



**Response by Energia to SEM Committee  
Consultation Paper SEM-16-075**

***I-SEM Energy Trading Arrangements Trading and  
Settlement Code***

**24 January 2017**

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## **Executive Summary**

Energia actively participated in the Working Group involved in the development of the draft Trading and Settlement Code (TSC) for the I-SEM balancing market. Whilst some improvements have been made to the drafting of the TSC as a result of engagement with industry via the Working Group process, a number of significant concerns remain outstanding and now require the attention of the SEM Committee to whom this response is submitted. Whilst all issues raised during the Working Group process, including escalations, have been deemed either 'out of scope' or 'resolved and closed' by the (EirGrid and RA) Project Team, we emphasise in this response that not all of these issues have been fully resolved with an appropriate degree of rigour. Indeed, a number of serious concerns remain outstanding as discussed herein. These unresolved issues threaten the proper and efficient functioning of the I-SEM energy trading arrangements, capacity remuneration mechanism and (potentially) the DS3 system services arrangements and we therefore assume they fall within the SEM Committee's remit to be considered and addressed in the fulfilment of its wider statutory duties.

In section 2 of this response, we document a number of material deficiencies in the Working Group process. These shortcomings have significantly increased the likelihood of material omissions, errors or unintended consequences arising under the proposed TSC, some of which we clearly identify in sections 3 and 4 of this response for the SEM Committee's immediate consideration. We have endeavoured to suggest amendments to the TSC drafting where possible in the Response Template appended to this response. However, it is not possible to respond in this manner on all important issues that we raise concerns about, which also warrant due consideration by the SEM Committee.

This response details and substantiates a wide range of issues requiring the SEM Committee's attention, including concerns relating to: scheduling and dispatch risk; governance and regulatory risk; the complexity of the market rules and related operational issues; the imbalance pricing methodology; the administered scarcity pricing methodology; the settlement algebra; credit, collateral and cash flow provisions; the interim modifications process; and a general lack of transparency, sufficient testing and prototyping. We also identify a number of omissions and material errors that must be addressed as a matter of urgency by the SEM Committee.

Most of these issues have the effect of increasing the financial risks faced by participants without any offsetting benefits and we are concerned that the overall level of financial risk imposed by the market rules is disproportionate and excessive, and could have a detrimental impact upon competition, customer prices and security of supply. Many of these concerns are well

documented and we would refer the RAs to our previous submissions on these matters. With reference to their statutory duties and relevant legal requirements, it is incumbent upon the RAs to ensure that such risks are reasonable and manageable so that all generators may compete in a level playing field and that those generators required to run the system are able to finance their activities.

### **Key recommendations**

- Address the omissions and material errors identified throughout this response, particularly in section 3.1.
- Ensure generators are not held liable for RO difference payments due to circumstances demonstrably beyond their control (examples include generator exposure to non-availability of the power or gas infrastructures maintained by regulated entities). Suggested remedies are included in section 3.2.1 of this response for the SEM Committee's consideration.
- The draft TSC allows for the wholesale transfer of risk from EirGrid onto suppliers, as discussed in section 3.12 of this response. This is unacceptable and therefore Energia recommends that they are removed.
- Significantly improve standards of transparency and good governance throughout the TSC, particularly in relation to the Flagging and Tagging Rules, the management of reserves, and SO-SO trading.
- Undertake a wider holistic review of the market arrangements for I-SEM in the form of independent quality assurance and end-to-end testing to identify and address any other material issues that cannot be uncovered through this consultation given the lack of extensive prototyping during the rules development process, among other shortcomings. This should include, inter alia, extensive, industry inclusive, testing of the energy and capacity settlement algebra as soon as possible, as recommended by ESP in their Stocktake Report, to ensure that it works as intended, and a comprehensive holistic review of credit and collateral arrangements across all I-SEM markets.
- A large proportion of the settlement algebra for suppliers is missing from the Code, making it impossible to fully review the supplier arrangements and provide feedback through this consultation process. The consultation is therefore premature and should have been delayed until these and other outstanding arrangements (e.g. implications of current escalation<sup>1</sup>, provision of spreadsheet and training on CRM settlement algebra) had been finalised. We suggest this substantive and procedural impairment to the consultation is remedied by publishing a final mark-up of the Code (against the current version) for a further round of consultation.

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<sup>1</sup> See footnote 13 of this response.

# 1. Introduction

This document sets out Energia’s comments in response to the Consultation Paper on the I-SEM Energy Trading Arrangements Trading and Settlement Code dated 15 November 2016 (“the Consultation Paper”)<sup>2</sup>, including a completed response template (“the Response Template”) and our feedback on specific aspects of the rules as requested by the Regulatory Authorities (RAs).

Energia acknowledges that the development of the Trading and Settlement Code (“the TSC”/“the Code”) for the I-SEM balancing market has required extensive and concentrated effort by EirGrid and the RAs, as well as market participants. Energia has engaged constructively in this process and has actively participated in every Rules Working Group meeting, submitting some 480 comments for consideration covering all aspects of the Code (representing over 36% of all TCS comments submitted), raising many detailed and substantive issues to be addressed. We have also provided independent expert evidence to the Working Group on fundamentally important topics – e.g. the imbalance pricing methodology and potential issues with parallel opening of the intra-day and balancing market. Whilst some improvements have been made to the drafting of the TSC as a result of engagement with industry via the Working Group process<sup>3</sup>, a number of significant concerns remain outstanding and now require the attention of the SEM Committee to whom this response is submitted. We note that all issues raised during the rules development process have been deemed ‘resolved’ and ‘closed’ by the Project Team under the formal Working Group process, but we would emphasise that not all of these issues have been fully resolved.

The ‘unresolved issues’ we refer to and discuss in this response threaten the proper and efficient functioning of the I-SEM energy trading arrangements, capacity remuneration mechanism and (potentially) the DS3 system services arrangements and we therefore assume they fall within the SEM Committee’s remit to be considered and addressed in the fulfilment of its wider statutory duties. However we note an expectation on the part of the SEM Committee that responses to the Consultation Paper will “focus on the detail of the legal drafting for the TSC Amendments...identifying potential drafting errors and suggesting specific revisions”, recognising, according to the SEM Committee, that the TSC is in line with I-SEM design decisions that have already been consulted upon<sup>4</sup>. We have endeavoured to suggest amendments to the TSC

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<sup>2</sup> Consultation Paper “I-SEM Energy Trading Arrangements Trading and Settlement Code”, SEM-16-075, 15 November 2016.

<sup>3</sup> For example, the imbalance pricing methodology, changes to triggers for administered scarcity pricing, the time period over which the make whole payment mechanism operates, the publication of market data, etc.

<sup>4</sup> Consultation Paper “I-SEM Energy Trading Arrangements Trading and Settlement Code”, SEM-16-075, 15 November 2016, page 6.

drafting where possible in the Response Template in section 4 of this response. However, it is not possible to respond in this manner on all important issues that we raise concerns about, summarised in section 3, which also warrant due consideration by the SEM Committee. Some of these unresolved issues require further (consideration of) I-SEM policy decisions because they were previously overlooked, misunderstood or unanticipated, but now clearly give rise to adverse consequences if implemented through the TSC as proposed. In other cases, it is a matter of the SEM Committee giving clearer direction with respect to broad I-SEM policy decisions already taken which have been interpreted in a particular manner by the Project Team which gives rise to significant cause for concern and compromises the efficiency and efficacy of the market to the ultimate detriment of consumers. To underline the importance of our comments in section 3, we refer to procedural deficiencies in section 2 which have collectively served to undermine the value and effective functioning of the Working Group process.

Given the large number of issues raised by Energia during the Working Group process it is not practical to provide a detailed and exhaustive account of them here. We note however that detailed comments (cross referenced throughout this response) explaining these concerns were submitted to the Working Group and captured via the formal issues log. Therefore, the comments raised via the Working Group, particularly in relation to areas highlighted in Section 3, should be considered integral to this response, especially as we do not consider them fully resolved via the Working Group process. Viridian's response to the Working Group escalation on exposure to CRM difference payments, dated 25 November 2016<sup>5</sup>, should also be considered integral to this response, along with all other evidence and representations made by Energia (or its representatives) more generally throughout the I-SEM design and implementation process<sup>6</sup>.

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<sup>5</sup> See Viridian escalation response, "Comments in response to Escalation 'Exposure to the CRM Difference Payment due to Operational Constraints'" submitted to the rules Working Group on 25 November 2016. We note the SEM Committee response to this Escalation Notice was published 23 January 2017, just one day before the TSC consultation response deadline. It effectively deems the Viridian escalation response as outside the scope of the escalation. We therefore request that the SEM Committee give due consideration to the Viridian escalation response in the context of this Consultation which cannot be restricted by the Working Group / Escalation process terms of reference given the wider remit of the SEM Committee.

<sup>6</sup> This includes Energia's responses to all policy consultations directly or indirectly relevant to the design of the I-SEM energy trading arrangements, including any materials by independent experts submitted with those responses, or presented to the RAs (or their consultants) via bilateral meetings. It includes materials compiled by independent experts submitted by Energia (or by the EAI of which Energia is a member) to the rules Working Group, or directly to the RAs and EirGrid Project Team. It also includes any materials provided by Energia (or by the Viridian I-SEM project team) to ESP as part of the Stocktake Exercise.

