

**Power NI Energy Limited
Power Procurement Business (PPB)**

I-SEM Detailed Design

**Rules Liaison Group
“Energy Market Design” Workshops**

**Response by Power NI Energy
(PPB)**

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Introduction

PPB welcomes the opportunity to respond to the RAs request for views from industry on the topics covered in the five Rules Liaison Group Meetings that considered the design of the Energy Markets.

General Comments

PPB welcomes the Regulatory Authorities engagement with market participants in the development of the I-SEM. The five meetings on the Markets have been informative but have also raised some concerns.

The markets must be internally consistent such that pricing is not fundamentally different across the timeframes, albeit one would expect Balancing Market prices to be more volatile. However it would be perverse if pricing in the BM actually incentivised participants to trade in that market rather than in the DAM and therefore the pricing in that timeframe, which is the only timeframe where there is any substantive design choice in the I-SEM, must reflect the true value of balancing actions. We appreciate this is a difficult task and it will not be easy to ensure unconstrained markets across the DAM, IDM and BM given the potential extent of Non-Energy actions and their potential to distort the Intraday and Balancing markets.

Few of the design decisions stand in isolation and most create different dynamics and consequences for other aspects of the market design or on how participants are incentivised to trade. It will therefore be difficult to properly evaluate the design options without undertaking modelling to inform on the consequences of different options, to help identify the most material decisions and to seek to understand the consequences for the market dynamics across each of the market timeframes. We welcome SEMO's proposals to model the new market arrangements and while we have only briefly reviewed their proposals, our initial impression is that the scope as currently drafted will not aid consideration of the market dynamics and further thought must be given to this to ensure the consultation on market design options is supported by analysis of causes and effects to ensure the consequences of the various options can be predicted and that decisions are appropriately founded on best evidence available.

It is also important to minimise unnecessary operational risk for participants given the greater proliferation and complexity of markets in the I-SEM. A key principle must be to maintain common formats where possible, for example ensuring all trading occurs at the same point (the current indication is for the DAM and IDM to be at the trading point but for bids into the BM to be at the station gate). Similarly the form of bids should be kept as similar as possible, particularly in the IDM and BM which are operating in parallel.

Comments on the “Energy Markets” topics

DAM

It is clear that as the DAM is to rely on Euphemia to determine the DAM outcomes in the I-SEM, there are limited design options open for consideration. However there are key matters in relation to what influence I-SEM can have on the PCR algorithm and on the overall Governance options in this area. It is important that there is consultation on the potential PCR membership options (associate through to full membership with full operational capability) and the costs and benefits for the I-SEM under the different options.

It was also highlighted during the workshop that the existing PCR members will determine whether any limitations are imposed on I-SEM bid structures, e.g. in terms of the types of bids permitted, the number of bids allowed, etc. and this could be a critical determinant on the risks for participants in the DAM and on the schedules that result from the DAM. This has the potential to affect not only the pricing in the DAM but could also have a very material impact on Reliability Options under the CRM. This needs very careful consideration and must be considered not just in the DAM context but also on the knock-on effects for the other Energy Markets (Forward, IDM and BM) and on the CRM.

Euphemia Testing

The criticality of Euphemia Testing is even more apparent following the discussion at workshops. The ability to obtain feasible and coherent schedules and prices is critical for risk management by market participants, being critical for generators seeking to achieve a feasible dispatch and for suppliers seeking to deliver viable products to their customers. It is particularly concerning to only be finding out at this stage that certain of the bid forms are excluded from price setting and the impact of this must be clearly identified.

It is also vital to recognise that the impact is not limited solely to the DAM but will reflect and impact across all the market timeframes from the forward market through to the BM. This “dynamic” must also be carefully considered and where possible modelled to ensure there is a clear understanding of impacts on the market in its totality and to minimise the risk of unintended outcomes.

DAM Fallback procedures

Fallback procedures are an obligation under the CACM but will be even more critical in the I-SEM as, unlike the other EU markets, the I-SEM proposals do not allow bilateral trading and hence the fallback procedures will need to resolve the market from a zero starting point with no pre-existing ex-ante contracts. The timelines are also very tight and the process of moving from Full Coupling to Partial Regional Decoupling to Full Decoupling must be tightly defined. There is also a risk that the Fully decoupled run could also fail in which case a further fallback arrangement will be required.

