Viridian response to I-SEM consultation on

Trading and Settlement Code

I-SEM Policy Parameters & Scheduling and Dispatch Parameters

Consultation SEM-17-029

Issued 12th May 2017

Responses due 9th June 2017

Table of Contents

1. Introduction

This response submitted by Viridian is an amalgamation of the individual comments from each of the Viridian businesses (Energia, PPB and Power NI). Viridian welcomes the opportunity to respond to the SEM Committee and Regulatory Authorities (RAs) consultation paper (SEM-17-029) on Trading and Settlement Code I-SEM Policy Parameters & Scheduling and Dispatch Parameters. The individual businesses within Viridian have actively and constructively engaged in all aspects of the I-SEM project and related consultation processes as it is essential to ensure the new and complex I-SEM market is fit for purpose for all market participants in the years ahead.

In many areas of this consultation document insufficient facts and details have been provided to allow a fully informed view to be provided by market participants, and the tight timeframe allowed for this consultation has not provided adequate time for participants to conduct any useful level of their own modelling to determine if the recommendations or proposals are reasonable. Further, as acknowledged in various parts of the paper (i) much of the results obtained from the modelling performed by the TSOs are outcomes of assumptions that may not in fact reflect the behaviour of market participants when I-SEM is operational, and (ii) some areas require real operational data to enable the determination of any realistic value or insight (e.g. the paper suggests an assessment of DMAT needs operational data). Due to the aforementioned Viridian and the individual business units each reserve the right to add to, remove from, change or alter any and all of the views and comments expressed in this consultation response at a later date when more facts and accurate details come to light. Further, given the aforementioned Viridian urges the SEM Committee to consult on all of the parameters detailed in this consultation paper after one year of experience of I-SEM operations (when the TSOs have already committed to review some of the parameters at this time (e.g. the value of LNAF and SIFF)).

Section 2 of this response makes some general comments in relation to points raised in the consultation paper while also responds to the high level proposals/recommendations made. Section 3 provided more detailed comments on some specific parameters consulted upon in the paper. Section 4 makes detailed comments on specific aspects of the detail provided in the paper. Finally our response ends with some concluding remarks.

2.   General Comments

2.1 Lack of Detail

While a substantial consultation document had been issued in relation to the nine (9) parameters being reviewed, insufficient detail is provided for the majority of the parameters to allow market participants to enable them to develop a clear view of the issues and the proposed values. Hence we, and we expect other participants, are unable to provide a detailed response from a well-informed position. In addition, in the case of many of the parameters, including where a material amount of detail had been provided, the final value proposed appears to have very little justification and does not appear to relate directly to the detailed information, analysis or consideration provided in the consultation paper.

The value of each of the proposed parameters play a key role in various aspects of how the I-SEM market will operate, and therefore it is essential that the right decision is made for each value to ensure the success of the I-SEM market in meeting desired outcomes. Unfortunately the information provided in this consultation paper did not facilitate the Viridian businesses making informed decisions on how best to respond to the details being proposed. Further, the lack of details provided on actual experience in relation to some of the parameters leaves one very uncomfortable as to how well, or otherwise, the desktop study and analysis will reflect how the I-SEM market will actually operate post go-live.

2.2 Insufficient consultation period

The SEM Committee allowed a four (4) week consultation period for this consultation and we consider this to be unreasonable and acutely insufficient for such a detailed consultation as SEM-17-029. A six (6) week consultation period would have been more appropriate, and is more reflective of normal practice for such complex consultations. Further, for such a complex consultation, a public workshop should have been arranged in advance of the consultation period to give market participants an overview of the details involved and the analysis that has been undertaken so that if participants wished they could have initiated their own modelling workstreams so as to have an informed view by the end of the (ideally six week) consultation period.

2.3 Review of Parameters

As acknowledged in various parts of the consultation paper many of the results obtained from the modelling performed by the TSOs may not in fact reflect the behaviour of market participants when I-SEM is operational.

Further it also suggests that in some areas to determine any realistic value or insight requires hard operational data (e.g. the paper suggests an assessment of DMAT needs operational data).

Given the aforementioned Viridian urges the SEM Committee to consult on all of the parameters detailed in this consultation paper (SEM-17-029) after one year of experience of I-SEM operations, and to do so within three months of the end of the first year. This timeframe coincides with that committed to already by the TSOs to review some of the parameters (e.g. the value of LNAF and SIFF)).

In addition Viridian urges the SEM Committee to instruct the TSOs to schedule early checkpoints throughout the first year (reviewed in the month directly after each quarter) of I-SEM activity to review the performance of each of the parameters outlined in the consultation paper. Such quarterly review reports from the TSOs should be shared with the market albeit it may not necessarily have to be consulted upon. The purpose of these early checkpoints are to avoid or mitigate any material unintended consequences which may need to be rectified before the review proposed and planned for the end of the first year of I-SEM operation, and which should be done on an annual basis.

2.4 Ex-Ante markets must function correctly

Several of the parameters consulted upon in this paper relate to how the Imbalance market will operate under I-SEM, and in particular what prices will be included in the calculation of imbalance prices. There is the potential that BM prices under I-SEM will be volatile, given there are so many variables at play. While exposure to volatile, and perhaps elevated, BM prices may appear logical in a properly functioning market, this is predicated on Participants having access to the appropriate liquid trading opportunities to allow them to manage their risks and mitigate their risk to such BM prices. Therefore it is essential to ensure that the I-SEM market has effective, efficient, and fully functioning Forwards, Day Ahead and Intra-Day markets. The details provided to date do not guarantee this as an outcome, and as a consequence volatile BM prices is a significant concern for all market participants.

2.5 Application of Price Limits

Price limits should not interfere with the competitive formation of prices, but should be set to limit the effect of contractual and other distortions on price formation. However, they should not be considered as a back-door element of the market power mitigation strategy. Market power (whether at peak times

or locational market power) is intended to be handled by other measures, and the crude application of price limits should be avoided.

3.   Comments on certain parameters consulted upon

This section provided more detailed comments in relation to the DMAT, QPAR, PCAP and PFLOOR parameters discussed in the consultation paper.

3.1   De-Minimus Acceptance Threshold (DMAT)

Viridian believes that the proposed value for I-SEM appears inappropriately high (0.4MWh for 5 minutes, corresponding to 2.4MWh for 30 minutes) when compared with GB market (0.17MWh for 5 mins equivalent of the 1MWh in 30 minutes, unchanged since 2001). I-SEM is a materially smaller market than GB, and logically the expectation would be that balancing actions in I-SEM may typically be expected to be smaller than in the GB market.

Further, due to the subdivision of acceptances proposed by the TSOs, by the deemed closing of open balancing instructions in I-SEM, many of the 'closed acceptance' orders may be filtered out by the proposed value of DMAT. As a consequence, the proposed DMAT value could leave very limited amount of volume and/or few balancing actions from which to set the Imbalance Price potentially leading to Imbalance Prices that do not reflect the underlying fundamentals, are more unpredictable, and are more volatile, all of which are not desirable or in the best interests of the I-SEM market as a whole. Greater details are provided below.