## 2. Procedural deficiencies in TSC development

Energia would like to document a number of factors that undermined the quality of engagement with industry via the Working Group process and that have increased the likelihood of material omissions, errors or unintended consequences under the TSC. These include:

- **The unrealistic timelines imposed upon the Working Group process, combined with the wider timetable for I-SEM policy development,<sup>7</sup> meant that inadequate time was provided to review materials.** In some instances the volume of materials made it impossible to conduct a proper review prior to the Working Group meeting or the deadline for providing comments (e.g. see comment 801)<sup>8</sup>. Energia notes that this issue was acknowledged by ESP in their recent Stocktake report:

*“[T]he design has been developed in consultation with the industry, who have also been part of Rules Working Groups scrutinising that design - albeit recent workload at the Rules Working Groups has inevitably impacted the level of scrutiny of rules by participants, and hence the level of comfort that can be derived from this process .... ;”<sup>9</sup>*

- **There was a lack of sufficient analysis and proto-typing in complex and important areas of the rules during the development process – e.g. in relation to imbalance pricing, the settlement algebra, etc.** For example, Poyry, in a report for EAI submitted to the RAs on 19<sup>th</sup> May 2016, concluded in relation to the imbalance pricing methodology that:

*“[Errors in the imbalance pricing algebra] ... illustrate flaws in the [rules development] process in that the draft rules are being developed without adequate quality control, without time to test the algebra thoroughly (e.g. in a spreadsheet such as the one developed in this relatively short project) and without the industry having the opportunity within the formal review process to assess the final proposals.”<sup>10</sup>*

ESP have also stated in their recent Stocktake report that:

*“It is best practice for complex areas of market rules to be prototyped (using tools like Excel) to provide assurance that they work, and do not give rise to unintended consequences. This has not been done in the case of the I-SEM rules.”<sup>11</sup>*

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<sup>7</sup> The consultation timeline for policy decisions on important aspects of the market detailed design was also unduly compressed and ran in parallel with the rules development.

<sup>8</sup> Where a comment in the issues log is referenced in this response it may not be the only comment relevant to the topic being discussed. Where no comments are referenced this does not necessarily mean that no comments were raised on that issue in the issues log.

<sup>9</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.24

<sup>10</sup> Poyry, May 2016, ‘Review of I-SEM Imbalance Pricing Methodology’, Report for EAI submitted to the RAs on 19<sup>th</sup> May 2016, p.3

<sup>11</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.24

And recommended that:

*“[P]rototyping of the market rules should be carried out to provide confidence that they work and do not have un-intended consequences (or that such unintended consequences are manageable);”<sup>12</sup>*

- **The operation of the Working Group process did not follow the terms of reference set out for the Working Group in some important respects.** In particular, the concept of Interim Legal Drafts was introduced to facilitate ongoing substantive changes to the concepts presented in Plain English drafts via interim legal drafting. Plain English drafts, however, were not updated to reflect these changes, which at times made it difficult to assess their intent and wider implications.
- **Potential conflicts of interest were not overtly managed.** Energia would have expected any potential conflicts of interest faced by EirGrid, who led the Working Group process, but who are subject to the code in their roles as Market Operator and System Operator, to have been overtly managed by the RAs. For example, we would have expected the consultants employed by the RAs to have taken a significantly more active role in the code development process, providing expert independent advice to the RAs and to the wider Working Group, particularly in areas where EirGrid could be perceived as being subject to a potential conflict of interest (e.g. the imbalance pricing methodology, management of the socialisation fund, etc.).
- **Rules development did not follow a logical sequencing.** We note that in some key areas – e.g. capacity market settlement – the development of market rules preceded policy decisions and that central system specification preceded finalisation of the market rules (e.g. see comment 685 and paragraph E.4.3.1 which prejudices CRM policy decision). Development of central system specifications prior to completion of market rules has resulted in a significant problem in relation to aggregation of in-market wind units and we fear other issues may arise. We also note that the current consultation is proceeding ahead of completion of the market rules (e.g. the decision on the Basis of Supplier Charging, the decision on the recent escalation regarding the settlement of difference payments under the CRM<sup>13</sup>, etc.). There are also a significant number of gaps in the agreed procedures in the current draft of the code.
- **Vague policy decisions in important areas allowed significant scope for interpretation regarding their implementation.** Some examples include the policy decision on imbalance pricing, policy decisions regarding

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<sup>12</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.25

<sup>13</sup> Publishing a response to the Escalation Note the day before (23 January 2017) the deadline for responding to the TSC Consultation does not give respondents sufficient time to review and respond to the proposals, which in any event have yet to be fully considered and developed in the TSC drafting.



triggers for administered scarcity pricing (e.g. see comment 810) and policy decisions regarding aggregation of wind units. As Poyry observed in their report on the imbalance pricing methodology:

*“The extent to which the imbalance price is influenced by the TSOs’ dispatch decisions and system constraints is an important consideration when developing the imbalance pricing methodology. At one end of the spectrum an imbalance pricing methodology may be based on an unconstrained market schedule [the left of the spectrum], while at the other end system constraints would be the primary driver of the imbalance price [the right of the spectrum]. ... It is important to consider where on this spectrum the most appropriate imbalance pricing approach for I-SEM would lie and the SEM-C decisions to date have not explicitly expressed a view on this subject. However considering it is the view of the SEM-C that the imbalance price should be ‘set only on energy actions’ it could be interpreted that the I-SEM approach should lie towards the left of the spectrum. ... The approach proposed for the I-SEM appears to allow for a greater impact of system constraints on the imbalance price and can therefore be considered further to the right of the spectrum ... . While attempts are made ... to remove the non-energy actions from the imbalance price calculation, in our view there remains a significant possibility that system actions will influence the price. As previously noted, the Irish system has a relatively high number of constraints and system actions required to relieve these constraints. As such, the potential impact of these constraints, if they are not prevented from influencing the imbalance price, could be significant and due consideration should be given to whether such an impact is acceptable.*

***It is our view that the SEM-C should proactively consider where on the spectrum it is appropriate for the I-SEM imbalance pricing methodology to sit, taking account of the latest information on the design.”***<sup>14</sup>(original Poyry emphasis)

Poyry then go on to observe that:

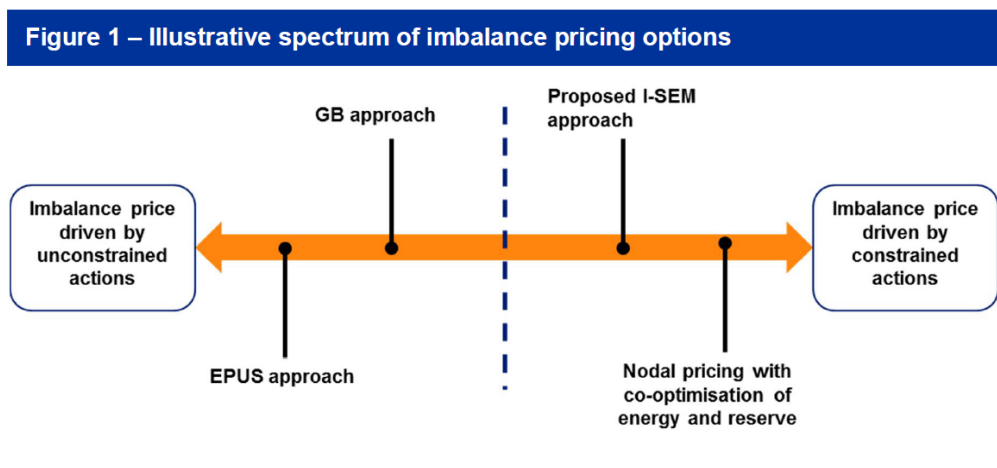
*“We note that significant amendments continue to be introduced such as the calculation of an imbalance price for each 5 minute period rather than for each half hour in the most recent release of the Legal draft (dated 27 April 16). These could have a significant impact on the operation of the imbalance mechanism and as such should feed into the SEM-C decision”*<sup>15</sup>

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<sup>14</sup> Poyry, May 2016, ‘Review of I-SEM Imbalance Pricing Methodology’, Report for EAI submitted to the RAs on 19 May 2016, p.11 to p.13

<sup>15</sup> Poyry, May 2016, ‘Review of I-SEM Imbalance Pricing Methodology’, Report for EAI submitted to the RAs on 19 May 2016, footnote at the bottom of p.13.

Finally Poyry's view of where the current imbalance pricing methodology implemented within the market rules sits on the 'pricing spectrum' referenced in the quote above is provided in the diagram below extracted and reproduced from the report.<sup>16</sup>



Energia notes that to date no clear direction from the SEM Committee has been provided on this issue.

The above extract from the Poyry report clearly illustrates the significant difficulties caused during the development of the market rules by vague and ambiguous policy decisions. It also illustrates the issues caused by ongoing significant changes to the market rules, even when in legal draft form. However in this particular instance we welcome the inclusion of an option to revert to full GB NIV tagging within the I-SEM pricing systems but observe that no clarity has been provided on how a decision whether or not to revert to this alternative pricing methodology will be taken by the SEM Committee - i.e. there remains no firm policy decision in this area and no governance arrangements have been established.

- **Agreed governance processes were not followed.** A commitment was given to Working Group participants to provide a status report, including a risk assessment, reflecting the information being reported to the SEM Committee. This reporting was to be carried out before legal drafting on rules areas commenced. This reporting did not occur and the Working Group did not have visibility of, or an opportunity to comment upon, the information reported to the SEM Committee (e.g. see comments 162 and 163, and the responses provided).
- **The procedure agreed for setting TSC parameters was not followed.** A process for determining TSC parameters was agreed with the Working Group in June 2016 (see comment 687). While Energia acknowledges it would have been difficult for the Project Team to manage this process, and

<sup>16</sup> Poyry, May 2016, 'Review of I-SEM Imbalance Pricing Methodology', Report for EAI submitted to the RAs on 19<sup>th</sup> May 2016, p11.

for participants to engage in it given the excessive volume of other work commitments, it provides evidence of the unrealistic project timelines and excessive workload set for the Working Group (e.g. see comment 825).

- **No proto-typing of the credit and collateral provisions was provided to the rules Working Group, and no scenario analysis was carried out.** In particular stress testing was not completed to ensure that the combination of the cash flow associated with administered scarcity pricing and the bad debt provisions do not combine to cause a potential cascading 'domino' effect – i.e. where the failure of one party leads to the failure of another party and so on.