One proposition for the final fallback in relation to interconnector capacity was for this to slide into the IDM. However given the continuing uncertainty on the functional capability of XBID, it may not be appropriate to rely on the IDM as a fallback in the circumstance where the DAM has been unable to determine any schedule and pricing.

IDM

The requirement for Intra Day trading to be transacted exclusively through the XBID platform appears to leave little design choice for consideration in the detailed design of the I-SEM. A key concern must be the Governance of XBID and what influence I-SEM can/will have over the ongoing development of the arrangements.

A further key consideration relates to what fallback arrangements will exist should XBID fail. The requirement for a system to be available will be driven both by the outputs from the DAM (and the feasibility of the schedules therefrom), and also the increasing volumes of intermittent generation for which the forecast output should become more reliable during the timeframe of the IDM. Hence the IDM must be available to enable market participants to manage their risks.

A final concern relates to “losses” which are not part of the initial XBID development. This could create artificial arbitrage opportunities in the I-SEM, particularly on trades across the East-West Interconnector that has a 6% loss factor which will be reflected in the DAM but not in the IDM. This 6% differential could result in significant uneconomic trades in the IDM and this aspect must be considered very carefully.

Physical Notifications

PPB recognises the need for the TSOs to understand what generators are expecting to generate. However the market will settle imbalances based on contracted positions and to have PNs (and certainly FPNs) reflect anything other than this position risks distortion of the Balancing Market. The BM settles imbalances relative to ex-ante traded positions and hence the BM pricing must reflect the cost of balancing relative to these traded positions and not relative to FPNs that are different to the traded positions. Determining the BM price relative to FPNs but then applying those prices to volumes relative to ex-ante trades would appear perverse. It is not clear to us that the BM prices would not be different if the Objective Function in the determination of BM prices is to (i) minimise the cost of deviating from FPNs based on ex-ante trades, compared to (ii) minimising the cost of deviating from FPNs that are not related to ex-ante traded positions.

A further concern is that de-linking FPNs from ex-ante trades could create a new area where market power could be exploited and which could then require further intervention to mitigate against such market power (e.g. a large portfolio generator could re-allocate production across its portfolio of generating units to seek to obtain a benefit that could be detrimental to the wider market). At the workshops the reason for considering such de-linking was conveyed as seeking to ensure generators tell the TSO if they are planning to over or under generate. However, Grid Code already provides obligations to follow dispatch instructions and no evidence has been

presented to indicate that this is a problem and that generators chose to ignore dispatch instructions in the SEM.

A further point is that any notifications should not require multiple submission of information that is already provided under existing obligations. For example, generators are already required to declare the availability of their generators under Grid Code and that submission should suffice for the TSOs without requiring a further separate submission to the TSOs.

The granularity of the FPNs needs to be carefully considered. Minute by minute FPNs could result in significantly more balancing actions by the TSOs as the aggregate of the FPNs at each minute interval are unlikely to match the profile of demand at that granularity. This will have a significant impact on the volume of Tagging and Flagging and could also impact on the number of balancing actions excluded, for example depending on the volume determined as being a de-minimus balancing action.

In relation to the concept of Partial Delinking, we again understand the TSO wanting to know what generators plan to trade. However, it is very unclear whether such information will add any value for the TSO as it will depend on the outputs from the DAM and in particular how feasible they are. It will also depend on the liquidity in the IDM and the dynamics across different timeframes and the optimism of traders independently believing they will fill positions when they are all chasing the same demand. Hence intermediate PNs could oscillate wildly from prudence to over enthusiasm which may be confusing rather than beneficial for the TSOs.

A final comment on FPNs relates to the timing, relative to the final confirmation of IDM trades. Higher levels of intermittent generation may result in a concentration of IDM trading close to IDM gate closure, i.e. one hour ahead of realtime. It was indicated at the workshops that confirmation of IDM trades may take 15-20 minutes. If this is the case, the timing of final FPNs must allow both for this confirmation period and also provide time for the participant to convert its trades into its FPN submission. With a trade concluded just prior to IDM Gate closure, a deadline of 30 minutes prior to realtime for the submission of FPNs would be tight for participants.

