenarios 1 and 2 of Appendix A be broken down into simpler calculations and have more examples provided? We are unable to follow the calculations, assumptions, and components used in the examples—more clarifications would be appreciated.	4. Thanks for your feedback. Scenarios 1 and 2 in Appendix A have been presented in the simplest form using the standard operating profit function.
5. On slide 60 - Scenario 2: this seems to be a duplication from Scenario 1 and is not related to the calculation of DAM BC export—please confirm.	5. The IESO can confirm that slide 60 is a duplication of slide 59. The updated slides have been republished.
6. On slide 57: please confirm if “SQEI” in the formula should be DAM QSI > SQEW instead.	6. The second bullet on Slide 57 should be: DAM QSW > SQEW. The updated slides have been republished.

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| <p>7. Both Scenario 1 and 2 are situations where DAM QSI is greater than SQEI/SQEW. Please confirm if the DAM Balancing Credit can ever negatively impact a Market Participant.</p> | <p>7. The IESO can confirm that the DAM Balancing Credit will not negatively impact market participants as it is always a payment.</p> |
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Modification to the Intertie Failure charges to Address Potential Gaming Issues

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| <p>1. Please provide a more detailed and explicit explanation of the failure charge formulas, with appropriate references in the same document (or same page if formatting permits). The current presentation of formulas is challenging for us to understand. To be clear, the formulas' variables are now explained in a separate document, which requires participants to go back and forth between documents to understand the changes presented by the IESO. As an example, please adopt the approach of math textbooks and provide the written names of each variable in a sidebar legend, as well as their own formulas in an annex close by (or on the following page).</p> | <p>1. Sample calculation of the Intertie failure charges will be provided at the Stakeholder Engagement meeting on December 15, 2023.</p> <p>The formulas, variable and equations will be codified in the updated market rules in Q1 2024.</p> |
| <p>2. The NISL is included as a variable within the formula of the intertie failure charges. Please provide examples where the NISL is binding for an entire hour, to show the NISL's impact on penalty charges. Please also provide, in the format described in the first paragraph, the formula that determines how the NISL and its impact on real-time pricing would be calculated. In turn, please show how this NISL cost would be added to the intertie import and failure charges.</p> | <p>2. Sample calculation of the Intertie failure charges will be provided at the Stakeholder Engagement meeting on December 15, 2023.</p> <p>The formulas, variable and equations will be codified in the updated market rules in Q1 2024.</p> |
| <p>3. Please explain what the settlement outcome for a marketer that has</p> | <p>3. NISL is a component of locational marginal price (LMP) both in day-ahead and real time market for all boundary entities when the NISL</p> |
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committed a day-ahead import transaction would be, if it is assessed a failure charge for an hour when the NISL is binding (which would send real-time prices higher). Would the associated NISL cost appear both in the real-time buyback of the day-ahead import MW and in the import failure charge?

is binding. The failed import transaction will be charged RT NISL as part of the day-ahead failure charge as per the formula provided in the Stakeholder Engagement presentation on September 21, 2023.

Day-ahead import transaction will only receive an import failure charge if the transaction is import congested in real-time. The NISL cost will appear both in the real-time balancing settlement and the day-ahead import failure charge. Any benefits the failed transaction derive from the real-time balancing settlement will be offset by the day-ahead import failure charge.

4. Real world examples—or scenarios market participants are familiar with—would help communicate the formulas' application and illustrate their intended purpose. At the moment, the introduction of the DAM and its interaction with the RT market make comprehension particularly challenging.

4. NISL is a component of locational marginal price (LMP) both in day-ahead and real time market for all boundary entities when the NISL is binding. The failed import transaction will be charged RT NISL as part of the day-ahead failure charge as per the formula provided in the Stakeholder Engagement presentation on September 21, 2023.

Day-ahead import transaction will only receive an import failure charge if the transaction is import congested in real-time. The NISL cost will appear both in the real-time balancing settlement and the day-ahead import failure charge. Any benefits the failed transaction derive from the real-time balancing settlement will be offset by the day-ahead import failure charge.

