

Recommended Values for SEM Price Materiality Threshold

Report to the Regulatory Authorities

Version 1.1



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1.0 Introduction

This paper sets out a recommendation to change the value of the Price Materiality Threshold to 0% on a temporary basis, until such time as an I.T. solution that is capable of calculating materiality is delivered.

The Price Materiality Threshold is designed to test when a change in input data, resulting from an upheld dispute, causes a change in the price greater than 5%. When the threshold is exceeded, the price is recalculated and included in a Settlement rerun. The purpose of the Price Materiality Threshold value is to achieve a balance between the value to the market of repricing and resettlement of a material error, and the operational overhead of the effort and resources required to adjust for the error.

The Price Materiality Threshold is a parameter which determines whether the Market Operator will include a corrected data input value, following a Pricing Dispute, in recalculating the Imbalance Settlement. The most accurate recalculation of price is at a 0% threshold; however this can result in inefficient outcomes (resettlement and uncertainty of the market for small monetary errors) and over burdening of MO and Participants for little value.

2.0 Background

On 10th May 2017, SEMO set out a report to the Regulatory Authorities, *Recommended Values for I-SEM Pricing Parameters*. The report sets out a recommendation for setting of *De Minimis Acceptance Threshold*, *Price Average Reference Quantity* and the *Price Materiality Threshold* for the purposes of the I-SEM arrangements. On 7th July 2017, the SEM Committee published the *I-SEM Policy Parameters and Scheduling and Dispatch Parameters Decision Paper (SEM-17-046)*. In this paper, the SEM Committee set the Price Materiality Threshold at 5%, to be applied from 1st October 2018.

Under paragraph B.19.3.1 of Part B of the Trading and Settlement Code (TSC), the Market Operator (MO) is required to report to the Regulatory Authorities proposing parameters to be used in determining the occurrence of recalculating the Imbalance Settlement Price as required from time to time.

3.0 Imbalance Settlement Price & Price Materiality Threshold

An Imbalance Settlement Price is an average price based on the 5 minute Imbalance Prices that comprise a given 30 minute Imbalance Settlement Period. When, as part of an upheld Pricing Dispute it has been determined that there is a manifest error, and the resulting change causes a change in price greater than a certain Price Materiality Threshold, the price will be recalculated and the changes will be included in a Settlement rerun, otherwise the price is not recalculated.

The Price Materiality Threshold parameter shall be proposed by the Market Operator from time to time and approved by the Regulatory Authorities. This is outlined in Section B.19.3.1 (b) of the TSC. The currently approved Pricing Materiality Threshold is 5%, as per [SEM-17-046](#).

As a result of manifest errors¹ detected in the calculation of the Imbalance Price since I-SEM market go-live, the Market Operator has upheld Pricing Disputes currently covering the following periods:

- 01/10/2018 – 24/10/2018
- 27/10/2018 – 29/10/2018
- 01/11/2018 – 11/06/2019

On the evening of the 11th of June 2019, SEMO deployed a software release (release C), which contained fixes to the defects pertaining to these manifest errors, into production. This deployment resulted in the removal of these defects, and subsequently removed the manifest errors from the pricing calculation.

Between the periods 1st October 2018 to 11th June 2019 there are numerous Imbalance Pricing Periods (5 minute prices) and Imbalance Settlement Periods (30 minute prices) that are subject to an upheld dispute, and therefore require repricing, as per Section E.3.8 of the Trading and Settlement Code.

The Market Operator is therefore required to assess each individual Imbalance Settlement Price with respect to the 5% Price Materiality Threshold, and where the Price Materiality Threshold has been met, republish and resettle the impacted Imbalance Settlement Periods.

SEMO is proposing that the Price Materiality Threshold be set temporarily at 0%. Reasons in support of making this proposal are outlined in Section 4; however a brief summary can be outlined as follows:

- Volume of repricing incidents:

The ISEM applications are operational since October 1 2018. To address the volume of disputes or subsequent repricing incidents (inherent in any market commencement) a solution capable of the following is required:

- The ability to inform the Market Operator of expected repricing outcomes, prior to publication and application of the new Imbalance Settlement Price is required.
- The ability to calculate large volumes of repricing incidents. (In stabilised market operations, repricing incidents occur infrequently.)
- The ability to recalculate a price frequently under different scenarios, such as defects and data changes.