The paper outlines the main reasons for using a DMAT value is to filter out small volumes due to operational constraints or unintended bid-offer acceptances (BOA) due in essence to the finite accuracy of the system dispatch and scheduling tools causing rounding errors. Setting a value for DMAT at such a high level as 0.4MWh (in 5 minutes) in the I-SEM market will, we believe, risk removing more than the unintended rounding errors or consequences stated, and thus a more reasonable value should be used.

Viridian has a particular concern in relation to how DMAT is proposed to be used in I-SEM which is different to how it is used in GB where it was first devised. The concern relates to the potential for the DMAT process under I-SEM to exclude a large number of energy balancing actions thus leading to incorrect values and errors in the calculation of Imbalance Prices. The following paragraphs explain this further.

The I-SEM settlement calculations as outlined in the consultation paper will separate acceptances into each 5 minute balancing interval and by price band. However, unlike GB; the I-SEM balancing instructions are 'open' in nature (i.e. 'until further notice'). For settlement purposes, and for the purposes of applying the DMAT filter, these open balancing instructions are effectively treated as 'closed' by way of minute-by-minute "return to FPN" acceptances (also termed "pseudo-dispatch instructions" or "PDIs").

This 'closed acceptance' settlement artifice will further subdivide energy acceptance volumes, in comparison with the GB market which uses 'closed' balancing instructions; resulting in a potentially large number of separate acceptance volumes. As a result there is a risk that a large number of energy balancing actions are excluded by the DMAT parameter, even if it is derived from the DMAT value in use in GB.

A simple example of this issue is outlined in Figure 1 below, where the volumes associated with these pseudo-dispatch instructions (PDIs) as well as the original dispatch instruction are each shown with different colours; and the sections of these volumes which traverse into other imbalance pricing period(s) are shown with different patterns.

Order No	Order volume		
	MW(min)	MWh	<0.4MW removed
1	3.5	0.06	
2	122.5	2.04	2.04
3	185.5	3.09	3.09
4	31.5	0.53	0.53
5	24.5	0.41	0.41
6	24.5	0.41	0.41
7	17.5	0.29	
8	31.5	0.53	0.53
9	10.5	0.18	
10	35	0.58	0.58
11	3.5	0.06	
12	3.5	0.06	
13	35	0.58	0.58
14	10.5	0.18	
Total	539	8.98	8.17
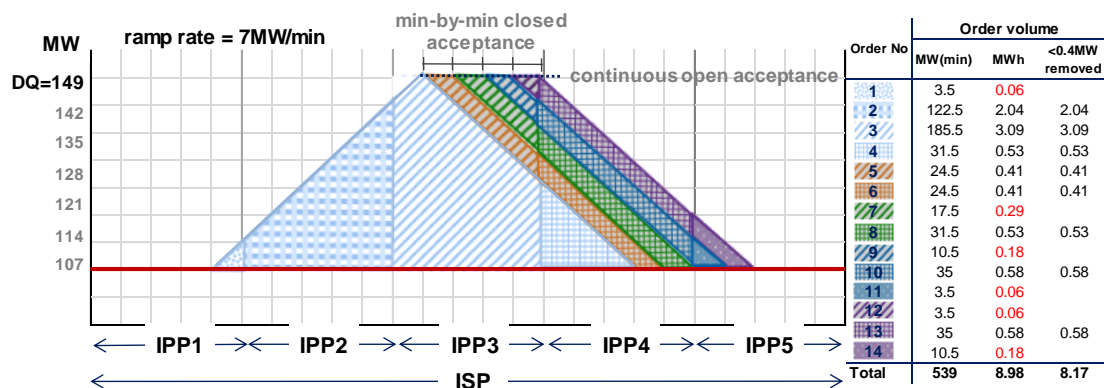
Figure 1: Open instructions and deemed closed acceptances

[IPP- Imbalance Pricing Period; ISP-Imbalance Settlement Period; DQ- Dispatched Quantity; PN – Physical Notification]

Our understanding from the Consultation is that each section of the pseudo-dispatch instruction profiles within the same imbalance pricing period shall be considered individually when being compared with the DMAT value. While we have received a clarification from EirGrid on this issue we have not yet fully understood the circumstances in which a closed acceptance is applied minute-by-minute and would need a better worked example tool to be shared

with industry to allow a better understanding of the interaction of DMAT and pseudo-dispatch instructions (before a final decision is taken).

In Figure 1, a unit is instructed to ramp up to a level of 'DQ' (with a ramp rate of ±7MW/minute), and due to not being instructed further, then deemed to have closed acceptance to go back to its PN level. In our example, the first two closed acceptance profiles (shown in orange and green) start in IPP2 (2nd Imbalance Pricing Period) and then continue into the subsequent imbalance pricing period (IPP3), while the last two pseudo instruction profiles (in blue and purple) again start in IPP2 and continue into both IPP3 and IPP4. We understand that each of these is considered separately for the application of the DMAT filter.

Due to this approach, there are six small volumes removed by DMAT (41% of all bids/offers). If we assume that this order is closed 4 minutes after the 149MW dispatch level is reached as in the figure, then it means that the 9% of the total additional output that the unit generated (which is the corresponding volume of those 6 orders removed) will be excluded from the imbalance calculation. This is argued to be excessive when compared to the experience in the GB market as outlined below.

In the GB market, based on Elexon's biennial review in September 2016 review covering the period 1 August 2015 to 31 July 2016, 33,521 actions out of a total 385,058 were removed from the imbalance price calculations by DMAT, corresponding to 8.7% (Vs 41% in our example) by number of acceptance and 0.078% (Vs 9% in our example) of the total energy volume of the actions. The share of volumes in the GB removed by the DMAT parameter (set at 1MWh) varied between 0.067% and 0.080% in the last four years (12/13 to 15/16).

Viridian believes that a value of DMAT that is either too high or too low would increase the volatility or unpredictability of the imbalance price; either by leaving inadvertent or non-energy-related actions within the balancing price calculation or by filtering out so excessively that the balancing price becomes disconnected from the underlying fundamentals.

We understand that the value of 0.4MW for DMAT proposed in the Consultation for the imbalance pricing period is based on the average ramping of existing units over a 5 minute period, assuming that the unit is ramping for the entire 5 minute period. However we believe that – compared with GB (1MWh in 30 minutes, unchanged since 2001) – **the proposed value for I-SEM appears inappropriately high** (0.4MWh for 5 minutes, corresponding to 2.4MWh for 30 minutes). I-SEM is a materially smaller

market than GB, and typical balancing actions may be expected to be smaller. Thus, intuitively one would expect the value of DMAT in I-SEM to be smaller than (or at most equal to) the value of DMAT in the GB market.

Viridian recommends that the decision on DMAT is deferred until such time as a simple worked example tool is created based on 'closed acceptance' orders and typical ramp rates. This tool should then be used to test the interaction between DMAT and closed acceptance orders (including pseudo-dispatch instructions) so that market participants, TSOs and the SEM Committee will gain a better understanding of the interaction between DMAT and these factors, and thus enable an informed view to be taken on what value DMAT should have to allow the I-SEM market function appropriately.