5. More generally speaking, we would appreciate a webinar to specifically review the purpose of NISL in the context of Market Renewal, both conceptually and

5. More information on NISL can be found in the IESO presentation "Understanding NISL under MRP" which was presented on February 22, 2022. Intertie Failure Charge would be the

how it would be calculated. For example, a better understanding of how uplift charges and NISL charges would interact would be helpful. In addition, please provide a list of all possible penalties and charges that could be triggered by a failed inertie transaction.

only charge imposed on a failed inertie transaction by Settlements.

Aligning ORA with MRP Design

On ORA Alignment:

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| <ol style="list-style-type: none"> 1. Please confirm if there is a report that would identify the individual resources whose Allocated Quantity of Operating Reserve (AQOR) is greater than their Total Accessible Operating Reserve (TAOR). 2. Please confirm if the OR Standby payment clawbacks are calculated based on a RT LMP OR price specific for each class of OR. 3. Please confirm if information regarding the determination and reallocating of excess available headroom (REAH) are published. If yes, in which report? 4. Please confirm if the Economic Operating Point (EOP) in the calculation of Lost Opportunity Cost is a published result. If yes, in which report? 5. Can the Operating Profit function be represented by a simpler formula in the Market Rules for RT MWP Clawback? We would appreciate more clarification on this function as it is currently difficult to follow. 6. Please confirm if there are any penalties resulting from a failure to provide | <ol style="list-style-type: none"> 1. There are no reports currently available to identify conditions where Allocated Quantity of Operating Reserve (AQOR) > TAOR. However, the IESO will continue to provide AQOR and TAOR as attributes on ORA clawback charges. 2. The IESO can confirm your interpretation is correct. 3. The Reallocating of excess available headroom (REAH) will be provided as an attribute on ORA clawback charge on the settlement statement for the applicable resource. 4. Economic Operating Point (EOP) will not be provided as a report. The IESO will provide EOP as part of the settlement data files. 5. Thank you for your comments.
The Operating Profit function is a standard function that is used throughout all relevant settlement calculations both in the current and future market. The RT MWP Clawback formulas are defined in the simplest form using the standard operating profit function. 6. Failure to activated OR are handled as compliance issues and will be subjected to |
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Feedback**IESO Response**

activated OR. If yes, how is it settled?
What is IESO's timeframe for applying this penalty?

compliance assessment by Market Assessment and Compliance Division(MACD).

7. Please confirm if there is a report documenting ORA activation events.

7. Currently, the IESO does not publish ORA events. The ORA reason code is in the 5-Minute Energy and Operating Reserve Schedule Report and the Real-time Energy and Operating Reserve Dispatch report. It is provided under the "Reason Code" column in these reports.

General Comments/Feedback

1. We are concerned by how ex-ante Market Power Mitigation, which can change a MP's offer and replace it with a reference level quantity, might cause a MP's total OR offers to be inconsistent with their total accessible OR quantity (e.g., resulting in over-commitment). Please provide sample calculations and scenarios to demonstrate that Market Power Mitigation would not unfairly penalize market participants for matters outside of their control.
2. Please clarify how MaxCap would be calculated for hydro facilities with varying daily limits

1. Ex-ante mitigation does not replace offered quantities with reference quantities. The assessment of physical withholding, which uses reference quantities as an input, is carried out after-the-fact and does not alter schedules or prices. For more information on assessment of physical withholding, please see Chapter 7, section 22.15 from the set of MRP market rules and also Market Manual 14.1, section 5.

2. MAX_CAP for generators (including hydro facilities) is derived hourly based on market participant offered PQ pairs.

Ontario Power Generation

Table 2 | Ontario Power Generation and IESO Responses

Feedback**IESO Response**

Correction to Day-Ahead Balancing Credit Formula to Align with Design Intent

Slide 13 & 14: DAM_BCE Import & Export Energy Formulas

The IESO has provided sample calculation of revised formulas in the Appendix A section of the September SE presentation.

Could you please provide a simple scenario in the slides for DAM_BCE similar to how an OR claw back example was demonstrated, for the revised formulas?

Modification to the Intertie Failure charges to Address Potential Gaming Issues

Slide 24 & 25: DAM-Import/Export Failure Charge – Formula (NEW)

Could you please provide a simple scenario in the slides for DAM Intertie failure charge, similar to how an OR claw back example was demonstrated, for the new formulas?

Sample calculations of DAM Intertie Failure charge and RT Intertie Failure Charge will be provided at the Stakeholder Engagement presentation on December 15, 2023.