In conclusion, therefore, the above clearly illustrates that there were material deficiencies in the Working Group process which developed the draft TSC now being consulted upon by the SEM Committee. These shortcomings have significantly increased the likelihood of material omissions, errors or unintended consequences arising under the proposed Code, some of which we clearly identify in sections 3 and 4 of this response for the SEM Committee's immediate consideration. We would also urge a wider holistic review of the market arrangements for I-SEM in the form of independent quality assurance and end-to-end testing to identify and address any other material issues that cannot be uncovered through this consultation given the lack of extensive prototyping during the rules development process, among other shortcomings. This should include, inter alia, extensive, industry inclusive, testing of the settlement algebra to ensure that it works as intended and a comprehensive holistic review of credit and collateral arrangements across all I-SEM markets.

### **3. Summary of concerns with proposed TSC**

Our main concerns relating to specific areas of the proposed TSC and its implications under the wider market arrangements, including potential adverse consequences, are set out below.

#### **3.1. Omissions and material errors within the TSC**

There are a number of omissions and material errors within the TSC that must be addressed as a matter of urgency. A list of these issues is provided below.

- **Generators should not be held liable for RO difference payments due to circumstances that are demonstrably beyond their control.** The settlement for the capacity market has no provisions to exempt capacity market participants from difference payments in scenarios when their failure to comply with capacity market obligations is due to circumstances demonstrably beyond their control. The issue of scheduling and dispatch risk is discussed in detail later in this response, while a number of other specific examples are provided below:

- The SEM Committee decision in relation to ‘Outturn Availability’ (SEM-15-075), made in the context of the SEM, will result in capacity market participants being obliged to declare their unit unavailable for five days during outages on the electrical transmission system that stops them being physically able to export onto the grid. Under the I-SEM market rules this exposes capacity market participants to significant and unreasonable financial risk over which they have no control (e.g. see comment 977). The Outturn Availability Decision therefore needs to be reviewed in the light of I-SEM.
- The change to firm access policy implemented via the I-SEM design set out in the Building Blocks Decision (SEM-15-064) removes the right of market participants with firm transmission access to secure infra-marginal rent via the balancing market regardless of physical conditions on the transmission system.<sup>17</sup> This creates large potential financial exposures for flexible units behind export constraints<sup>18</sup> (e.g. see comments 503).
- There are no provisions to deal with gas supply shortages resulting from problems with the gas transmission network. Under the proposed market rules for I-SEM, a capacity market participant remains exposed to significant potential financial loss if a gas transmission outage results in the availability of their capacity market unit being curtailed at a level below their capacity obligation (e.g. because of a trip caused by a gas interruption, or reduced availability due to operation on an alternative fuel). This is a very serious issue because under the proposed rules problems on the gas transmission system could trigger a scarcity event in the electricity market.
- There are no exemptions from difference payments for capacity units undergoing mandatory tests on secondary fuel operations.<sup>19</sup>
- **The role and obligations of the System Operator and NEMO under the TSC have not been clearly set out under section B** (see the approach taken for the Market Operator in section B.13). The System Operator and NEMO have responsibilities under the code, which impact balancing

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<sup>17</sup> A unit behind an export constraint cannot submit a non-zero PN unless it has an ex-ante contract position. Under the market rules a short notice unit behind an export constraint that was out of merit in ex-ante timeframes will be exposed to difference payments during an unanticipated scarcity event in balancing market timeframes – i.e. the System Operator will not inc the unit on for energy reasons and dec the unit off for non-energy reasons.

<sup>18</sup> This includes peakers and CCGTs that can operate in open cycle mode.

<sup>19</sup> While we acknowledge that these last two issues were not formally raised as part of the Working Group process, they represent a significant financial risk for gas-fired generators.

market outcomes and risks faced by participants (e.g. see comments 506 and 804).

- **There are no provisions under the proposed market rules to allow aggregation of in-market wind units** (e.g. see comment 806). This creates an unacceptable operational overhead for any market participant that has multiple wind units registered in the market. To put it in context, Energia has c40 in-market wind units and under the current market rules each of these units will need to be traded out individually within the ex-ante spot energy markets to ensure they receive compensation for constraints and are kept whole for curtailment. This is neither practical nor feasible and therefore aggregation of in-market wind farms must be facilitated under the market rules, regardless of the impact on central systems or the settlement algebra.
- **The central market systems do not facilitate multi-mode generators offering different operational configurations into the balancing market (e.g. see comment 496)**. This is a real missed opportunity to implement a market solution that facilitates generators from offering the flexibility already inherent within the existing fleet and begs the question as to why it is not being actively developed given the increasing penetration of wind on the system and the challenges this presents for system management. The current DS3 programme evidences the value to the system of flexibility within the generation portfolio and it therefore seems perverse that the market rules and system design do not facilitate it being offered by participants.<sup>20</sup>
- **The methodology for calculating the curtailment price set out in section E.6 is incorrect**. The curtailment price should be an average trade price per unit given its use in the later settlement algebra to avoid imposing financial exposures (e.g. see comment 477 and 1530). We believe the absence of an algebraic formulation for this calculation has contributed to the error in the methodology (e.g. see comments 852 and 1531).
- **The make whole payment mechanism does not accurately model changes in start costs associated with changes in warmth state** (e.g. see comment 1562). A generator whose start is delayed by the System Operator such that the generator moves beyond the heat state boundary that was assumed in its ex-ante trading activities – e.g. moves from a hot to a warm start, or from a warm to a cold start – is not kept whole under

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<sup>20</sup> We note that if the market rules and central market systems facilitated mutually exclusive submission of commercial and technical data for different potential operating configurations, or allowed intra-day changes to technical parameters – i.e. the ability for a generator to switch between operating modes within day - scheduling and dispatch risk for multi-mode units could be significantly reduced – see our discussion of this issue later on in the response.

the mechanism.<sup>21</sup> We have a further general concern that the make whole payment mechanism has not been properly tested despite its central role in recovery of fixed costs under the rules. Other design flaws, or implementation issue, within this mechanism could result in systemic financial loss by participants, or impose unnecessary costs on consumers.

- **The TSC adjusts commercial offers with break points below the actual availability of a unit based upon the average availability of the unit in the settlement period and not the maximum availability of the unit.** We are concerned this could cause issues in settlement and we would welcome evidence of this being tested to confirm that it will not have any adverse effects (e.g. see comment 1494).
- **The application of the maximum of the secondary capacity trade price or the primary capacity trade price to calculate stop loss limits for secondary trades is incorrect and is not based on sound economic principles.** The additional risk taken on by a capacity market participant should be capped relative to the secondary traded price regardless of whether the price is below the primary auction price to avoid asymmetry of financial risk between primary and secondary trading rules. The current approach results in participants that engaged in secondary trades taking on proportionally more risk than those who do not (e.g. if they trade at times when the secondary price is below the primary auction price). This additional risk could distort trade incentives and act as a disincentive for capacity units to trade in the secondary capacity market. This is extremely unhelpful given the significant structural market power issues that will exist in the secondary market – i.e. the dominance of ESB – and the wider liquidity concerns (e.g. see comment 1578).
- **The assumption used in the ranking mechanism for biased PNs and uninstructed imbalances is false and does not work in the case of multiple acceptances across time** (e.g. see comments 201). The materiality of this issue will depend upon volume of early acceptances made on a unit by the System Operator and their timing – i.e. if they are before or after gate closure.
- **The answer provided to comment 285 suggests that the methodology for allocating ex-ante trades into imbalance settlement periods could result in a mismatch between allocation of trades for energy and capacity settlement purposes** (e.g. see comment 285). We note the intention is not to use this functionality at go live but it remains within the market rules as a latent (and unwarranted) risk.

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<sup>21</sup> For example, a generator may have priced a hot start into its ex-ante market trade but in dispatch its start is delayed such that it is actually on a warm start. In such a scenario the generator has incurred additional costs (the delta between its hot and warm start costs) which are not paid to it under the mechanism.

- **The quality of the drafting in the Code in some areas is poor (e.g. incorrect referencing, lack of definitions for terms, no indication of units required/used for some important data items, missing data transactions).** For example, we were unable to locate the data transactions from the System Operator to the Market Operator for the imbalance pricing methodology and the units used for technical offer data items do not seem to be provided. In combination, the status of the legal draft has made detailed review of the TSC for this consultation process more difficult.
- **A large proportion of the settlement algebra for suppliers is missing from the Code.** Thus it is impossible to review the supplier arrangements and provide feedback through this consultation process. The consultation is therefore premature and should have been delayed until these and other outstanding arrangements (e.g. the decision in relation to the escalation on scheduling and dispatch risk<sup>22</sup>) had been finalised and reflected in the Code drafting. We suggest that this impairment be remedied by publishing a final mark-up of the Code (against the current version) for a further round of consultation.

The above list represents some obvious flaws in the TSC that must be remedied as a matter of priority. The remainder of this response elaborates where necessary and identified other issues of material significance that need to be properly considered and addressed. Energia is concerned that further problems could arise as the impact and implications of the market rules on participants becomes more evident over the coming months. This further underlines the importance of a wider holistic review of the market arrangements for I-SEM in the form of independent quality assurance and end-to-end testing to identify and address any other material issues that cannot be uncovered through this consultation given the lack of extensive prototyping during the rules development process, among other shortcomings.

### **3.2. Reliability Option scheduling and dispatch risk**

The I-SEM trading arrangements and market rules more generally introduce excessive, and in some cases, unwarranted<sup>23</sup> financial risks upon participants. Energia has raised concerns regarding these risks extensively as part of the I-SEM consultation and rules development process and we therefore focus upon the specific example of scheduling and dispatch risk within this section, which is the subject of an ongoing escalation process<sup>24</sup>.

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<sup>22</sup> See footnote 13 of this response.

<sup>23</sup> In the sense that the risks emanate from flaws in the design rather than serving to incentivise efficient market outcomes – e.g. monthly fuel indices for the strike price calculation, provisions to manage the socialisation fund, information imbalance charging functionality, scheduling and dispatch risk under ROs etc.

