

# I-SEM

## Policy Parameters & Scheduling and Dispatch Parameters (SEM-17-029)

If you have any questions in relation to our response, please don't hesitate to contact Connor Powell ([connor.powell@sse.com](mailto:connor.powell@sse.com)) or Rory Kelly ([rory.kelly@sse.com](mailto:rory.kelly@sse.com))

## Summary

Thank you for giving SSE the opportunity to comment on the Proposed Parameters for Imbalance Pricing, Scheduling and Dispatch. SSE operates 1870MW of generation capacity and is the largest renewable energy generator in the all-island market. We supply energy to around 800,000 customers. The long-term priority for our businesses is delivering sustainable, flexible, affordable energy production to our customers through a diverse portfolio of assets.

These parameters will, to a large extent, determine imbalance price volatility, trading volumes and behaviour across all of the I-SEM physical markets. With that in mind, it is disappointing that the SEM Committee has only provided a very short period for consultation – this has limited the extent to which we have been able to look at the methodologies employed by the SEMO when proposing initial values for these parameters.

We believe that a ‘least regrets’ approach should be applied in the absence of experience, data and testing and would therefore recommend the following values for go-live, with a review when the SEM Committee, SEMO and participants can make a more informed decision:

- DMAT set at 0.83MWh
- QPAR set at 10MWh
- Price Materiality Threshold set at 10%

For LNAF, SIFF and SSII, we cannot accept that the recommendation is effectively to ignore multiple years of I-SEM and EU market development on the basis that the TSO is uncomfortable with some risk indicators increasing when they move away from long notice scheduling and commitment. This is a natural consequence of the move to balance responsibility. To propose a zero values for LNAF at go-live is a direct breach of:

- TSO Licence Conditions
- I-SEM High Level Design
- I-SEM Detailed Design
- CACM Network Code
- BAL Network Code

If the TSO can clearly demonstrate that ‘risk indicators’ are actually leading to bad outcomes and that the equilibrium point will never be reached by participants adapting to balance responsibility, LNAF could be set to a zero value **following market go-live**. Alternatively bilateral tools could be introduced to allow the TSO to intervene outside the Balancing Market. **However at I-SEM market go-live, LNAF must be in place**. The TSO must revisit these parameters and propose parameters in line with the above decisions.

## Pricing Parameters

### De Minimis Acceptance Threshold (DMAT)

The stated aim of the DMAT is:

*“[DMAT] is intended to prevent very small volumes arising from the integration of dispatch instructions from influencing the price.”*

This mirrors the Elexon definition of DMAT. However, because of a different methodology for integrating dispatch instructions into pricing (5 minute vs 30 minute) in I-SEM, there is no Continuous Acceptance Duration Limit (CADL) incorporated in the imbalance pricing methodology. This means that the I-SEM market will rely more on either DMAT or automated System Flagging. As the consultation notes:

*“A sufficiently large value could remove from pricing the influence of acceptances **which would be difficult to forecast** and which could be very different to the other accepted prices.”*

Given the difficulties already inherent in forecasting over a 5 minute period and in replicating the automated aspects of TSO System Flagging, we think that the role of DMAT should be considered as wider than the stated definition – it must, to some extent, **predictably** remove volumes from very short duration BOAs in the same way that the CADL and ‘fast reserve’ BOA flagging does in the UK. Accuracy but unpredictability may result in ‘correct’ imbalance pricing but this is meaningless if that accuracy takes precedence over providing signals that allow participants to optimally trade their imbalance exposure.

While we recognise that the impact of these very short duration actions will be dampened by simple averaging over the 30 minute imbalance settlement period, it should still be considered inappropriate that very short duration actions are included in price setting at all – should a 25 second offer taken at Turlough Hill set the imbalance price for a 5 minute period and feed into a 30 minute cash out? Under the parameter proposed, it could.

If the aim of DMAT is modified to incorporate removal of short duration/volume actions that do not reflect the underlying 5 minute imbalance pricing period and 30 minute imbalance settlement period, we think that the value should increase. Based on the public ramp rates, we’d propose a **value of 0.83MWh** for the 5 minute period, representing an **effective DMAT of 5MWh** over the imbalance settlement period. This would ensure that very short duration fast actions that are not reflective of the underlying pricing or settlement period are automatically removed from cash out.

### Price Average Reference Quantity (QPAR)

The stated aim of QPAR is not clearly stated in the consultation, other than noting that the overall solution needs to be *efficient, robust, adaptable, objective and transparent*. The background to methodology sets out some important considerations, namely that:

- A **progressive move** to fully marginal pricing has been used, even in mature markets with many years of imbalance management experience - the paper notes that:

*“[T]he original purpose of the PAR Tagging mechanism was to more closely align the main energy imbalance price with the price of the marginal energy balancing action (i.e. the most expensive action taken by the SO to balance total energy supply and demand). It is important to note that GB has moved progressively to average pricing over a smaller subset of quantities and intends to move to marginal pricing in 2018.”*

What isn't stated is that this gradual move has been underpinned by mature Day Ahead, Intraday and Balancing Markets and is supported by a more forecastable, tradable 30 minute imbalance pricing period, rather than the 5 minute period proposed in I-SEM.