Finally, PPB does not see the need for Information Imbalance charges which may be more relevant in a fully self-dispatched market but which are not relevant in a Centrally Dispatched market. The threat of such charges only adds risk and will ultimately result in higher costs for customers.

Objective function of the BM

The HLD clearly identifies the objective function to be minimising the cost of deviating from PNs. However while this was noted in the slides presented at the workshop, the slides then deviated to indicate the objective function is to “Minimise the Cost of Dispatch”. Minimising the cost of dispatch is a very different objective as it is more akin to the current objective of minimising production costs in the SEM which is a very different starting point than what the HLD proposes. The correct objective function to align with the HLD is therefore to “Minimise the Cost of Re-dispatch” which captures the concept of deviating from notified production levels.

A key issue is the volume of early actions the TSOs take and what influence such actions have on trading and liquidity in the IDM and whether such actions influence pricing in the IDM and affect the distribution of Inframarginal Rents. This must be considered in the consultation paper and would benefit from modelling to inform the debate and consideration.

Reaching a Feasible Dispatch

As already noted, we recognise the need for the TSO to operate the system but we are concerned that the focus is on the market failing to reach a feasible position and therefore concentrating on enabling early TSO actions. However such focus risks becoming self-fulfilling and actually creating the outcomes that the market is seeking to avoid. We are concerned that the TSOs continue to see their role as being to minimise production costs whereas under the HLD, their role is to accommodate the market outcomes to the extent possible and to minimise the cost of deviation / re-dispatch to balance the energy imbalances and to obtain the other services they require to operate the system safely and securely.

Form of Bids and Offers

PPB considers the form of Bids and Offers (BOs) should be consistent with the trading structure required in the IDM, particularly given participants will be participating in both markets at the same time and therefore it would be operationally sensible to have consistency. PPB therefore considers the BOs must be relative to prevailing PNs which would be consistent with IDM trading and which also reflect the form of BOs in the GB market.

It is worth noting that because the IDM and BM is operating contemporaneously in the I-SEM, the prices cannot relate to FPNs since those will only be known after IDM gate closure and hence must relate to the PN prevailing at the point in time where the TSO takes an early balancing action. This also raises a question as to how this interacts with de-linked PNs that may reflect a desired outturn position by a generator but which is not ultimately fulfilled through Intraday trading.

No restrictions can be imposed on participants amending the prices in their BOs since to do otherwise would result in a mismatch with the continuous evolution of pricing in the IDM. However, clearly if the TSO takes an early balancing action and accepts a BO, then that is a confirmed trade executed at the price prevailing at the time of the TSO's acceptance.

This does however raise questions as to how such trades are treated, for example the current proposal is that acceptance of BOs doesn't change the PNs. This may be appropriate in GB where BOs are only accepted after the IDM has closed but this approach is less apparent in the I-SEM where the markets overlap. At its simplest, acceptance of the BO will change the expected physical output level of a generating unit. Commodity prices will vary, particularly where such actions occur well before closure of the IDM, and the generator will need to revise its BOs for movements away from the production level implied by acceptance of a BO. Under the existing proposals, if for example the generator had no ex-ante position and a PN of zero, and the TSO accepted an INC and starts up the unit, it is meaningless to continue to provide BO prices based on a PN of zero, particularly as the decremental

price, should the TSO later decide it no longer requires the initial BO, will not be the same as what was previously offered due to both the incurrence of sunk costs following the initial acceptance and from movements in the general cost of commodities, etc. This requires very careful consideration to understand the dynamics and to ensure participants and TSOs are making decisions based on the correct information and that participants are not being asked to bear unreasonable risks.