<sup>24</sup> See footnotes 5 and 13 of this response.

Scheduling<sup>25</sup> and dispatch<sup>26</sup> risk occurs under the proposed market rules because of the assumption that a capacity market participant will be able to secure a contract position in one of the ex-ante spot energy markets, or will be dispatched by the TSO via the balancing market, whenever the energy market price exceeds the strike price set for the capacity mechanism. The premise behind this assumption is that the strike price will only be reached at times of capacity scarcity, and therefore capacity market participants will be able to sell their output via spot energy markets, or via the balancing market to cover their exposure to difference payments. This assumption and its underlying premise however are false, as explained below.

- The exclusive nature of the I-SEM trading arrangements forces participants to transact through spot energy markets (including the balancing market) to offset their exposure to capacity market difference payments. The operational definition of reserve scarcity set out in the market rules, however, means that periods of reserve scarcity need not coincide with a short capacity margin and can be triggered by forecast or operational errors made by the System Operator. In such instances energy markets are extremely unlikely to be able to anticipate scarcity events,<sup>27</sup> while the System Operator will only need to replace the shortfall in operational reserve via the balancing market. This will result in some capacity market participants being unable to meet capacity market obligations through no fault of their own (e.g. see Viridian escalation response dated 25 November 2016<sup>28</sup>).
- The operational definition of reserves employed in the market rules, combined with the 5 minute imbalance pricing period, significantly increases this risk. This is because even a short-lived deficit in operating reserves (which could be caused by system operator forecast errors or dispatch errors) can push the imbalance price above the capacity market strike price. This makes it even less likely that ex-ante spot energy markets will anticipate such events, while the System Operator will again only need to replace the shortfall in reserve via the balancing market.
- The use of monthly fuel indices for the strike price calculation means that capacity market difference payments could be triggered as a result of volatility in spot commodity markets rather than reserve scarcity (e.g. see comment 736). If difference payments are triggered because of commodity price movements there may be insufficient demand to allow all capacity market participants to secure an ex-ante contract position, or

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<sup>25</sup> Scheduling risk is the risk of not securing an ex-ante contract position in the day-ahead and intra-day markets.

<sup>26</sup> Dispatch risk is the risk of not securing a physical dispatch position via the balancing market.

<sup>27</sup> Even if markets do anticipate the event, insufficient demand would be available to allow all capacity market participants to secure contract positions.

<sup>28</sup> See footnote 5 of this response.



achieve a dispatch position via the balancing market. Energia notes that setting the strike price on monthly fuel indices does not improve incentives to make capacity available but does transfer financial risk from suppliers onto generators – i.e. provides an ex-gratia cap on the exposure of suppliers to commodity price movements.

Scheduling and dispatch risk will impose excessive and unwarranted financial risk on capacity market participants. Assuming a de-rating factor of 90%, a strike price of €500/MWh and an ASP of €11,000/MWh,<sup>29</sup> one hour of scarcity could cost a 400MW CCGT c€3.8m, excluding any adjustments for load following, or the impact of stop losses.<sup>30</sup> It is obvious that the imposition of such costs has serious negative implications for the profitability of capacity market participants. In the case of a participant that was marginal, barely infra-marginal, or “constrained on” in the capacity market (i.e. cleared in the capacity auction at its offer price), these arrangements could result in revenue adequacy issues, putting security of supply at risk.<sup>31</sup>

The application of load following adjustments does not provide adequate protection from these exposures. This is because the reduction in capacity market obligations is implemented pro-rata relative to market demand consumption, not proportional to the ex-ante contract positions, or dispatch levels of participants (e.g. see comment 296). A proper solution to this issue is therefore required (e.g. see comment 535) to avoid an unwarranted increase in costs for consumers, either directly, through the price paid for capacity, or through reduced security of supply.<sup>32</sup> Energia has offered a number of reasonable and constructive suggestions on this matter (summarised below) that we request are considered by the SEM Committee.

### **3.2.1 Suggested remedies to RO scheduling and dispatch risk**

- Restrict the obligation to make difference payments under the CRM by making it contingent upon ex-ante scarcity warnings being issued by the System Operators (e.g. see comment 698);
- Change the definition of scarcity so it is based upon the available capacity margin rather than operational reserves (e.g. see Viridian escalation response);

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<sup>29</sup> The value of full ASP will be set at €3000/MWh at least on a transitional basis. There is a risk in the future however that it could increase to a higher figure – e.g. based upon some percentage of VOLL. The current value of VOLL in SEM is c€11,000/MWh. The example provided is therefore a worst case scenario but it is worth noting that even with a full ASP of €3000/MWh the financial loss would be significant – i.e. in the region of c€1m.

<sup>30</sup> These may reduce the level of exposure in some instances.

<sup>31</sup> It is worth noting that the risk of being subject to such costs is not considered in the discussion of the methodology for setting the Existing Capacity Offer Cap in the CRM Parameters Consultation (SEM-16-073).

<sup>32</sup> Energia acknowledges that measures are being taken to address the clear anomaly in the market rules regarding units dispatched to provide some ancillary services, such as reserve, however this is only one instance of scheduling and dispatch risk and does not address the wider issues.

- Utilise the concept of a “valid offer” to determine the liability of capacity market participants to make difference payments (e.g. see comment 535 and Viridian escalation response);
- Include functionality within market systems that allows multi-mode generators to offer different operational configurations simultaneously into the balancing market to reduce their potential exposure to dispatch risk (e.g. see comment 496 and Viridian escalation response).
- Implement an ex-post appeals mechanism to allow participants to appeal difference charges if certain criteria are met (e.g. see Viridian escalation response);

In conclusion, therefore, Energia notes that most of the issues raised in this response have the effect of increasing the financial risks faced by participants without any offsetting benefits and we are concerned that the overall level of financial risk imposed by the market rules is excessive, and could have a detrimental impact upon competition and security of supply. These concerns are well documented and we would refer the RAs to our previous submissions on these matters. With reference to their statutory duties and relevant legal requirements, it is incumbent upon the RAs to ensure that such risks are reasonable and manageable so that all generators may compete in a level playing field and that those generators required to run the system are able to finance their activities. In practical terms, this means that the TSC will have to ensure that capacity market participants are not liable for RO difference payments due to circumstances demonstrably beyond their control.

### **3.3. Governance and regulatory risk**

Clear and transparent governance arrangements and appropriate allocation of roles and responsibilities are important to ensure that I-SEM provides a stable and predictable framework that protects consumer interests, delivers competitive outcomes and ensure long run market confidence. There is considerable scope to improve standards of good governance and reduce the perception of regulatory risk under the TSC. In particular, Energia has concerns regarding: (a) lack of transparency in critical commercial areas; (b) inappropriate governance arrangements for important commercial parameters; and (c) reliance upon EirGrid to provide recommendations on potentially sensitive commercial areas<sup>33</sup> rather than seeking advice from independent experts.

Specific examples of the regulatory risk that arise under the market rules are:

- **Governance arrangements for commercially material parameters in the capacity market are not adequately defined.** For example, the

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<sup>33</sup> Areas that have a significant impact on financial risk and potential implications for system management, or system management costs.

administered scarcity pricing mechanism, the strike price calculation, etc. do not preclude material changes being implemented after a capacity auction but prior to the end date of auctioned capacity contracts.<sup>34</sup> Clear and unambiguous governance arrangements are required to allow participants to assess their financial risk under the capacity mechanism. (e.g. see comments 1375 and 1523).

- **Governance arrangements for the Flagging and Tagging Rules (F&TRs) are inadequate.** The F&TRs will substantially impact price formation in the I-SEM balancing market<sup>35</sup> and could also affect dispatch balancing costs, in which case, a potential conflict of interest arises for EirGrid.<sup>36</sup> Full transparency around the F&TRs (i.e. not just what constraints are captured by the rules, but also how they are captured and implemented in the central market systems), including advanced notification of future changes, is therefore required to allow accurate forecasting of the imbalance price, and facilitate efficient market trades. It is also required to allow participants to review imbalance price outcomes and raise pricing disputes. The current description of the rules in paragraph 1 and 2 of Appendix N and the obligation imposed upon the Market Operator under paragraph 3 is insufficient to address these concerns (e.g. see comments 1065, 1532, 1533 and 1544).<sup>37</sup>

Poyry have also expressed a concern is relation to the transparency and governance arrangements for the F&TRs:

*“During our review, a new statement of system constraints was issued by the TSO, which highlights issues of governance and the need for a dynamic process which retains stability and transparency. Changes to the set of constraints can occur at any time. The process to keep the flagging and tagging algebra up to date (while following good testing and sound governance procedures) is not described and this is a*

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<sup>34</sup> For example, an increase in the full ASP price would materially change the value of reliability options and the financial risks of holding them. A reduction to the strike price formula would increase the frequency with which reliability options will be called and decrease energy revenues, increasing the value of the reliability option. A reduction in stop loss limits increases the financial risk of holding a reliability option, and therefore its value.

<sup>35</sup> As Poyry note in their report submitted to the RAs on 19 May 2016 “Review of I-SEM Imbalance Pricing Methodology” the process for flagging and tagging non-energy actions is “... of particular importance given the significant impact the SO flagging stage is likely to have on the imbalance price and the extent to which it is influenced by non-energy actions.” p.16

<sup>36</sup> Poyry also note this potential conflict of interests and the need for robust governance: “Given the central role of the TSO in defining the imbalance pricing rules, and noting their incentives to minimise the costs attributed to non-energy actions we support the need to limit any subjective decisions by the TSO in how the [system] constraints are represented within the algebra.” “Review of I-SEM Imbalance Pricing Methodology” p.2

<sup>37</sup> The information that must be published by EirGrid in relation to the F&TR, and the triggers for / frequency with which it must be updated and published need to be clearly and unambiguously defined in the code. They should also be sufficient to meet the requirements of participants.