- Similarly, in reference to the SEM-15-065 decision, the paper notes that there are a **number of options available** to mitigate against volatility

*“A suite of pricing parameters can be considered together to mitigate the concerns of participants (e.g. Continuous Acceptance Duration Limit or CADL, De Minimis Acceptance Threshold or DMAT, and QPAR)”*

These options have been effectively removed from I-SEM by the imbalance price methodology chosen, with the exception of QPAR. SEMOs aim and methodology for calculating DMAT does not relate to the concerns of participants, and the removal of CADL was related to a decision to integrate and automate imbalance pricing with the specifications of the TSO dispatch tool. QPAR is the only option left to be used in the event of excessive volatility.

- The paper acknowledges that greater volatility and uncertainty under **entirely new and unique imbalance pricing arrangements** would have damaging impacts on ex-ante markets:

*“However the greater volatility caused by such a purely marginal approach could create uncertainty which would have adverse impacts on ex-ante market trading, reducing liquidity as participants would be more conservative”*

These adverse impacts would be particularly pronounced under a 5 minute imbalance pricing approach with key real-time market information unavailable. Those unique I-SEM characteristics<sup>1</sup> make it particularly difficult for trading desks to replicate, forecast and trade imbalance positions under I-SEM – it is difficult to see why a ‘stronger’ but more volatile signal wouldn't simply result in an unnecessary and inefficient bias towards long positions.

Transitional arrangements have been applied even in mature markets, the I-SEM imbalance pricing arrangements are unique in an EU context and QPAR is the only option available to mitigate against excessive volatility. It is fairly difficult to understand why there wouldn't be a clear bias toward some form of averaging at go-live.

The paper in fact states the opposite, giving the following reasons for a bias towards fully marginal pricing from go-live:

- A concern that larger QPARs could make it more difficult to forecast the price
- A concern that moving away from marginal pricing may shift the cost of balancing from participants to imperfections
- A concern that uncontracted CRM units may not receive scarcity premia

The first two of these are unsupported by the BETTA or I-SEM analysis that follows – on the latter point, this is a wider issue with what we believe to be a flawed BMPCOP that should be addressed there, rather than through a critical imbalance pricing parameter.

Finally, the modelling carried out by SEMO is heavily caveated – without relevant historical data, you have to make assumptions about bid and offer pricing, which in turn would be based on assumptions

---

<sup>1</sup> Chosen on the basis of TSO integration of the imbalance pricing and dispatch tools and market power concerns respectively, rather than on the basis of providing a clear trading signal

around participant behaviour that would dynamically adapt to an adjusted trading signal. It also produces no clear outcome:

*“In summary, the impact of increasing QPAR on decreasing standard deviation of the Imbalance Price appears to be small. There appears to be a small impact on the average imbalance price also, one which appears to be opposite to the signal intended by PMEA.”*

Given all of the caveats, the difficulty applying GB analysis to a new and different market and the unclear outcome, it is very difficult to see why SEMO have recommended a value of 0.17MWh for the QPAR value. The overwhelming considerations should clearly be:

- Providing a progressive transition toward fully marginal pricing from go-live
- Not removing the only remaining option to control imbalance price volatility at go-live
- Applying caution under a new and untested imbalance pricing approach

**SSE would recommend a HHQPAR of 60MWh**, using the regular review periods to revisit this value with the benefit of historic data and real experience of market participants behaviour. We do agree with SEMO that moving to fully marginal pricing should be the end goal – under functioning, tradable imbalance pricing arrangements it will provide the most efficient signal. We do not agree with SEMO that moving directly to fully marginal at go-live under untested arrangements with inexperienced participants is sensible or prudent.

### **Price Materiality Threshold**

Applying similar logic to the Price Materiality Threshold gets you to a similar place. Transitioning to I-SEM represents a complete overhaul of nearly every commercial aspect of existing market arrangements. There are numerous unknowns for both the TSO and participants - the most fundamental for this parameter is how much volume will actually flow through the Balancing Market. The paper states:

*“In the ISEM, a change in the Imbalance Settlement Price would only have a large effect on the overall revenue of a unit which has a large position in the balancing market – if the unit has a market position but it only relates to the ex-ante markets and not the balancing market, a change in the price would have a small or no effect.”*

We don't know how large positions will be in the balancing market – while participants will be seeking to manage their cash out efficiently, under an immature single sided cash out regime, this may mean that some participants take target positions to help resolve imbalances other participants have left open, resulting in larger BM volumes. In addition, there will be a wide range of participants in I-SEM – a small error for a portfolio may be a large error for a small assetless trader. In addition, central market systems and participant systems are untested and will remain untested in a live environment - market trials will not provide a real proxy for real physical market operation.

With these things in mind, we feel that €15,000 for an individual company in a 30 minute period is too large to use as a proxy to establish this threshold. We would suggest €10,000 and based on the modelling in the paper this would recommend an **initial 10% Price Materiality Threshold**. This parameter can be reviewed and adjusted after a transitional period, once the above items are understood.