¹ A full list of the manifest errors detected in the calculation of the Imbalance Price from 1st October 2019 to 11th June 2019 is published on slide 99 of the [Market Operator User Group Presentation](#) from May 2019.

- Currently available system solution:

The current system solution is designed for stable market operations, not for high volume multi-scenario incidents. In the short term, it can reprice for a 0% Price Materiality Threshold while an updated solution capable of managing at 5% Price Materiality Threshold is being developed. There is no definitive date for delivery of the updated system solution and as of this point in time; the best estimate for delivery is 12-14 months.

- Cost and benefit:

The Price Materiality Threshold ensures as far as possible that the cost of repricing and resettlement does not exceed the benefits of carrying out the repricing and resettlement exercise. Given the volume of repricing incidents, it may be prudent to recognise that the costs of applying a 5% Price Materiality Threshold for post-production support is likely to be greater than the benefit of applying a non-zero Price Materiality Threshold. It is also important to recognise that while a small number of instances where a price change is calculated to be immaterial and is seen as low impact, the cumulative impact of numerous immaterial price changes could potentially add up to a significant difference in price.

- Participant feedback:

The imbalance repricing survey, from July 4th 2019, provided insights into Participant priorities and desire for financial certainty. Given the long lead time for an updated system solution to address a 5% Price Materiality Threshold, it may be prudent to consider the application of a 0% Price Materiality Threshold to provide a level financial certainty.

3.0 Proposal

The proposed approach is as follows:

- The Price Materiality Threshold be set at 0%, on an interim basis, and restored to 5% when systems are updated appropriately. The best estimate for delivery is Quarter 3 2020. This proposed parameter change would allow SEMO to meet its code obligations for the recalculation of an Imbalance Settlement Price in accordance with paragraph E.3.8 of the Trading and Settlement Code (TSC).
- Assess all Imbalance Prices for the period 1st October 2018 to 11th June 2019 and any additional Imbalances Settlement Prices subject to a Pricing Dispute thereafter.
- All 5 minute imbalance prices and 30 minute settlement prices for the period 1st October 2018 to 11th June 2019, and any subsequent periods subject to an upheld

Pricing Dispute thereafter (until an I.T solution is available to apply materiality) are recalculated and publish automatically regardless of materiality.

- The reports published (REPT 008, 009 and 050) will overwrite previously published reports in the system, and on the website.
- SEMO will continue to actively design and develop the system solution and analytics to apply a 5% Price Materiality Threshold as early as possible.

4.0 Justification

There are currently Pricing Disputes upheld for the majority of trading periods from 1st October 2018 to 11th June 2019. System effects and data errors have resulted in a number of manifest errors in the calculation of the Imbalance Price. The justification for a 0% Price Materiality Threshold is as follows:

4.1 Function Restrictions:

The current repricing solution cannot easily apply a 5% Price Materiality Threshold. The solution is designed to operate as follows:

- Step 1: Load in the save-cases (Note: The save-case, which is a record of the inputs for a 5 minute period, will be loaded in batches. Each batch could be for one day (288 savecases) or for many days).
- Step 2: Run the QBOA calculation.
- Step 3: Run the Imbalance Price Calculation.
- Step 4: Publish of the new Imbalance Prices.
- Step 5: Generate the new save-case.

Cognisant of the complexity of repricing, it is not feasible or practical to manually calculate materiality outside of the production system. Any Imbalance Price that is recalculated using the current solution will apply and publish automatically (as per the steps outlined above), regardless of materiality. The reports published (REPT 008, 009 and 050) will overwrite previously published reports in the system, and on the website. Manual calculation of price materiality at that point is at risk of manual error and causing confusion in the market.

4.2 M + 13 Resettlement:

Repricing at a 0% Price Materiality Threshold may provide the opportunity for the timing of repricing and M+13 resettlement to align. If a 5% materiality threshold is applied, and repricing is therefore delayed until such time as an I.T. solution is available, M+13 would go ahead as planned in November 2019, with a further ad hoc resettlement required for the period 1st

October 2018 to 11th June 2019. (Note: The alignment of repricing and resettlement is dependent on successful testing of release D).