*particular area of concern over the robustness of the methodology going forward.*<sup>38</sup>

It is worth noting the high degree of transparency and robust governance arrangements implemented for the scheduling and pricing algorithm used in the current SEM. This engenders confidence in SEM market outcomes. We therefore recommend a similar approach is adopted for dispatch and pricing processes under the I-SEM trading arrangements.

- **Unclear governance arrangements for operational reserves requirements and concerns of insufficient transparency regarding System Operator reserve management policies** (e.g. see comments 699 and 818). Under paragraphs E.4.4.1 and E.4.4.3 the operational reserve requirement used by the System Operator within its real-time dispatch tool affects the trigger level for Reserve Scarcity Pricing. Changes to operational reserve requirements will therefore change the likelihood of Administered Scarcity Pricing occurring, particularly at times of system stress; increasing scheduling and dispatch risk for participants (discussed later within this response). We appreciate that reserve requirements need to be managed dynamically by the System Operator to ensure system security. However, given the potential financial implications for participants, it is essential there is a high-degree of transparency and appropriate governance arrangements put in place.
- **A reliance upon EirGid (acting as SEMO) to provide recommendations on important commercial parameters**<sup>39</sup>. For example, SEMO may provide recommendations on imbalance pricing parameters (e.g. see paragraph E.2.1.2 and E.2.1.3). SEMO also have some role in relation to the reserve scarcity price curve under E.4.3.1.<sup>40</sup> These parameters have material commercial implications for participants and could affect EirGrid acting as System Operator. Relying upon recommendations from an independent expert to inform regulatory decision making in these areas would remove any potential perception of conflict of interest.<sup>41</sup>
- **A reliance upon EirGid (acting as System Operator) to provide recommendations on important commercial parameters.** For example, EirGrid provide recommendations on the fuel indices used to calculate the Strike Price and the charging mechanism for Information

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<sup>38</sup> Poyry Report, May 2016, 'Review of I-SEM Imbalance Pricing Methodology', Report for EAI submitted to the RAs on 19 May 2016, page 2.

<sup>39</sup> Governance arrangements for other aspects of the imbalance pricing methodology are also of concern to Energinet.

<sup>40</sup> It should be limited to implementation of SEM Committee decisions.

<sup>41</sup> It is imperative that any potential changes to these parameters are also made subject to a full consultation process with industry because of the significant commercial impact these parameters could have on market participants.

Imbalance Charges (e.g. see paragraphs F.16.1.1 and F.16.1.2, and F.10.1.2 and F.10.1.3 respectively). These areas have a material financial impact on participants and will influence the operation of the capacity and energy markets; directly affecting EirGrid as the System Operator.<sup>42</sup> Relying upon recommendations from an independent expert in these areas would therefore help to avoid any potential perception of conflict of interest.<sup>43</sup>

### 3.4. Unorthodox design and lack of testing

Fundamental components of the I-SEM energy and capacity market design are unorthodox and potentially unique, and insufficient detailed analysis has been conducted to determine their impact upon the operation of the energy and capacity markets (i.e. there is a significant risk of adverse unintended consequences for participants and consumers as noted in the ESP Stocktake report). These design choices have also added significant complexity to the market rules (discussed later in this response). Some examples of unorthodox and potentially unique design choices are provided below.

- **The use of LNAF and SIFF factors to manipulate outcomes from the security constrained unit commitment algorithm is unusual and was not rigorously tested as part of the rules development process.** The potential sensitivity of balancing market outcomes to changes in these factors was not known by participants during the rules development process. We therefore recommend that a Working Group is set up with industry to carry out extensive scenario based modelling to determine the sensitivity of market outcomes to these factors (e.g. see comment 507 and comment 523). The results of this modelling should be used to inform a consultation on the appropriate value of these parameters for the start of the I-SEM. We would also recommend that any subsequent change to these factors is subject to full industry consultation.<sup>44</sup>
- **The use of dual order formats within the I-SEM balancing market (complex and simple orders) could result in an anomaly in imbalance price formation (i.e. the start costs associated with longer notice plants may tend to not be included in the imbalance price calculation).** This could result in a systemic difference in price formation

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<sup>42</sup> Trading in ex-ante energy markets will determine the extent and cost of balancing actions required to secure the system.

<sup>43</sup> It is imperative that any potential changes to these parameters are also made subject to a full consultation process with industry because of the significant commercial impact these parameters could have on market participants, and in the case of Information Imbalance Charging, the impact they could have on liquidity in the intra-day market.

<sup>44</sup> Energia acknowledges that there may be a period of bedding in for the new market arrangements where parameters that are clearly causing issues may need to be changed at short notice. As a general principle however changes to critical market parameters such as LNAF and SIFF parameters should be subject to full industry consultation given their potential significant impact on energy market outcomes.

between the intra-day and balancing market and lead to a distortion in trade incentives (e.g. see comment 523). It has also resulted in significant complexity being introduced into the settlement algebra, (discussed in more detail later in this response).

- **Parallel opening of the intra-day and balancing market may be unique.** Allowing the TSO to reposition some units prior to gate closure is necessary to ensure security of supply. Allowing repositioning by the System Operator via the balancing market, while the intra-day market is still open (parallel opening), is extremely unusual. Again this could distort trading incentives, reducing liquidity in the intra-day timeframe (e.g. see Poyry slides entitled “Potential Trading Distortions in the Intra-Day Market Under I-SEM” submitted to the rules Working Group in 2016). It has also resulted in significant complexity being introduced into the settlement algebra (discussed in more detail later in this response).
- **The use of open instructions in a market that employs a balancing mechanism like the one in I-SEM is unorthodox.** In the I-SEM order prices for the same settlement period can change multiple times throughout the day. As a result, each action taken must be considered as a closed instruction to determine a fixed volume at the prevailing order price. Therefore using open instructions for dispatch results in the requirement for complex rules to close instructions for settlement purposes.<sup>45</sup> This adds significant and unnecessary complexity to the settlement rules (discussed in more detail later in this response).

Energia notes that under Articles 10 and 52 of the current draft of the Network Code on Electricity Balancing there are requirements to ensure that imbalance pricing, and TSO actions, do not distort trading incentives. Given the unique aspects of the energy trading arrangements (e.g. the parallel opening of the intra-day and balancing market), and the ability of TSO actions (including how they are treated under the F&TRs) to influence the imbalance price, a thorough and further independent assessment of the balancing market design should be carried out (e.g. see comment 803).<sup>46</sup> As Poyry state:

*“There are several aspects of the... [settlement algebra] which could potentially lead to unintended or perverse incentives for market participants resulting in a distortion of normal traded activity and price discovery. We note*

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<sup>45</sup> The use of open instructions within the context of an ex-post pool market like the SEM is not unorthodox as the market design suits that approach. A generator in the SEM only has a single order that is applicable to all TSO actions taken on any given trading day. This removes the requirement to impose boundaries (close dispatch instructions), to clearly determine the order to be used in settlement.

<sup>46</sup> ESP do not seem to have looked in detail at this area of the market rules or fully assessed the settlement algebra, and its implications for trade incentives, given they recommend the need for proto-typing.

that the RAs have an obligation under the emerging EU Network Balancing Code to ensure TSO actions do not distort trading.”<sup>47</sup>

### 3.5. Excessive complexity of market rules

Some areas of the market rules are excessively complex – e.g. Appendix O, the capacity and energy settlement algebra. Such high complexity combined with an unorthodox design and lack of extensive proto-typing during the rules development process, creates considerable scope for material errors and unintended consequences. As ESP comment:

*“It is best practice for complex areas of market rules to be prototyped (using tools like Excel) to provide assurance that they work, and do not give rise to unintended consequences. This has not been done in the case of the I-SEM rules.”*<sup>48</sup>

*“[P]rototyping of the market rules should be carried out to provide confidence that they work and do not have un-intended consequences (or that such unintended consequences are manageable)”*<sup>49</sup>

A non-exhaustive list of some of our key concerns relating to the excessive complexity of the market rules is provided below.

- **The use of open instructions (which facilitated minimal change to System Operator dispatch systems) has created extensive and unnecessary complexity within the settlement algebra.** This complexity will make shadow settlement of balancing market actions significantly more challenging under the I-SEM arrangements and could lead to a significant decrease in market transparency (e.g. see comment 821).<sup>50</sup> As Poyry have noted in a report for EAI submitted to the RAs in September 2016:

*“There is significant complexity in the proposed settlement algebra... [S]ome of this complexity arises due to the retention of open instructions in I-SEM, and parties may find it difficult to properly validate settlement of the associated deemed closed orders.”*<sup>51</sup>

*“... [S]ome elements of algebra ... are highly complex and can lead to inconsistent outcomes if the legal draft is not interpreted correctly. This complexity makes it difficult to be certain that the algebra gives sensible outcomes in every possible circumstance, and similarly to be certain it has*

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<sup>47</sup> Poyry, August 2016, ‘Review of I-SEM Imbalance Settlement Methodology’, Report for EAI submitted to the RAs, p.3

<sup>48</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.24

<sup>49</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.25

<sup>50</sup> We note the comment by SEMO at WG9 regarding the issues central market system vendors were having understanding the rules around open instructions

<sup>51</sup> Poyry, August 2016, ‘Review of I-SEM Imbalance Settlement Methodology’, Report for EAI submitted to the RAs, page 2.