Aligning ORA with MRP Design

MRP Implementation Proposal for ORA

Considering the mitigation for OR claw back, is the Reference Level quantity or, as stated, the MaxCap being utilized in the calculation?

MAX_CAP for generators (including hydro facilities) is derived hourly based on market participant offered PQ pairs.

General Comments/Feedback

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| <p>1. Has there been an assessment to determine if the implementation efforts to be undertaken by the IESO and MPs for at least 8 new charge codes (including DAM Import/Export Failure charge, RT MWP, and GOG claw back for each OR class) are justified in terms of cost versus projected savings?</p> | <p>1. The new DAM interties failure charge are necessary because traders may have information of the potential RT intertie price prior to the transaction flowing which may incentivize the traders to purposefully fail the transaction.</p> <p>The RT MWP and RT GOG claw backs are based on the principle that a market participant should not receive compensation for energy it was not capable of providing. The principle is consistent with the ORA clawback in the current market.</p> |
| <p>2. Is it expected that these new charge codes will be included and defined in the CT & Equations document by January 2024?</p> | <p>2. All charge types and equations, variable descriptions and rounding conventions related ORA and implementation design changes</p> |
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Feedback**IESO Response**

It is of utmost importance for OPG to have a finalized list within this timeframe to ensure compliance with the IESO MRP schedule.

3. Will the Q1 2024 CT & Equations document be the final release of the document?

presented at Stakeholder engagement in September and December will be included in published version of the IESO Charge Type and Equations document in January 2024.

3. There may be further changes to the IESO Charge Type and Equations subsequent to the publication in Q1 2024 for any potential changes that may arise due to final alignment batch including tax treatment for the new MRP charge codes.

Workbench Energy

Table 3 | Workbench Energy and IESO Responses

Feedback**IESO Response**

Comments re: OR Accessibility MRP Implementation Proposal for GOG Resources.

In this morning’s session, IESO proposed an approach to align the current OR accessibility calculations to the RT MWP and RT GOG calculations in the updated MRP framework.

The challenge for GOG Resources that utilize the pseudo-unit model is that the assigned OR capacity to each of its physical resources is done by formula, not by available OR. This will present a challenge whereby the allocation of OR from PSU to PU may assign inaccessible OR to an STG by formula. A clawback will be calculated on the STG, without the opportunity to assign the inaccessible STG OR to an associated GT, which otherwise has too low of an allocation.

For example, consider a 1x1 PSU made up of a 100 MW GT and a 50 MW STG.

- The MLPs are 60 MW and 30 MW.
- The Pseudo-unit has a 90 MW MLP and 150 MW baseload. There are 60 MW of OR available.

The methodology of the OR standby payment clawback considers the combined capability of all aggregated resources to determine if there is inaccessible OR. In the case where PSU translation allocated a portion of inaccessible OR to ST that it may not be to provide, the combined capability from both CT and ST should sufficiently cover any inaccessible OR incurred by the ST.

In the scenario provided, if the overall capability of OR is 60 MW, the available headroom from CT unit will fulfill the missing 10S OR from ST. ST will not be charged with any OR clawback.

The CT and ST combined settlement would receive the total OR scheduled for the PSU of 55 MW of 10S OR and 5 MW of 30R OR hence

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- The PSU offers the 150 MW of energy and holds 60 MW of OR to align with capability. there should not be any under-earns of OR revenue.
 - OR GT ramp rate is 5 MW/min. STG ramp rate is 0.5 MW/min.
 - STG, by nature, lags in its output and therefore cannot provide its proportion in 10 minutes.
 - PSU therefore offers 55 MW of 10S OR and 5 MW of 30R OR.
 - The PU allocation, by capability and ramp rate, is:
 - 10S: GT 50, STG 5.
 - 30R: GT 0, STG 5.
 - The PU allocation by formula may not align.
 - If the PSU --> PU translation of OR allocates by proportion, the 10S 55 MW of OR will be assigned such that:
 - the GT is under-assigned and STG over-assigned 10S OR.
 - STG then incurs an OR Accessibility Clawback in 10S, and
 - GT under-earns OR revenue by having a 30R assignment when 10S is available.

A straightforward solution within the settlement calculations is not clear. An opportunity to amend the PU allocation of OR within the EMI system may be a better solution.