4.3 Delivery Timeline:

An updated repricing solution to manage the 5% Price Materiality Threshold materiality at post production incident volumes can be implemented, however based on best available information, it is estimated that this solution will be deployed in 12 – 14 months' time. Applying this solution to reprice the market from 1st October 2018 to 11th June 2019 would result in repricing for this period to extend into late 2021.

Considering all of the issues listed above, and the increased risk profile associated with the manual manipulation of data, conducting repricing with a 5% Price Materiality Threshold without appropriate systems and analysis tools is not recommended and is deemed inconsistent with the actions of a prudent market operator.

4.4 Appropriate use of the Price Materiality Threshold

The original SEMO proposal for the Price Materiality Threshold, and the subsequent SEM Committee decision to apply a 5% materiality threshold, were primarily based on consideration of issues which would occur on stable systems and therefore impact isolated Imbalance Settlement Periods or consecutive sets of Imbalance Settlement Periods, such as incorrect application of System Operator Flags or Net Imbalance Volume Tags etc. The management of post-production volumes of repricing incidents was not a major consideration.

Based on currently available information, applying a 0% Price Materiality Threshold provides the quickest and most efficient route to meeting obligations in the Trading and Settlement Code with minimum impact on Participants (i.e. Costs associated with the uncertainty of Pricing between 1st October and the 11th of June).

4.5 Imbalance repricing survey

At the Market Operations User Group meeting (MOUG) on the 20th June 2019, a discussion regarding the reduction of the Pricing Materiality Threshold to 0% occurred, and the associated timeline for delivery of repricing in this instance was outlined. It was explained to Participants that:

- The application of the 5% Price Materiality Threshold would delay repricing due to functional restrictions in the current business systems.
- An accurate assessment of the impact of repricing on the original imbalance prices is not possible without an updated system solution.

Participants expressed concern at the possibility of further delays to repricing, and requested the opportunity to convey their views through a survey.

The purpose of the survey was to assess if there was a unanimous view that repricing should or should not occur. The results of the survey showed:

- A majority of Participants (based on the number of Participants in the market) were neutral or expressed a preference that repricing should not be carried out.
- A majority of Participants (based on MWs traded in the market) were in favour of repricing.

Participants voting against repricing indicated that it was due to prioritising a need for price certainty. Those Participants voting for repricing indicated their priority was accuracy of payments.

Given a non-unanimous result, the recommendation is to proceed with repricing and subsequent resettlement. Repricing at a 0% Price Materiality Threshold (all of the affected trading periods) will provide the most accuracy in the quickest timeframe.

5.0 Summary and Conclusion

SEMO is committed to procuring the necessary system enhancements to allow for effective materiality validation. At this time, SEMO does not have a firm date for implementation of the updated systems to support a 5% Price Materiality Threshold from its vendor.

A delay in repricing to ensure compliance with the current 5% Price Materiality Threshold, could lead to an extended period of time where Imbalance Prices and Imbalance Settlement Prices are not finalised. The final resettlement of the trading periods impacted by upheld Pricing Disputes cannot take place until repricing has completed; application of the 5% Price Materiality Threshold could potentially extend resettlement of 2018 and 2019 into the year 2021 (i.e. Post M+13). This could increase financial risk and uncertainty for Participants. This uncertainty is further exacerbated, as SEMO is currently unable to provide a detailed analysis of financial materiality of expected changes to the Imbalance Settlement Prices over the disputed periods, at this time.

The application of a 0% Price Materiality Threshold may allow for repricing to start quicker and allow the Market Operator to remain compliant with the TSC and ensuring maximum accuracy of the final prices.

The recalculation of all Imbalance Settlement Prices (excluding Market Backup Prices) would give transparency to overall changes in price, and more accurately reflect the Imbalance Settlement Prices intended under the market design. SEMO suggests that this transparency would aid any future review of the Price Materiality Threshold following an initial period of Balancing Market operation, as requested by respondents and referred to in the SEM Committee decision paper ([SEM-17-046](#)).

In summary, operating at 0% Price Materiality Threshold is the most prudent approach and a necessary step that will allow repricing to begin as soon as the current interim I.T. solution has successfully completed testing and is deployed into production.