

Memorandum

To: Technical Panel

From: Darren Byers

Date: February 3, 2026

Re: Adjustments to Real-Time Make-Whole Payments

Background

Attached for Technical Panel review and consideration are market rule amendments required to address unwarranted make-whole payments (MWP) related to the following items:

- 1- Operating reserve (OR) Lost Opportunity Cost (LOC) and forbidden regions of hydro-electric resources;
- 2- OR ramping in LOC Economic Operating Point (EOP) calculations; and
- 3- Real-Time Make-Whole Payments (RT-MWP) that are not offsetting amongst energy and OR products.

At the January 13th Technical Panel meeting, the Panel voted to post the proposed market rule amendments for further stakeholder review and comment. Two sets of comments were received; one from Vlad Urukov (generator representative), and the other from Ontario Power Generation (OPG). A summary of the feedback with IESO responses is attached. The comments provided support for items 2 and 3, and focused on questions related to item 1- OR LOC and forbidden regions.

In the current market rules, the energy component of the Make-Whole Payment takes into account the forbidden region for hydro-electric resources while the operating reserve component does not. This results in unwarranted make-whole payments related to operating reserve. The proposal for item 1 replicates the existing approach taken for energy and applies it to operating reserve, the premise being that a market participant should not be entitled to a make-whole payment for a volume that is infeasible, for either energy or operating reserve, and that the logic for each should be consistent.

In both submissions, concern has been expressed that for hydro resources with forbidden regions, there is a potential that the IESO might be reducing make-whole payments beyond what is unwarranted. Specifically, the concern has been that a hydro resource, when scheduled at the boundary of its forbidden region, may have its make-whole payments reduced in

circumstances where its schedule was the result of a constraint or differences between the scheduling and pricing passes of the engine, rather than as a result of the engine respecting the resource's forbidden region.

The IESO's analysis shows that schedules at the boundary of the forbidden region are almost entirely to respect the resource's forbidden region, and that the concern raised only occurs in a very small number of instances. Of the relevant dispatch intervals over seven months, approximately 95% of the schedules were the result of the engine respecting the existence of the forbidden region of a hydro-electric resource, and therefore the make-whole payment was appropriately reduced. The remaining 5% represents an infrequent, edge case that is beyond the scope of this specific MWP initiative and has no easily workable solution.

The following revisions have been made to the proposal from the version posted for stakeholder review:

- Section Ch.9.s3.5.6: this section, which calculates the amount of lost opportunity cost for OR associated with a forbidden region ($RT_OR_FROP_LOC_{r,k,h}^{m,t}$) should only be applicable when the hydroelectric resource is within or at the upper boundary of the forbidden region. For additional clarity, an addition of a "where clause" is proposed in section 3.5.6 d.ii, which aligns with the trigger for the energy lost cost. This change was made based on internal review.
- Section 3.5.6.1 – deletion of an incorrect max 0 function. The amendment made to the Real-Time Forbidden Region Operating Profit for energy equation (RT_FROP_LC) found in section 3.5.6.1 included a change to the formula to introduce a max function to energy lost cost. This was incorrect, as the max of zero should only apply to the lost opportunity cost. This change was made based on internal review.
- Section 3.5.6.3.c.: deletion of "or equal to". The first "Where" provision which specified a requirement that the quantity scheduled for injection should be "greater than *or equal*" to the forbidden region lower limit is incorrect and should only be "greater than". This change was made as suggested by OPG.
- Sections 3.5.4.5 and 3.5.4.6: for further clarity, sections 3.5.4.5 and 3.5.4.6 have been split into conditions (i) and (ii). This change was made as suggested by OPG, to minimize any ambiguity.

The above changes have been added to the MR-00490-R00 proposal, and are highlighted in yellow in the tracked changes version.

Panel Action and Next Steps

The IESO recommends that the Technical Panel vote to recommend the proposed market rule amendments MR-00490-R00 to the IESO Board for approval at its March 9, 2026 meeting. Per the Technical Panel Terms of Reference, Panel members will be asked to provide reasons for their stated positions.

Accompanying Materials

- Market Rule Amendment Proposal – MR-00490-R00 Adjustments to Real-Time Make-Whole Payments
- Market Rule Amendment Proposal – tracked changes version
- Comments from Vlad Urukov with IESO responses received January 8, 2026

- Comments from Vlad Urukov and OPG received January 26, 2026, with IESO responses