3.2 Price Average Reference Quantity (QPAR)

While in principle Viridian agrees with the SEM Committee that – in the medium term – the marginal pricing approach (i.e. setting QPAR to 1MWh) may provide the truest reflection of the cost of balancing, we support a more cautious start to the I-SEM market in which a higher initial QPAR value is used given;

(1) that GB, even with a long history and extensive back-casting, adopted a transitional approach to reducing PAR from 500MWh to 50MWh (as today) by November 2015 and ultimately plan to only get to 1MWh in 2018 after many years of "stable" market operation.

(2) the new, complex, and untested nature of the I-SEM imbalance arrangements, and the possibility of anomalies in the pricing (especially in relation to the flagging and tagging, and the impact of DMAT);

(3) there is an overall desire in the market as a whole to facilitate a smooth transition from SEM to I-SEM which is facilitated by the phased implementation of certain key parameters (e.g. the value of ASP moving from €1,000 to €3,000 by I-SEM go live before rising to VOLL at the end of the transitionary phase)

The analysis performed in the GB market to assess the impact of Code Mod Proposal P305 (to move to a PAR of 1MWh by 1st Nov 2018) indicates clearly that reducing the value of PAR typically leads to higher price volatility and a higher level of Imbalance Prices, which is as expected. Conversely by

implication a higher value for QPAR will dampen the volatility in Imbalance Prices and thus ensure a smoother transition from SEM to I-SEM. However it is acknowledged that the extent to which a higher value for QPAR reduces price volatility in practice is dependent on other factors such as actual bidding behaviour, the relative discrete price changes across the Supply curve, and the level of system constraints.

Following the experience in the GB market, and to provide greater assurance of a smooth transition from SEM to I-SEM, given the material change in market conditions as a result, Viridian strongly supports initially setting QPAR higher than 1MWh. With experience, Viridian suggests that a clear roadmap can be created to outline how the full transition to a QPAR of 1MWh will occur as the market settles and participants, TSOs and RAs become more familiar with the dynamics and interactions in the market and the likely impact of different values for QPAR. Setting a value for QPAR at 1MWh initially is unjustified and potentially very harmful to the successful implementation of I-SEM, especially in the early days.

It should also be noted that the experience in GB indicates that there is a close relationship between DMAT and QPAR, and thus given the point made for a smaller DMAT than the 0.4MWh proposed (5 min interval) this will effect what QPAR should be, as typically the higher QPAR is the smaller DMAT can be. It is suggested that prudently for I-SEM go-live QPAR should be higher than 1MWh and DMAT not greater than that used in the GB market, and then to learn from experience so as to reset same given hard evidence after one year of I-SEM operation

3.3   Market Price Cap (PCAP)

Viridian supports the proposal to set PCAP equal to VOLL given;

(i)   It is the maximum level at which PCAP can rationally be set at.

(ii)   It is the level to which ASP is planned to increase to.

(iii)   One of the pre-conditions for acceptance of a capacity mechanism in any market under EU rules requires the removal of any artificial limitation of the ability of energy markets to deliver investment, including price caps. Thus it is likely to be a requirement under State Aid rules, in order for the CRM regime in I-SEM to get approved, that any price cap must reflect the Value of Lost Load (VOLL).

Given the above it appears that setting PCAP to anything other than VOLL would be inappropriate.

Viridian requests the SEM Committee initiates a thorough review to ascertain the true value for VOLL for Ireland and Northern Ireland as this has not previously been done. This is necessary to avoid the I-SEM market accepting at face value, without any analysis, a value for VOLL deemed to be appropriate in another market(s), the basis for which may not be known, or which may not be appropriate for I-SEM given the particular arrangements in Ireland and Northern Ireland compared to other markets.

3.4   Market Price Floor (PFLOOR)

Viridian opposes the proposed value for PFLOOR and we are extremely concerned that the consultation paper provides no justification for the proposed value. We do not accept the proposition that setting PFLOOR to minus the value of VOLL is "*the least distortionary approach*" or that it is the "*most consistent with EU direction of travel*", the latter being somewhat subjective and represents purely a view at a moment in time as opposed to being based on any firm facts.

As outlined in the consultation, PCAP and PFLOOR "*have distinct rationales and provide different market incentives*" and thus there is no logic to applying a symmetrical view to these two values i.e. if there is a logic to set PCAP at VOLL, the same logic does not apply to support setting PFLOOR to minus the value of VOLL. The commentary in the consultation paper supports this view stating that "*while VOLL provides a maximum rationing price there is no equivalent concept/assessment regarding negative prices*".

Further as stated in the paper in relation to PCAP, but equally applicable to PFLOOR, the setting of either of these values should not be linked to "*the data handling capabilities of a particular trading platform (XBID)*". So the values in XBID are not relevant in considering what PFLOOR should be.

Given the unique nature of the I-SEM market, and that logic would dictate there should be an economic rationale for the setting of any price cap (including PFLOOR), proper procedure should ensure that every effort is made to formulate a clear (ideally economic) rational for the setting of PFLOOR acknowledging the possibility that as outlined in the paper, "*there is no obvious limit to how much it [a customer] would be prepared to be paid to [consume energy]*".

Viridian accepts that it is entirely reasonable for negative prices to occur in wholesale energy markets, even ignoring the effect of renewable support policies. In particular, large thermal generators may have high start costs or long ramping periods, which trigger high costs (or opportunity costs) in the event of a shutdown. Such generators may genuinely be willing to bid a negative price in certain hours to reduce output. However, experience in other markets has shown that this has historically not been regular occurrence, and the values are in the hundreds rather than thousands of euro/MWh. For example in GB, since the start of 2009, the System Sell Price appears to have only been negative on 256 occasions, with a minimum price of -£153.89 (on two consecutive half-hours), and with only three half hours with a price ≤ -£100/MWh.

The situation for renewable generators with a per-MWh support payment is more nuanced. In principle, such generators might wish to bid a negative price as a stop-loss that at least covers the value of their support payment in the event that they reduce output. However, in markets with high levels of renewable generation, this might have the effect of materially distorting energy price formation at low demand periods. To date, the SEM Committee has not permitted renewable generators to consider their support payments as an opportunity cost, in consideration of the BCOP principles.

Generators in many markets have contracts (e.g. simple feed in tariffs for renewable generation) which isolate them from the wholesale energy prices. If required, such generators would be prepared to bid very low or negative prices to sell energy, to ensure that they were dispatched. The (provisional) decision on REFIT and AER contracts, which adopts day-ahead as the reference price, means that at the margin, generators under these contracts are in principle exposed to intraday and imbalance prices. Similarly, generators eligible for the NIROC regime are exposed to wholesale and imbalance pricing. The level of support (per MWh of production) in each hour will be known (at latest) after the day-ahead auction is complete. Other things being equal (and assuming zero marginal costs of generation), these supported generators would be willing to sell at a negative price only up to the value of their support, rather than an infinitely negative price. They would be willing to buy back (and not produce) at a negative price which is anywhere below the (negative) level of their support payment.