We have a further significant concern over the proposals that any Intraday trades conducted by a participant, subsequent to any TSO BO acceptance, in the first instance substitutes for that BO traded volume. This effectively means the BO acceptance is not firm and that IDM trading following any early BM actions by the TSOs is not a trade in the market but is a trade against that BO transaction and will therefore not occur unless a higher price can be obtained in the IDM. This could reduce liquidity in the IDM and result in more TSO arbitrage trading in the BM risking TSO trading dominating the IDM and BM. There is also a concern that such an action conflicts with the data collection and reporting obligations under REMIT which requires reporting of *“the precise identification of the wholesale energy products bought and sold, the price and quantity agreed, the dates and times of execution, the parties to the transaction and the beneficiaries of the transaction and any other relevant information”*.

On the flipside, where early TSO actions provide a benefit to market participants who would not otherwise be in the market, this could represent a significant redistribution of IMR.

These problems are all consequences of the IDM being open at the same time as the BM. It is vital that any proposals are appropriately modelled to enable participants to properly assess the pros and cons of different potential approaches.

The treatment of startup/shutdown costs is important in the I-SEM. Mandatory participation in a BM that opens following conclusion of the DAM means that the I-SEM is very different to, for example, the GB BM where the market timeframe is within one hour of realtime and as the market is voluntary, generators who can provide flexibility within this timeframe can choose the volumes and prices with which they want to participate. As a consequence the I-SEM must address such startup/shutdown costs and it must do so transparently within the market since otherwise BM prices will not reflect the correct balancing costs which may distort how participants choose to participate in the I-SEM.

A final topic that needs to be addressed is the treatment of losses in the BM. This may also be relevant to the trading point and we are concerned with the proposal for BM trades to be at the Station gate whereas DAM and IDM trades will be at the trading point. PPB considers all trades should be quoted and traded as the same point for consistency and to minimise the scope for operational error for participants.

Pre-BM Actions

PPB is concerned with proposals to introduce further out of market arrangements for early TSO actions which could also be seen to reward inflexible generating units. DAM outcomes are to be known by 2pm and it is most likely that any unit starting up would be required for the morning load lift at around 7am (rather than for the start of the trading day at 11pm). In the more likely scenarios, this provides 17 hours for a unit to synchronise. For the odd occasion where there is insufficient time and earlier action is needed, any such early TSO action should just use the BM prices available to it at the time the decision is made to instruct a startup.

Reserves

Reserves are no different to any other TSO balancing action and the TSO has full flexibility to dispatch generating unit at a required load point using the BM INCs and DECs.

Categorisation of Energy and Non-Energy Actions and Imbalance pricing

The HLD of the I-SEM states that participants are to be Balance Responsible. However, there will inevitably be imbalances and the extent of such imbalances will be influenced by forecasting accuracy (wind and demand), and inaccurate loss factors. It will also be influenced by how participants choose to trade in the ex-ante markets and it may also be influenced by the DAM outcomes (Euphemia testing and any PCR limitation on bids will be important inputs to this) and by IDM liquidity. Given the high degree of uncertainty over the outcomes and dynamics of the ex-ante markets, it is important that the Balancing Market pricing is consistent with earlier markets and with the conditions prevailing in the balancing market.

Pricing must not be polluted by early TSO actions and therefore it will be very important to isolate actions that are true energy balancing actions to determine a reflective price. Hence Tagging and Flagging will be very important to the determination of appropriate pricing which will incentivise rational participation in the markets generally.

A major concern is that the number of TSO actions that are Non-Energy, and particularly early actions, will make it very difficult to disseminate the Energy actions from Non-Energy ones. This needs to be concluded such that the pricing is not distorted and provides a true reflection of the costs of energy balancing.

It is very difficult to identify what are the more material decisions that affect BM pricing and we believe it would be beneficial for participants for any proposals put forward in the consultation paper to be supported by modelling of potential impacts of decisions on which actions to Tag and Flag, and on other parameters such as the de-minimus quantum, the PAR value, etc. It would also be useful to understand the interaction between the granularity of FPNs (e.g. minute values or settlement period values) and the number of balancing actions undertaken and the consequences of that on the Tagging and Flagging and on the resulting BM pricing.

Imbalance Settlement

The settlement examples only consider Bid/Offer at IDM Gate closure and would benefit from examples that show the settlement of earlier actions taken at different prices.