*been put in a model completely correctly. We note that much of the complexity arises due to the decision to retain open instruction in I-SEM*<sup>52</sup>

- **The use of open instructions could significantly complicate imbalance price forecasting.** For example, if QBOA and PBOA for each BM unit are not published on a suitable timeline they would need to be inferred from dispatch instructions and offer data as per the complex rules set out in Appendix O (e.g. see comment 822). This would be a non-trivial exercise, which is further complicated by the decision to implement a short imbalance pricing period of 5 minutes, reducing the time available for collating data and executing the process. We believe the required data will be published on a suitable timeline but have requested confirmation via the Response Template in section 4 of this response.
- **Parallel opening of the intra-day market and the balancing market has required complex concepts to be introduced within the settlement algebra.** These include the requirement to manage:
  - Multiple actions for any given settlement period priced on different orders submitted by the generator at different times during the trading day (multiple acceptances);
  - Substitutive PNs whereby the volume of bid offer acceptances in the balancing market are adjusted relative to any subsequent changes in a units ex-ante contract position; and
  - The introduction of complex mechanisms to manage the payment of premiums and discounts<sup>53</sup> based upon the trading behaviours of balancing market participants in the intra-day market relative to bid or offer acceptances by the System Operators in the balancing market.
- **The decision to proceed with mixed reference pricing for reliability options has added further complexity to the settlement algebra.** For example, the requirement to track the volume of obligations met via trades in different energy markets. There is also a risk the settlement algebra in this area could distort trading incentives.
- **The use of two types of order format (complex and simple) in the balancing market further complicates the settlement algebra.** For example, it requires inclusion of a make whole payment mechanism.<sup>54</sup> It also raises concerns regarding price formation in the balancing market (discussed in previous section).

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<sup>52</sup> Poyry, August 2016, 'Review of I-SEM Imbalance Settlement Methodology', Report for EAI submitted to the RAs, page 2.

<sup>53</sup> The premium and discounts are calculated as the difference between bid or offer prices and the imbalance price.

<sup>54</sup> Our concerns with the make whole payment mechanism within the settlement rules were set out earlier in this response.



- **Implementation of ex-post automated flagging and tagging.** In conjunction with a lack of transparency and appropriate governance arrangement (see our comments relating to the F&TRs earlier in this response), implementation of automated ex-post flagging and tagging is likely to make accurately forecasting the imbalance price more difficult. The decision to implement a 5 minute imbalance pricing period has added to this difficulty. If participants cannot accurately anticipate the imbalance price it will result in inefficient market outcomes.<sup>55</sup>

In conclusion, therefore, the excessive and unnecessary complexity of the market rules leads to uncertain trading incentives and a high risk of unintended consequences. It also reduces transparency and increases participant system costs.<sup>56</sup> These factors combined undermine confidence in the market arrangements and could act as a barrier to entry into I-SEM.

### **3.6. Unnecessary operational complexity for participants**

The market rules introduce unnecessary operational complexity that will further increase participation costs, and could act as a barrier to entry. Examples of this unnecessary operational complexity include:

- **The market rules prevent aggregation of in-market wind units.** This means that a participant that registers multiple wind units must trade these units individually within the market to ensure the unit is properly settled for constraints and curtailment. This is an excessive and unreasonable operational overhead to impose on participants; unnecessarily increasing participation costs (e.g. see comment 806).
- **The ex-ante spot markets and the balancing market trade at different notional points on the transmission system – i.e. trading boundary and station gate respectively.** This unnecessarily complicates trading operations, and while it is likely this can be managed by adjustments in participant systems, it again adds unnecessary complexity and cost.<sup>57</sup>
- **Gas-fired generation will need to submit a large volume of orders to the intra-day and balancing markets to manage commodity risk.** The implementation of dual order formats in the balancing market, combined with parallel opening of the intra-day market and balancing market, results in a requirement for dispatchable gas-fired generation units to submit a

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<sup>55</sup> In GB the imbalance price can be far more easily inferred by looking at recent TSO acceptances and their status, which is set at the time the action is taken and not post event. This information is provided to the market in the form of a report.

<sup>56</sup> In the case of the settlement algebra the complexity will make it significantly more difficult to shadow settle the market rules compared to the current SEM. In the case of the imbalance pricing algebra it will make it far more difficult to anticipate, back-cast or dispute the imbalance price.

<sup>57</sup> This cost is incurred individually by each participant rather than being incurred once, and therefore socialised, in the central market systems.

large volume of orders to the intra-day and balancing markets to manage commodity risk.

- **The complexity of the settlement algebra complicates incentives for trading compared to other markets, particularly if a unit is subject to early acceptances via the balancing market.** For example, traders will be required to monitor balancing market actions when trading in the intra-day market to ensure that they have taken account of their dispatch position and potential exposure to the imbalance price. Substitutive trading may require a trader to confirm that an intra-day market trade does not open up an exposure to under recovery of start-up and no load costs – e.g. if the System Operator has issued a sync instruction to the generator prior to intra-day market close.

### 3.7. Concerns with imbalance pricing methodology

Energia has engaged extensively in the development of the imbalance pricing methodology and acknowledge the positive changes that have been implemented in this area.<sup>58</sup> However, a number of significant concerns remain, as set out below:

- **The extent to which system constraints could influence the imbalance price.** The I-SEM will be highly constrained and implementing a pricing mechanism that is significantly influenced by system actions taken by the System Operator may produce volatile imbalance prices, which are difficult for market participants to anticipate.<sup>59</sup> The inability of market participants to anticipate imbalance prices could lead to inefficient trading in ex-ante energy markets, increasing costs to consumers. Poyry carried out a detailed review of the I-SEM imbalance pricing methodology on behalf of some EAI members. Some key findings of that report are reproduced below:

*“It can be seen from the worked examples that the level of constraints on the system can significantly impact the price, potentially leading to increased price volatility during periods with a high number of system actions. ... PAR Tagging when applied to our examples lowers prices somewhat but the extent to which it reduced price volatility in practice appears to differ significantly between hours.”<sup>60</sup>*

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<sup>58</sup> Positive changes include the inclusion of a form of NIV tagging in the imbalance pricing methodology, the implementation of an option to revert to full GB NIV tagging, the belts and braces approach adopted for triggering administered scarcity pricing and the changes relating to the implementation of PAR.

<sup>59</sup> The decision to implement a very short pricing period of five minutes could also significantly increase the difficulty of accurately forecasting the imbalance price.

<sup>60</sup> Poyry, August 2016, ‘Review of I-SEM Imbalance Settlement Methodology’, Report for EAI submitted to the RAs, p.3

*“Under the proposed I-SEM approach imbalance pricing will be more significantly influenced by system actions than in GB. The combination of elements in the ‘flagging and tagging’ approach means that balancing actions which have a low cost (from a system perspective) may be attributed to ‘system’ causes, leaving the cost of energy balancing to be met by actions which have a higher cost (again from a system perspective). As a result, the energy imbalance pricing will be more volatile than is the situation where the system actions were not required; with a reduction in the costs which were attributed to system actions. The extent to which this will happen cannot readily be inferred without seeing real balancing data, but we believe that it will lead to material influence of system actions on the energy imbalance price that may make it more difficult for participants to accurately forecast /anticipate it, as pricing levels will not consistently reflect underlying market fundamentals, such as the NIV. Where this results in a significant divergence in expectations of future imbalance pricing levels between market participants it could undermine liquidity in ex-ante markets or result in actions that are uneconomic from a system perspective thereby increasing total system costs. It could also result in a reduction in the measurement and transparency of constraint costs.”<sup>61</sup>*

*“Due to their importance to the overall I-SEM market, we believe it to be appropriate that due time and scrutiny are applied to completing and testing the imbalance pricing arrangements on a timescale that allows for necessary input and revision.”<sup>62</sup>*

Combined with concerns regarding potentially low liquidity levels in the continuous intra-day market, volatile and unpredictable imbalance prices in the I-SEM could also result in significant financial exposure for participants; a concern highlighted in the ESP Stocktake report.

*“Experience of the introduction of new wholesale energy markets suggest that market prices can be relatively unstable for the first six to 24 months - until the market finds an (at least initial) equilibrium.”<sup>63</sup>*

*“Changes to wholesale energy markets – such as that envisaged for the introduction of the I-SEM – are normally associated with an initial period of high price volatility. In the extreme, this volatility could impact the solvency of some market participants. This solvency can be protected through forwarding contracting – to cushion the impact of extreme prices.”<sup>64 65</sup>*

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<sup>61</sup> Poyry, August 2016, ‘Review of I-SEM Imbalance Settlement Methodology’ Report for EAI submitted to the RAs, p.1.

<sup>62</sup> Poyry, August 2016, ‘Review of I-SEM Imbalance Settlement Methodology’ Report for EAI submitted to the RAs, p.2.

<sup>63</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.23

<sup>64</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.21

*“ ... [T]he I-SEM includes a substantial number of non-vertically integrated players who will need contracts to ‘cushion’ the impact of price uncertainty during ... early days ... [F]or a number of reasons, there is limited or no trading to date of contracts to manage energy market price risk after the planned I-SEM Go Live. ... The consequences of not having contracts are amplified in that prices tend to be more volatile in the early months of a new market.”<sup>66</sup>*

- **Lack of transparency regarding the status of actions taken to accommodate priority dispatch.** The general lack of transparency in relation to the F&TRs means it is unclear whether actions taken on non-priority dispatch units to accommodate priority dispatch (e.g. DEC actions taken on thermal units) will be flagged under the imbalance pricing methodology (e.g. see comment 472). The treatment of such actions could have a significant impact on the imbalance price at times of high wind penetration. Therefore how these actions are classified under the F&TRs should be clearly set out. This issue exemplifies the transparency and governance concerns raised earlier in relation to the F&TRs.
- **Lack of transparency regarding SO-SO trading under I-SEM and its impact on the imbalance price (e.g. see comments 308, 474, 518, 1064, 1486, 1544).** We welcome the commitment given in response to our comments that more information regarding SO-SO trading under the emerging European balancing arrangements will be provided in Q1 2017. However, we note that SO-SO trading activities may occur under I-SEM trading arrangements prior to the introduction of the European balancing arrangements and therefore an understanding of how these will operate under I-SEM is also required.