In many markets, price limits are not explicitly related to specific market distortions, but are rather applied as a backstop form of mitigation against the abuse of market power. This is common in energy markets, and also in competitive capacity markets where price caps are sometimes expressed in

terms of the cost of new entry (CONE). Similarly, a price floor may be applied to balancing orders to protect against generators exercising locational market power (e.g. bidding large negative prices to reduce output). If this is the case, then it should be considered as part of a package of market power mitigation measures rather than as a stand-alone measure.

The aforementioned suggests that a more reasonable value for PFLOOR should be set. This value, we consider, should reflect a realistic view of what economic drivers may occur in the I-SEM market to drive behaviour, which could be linked perhaps to the cost of providing a comfortable margin outside the cost of shutting down and restarting a thermal plant and the foregone revenue during the restart period which we would expect to reveal a much smaller value (in absolute terms) for PFLOOR (somewhere around 10-15% of that proposed).

3.5   Price Materiality Threshold

The proposed Price Materiality Threshold is linked directly to the decision in SEM-17-009b to set the Settlement Recalculation Threshold from go-live of I-SEM to €15,000 (such cost being higher than the cost to the market of administering a Settlement Rerun which was estimated to be c€10,000). To achieve this €15,000 value the SEM Committee suggest requires the setting of the Price Materiality Threshold to be 15%. While this may appear reasonable, Viridian is concerned that there are a number of assumptions used in to the derivation of this value which may not prove to be correct, and further that market behaviour may dictate different values given the value of 15% will be dependent on the volumes and prices participants bid into the market (or which are set under the ASP mechanism), which will vary up and down depending on the particular circumstances in the market over time. As such, in the absence of better information it is difficult to argue against the proposed 15% threshold but this should be re-evaluated on an on-going basis and re-consulted upon after one year of operation in I-SEM.

3.6   Response Period Duration Parameter

The consultation paper proposes that "*The Response Period Duration should be a period of time that is useful to the Participant*" and thus "*providing a period of time during which a Participant is unable to interact with their bank or access any significant trading opportunities to resolve their credit breach, would be unreasonably be considered a "time to remedy"*". Further the SEM Committee considers that "*the Response Duration Period should not be in any way punitively short, but can be managed within the normal course of business practice*". The SEM Committee then proposes the Response

Duration Period to be set to five (5) working hours where working hours are deemed to be between 09:00 and 17:30.

Viridian does not support the generic application of the proposed 5 working hour timeframe as this timeframe is unworkable in most instances. Viridian would like to understand what background work was performed in order to ensure that the proposal of 5 working hours was achievable in the I-SEM market for Participants using banks in Ireland and Northern Ireland.

The first point to note is that while the working hours in the market outlined in the paper run from 09:00 to 17:30 these are not bank working hours i.e. they do not reflect the times the banks will execute activities on behalf of customers which will cease at 17:00. Thus the half hour from 17:00-17:30 should not be factored into any timing that may be agreed for the Response Period Duration Parameter.

The timeframe which is possible depends on a number of factors including;
    (i)   the time the CCIN is issued
    (ii)   the particular arrangements and payment process regime of each Participants bank, and
    (iii) whether the Participants bank is the same bank as SEMO's bank.

The timing of the CCIN (if one is to be issued) is linked to the time of the three (3) Credit Assessments performed each Working Day, being at either 09:00, 12:00 or 15:30.

Viridian would like to suggest the following.
    (1) If following a Credit Assessment at 09.00, a CCIN is issued at 10:00, then the Participant has until 17:00 on that Working Day to resolve their credit breach issue (i.e. a window of 7 working hours from issue of a CCIN).
    (2) If following a Credit Assessment at 12.00 or 15:30, a CCIN is issued at either 13:00 or 16:30 respectively, then the Participant has until 17:00 the following Working Day to resolve their credit breach issue (i.e. a window of 8.5 to 12 working hours from issue of a CCIN).

Alternatively if a simple rule was preferred for all situations, this rule could be that whenever a CCIN is issued on a Working Day D to a Participant, the Participant has until 17:00 on the next Working Day (day D+1) to remedy the credit breach issue.

4.   Detailed comments

In the following section Viridian provides detailed responses to the parameters consulted on in this consultation paper, and the issues raised as part of this.

4.1   Detailed comments on SEM-17-029(a)

Detailed comments on the other parameters consulted on in SEM-17-029(a) are outlined in Appendix A (Page 16-23 of this consultation response submission).

4.2   Detailed comments on SEM-17-029(b)

Detailed comments on the other parameters consulted on in SEM-17-029(b) are outlined in Appendix B (page 24-42 of this consultation response submission).

5. Conclusions

It has proved extremely difficult to make informed comments on many aspects of the consultation paper given its complexity, the lack of detail provided in the paper itself, and the lack of time to allow any form of real analysis to be performed. It is therefore our view that the SEM Committee must consult again on all nine (9) parameters after one years' experience of I-SEM where the facts and details of this years' experience are shared with the market as part of the consultation.

In relation to the nine (9) parameters consulted upon in this consultation paper (SEM-17-029) Viridian summarises below its high level view of the SEMC proposed decisions.

(i) **DMAT**

    a. Viridian believes the value proposed for DMAT is excessively high and believe there is no justification for a small market like Ireland to have a value for DMAT in excess of that used for the GB market.

(ii) QPAR.

    a. Viridian supports a more cautious start to the I-SEM market in which a higher initial QPAR value (larger than 1MWh) is used for at least the transitionary period.

(iii) Price Materiality Threshold.

    a. In the absence of better information it is difficult to argue against the proposed 15% threshold even though we consider and expect it is dependent on participant behaviour in the market and other I-SEM design elements. Viridian urges that this value should be re-evaluated on an on-going basis and re-consulted upon after one year of operation in I-SEM.

(iv) LNAF

    a. Given the inconclusive nature of the results from the analysis performed Viridian supports the setting of LNAF to 0 for first year of I-SEM. However Viridian proposes that this be consulted upon after one year of experience of I-SEM.

(v) SIFF

    a. Given the inconclusive nature of the results from the analysis performed Viridian supports the setting of SIFF to 0 for first year of I-SEM. However Viridian proposes that this be consulted upon after one year of experience of I-SEM.

(vi) Time to set SIFF

    a. To be of any real benefit to market participants SIFF should be provided to the market before close of business (5pm) TD-1.

(vii) Response Period Duration Parameter

    a. If following a Credit Assessment at 09.00, a CCIN is issued at 10:00, then the Participant has until 17:00 on that Working Day to resolve their credit breach issue (i.e. a window of 7 working hours from issue of a CCIN). Further if following a Credit Assessment at 12.00 or 15:30, a CCIN is issued at either 13:00 or 16:30 respectively, then the Participant has until 17:00 the following Working Day to resolve their credit breach issue (i.e. a window of 8.5 to 12 working hours from issue of a CCIN).

    b. Alternatively if a simple rule was preferred for all situations, this rule could be that whenever a CCIN is issued on a Working Day D to a Participant, the Participant has until 17:00 on the next Working Day (day D+1) to remedy the credit breach issue.

(viii) PCAP

    a. Viridian supports the setting of PCAP to equal the Value of Lost Load (VOLL). However Viridian requests the SEM Committee to investigate an appropriate value of VOLL for the Ireland and Northern Ireland markets before finalising this decision.