The examples also highlight the issue we noted earlier where the TSO is taking decisions on INCs/DECs based on FPNs that are delinked from Ex-Ante trades, yet settlement is based on the Ex-Ante trades. Numerical Example 2 shows the consequences of a decision to DEC a unit whose FPN was higher than the Ex-Ante volume and shows that the 20MWh FPN surplus is not paid at the BM price and only 80MWh is paid back at the DEC price. However if there was a second generator with its FPN higher than its traded position but with a lower DEC, it would not be accepted and it would receive the high BM price for the FPN surplus, whereas the least cost solution would have been for that generating unit to have been dispatched at its ex-ante traded volumes. This highlights the perversity of the TSOs dispatching based on INCs and DEC relative to FPNs that do not reflect the traded position while settlement is based on the Ex-Ante traded position.

Global Aggregation

It was clear from the discussion at the workshop that the loss adjusted net demand is uncontrollable for suppliers. It was also identified that the error is volatile and could swing from being positive or negative from one period to the next. One proposal set out in the slides was for the “volume” to be allocated to suppliers which would allow suppliers to seek to trade that volume or just incur the balancing price. However if the volume is volatile and difficult to predict, trading could in fact increase the suppliers imbalance if they expected the allocation to be in one direction and the actual allocation was the other. We would be surprised if this were a viable proposition for suppliers.

The tariff option suggested at the workshop seemed to have universal support and would appear to be a more appropriate option for such a cost over which suppliers have no control. As noted at the workshops, this would also expose the error to greater scrutiny and transparency and may lead to reduction in the error volume, for example, through improvement in the determination of loss factors and it could expose other areas (e.g. theft) that should be addressed.

Instruction Profiling

There does not appear to be any change required to the instruction profiling applied to actual dispatch instructions. The main issue is therefore whether the dispatch instructions are open or closed. There appears to be little difference for settlement purposes but the main difference may relate to what information is provided to generators when the TSO is issuing instructions prior to closure of the IDM. This also goes back to what Bid/Offer the TSO is accepting and the firmness of the TSO's acceptance.

For example, if the TSO instructs the startup of a generating unit, is the only decision they are committing to at that stage for the unit to startup and synchronise at its Minimum Generation level? If so with this open instruction, the generator would assume the maximum commitment is that the unit will only be scheduled for the duration of its minimum on time and any

subsequent IDM trades the generator undertakes are likely to be based on this premise. If however the instruction is a closed instruction, then the TSO would have to provide the full profile that the TSO requires, including how long the unit is to be run for. This will provide firmer information to the generator to inform its decisions on how it trades in the IDM. However, this has consequences for the firmness of the trade and the TSOs' commitment has to be firm with rights for the generator to revise their BO prices to reflect that contractual commitment and the costs of subsequent deviation from that.

Testing

PPB considers the Testing regime in the SEM to be overly restrictive and requests that the arrangements in the I-SEM should seek to minimise the lead time required to arrange tests and should be more flexible such that generators can cancel Testing status as soon as their testing requirements are complete such that they can re-enter the energy markets as quickly as possible.

We note the initial suggestions that imbalance arrangements would apply and it is important that the interplay with the Testing Tariffs is assessed and considered.

Metering

The earliest provision of meter data remains important for market participants to enable them to manage their positions in the energy markets by providing the earliest possible feedback on their actual meter data.

There was a discussion at the workshop as to whether there could be different arrangements for meter polling in each jurisdiction. It is unclear whether such a difference would affect the loss allocation to each jurisdiction although it was indicated at the meeting that it probably would. This would need to be investigated before any decision could be made.

Local Market Power

Market Power clearly needs to be considered across all timeframes and markets (including the CRM and DS3 markets) and the interplay between these needs to be considered at a macro level. However that does not mean that the workstream considering the detailed design of the energy markets can ignore the matter. Market Power issues should be identified and assessed in each workstream and this should then be fed back to the more general market power workstream to help identify inter-relationships and also help identify whether more generic measures will assist with the management of issues or whether more specific measures are required that are unique to a particular part of the market design. We consider this identification process must occur within the individual workstreams.

In relation to the issue of local market power, we believe that where possible, out of market arrangements should be avoided as they reduce transparency in the markets.