Energia welcomes the response to comment 475 that the Project Team are “currently looking at outside consultancy support for modelling the imbalance pricing methodology” given the concerns articulated herein, which are further substantiated by independent experts, and request confirmation of when such testing will be completed. We would also welcome a firm commitment that

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<sup>65</sup> It is important to note that ESP do not consider the long standing structural issues that will continue to exist under I-SEM– i.e. the high levels of wind on the system (unlikely to be sold on a forward basis) and the market power of ESB within the forward market. Even if all thermal output was sold on a forward basis it would be insufficient to meet supplier hedging requirements, while the contracts currently offered in the SEM are not competitively priced – see the report by Baringa entitled “I-SEM HLD Consultation: Promoting forward liquidity and mitigating market power in the I-SEM”:  
“Analysis of the current SEM forward market indicates exceptionally low levels of market led liquidity and exhibits dynamics that could be indicative of the exertion of market power” (p.26).  
The proposals put forward by the SEM Committee in the Forwards and Liquidity workstream, and referenced by ESP as a means of addressing their solvency concerns, do not consider either of the major structural issues that will exist in I-SEM (i.e. the levels of wind penetration and ESB market power). Therefore imposing the proposed measures will result in further financial risk for participants, particularly competitors of ESB. The reasons for this are set out in detail in our response to SEM-16-030.

<sup>66</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.23

testing will be conducted collaboratively with industry, in a fully transparent manner (i.e. with the publication of all input and output data and modelling tools), and note the ESP Stocktake report recommends inclusive market testing activities, albeit specifically in relation to late stage assurance testing.

*“[T]esting will be required to ensure the I-SEM systems deliver the design, and that the RAs and participants should have a review role for the specification of the late test stages – to ensure all areas of requirements are adequately covered.”<sup>67</sup>*

The inclusion of full GB NIV tagging as a fall-back option within the market pricing software was also a positive step but we would appreciate clarification of the criteria that will be used to determine whether full GB NIV tagging is introduced and an indication of when a decision on this matter will be taken. If a decision to change the imbalance pricing methodology is taken during market trials then Energia requests that market trialling is reset to ensure the commercial readiness of market participants is not undermined.

### **3.8. Concerns with administered scarcity pricing methodology**

Energia has engaged extensively in the development of the administered scarcity pricing mechanism and we acknowledge the positive changes that have been implemented in this area. However, we would welcome formal confirmation from the RAs that local scarcity issues (e.g. in Northern Ireland or the Republic of Ireland) cannot trigger administered scarcity pricing. We believe this is the case due to the inclusion of paragraph E.4.5.1 (a) within the TSC. Our understanding of this paragraph is that demand control events can only trigger administered scarcity pricing if reserve scarcity pricing is in effect. If administered scarcity pricing can be triggered by local, or even, jurisdictional demand control events, this would further increase scheduling and dispatch risk, which is unacceptable. A number of other concerns relating to administered scarcity pricing are set out below:

- **No provisions have been introduced to prevent administered scarcity pricing being triggered by scarcity events caused by issues on the gas transmission system.** Gas-fired generators should not be subject to financial loss under ROs as a result of problems on the gas transmission system. Such issues are outside of their control and therefore the market rules need to be amended to remove this risk.
- **There is inadequate transparency around the management of reserves.** Given the operational definition of reserves used in the administered scarcity price mechanism it is essential that there is full transparency regarding System Operator policies relating to the

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<sup>67</sup> ESP Consulting, November 2016, ‘I-SEM Programme: Stocktake Report’, p.25

management of operational reserves, and that ex-ante indicative, and real time actual reporting of operational reserve volumes is implemented to help participants better anticipate potential scarcity events (e.g. see comment 975).<sup>68</sup>

### **3.9. Concerns with the settlement algebra**

Energia has significant concerns about the excessive complexity of the settlement algebra, which will reduce transparency and make it challenging for participants to shadow settle the market. This creates unnecessary financial risks for participants and requires development, and maintenance, of complex and expensive shadow settlement systems, increasing costs for participants and ultimately for consumers.

Our main concerns with the settlement algebra are set out in the sub-sections below.

#### **3.9.1. False assumptions, omissions and errors**

There are a number of false assumptions, omission and errors in the algebra, some of which may result in under recovery of costs. For example:

- The settlement algebra makes no provision for the suspension of difference payments under the capacity mechanism where the failure of a participant to meet its capacity market obligation is outside of its control.<sup>69</sup>
- The make whole payment mechanism does not accurately model changes in start costs associated with changes in warmth state (e.g. see comment 1562).
- The assumption used in the ranking mechanism for biased PNs and uninstructed imbalances is false and does not work in the case of multiple acceptances across time (e.g. see comments 201).
- The answer provided to our comment 285 suggests that the approach for allocation of ex-ante trades into imbalance settlement periods, if utilised, may not be consistent with the allocation of ex-ante trades for capacity settlement.
- The calculation of stop loss limits for secondary trades is incorrect and not based on sound economic principles (e.g. see comment 1578).

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<sup>68</sup> Energia notes that even if such reporting is implemented that it does not remove scheduling and dispatch risk for CRM participants. This is because if scarcity in operational reserves does not coincide with a tight available capacity margin there is no guarantee that market demand will be sufficient to ensure all capacity units secure an ex-ante contract position (or are dispatched by the System Operator) to a level consistent with their capacity obligations.

<sup>69</sup> Examples include, but are not limited to, failure to achieve a sufficient contract position or balancing market position due to: scheduling and dispatch risk, issues on the gas transmission system, issues on the electricity transmission system, grid code obligations (e.g. the outturn availability decision SEM-15-075), completion of mandated fuel testing, etc.

- The code adjusts commercial offers with break points below the actual availability of a unit based upon its average availability not its maximum availability (e.g. see comment 1494).
- The provisions included for management of the socialisation fund could impose substantial financial loss. (e.g. see comments 1584, 1585 and Viridian escalation response<sup>70</sup>).

### 3.9.2. Risk of distorting intra-day trading incentives

The settlement algebra could distort intra-day trading incentives undermining liquidity in the intra-day market. Poyry have confirmed this risk in their review of the I-SEM imbalance settlement methodology, as detailed below:

*“There are several aspects of the ... [settlement algebra] which could potentially lead to unintended or perverse incentives for market participants resulting in a distortion of normal traded activity and price discovery.”<sup>71</sup>*

*“Fundamental incentives for generators to trade in IDM are removed by settlement rules around substitutive PNs”<sup>72</sup>*

*“Fundamental barriers to trade in IDM are created (e.g. unhedgable exposures to imbalance price) because of settlement rules on substitutive PNs”<sup>73</sup>*

*“Other unusual BM design choices may create further distortion of trading incentives in the intra-day market”<sup>74</sup>*

Such as:

*“Fundamental distortion of price formation between IDM and BM due to unknown impact of different order formats, with start costs excluded from BM price but reflected in IDM price” which they then go on to clarify “may distort price formation in the BM relative to the IDM undermining efficiency of trading signals”<sup>75</sup>*

### 3.9.3. Treatment of supplier charging

A large proportion of the settlement algebra for suppliers is missing from the Code. Thus it is impossible to review the supplier arrangements and provide feedback through this consultation process. The consultation is therefore premature and should have been delayed until these and other outstanding

<sup>70</sup> See footnote 5 of this response.

<sup>71</sup> Poyry, May 2016, ‘Review of I-SEM Imbalance Settlement Methodology’, Report for EAI, p.3

<sup>72</sup> Poyry, September 2016, Potential Trading Distortions in the Intra-Day Market Under I-SEM, slides submitted to I-SEM Working Group, slide 7

<sup>73</sup> Poyry, September 2016, Potential Trading Distortions in the Intra-Day Market Under I-SEM, slides submitted to I-SEM Working Group, slide 8

<sup>74</sup> Poyry, September 2016, Potential Trading Distortions in the Intra-Day Market Under I-SEM, slides submitted to I-SEM Working Group, slide 9

<sup>75</sup> Poyry, September 2016, Potential Trading Distortions in the Intra-Day Market Under I-SEM, slides submitted to I-SEM Working Group, slide 9

arrangements (e.g. the decision in relation to the escalation on scheduling and dispatch risk) had been finalised and reflected in the Code drafting. We suggest that this impairment be remedied by publishing a final mark-up of the Code (against the current version) for a further round of consultation.

### **3.10. Insufficient testing of settlement algebra**

Energia would emphasise the pressing need to carry out extensive, industry inclusive, transparent testing of the settlement algebra to ensure that it works as intended by the algebra outlined in the TSC (also noted in the ESP stocktake report).

Whilst welcome, the Excel spreadsheet provided by SEMO and the one-day training session on 16 December 2016 falls significantly short of the testing required. A key concern with the current test model is that it is one dimensional. Our concerns about the complexity of the algebra are focused on the outcomes when the algebra is modelled over a period of time with multiple simultaneous scenarios. Examples of how the current Excel model does not adequately model the settlement algebra include:

- Test scenarios are for a single set of commercial offers only and therefore exclude test scenarios that cover multiple acceptances.
- No testing of the ability to track QBOA to commercial offer data which can change over time.
- No functionality to test fixed cost payments and charges
- No functionality to test uninstructed imbalances

We also welcome SEMO's commitment to provide a capacity settlement model and training but note this has not been provided to participants to date.

Also, given the limited functionality included within the current prototype model it is unclear how SEMO will fully test Central Market Systems. Furthermore Energia request more transparency on the progress and delivery of Central Market Systems and suggest that frequent milestone reporting is provided to participants and also request clarity on the impact to participants should any late changes be made to the Code as a result of system development and testing outcomes and what contingency plans exist for this.

While the provision of spreadsheets and training by SEMO is welcome we recommend that extensive formal proto-typing and testing of the energy and capacity settlement algebra is carried out as soon as possible as recommended by ESP in their stocktake report, and furthermore that such testing is fully transparent and inclusive of industry.