(ix) PFLOOR.

    a. Viridian rejects the proposed value of PFLOOR. There is no economic argument, or indeed any argument based on facts, that would support FFLOOR being set to minus the value of VOLL. Viridian suggests the value of PFLOOR could be linked to the cost of shutting down and restarting a thermal plant and the foregone revenue during the restart period with a suitable margin applied to provide a buffer. This is expected to reveal a much smaller value (in absolute terms) for PFLOOR (somewhere around 10-15% of that proposed).

Appendix A

Comments on Specific aspects of SEM-17-029(a)

Recommended Values for I-SEM

Pricing Parameters

No.	Page	Section/ Para	Comment	Questions/Issues
1	5	1.1	Consultation claims that when NIV tagging does not have enough SO flagged balancing actions to meet NIV, the TSO will use the most expensive remaining actions until NIV is met	The TSOs give no explanation as to how using these high price actions reduce volatility?
2	6	1.3	Consultation states that "the assumptions and methodology used for the approach were not developed with the aim of forecasting exact values, but rather to indicate "trends".	This appears at odds to the obligation on the MO to propose parameters to the RAs for approval??
3	7	2.1	Is it "normal" to have a DMAT in a market, and is this in line with international best practice? (Paper notes DMAT in BETTA market is 1 MWh).	Would a weighted average process instead of using a DMAT not yield a more accurate result?

4	7	2.1	There is a lot of wording stating it is a good thing to eliminate smaller values but there is a real lack of factual hard evidence as to what negative impact these small values could have and thus why they should be removed.	Is it simply to reduce the volatility (which the paper admits this factor influences), and perhaps the price, of Imbalance Prices (which the paper is silent on)? Only the TSO will know this from the analysis they have done. Would a weighted average process not yield a more accurate result?
5	7	2.2.1	Statement that "*Impact of inappropriate acceptances setting the price is mitigated by the fact that the price would only be set for a five minute period*" is not an appropriate justification.	This is not an appropriate justification for allowing inappropriate acceptances. Is there a system fault that should be remedied instead of creating a regime to compensate for the system fault?
6	8	2.2.1	References "quirks in the data".	The origination of the Quirks should be understood and eliminated rather than trying to create a filter to reduce the impact
7	8	2.2.1	Is forecasting really an issue?	Will any market participant be actually able to forecast from the bottom up?
8	8	2.2.2	The paper claims using a DMAT will have a "micro-effect" in terms of price setting and settlement by removing small volumes (and related prices - paper ignores this) from 5 min price setting periods.	Sampling should be completed to determine if DMAT actually does have a "micro effect" (i.e. negligible) in terms of volumes and prices. Further no information has been provided in terms of what %

					or trades, and % of volumes, are excluded by the proposed DMAT vales. Without this an informed view is not possible based on the data provided.
9	9	2.2.2		Refers to a value of DMAT that reflects the" theoretical need"?	The theoretical need should be a very small figure but is driven by TSO concerns. The rationale for this is very unclear.
10	9	2.2.2		There is no recognition of the relative size of I-SEM vs BETTA	In other parts of the paper the contrast between BETTA and I-SEM scale is made yet it is ignored here. If I-SEM is 12% of BETTA then one argument could be that DMAT should be 12% of the 1MWh used in GB
11	9	2.2.2 – para 4		References settlement logic in I-SEM likely to create more small BOAs than in GB	Is the real problem then the settlement logic which needs re-appraised?
12	10	2.2.2		References the possibility of unintended acceptance of bids and offers.	No evidence has been provided to justify stating this as a possibility so it is assumed this is just supposition?
13	10	2.2.2		Again references "Data quirks" and the desire is expressed in paper to only look at Bids and Offers accepted due to balancing and to avoid looking at bids and offers due to "data quirks".	Firstly it is argued to be better to remove or fix what is causing the data quirks rather than applying DMAT as a quick fix sticking plaster to mask the underlying issue? Either way removing or fixing the data quirks

					should be done.
					Secondly the resolution suggested is to set DMAT high enough to exclude these data quirks – the TSO is asked to provide data to prove "data quirks" are only ever small values.
14	10 - 12	2.2.3		The range of possible values for DMAT were calculated to be between 0.17MWh and 0.44MWh for the 5 min Imbalance Pricing Period, and the value of 0.4MWh was selected.	No rationale has been provided for why such a high value for DMAT (90% of max) was selected? A better approach is suggested to wait to see what happens in Market Trials once we see how the BOAs are being selected by the settlement algebra, etc. This value should be reviewed every 12 months of I-SEM operation
15	14	3.2.1		The last para references "participants would need to learn" which is concerning as it emphasises the real potential of risk	This highlights that there has not been proper assessment of the market dynamics and what the outcomes will be. It is relying on participants submitting bids etc to overcome market design failings. A key concern is that this may favour participants with market scale and market power.

16	15	3.2.2	The paper states that the larger the PAR Quantity, and the less marginal the Imbalance price calculation, the more difficult it may be to forecast the price accurately.	While this may appear a reasonable assumption there is no firm basis for stating this statement and no evidence has been provided to support this assertion.
17	16	3.2.2	The last para states that "larger values could result in these type of effects"	This statement "could" highlights the lack of analysis.
18	16	3.2.2	The paper states that if the only scenarios which have the intended effect of reducing volatility in the price are larger QPAR values which also result in other [negative] impacts on price, this suggests that a marginal price approach should be used	The logic of this sweeping statement is questionable, given the lack of supporting facts and evidence.
19	20	3.2.3.2	Elexon analysis of P305 used historic data	The lack of similar such data for I-SEM creates risk. There should be a review of this during Market Trials after systems are used for the first time in anger.
20	23	3.2.4	The last para considers scaling by 12% based on the I-SEM vs GB relativity of peak	There is no justification provided as to why peak demand relativity is relevant, or for scaling down as proposed. Given the objective is to derive a BM price would it not be more appropriate to consider the relative volumes in the BM?

21	24	3.2.4	The paper just selects 1MWh and states no "scaling" is needed without giving any justification	Supporting data to justify this scaling is requested.
22	24	3.2.5	In last para, there is a contemplation of a variable approach which seems highly inappropriate.	Such a suggestion adds further subjectivity and complexity for no explained benefit.
23	25	3.2.5	In last para, there is no consideration of the veracity of the model.	Is it not the case that the results are heavily dependent on the Tagging & Flagging process and other forecasting error aspects?
24	30	3.3	In the last para, the paper states the impact is small	It is not clear how this conclusion can be derived when the forecasting model uses hourly granularity?
25	32	4.2.2	The Price Materiality Threshold in the I-SEM arrangements will be based on assessment of the Imbalance Settlement Price which would be likely to have an effect on settlement across ALL participants	The rationale for linking the materiality threshold to "ALL participants" is queried? The questions is asked might it be more appropriate to have it calculated over a certain "critical" percentage of the volume which could be a figure in the region of 33%-50%??
26	32 & 33	4.2.2	The paper states that settlement amounts in I-SEM are not likely to reach €250k	No justification provided for this. It seems to ignore the possible implications of the CRM on plant closure (which seems ignored in the modelling) and similarly ignores that prices could be much higher at up to ASP (initially €3,000/ MWh) which would offset lower