## Scheduling and Dispatch Parameters

### Long Notice Adjustments

The TSO scheduling process objective is to meet Licence Condition 10A:

- *Minimising the cost of diverging from physical notifications;*
- *Enabling the ex-ante market to resolve energy imbalances;*
- *Minimising the cost of non-energy actions by the Licensee;*

In addition to these final licence conditions, the Regulatory Authorities have set out clearly in a number of different decisions (SEM-16-058 and SEM-15-065). The first two requirements have been made clear to the TSO and SEMO throughout the High Level Design of the Market and the Detailed Design of the Market. These requirements are there to meet CACM and BAL Network Code requirements and to ensure that the I-SEM ex-ante markets can function properly. The position of the RAs and Market Participants is best expressed in SEM-15-065:

*The SEM Committee has decided to proceed with an option under which the ex-ante markets are left to resolve the energy supply/demand balance, **with participants' physical notifications at gate closure representing their ex-ante market position. The TSOs will then seek to minimise the cost of dispatching the system given these Final Physical Notifications (FPNs). The TSOs should not take any action prior to gate closure unless it is for reasons of system security, for priority dispatch or for other statutory requirements.** The SEM Committee considers that this approach provides greatest clarity to all market players.*

The mechanism proposed by the TSOs to implement these objectives and decisions is the application of the Long Notice Adjustment Factor (LNAF) to the start-up costs of units in the scheduling process. This was chosen during the development of the Trading and Settlement Code because the TSO decided that they would like to create Scheduling and Dispatch tools that more closely resemble RCUC:

***“The scheduling process is based on the best demand forecast information rather than the sum of the PNs”***

However:

***“The proposed approach of scheduling to the forecast demand (rather than PNs) may tend to indicate a requirement for ‘early’ energy actions **that would conflict with the SEMC guidance that such actions should be avoided prior to gate closure.** This is particularly the case if there is a significant market shortfall that would be resolved by starting up a relatively low cost unit with a long notification time.”***

***“To reflect SEMC guidance, it is proposed to introduce a means of making long notice units appear relatively more costly in the scheduling process when compared to shorter notice units.”***

Given all of this – it is very difficult to see why the recommended values for LNAF and associated parameters have effectively been set up to ignore the SEM Committee decisions, the TSO licence conditions and the clear expectations of Market Participants. Avoiding early actions, subject to system constraint management, **is required** to enable the ex-ante market to resolve energy imbalances. **The TSO's scheduling and dispatch tool will now effectively ignore this obligation and generate schedules and commitment runs that look much like SEM, rather than I-SEM.**

We do recognise that, **in exceptional circumstances**, the ex-ante markets will not be able to resolve all energy imbalances. Non-energy actions aside, there may be instances of very large energy

imbalances that cannot be covered through incremental volume available on already committed units or commitment of new units in sufficient time. However, this is a question of balance that should be resolved by these parameters or alternative TSO commitment tools.

Without these factors in place the TSO will not comply as the scheduling and dispatch tools would try to resolve all energy imbalances with early actions. In the absence of LNAF, SCUC will consistently generate scheduling and commitment actions that are in direct breach of TSO licence conditions and contra to the stated I-SEM Market Design.

This has not been acknowledged in the consultation paper, which has (despite the many caveats over modelling referenced under the pricing parameters) prioritised qualitative concerns that meeting the TSO licence condition may:

- Increase hours of reserve shortage;
- Increase instances of starts on short notice units;
- Increase running of DSUs;
- Decrease running hours for long notice units;
- Increase production costs<sup>2</sup>

The transition from SEM to I-SEM is a significant change in market and power system operation in Ireland and Northern Ireland. **However, this has been taken into account throughout the market design process.** While the paper outlines some risk indicators which arise from the application of LNAF, we believe these are the risks involved in a balance responsible market and will naturally be corrected by participant behaviour adapting to that responsibility – as the recommendation paper notes:

*“The dynamics observed arise due to balance of the incentives between timeframes; however, ultimately some form of equilibrium will emerge based on behavioural changes that arise in response to the signal, e.g. in response day-ahead and balancing market prices, participants may develop more active trading strategies to manage their imbalances in the intraday market; in response to less running hours in the BM, participants may focus their trading strategies on the ex-ante markets. It is important to understand that this modelling does not represent the final equilibrium point. It represents the signal but not the response.”*

We believe the LNAF, SIFF and SSII are absolutely required in some combination to allow the I-SEM markets to work as intended. We cannot accept the proposal that these will be removed for go-live and revisited at some later stage – this proposal is non-compliant with:

- TSO Licence Conditions
- I-SEM High Level Design
- I-SEM Detailed Design
- CACM Network Code
- BAL Network Code

If the TSO can clearly demonstrate in go-live that these ‘risk indicators’ are actually leading to bad outcomes and that the equilibrium point will never be reached by participants adapting to balance responsibility, LNAF could be set to a zero value following market go-live. Alternatively bilateral tools could be introduced to allow the TSO to intervene outside the Balancing Market. **However at I-SEM market go-live, LNAF must be in place.**

---

<sup>2</sup> Ignoring the fact that these will tend to be charged to participants that fail to balance their positions