

# Memorandum

**To:** Technical Panel

**From:** Jessica Tang

**Date:** February 17, 2022

**Re:** Market Power Mitigation – Rationale for Offer Replacement when the Conduct Test is Failed

At the February 15, 2022 Technical Panel meeting, Panel members discussed a range of scenarios to illustrate how Market Power Mitigation and the Independent Review Process would be operationalized based on the Detailed Design for the Market Renewal Project and the corresponding market rule amendments. Several Panel members had questions about the decision to replace the entire offer curve with the reference level curve when only one offer tranche fails the conduct test for market power. The reference level curve is the set of prices and quantities showing the short-run marginal costs of a particular resource. In response to these questions, the IESO committed to provide the Technical Panel with the rationale for this design decision in advance of their next meeting.

## **Background:**

During the detailed design phase, the IESO analyzed the optimal way to carry out the conduct test. The conduct test, carried out when competition is restricted, determines if dispatch data values submitted by a market participant differ significantly from what the values would have been in a competitive market. This analysis included a review of how the conduct test is carried out by other system operators (NYISO, SPP and ISO-NE) that use the conduct and impact methodology to mitigate market power. In these jurisdictions, when a conduct test is failed for any offer tranche, the entire offer curve is replaced with the reference level curve.

This decision was reflected in both the Day-Ahead Market Calculation Engine detailed design document (section 3.6.4.5) and the Pre-Dispatch Calculation Engine detailed design document (section 3.6.3.2).

### **Rationale for Design Choice:**

Implementability: The selected approach avoids violating any requirements in the calculation engines as outlined in the Appendix and also avoids a material impact on the amount of processing time that the calculation engines require to determine schedules and prices.

Flexibility of offer submission: The selected approach avoids the introduction of new restrictions on market participant offer structure.

Easy to understand: The selected approach is simple and avoids the introduction of a new set of complicated business rules.

Experience in other jurisdictions: The selected approach has a proven track record in other jurisdictions in North America that use the same methodology as the IESO will use for ex-ante mitigation (conduct and impact).

### **Alternative Design Options Considered:**

During detailed design, the IESO considered the possibility of replacing only a portion of an offer curve with a reference level curve when the conduct test was failed.

The first alternative would ensure that the conditions outlined in the Appendix are respected by requiring market participants to submit offers with the same quantity breakpoints found in the reference level curve. This option would significantly restrict market participants' ability to freely determine their offers, a problem that would be compounded for pseudo-units who already face limits on the number of offer tranches they can submit.

The second alternative would ensure that the conditions outlined in the Appendix are respected by creating complex business rules to modify the offer curve after mitigation is applied. This would significantly increase the amount of time that the calculation engines require to solve and would also lead to inefficient dispatch and pricing outcomes as offer prices after the modifications would not reflect the short-run marginal costs of the resource.

## **APPENDIX**

### **Monotonicity:**

The calculation engines logic is built based on the assumption that offer curves are monotonically increasing in price. Monotonically increasing offer curves means that the offer price associated with each tranche of the offer curve increases. Decreasing or U-shaped offer curves are not monotonically increasing and are not valid inputs. Monotonicity ensures that the engine will select the tranches in ascending order, which means the calculation engine will never select a higher-priced tranche before a lower-priced one.

### **Total number of offer tranches:**

Market participants offers and reference levels are limited to no more than 19 tranches. This limitation is due to the processing requirements for carrying out the optimization. The limit of 19 tranches is in place to ensure that the calculation engines can solve within the required timelines. Replacing only some offer tranches with the reference level curve could create a new curve with more than 19 tranches.

For example, consider an offer with 19 tranches, where with the quantities from 1 – 100 MWs are covered by the first 18 tranches and the last tranche covers the quantities from 101 – 200 MWs. Further, assume the reference level also has 19 tranches where the first tranche covers the MWs from 1 – 100 MWs, and the remaining 18 tranches apply to the MWs from 101 – 200 MWs. In this example, if the top offer tranche fails the conduct test, replacing only the top offer tranche with the reference level curve would create a curve with 37 tranches.