				volumes.
27	33	4.2.2	Settlement reruns are at Participant level	The TSOs are asked to outline why settlement reruns are not at unit level?
28	33	4.2.2	The paper states that it is far less likely that the price would be different across as many periods in the Trading Day in the I-SEM as can occur in the SEM.	No explanation for this statement has been given. It is difficult to see this as the case since in SEM BCOP applied (so expect plants SRMC to differ) where in I-SEM competitive bidding occurs with people bidding what they think the market will accept and potentially on a narrow range.
29	34	4.2.3	The monetary value resulting from the price change should be greater than the overhead cost of undertaking the rerun	What is the overhead cost of a rerun? How is this regulated?
30	34	4.2.3	One of the main drivers for determining the Pricing Recalculation Threshold is the value of the changes being large enough and distributed enough	Why is the dependency not limited to the materiality of the value being large enough as opposed to including the distributed enough?
31	34	4.2.3	In the paper it suggests that operational data would make it possible to access the typical percentage change in the price recalculated for Pricing Disputes relating to pricing inputs and use this to fine-tune the parameter	If operational data will lead to better decisions it is suggested that this parameter is reviewed after 1 year of operational data is available
32	34	4.2.3	Third bullet references "settlement of contracts"	It is unclear what contracts this is referring to?

| 33 | 34 - 35 | 4.2.4 | The paper argues it is too complex to increase prices in each Imbalance Settlement period (and this may overstate the required settlement amounts) so the approach is to change the price in defined "smaller number of periods" which is likely to achieve more realistic results. No justification is given from jumping from the above to using an "average price" and picking 21:00 as the "average". | Why in the analysis was just 1 hour (21:00 hour) used instead of a "smaller number of hours" as they had argued for?? It is not clear why they picked 21:00? |
| 34 | 38 | 4.4 | Intuitively 15% seems high. This section makes no reference to the experience in other markets and the thresholds in those markets and how "scale" might impact those. | Is there relevant experience that could usefully be considered? |

Appendix B

Comments on Specific aspects of SEM-17-029(b)

Recommended Values for I-SEM

Scheduling and Dispatch Parameters

No.	Page	Section /Para	Comments	Questions/Issues
1	4	1.1	The paper outlines that the TSOs should not take any action prior to the Balancing Market Gate Closure unless it is for reasons of system security e.g. for reserves, for priority dispatch, or for other statutory requirements	It seems unreasonable to imply that Priority Dispatch is an element of system security
2	6	1.3	One value for LNAF will be used for all periods "in order to reduce the complexity of the implementation of the factor".	Reducing the complexity of using this factor (all other things being equal) is not a good enough reason not to have a different LNAF for different periods in the day if this would yield the most accurate result. If this was the case no details have been provided as to how materially the LNAF would need to change between periods, and further what materiality multiple LNAFs in a day could have on the outcome of the scheduling and dispatch process particularly in terms of cost

3	8	1.6	Since the LNAF and SIFF will only affect the scheduling of offline units those units with long notice requirements will have an additional incentive to trade in the intraday market rather than waiting to be scheduled by the SOs.	This is not correct. Due to Bidding Restrictions in the IDM the SEMC only allow Simple Bids. Due to this, offline generators WILL NOT HAVE AN ADDITIONAL INCENTIVE TO TRADE IN THE IDM as they will NOT be able to bid in their start costs (and thus will not recoup these costs) (which they could with Complex Bids) and their simple orders would be too expensive to get scheduled - thus OFFLINE generators CANNOT in fact do anything regardless of what LNAF and SIFF are, or the costs to them of same.
4	8	1.6	States that units with long notice times will be incentivised to trade in the IDM.	This ignores the fact that the I-SEM are not in XBID and the recent information is that the I-SEM cannot participate in the UK wide 3:30pm auction which will likely further reduce liquidity and options to trade in the IDM (and particularly where fixed costs need to be covered).
				Also further risk if the recent announcement regarding restricting DAM order types is enforced. This will further increase Scheduling Risk and scope to get a feasible schedule which when allied to the IDM limitations, makes this statement incorrect.

5	8	1.6	The paper outlines that LNAF and SIFF values would also incentivise units to reduce their notice times where this is technically and economically feasible	The market already incentivises units to have as short a notice period as technically and economically possible. Thus it is hard to see how LNAF and SIFF will create a further incentive as the consultation suggests. Further, as outlined above, Bidding restrictions in the IDM make it very unlikely generators will recoup their start costs further discouraging investment.
6	8	1.6	LNAF and SIFF would be used in the scheduling process only (not in real time dispatch or settlement)	No reasons have been given as to why LNAF and SIFF are not applied outside the Scheduling process if what they aim to achieve is a sufficient incentive to use them?
7	9	1.6	It is important in situations where non-energy drivers for balancing actions are greater than energy drivers for balancing actions that the effect of the LNAF is reduced or removed.	How would TSO know where non-energy drivers for balancing actions are greater than energy balancing drivers given they have stated in Section 1.1 "actions to balance energy requirements are not fully distinguishable from constraint (non-energy) actions and visa-versa"? Also why state LNAF only will be reduced/removed and not SIFF also?

8	9	1.6 last para	States that the outcomes will depend on how participants bid and hence it isn't guaranteed that the assumptions outlined in the paper are correct.	The assumptions outlined are challenged given they depend on how participants bid and market dynamics.
9	9	1.7	The 1st bullet only considers unintended consequences of applying LNAF and SIFF	This may work both ways and not applying LNAF and SIFF such that the TSOs do intervene will also have unintended / undesirable consequences
10	9	1.7	In the last bullet point, the TSOs state that the OCGTs may have operational limitations and hence there is a risk of using up their limited hours.	This seems a strange argument since in effect the paper seems to be saying this inflexibility should be accommodated yet in other places they are saying "inflexible CCGTs" have less value to the system and should be incentivised to improve. Should the same not apply to OCGTs rather than potentially embedding their inflexibility into the system?

This also runs contrary to the fact that TSOs claim they can't accommodate CCGTs that can flexibly operate in OCGT mode which is a material issue. |
| 11 | 10 | 1.7 | Same issue with OCGTs being beyond their normal lifespan and hence are less reliable.

Also in relation to maintenance, the TSOs seem to be trying to set the outcome rather than stepping back and allowing the market deliver | It is unclear why age and reliability are wholly correlated.

It is hoped that the suggestion here is not to protect certain generators when their value is eroded by their unreliability? |

12	10	1.8	The focus of the modelling approach was on qualitative analysis	Given the market has known the high level form of the I-SEM energy market since 2016 it is argued that there was sufficient time for a quantitative analysis. Without this the true materiality of the issue is hidden from participants making it impossible to make informed comments on what the consultation paper is proposing.
13	12	2.1	The [LNAF and Notice Time Group Curve] parameters are intended to adjust the schedule and resulting dispatch decisions, and thus they have the potential to impact on the other objectives of Ensuring Operational Security and Maximising Priority Dispatch Generation.	Is this a material concern related to these parameters?? Changes is plant availability, performance, PNs and prices may have a greater impact on the Scheduling process, and changes in these will happen all the time and will impact the same two objectives each time they change. It is difficult to get a sense of the materiality of impact of changing LNAF and Notice Time Group Curve parameters as insufficient details has been provided.

14	12	2.2.1	The aim is to determine a factor which when applied to generators start-up costs will cause the scheduling system to favour (subject to fulfilling system security, priority dispatch and other statutory requirements) actions with high variable cost short notice time units	This implies that the factor applied may not achieve the desired result if system security and priority dispatch obligations have to be met at the time - how is this Ad-Hoc application of other obligations addressed in the scheduling system to achieve a meaningful LNAF factor with desired results??
15	12	2.2.1	The Last paragraph refers to "a view is taken" in relation to the purpose of calculating an LNAF i.e. that the intended outcome is to generally reduce the instances of the scheduling tools suggesting actions on longer notice units in scenarios where the drivers for energy balancing actions are greater than the drivers for non-energy balancing actions.	Details are requested as to the rationale behind this "view" and from what perspective this view was taken?
16	13	2.2.2	Should this analysis also be considering Market power?	Is there a risk that the majority of the fast start units are controlled by one party (e.g. ESB) who may thus have a dominant position? This must also be relevant to the analysis of the impact of LNAF and SIFF if imposing factors has the consequence of increasing such parties Market Power?

17	13	2.2.3	The Data Analysis Phase calculates Notice Time Groupings of units with similar Equivalent Prices and Notice Times	Logic would suggest that it may be more accurate not to group units together but to treat each unit on the merits of its individual Price and Notice Time. Hence the TSOs are asked to clarify why they have used groupings?
				If in reality the TSO groups all units with Notice Times in a certain range (e.g. less than one hour) and then simply calculates the Equivalent Price to reflect the average price of these units this would appear to be an overly simplified process and may lead to inaccurate and inefficient results.
18	14	2.2.3.1	All Unit costs are calculated based on starting in the Cold Warmth State	This arbitrary approach fails to recognise that on the day the unit being called may be in a Warm or Hot Warmth State with shorter notice times and potentially lower prices.
				It is argued that it must be possible to identify the mix of Warmth Start States in SEM (albeit this will be impacted gradually more and more by growing wind generation) and use this as a basis?
				Given there must be a mix of states would Warm Warmth State rates be a more appropriate proxy?

19	16	2.2.3.2	It is proposed to use the average start cost price approach to set the LNAF of a NT Group	The paper recognises that this has a dampening effect but gives no analysis to indicate the magnitude or the impact of such an approach which must distort the analysis. Is this not just trying "fix" an issue created by using NT Groupings as opposed to calculating an LNAF for every unit individually?
20	16	2.2.3.2	It is proposed to filter out units with zero variable costs (like Hydro units)	No detailed reason has been given for this proposal which on the face of it may seem reasonable but if the primary driver for creating NT Groups is to group Units of similar Notice Times then cost is a secondary issue and thus this proposal appears flawed as it may give incorrect signals
21	17	2.2.4	The capacity used in the model is likely to influence the results. It seems that the analysis assumes all existing units remain but that is at odds with the information shared with the market in relation to the CRM regime that is suggesting c2,500MW should close.	Not all the existing units can remain and the analysis cannot ignore the CRM incentives as it seems to be doing.
22	19	2.2.5	The SIFF will assess whether the LNAF should be applied on a given Trading Day or not on the basis of the size of the market shortfall	Participants need more details in order to understand the rationale behind any value of SIFF above which LNAF is implemented and below which LNAF is not implemented, and also in relation to how this SIFF figure is calculated. This is not an issue currently if SIFF

					remains set to zero.
23	21-22	2.3.1	Three (3) possible approaches to Notice Time Groupings were created		No explanation as to how these groupings were created, or the logic behind same has been provided so it is impossible to determine if this or the selected approach is a good or bad approach
24	21-23	2.3.1	The higher cost 0.24 hour notice units were split out from the other units with notice periods of under 1 hour		In no other grouping were units within the grouping with different Notice Periods split out. Potentially this is a distortion to the regime which could inadvertently favour units able to react in under 0.24 hours over other units also able to react in under 1 hour. No details of how such units may be favoured or not has been provided.
25	23	2.3.1	Notice Time Grouping 2 was selected		The detailed reasons for selecting this have not been provided or explained properly.
26	25	2.3.2	DSUs are called in the analysis for the provision of energy in a manner that is unlikely to have been considered in their original design		Given many DSU units bid into the market to reduce demand, and DSU units do not receive energy payments, the TSOs are asked to clarify that type of DSU unit they believe will be providing "energy" and what incentive there is for such DSU units will provide this?. Further the details of the design not accounted for should be explained.
					Is there a fear that this might

				be a distortion which favours some DSU units over others?
27	29	2.3.2 para 1	The suggestion was made that participants might react to the application of LNAF by trading into long positions in the ex-ante markets so that SIFF will not trigger LNAF application	This possibility seems unlikely given is ignores the potential exposure to Balancing Market pricing
28	29	2.3.2	Table 8 shows the main increase in production costs being derived from GB generators (i.e. increased imports)	I/C flows are set by DAM & IDM trading and were shown as top priority for dispatch purposes in the TSOs BM principles document. Hence it appears this change can only happen if the TSOs are totally rescheduling the system after IDM gate closure. However this TSO-TSO trading functionality and pricing has not yet been fully addressed although the SEMC did state there would be "no preferential treatment"? Given this reschedule possibility, and also the potential system security concerns this raises, the TSO-TSO trading arrangements should be subject to public consultation with market participants.

29	30	2.3.2	Table 9 shows higher hours of insufficient reserve (Reserve Shortage) once LNAF is applied. Table 10 shows for 6 of the 9 Elements the application of LNAF increases the hours of system constraints are binding. Table 11 shows in all looked at cases the application of LNAF increases the hours of unserved energy (i.e. load shedding).	From a system security perspective the application of LNAF does not make sense in I-SEM. The reasons for LNAF having these negative impacts should be shared with the market. What is the international experience???
30	30	2.3.2	In Table 9, does this indicate that there is always a number of hours of reserve shortage (even in base case)??	What is the likely impact of this have on the ASP function?
31	31	2.3.2	In Table 11, again we see high levels of unserved energy	What is the likely impact of this have on the ASP function?
32	32	2.3.3	The paper states that it is not always the case that the schedule allows LNAF adjusted utilisation of short notice units over long notice units when security can be maintained	Is Eirgrid stating that there is an error in the Scheduling and Dispatch Optimisation process/system that needs to be fixed in order to perform as expected?
33	33	2.3.3	The application of LNAF will cause higher running of short notice units which in abnormal events will HIGHTEN the risk of being unable to meet reserve and demand requirements.	The impact of scheduling additional reserves has not been modelled. Without this it is not realistic to make an informed comment on whether this is something material to alter the view on LNAF.

34	33	2.3.3 para 1	Reference is made to abnormal events (multiple trips, larger than expected changes in wind) but those are not anything that is an output of a "forecasting" model?	It is not clear if this is a conceptual comment or a claimed output from the TSO modelling?
35	34	2.3.3	The paper contends that Peakers and OCGTs are more likely to hit emissions limits, and increased utilisation of DSU units is likely to increase their costs and may affect their availability. These factors have not been modelled	RAs, TSOs and Participants could make a more informed view if these factors had been modelled
36	34	2.3.3	Again reference to OCGT limitations but the paper seeks to protect them rather than reflect the impact of that limitation on the value of the units to the system.	Any inflexibility related to OCGT units should not be treated any differently to the inflexibility related to CCGT units. Both OCGT and CCGT units have similar value to the system and both should have the same incentives to improve. The potential for embedding inflexibility for certain units into the system should be avoided.
37	34	2.3.3	Also the conclusions indicate LNAFs will increase binding nature of constraints - even when all existing units are assumed to remain with no CRM induced closures??	Further details are requested to support this comment.

38	35	2.3.5	The paper outlines that applying LNAFs will weigh the schedule towards shorter notice units but with potentially a significant increase in costs to the market, including from I/C Trades from GB. This counters the two TSOs objectives ((a) and (c)) to minimise costs.	Insufficient detail has been provided to make these points clear or justify the economic rationale for applying LNAFs. These are not absolute objectives.
39	37	2.4	The TSOs propose the value of LNAF is set to zero at market start and for a period of one year thereafter	Viridian supports this proposal given the high degree of uncertainty in the modelling as outlined by the TSOs. However before any change is made to the LNAF (to move from zero) there must be a further consultation with the market to share the experience from the I-SEM market operation, and to allow participants comment on whatever the proposal at that time may be.
40	38	3.1	It is not clear what demand is used here?	Is it Gross demand including Out of Market renewables or just market demand?
41	40	3.2.1	Is a %age appropriate given a 10% at minimum system load (e.g. at night) will be much lower risk than 10% at peak load (e.g. tea time peak).	Should the shortfall not just be in total MW?
42	40	3.2.1 para 2	States "for the same level of SSII… in situations of energy balancing requirement could be higher or lower"	This comment is not very insightful and lacks clarity on what point is actually being made.

| 43 | 41 | 3.2.1 | Proposed to use a binary application of SSII such that it changes from zero to one to not apply/apply LNAF

The proposed decision to choose Option 1a is not really justified by anything. | TSOs were warned by the market about the inappropriateness of binary application in DS3 arrangements which were not heeded at the time. The bad experience since means the TSOs are now revising them. Thus experience of binary applications is not good, and the binary application of LNAF is argued intuitively to be wrong with a graduated or stepped approach more likely to be appropriate.

There are many possibilities outlined as to what might happen depending on a high or low value of SSII but no facts and figures presented to justify this proposal and thus it is not possible to determine if this is reasonable.
Experience of the first year of I-SEM should be used to clarify what is reasonable and why based on facts, which should be consulted upon again. Multiple steps or a graduated application (Option 1b) may prove to given the desired results more often. |

44	42	3.2.2	The values of SSII where the application of LNAF may be relevant may be in the range 0 - 10%	This assumption while it may appear reasonable is purely from a desktop study and has not firm basis. It is suggested real data in I-SEM needs to be considered before this broad assumption can be verified as reasonable.
45	42	3.2.2 para 3	The smallest demand day is selected. This appears unusual when in most other aspects of the I-SEM including BMPCoP the focus is on a trading period!	Why has a demand day been selected as opposed to a Trading period?
46	43	3.2.3	The paper outlines that the LNAF could be applied in a way which can incentivise the desired outcomes from an energy balancing perspective while not being expected to have an adverse effect on non-energy balancing outcomes.	Further details as to how this is possible should be provided as this is very unclear how energy and non-energy balancing can be separately incentivised
47	44	3.2.4	In the absence of operational data shortfalls are assumed to occur evenly over the Trading Day	This appears an over simplification. In reality shortfalls will vary in different periods so the results arising from this simplification outlined in the paper are unlikely to be accurate and thus will need to be reassessed during I-SEM

48	46	3.2.4	A % level of Shortfall imbalance was applied to the DAM in the range 1% to 10%	In addition to this it is suggested for meaningful values there needs to be a materiality criteria i.e. a % of demand is not sufficient without also a MW value given the potential to turn on or not Generators which have an average size of 229 MW (as per Clause 3.2.2)
49	46	3.2.4 and 3.3	The paper outline the intention was to investigate whether there is a level of shortfall imbalance at which the application of the LNAF has the greatest impact, and therefore focuses on the proportion of the desired outcomes.	This consultation paper suggests that the greater the impact of LNAF the higher the proportion of desired outcomes. No data has been provided to show this is the case. It is suggested the analysis should primarily look at the proportion of desired outcomes by applying different LNAFs for different levels of imbalance (and not primarily the level of impact as suggested).
50	48	3.3	The figure of 9% has been selected without any particular justification	Justification for the 9% figure should be provided particularly given earlier in section the statement was made that the results are inconclusive

51	48	3.4	The TSOs recommend SIFF as a binary flag set at either 1 or 0 so as to apply LNAF or not. They also propose to set SIFF to 0 initially for a period of 1 year	There is insufficient data provided to allow participants make an informed view on a binary SIFF and thus it is requested that after the year of I-SEM experience this is consulted upon as the graduated application of SIFF may prove better. Due to the non-conclusive results from modelling Viridian support the setting of SIFF at zero for the initial year of I-SEM but ask that this be consulted upon again at that time.
52	49	3.4 para 2	States that the modelling work did not provide an obvious optimal value of SSII.	The modelling itself appears to have been inappropriate. For example it fails to take account of the fact that actual results when I-SEM is operational will differ as a consequence of (i) market dynamics (ii) depending on which DAM order types are available and how they differ over time and (iii) if a more effective IDM solution is available.

53	50-53	4	An issue is the binary nature proposed and the value of getting the SSII after 7pm even though it is noted that it may be more useful within office hours.	To be useful participants need this before business close at 5pm
54	50	4.1	The design approach for the scheduling and dispatch process sets an SSII at a moment in time before the Trading Day and keeping it fixed for the Trading day	The TSOs are asked to outline the benefits and rationale for setting it in advance of the Trading Day and keeping it fixed for the day - as opposed to varying it in line with new up to date data (e.g. revised wind and demand forecasts, revised PNs after IDM)
55	53	4.3	The recommended daily time for fixing the SSII for a Trading Day is between 19:00 and 22:00 TD-1, and at least one hour prior to the start of the final LTS scheduling run	To be of any real value in making decisions the SSII value should be set and published within business hours on TD-1. Therefore Viridian request this value to be published by 16:00 TD-1. Again the question is asked as to why the SSII must to be set in advance of the Trading Day. We request that after one year of operation this is consulted upon again with the market to determine what this should be (if anything) on the basis of experience and facts

56	54	5	There is only limited information provided on the assumptions made in Clause 5 so it is very hard to comment on the modelling	Greater detail is requested.