### 3.11. Concerns with credit and collateral provisions

Energia has set out a summary of its main concerns with the credit and collateral provisions below:

- **A comprehensive holistic review of credit and collateral arrangements across all I-SEM markets is required.** Credit and collateral provisions in relation to NEMO markets may be outside the intended scope of this consultation. However, a comprehensive holistic review of the arrangements across all I-SEM markets (i.e. how they function as a whole) is required so that an impact assessment and informed evaluation can be undertaken.
- **No proto-typing of the credit and collateral provisions was provided to the rules Working Group, and no scenario analysis was carried out.** In particular stress testing was not completed to ensure that the combination of the cash flow associated with administered scarcity pricing and the bad debt provisions do not combine to cause a potential cascading 'domino' effect – i.e. where the failure of one party leads to the failure of another party and so on.
- **Consequences of default/credit increase notices in the balancing market:** How these can impact the ability to trade in the ex-ante markets. Energia requests further clarity, supported by example scenarios, where the SEMO/NEMO credit provisions can interconnect and also how default in one market will impact entities in other markets. For example, what is the resultant impact to legal entities in NEMO where a participant defaults in the balancing market, taking into account that credit in NEMO is assessed at a legal entity level whilst in the balancing market the same legal entities for the purposes of credit can be netted under one participant? It is unclear whether or not such consequences would impact the primary or all legal entities.
- **Contract Refusal (section F.2.2.3):** The implications of contract refusal are unclear and as per comment 1545 in the rules feedback template. Energia would welcome further clarification on how trades which are deemed contracted can be cancelled by SEMO. Again, proto-typing of scenarios where contract refusal can be invoked should be modelled across both markets to ascertain the full implications and potential consequences for participants both directly and indirectly impacted by such a scenario.
- **Excessive Credit Requirements:** The Undefined Exposure (UDE) in the balancing market for a supplier is based upon historical assessments of 100% of supplier net demand and does not make any assessment of the allocation of demand purchases across Ex-ante and Balancing markets. The resultant impact of this is that a supplier who can accurately forecast

demand and purchases 100% of their demand in the Ex-ante markets will be required to post credit for 100% of their net demand in the ex-ante markets and in the balancing market a further 100% demand assumption is applied to the UDE credit provision.

- **Reduced Netting between Generators & Suppliers:** Further to the provision above, credit provisions for generation in the balancing market is not assessed on the same basis and therefore reduces the netting capability of participants. Energia believes that a single administrator of credit would reduce the credit burden on participants as well providing more opportunity for participants to avail of netting benefits, and as such we welcome further consideration of single collateralisation across all I-SEM markets to help streamline collateral arrangements for participants.
- **SEMO provisions (B.18.3 Suspension):** Energia requests clarity, supported with examples, on how SEMO can invoke this provision when participants default in the NEMO market resulting in suspension from the balancing market. Given that much of the trading in the NEMO will be pre-funded, the full extent of exposure to the balancing market should be reviewed and provisions considered as necessary.
- **Implications for a Price Taker in NEMO:** The credit provisions in NEMO ultimately require pre-funding of trades which imposes a significant credit burden on suppliers who may consider being a price-taker in ex-ante markets given the unpredictable and potentially volatile nature of imbalance pricing under I-SEM. The implications of this provision could mean having to post collateral up to the price cap which may considerably exceed the market clearing price resulting in excessive credit being posted. Further to this, credit will also be required for settlement exposure and balancing market credit provisions will also apply.
- **Credit Parameters:** Energia acknowledges that there will be a parameter consultation phase and strongly recommend that credit parameters are appropriately reviewed to ensure that credit requirements are not excessive and also validate the assumptions used in the proposed parameters, for example the UDE makes assumptions on SOLR timelines which have a significant impact on credit.
- **Transitional Credit Arrangements:** Energia has requested on several occasions through various market forums clarity on transitional credit cover arrangements and how this can be managed effectively minimising additional credit and collateral (and resultant cost) during the transition from SEM to I-SEM whilst making sure that the operational management of this for participants is streamlined.

### **3.12. Concerns with cash flow provisions**

Energia is concerned about the mechanisms provided to EirGrid under the TSC to manage cash flow risk.

- Under paragraphs F.12.1.4 and F.15.2.4 EirGrid (acting as SEMO) has a provision that allows it to change the Imperfections Charge and Currency Cost Charge within year. These changes can be implemented under the Code without a suitable notification time creating potential financial exposures for suppliers (e.g. see comment 1568).<sup>76</sup>
- Under paragraphs F.19.1.6, F.20.5.3 and F.20.5.5 of the Code, EirGrid (acting as SEMO), is given provisions to manage shortfalls in the capacity market socialisation fund. These include the ability to:
  - Change the capacity charge within year;
  - Reduce payments owed to suppliers by changing their Tracked Difference Payment Shortfall Amount; and the
  - Standing provision to reset a supplier's Tracked Difference Payment Shortfall Amount to zero at the start of each capacity year.

These measures could impose significant financial exposures and are contrary a much vaunted benefit of the capacity market design; that it provides a perfect hedge for suppliers against administered scarcity pricing.<sup>77</sup>

It is unclear how these provisions will be used but their inclusion within the TSC allows for the wholesale transfer of risk from EirGrid onto suppliers. This is unacceptable and therefore Energia recommends that they are removed<sup>78</sup>.

### **3.13. Concerns with concept of information imbalance charging**

Energia appreciates that information imbalance charging will not be introduced at I-SEM go live but we remain concerned that the provisions facilitating its introduction are included within the market rules and will be implemented within the central market systems (e.g. see comment 34, 1558, 1559). Furthermore, we are concerned by the perceived potential conflict of interest EirGrid may be subject to if requested by the SEMC to provide a recommendation regarding the value of charges. This potential conflict arises

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<sup>76</sup> The notice time required to be given to customers under licence is 30 days and operationally this takes approximately 8 weeks to put into effect, thus a 90 day notice time is required as a minimum.

<sup>77</sup> The fact that these measures have been included in the Code drafting could indicate that EirGrid is reluctant to take on this potential cash flow exposure, signalling its potential magnitude and therefore the detrimental impact it could have upon suppliers.

<sup>78</sup> If they are not removed, then we request clear and unambiguous criteria, to be consulted upon, are established governing their use, including at least 90 day notice time for changes to supplier charges, to provide protection from excessive financial risk.

because information imbalance charging is intended to make dispatching the system easier for the System Operator by improving the quality of information received via PNs (although this outcome is by no means certain), but its introduction is likely to have a detrimental impact on the efficiency of the ex-ante energy markets.

If information imbalance charging is introduced it will penalise balancing market participants for events that are outside of their control. This is because the ability to deliver a contract volume equal to an intended PN position is significantly influenced by extraneous factors, such as commodity price movements, changes to wind generation levels, changes to demand forecasts, plant availability, the behaviours of other market participants, and liquidity levels in the intra-day markets. Therefore charging a participant for changes to its PN relative to its final PN is unlikely to significantly improve the quality of the information provided to the System Operator. This is because those changes are predominantly necessitated by the market design that requires participants (including those that submit PNs) to update their trade positions within day to reflect changes in market conditions so the energy market as a whole can reach an efficient economic outcome. Therefore, if information imbalance charging is introduced its cost is likely to be passed through to consumers via the bid / offer prices of market participants, increasing costs, without delivering a significant improvement in the quality of the information received by the System Operator through PNs. If participants cannot recover these costs from the market they will distort trade incentives, particularly approaching gate closure, when the weighting of the charge is likely to be greatest. Under this scenario information imbalance charging would act as a barrier to intra-day market trade specifically at those times when the requirement to trade is likely to be greatest (e.g. because the errors associated with wind forecasting will be least). As Poyry conclude:

*“Implementation of non-zero information imbalance charges would effectively act as a levy on intra-day trade further reducing incentives to trade in the IDM”<sup>79</sup>*

Energia therefore recommends that information imbalance charging is not introduced at any time under I-SEM trading arrangements. Its introduction will not improve the quality of the information received by the System Operator (changes to PNs should arise as a result of efficient trading activities) but will introduce inefficiencies into energy market outcomes and increase costs for consumers.

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<sup>79</sup> Poyry, September 2016, ‘Potential Trading Distortions in the Intra-Day Market Under I-SEM’, slides submitted to I-SEM Working Group, slide 9.

### **3.14. Concerns with interim modifications process**

The RAs have invited comments in particular on the issue of amendments to the Code under Chapter H and whether there is an overlap between this drafting and the provisions of the Urgent Modifications process set out in Section B.17.16.

Transitional section H.2 of I-SEM TSC, designed to facilitate 'fast-track' modifications post I-SEM go-live, is not required and should therefore be removed. The Urgent Modifications process is adequate.

The criteria for 'fast-track' modifications are too broadly defined in section H.2, this is clearly inappropriate:

- Para H.2.1.1 of Section H.2 includes Modifications required to "ensure the orderly, effective or sustainable operation of the SEM". Any of the Code Objectives could reasonably fall within this criterion and therefore this process could be used for any proposed Modification.
- The 'fast-track' process is therefore unlikely to be used in exceptional circumstances only (i.e. when Urgent Modifications are not resolved efficiently):

It was claimed by the I-SEM Project Team responding to comment 807 raised at the Rules Working Group that: "If the [Modifications] Committee uses the Urgent Modification process efficiently and sets itself aggressive timeframes to resolve such matters then use of the interim fast-track change process may not be required". However, because the criteria for 'fast track' Modifications under Section H.2 are more broadly defined than Urgent Modifications in section B.17.16.3 of the Code, it is incorrect to suggest that the 'fast track' change process may not be required if Urgent Modifications are processed efficiently.

The Modifications Committee has effectively no governance role with regards to Modifications proposed under section H.2.

There is no meeting of the Modifications Committee to consider the proposed Modification, there is no voting of the Committee to recommend its approval or rejection. The MO simply has an obligation to forward details of the proposed Modification to the members of the Modifications Committee, seeking feedback within a deadline determined by the MO.

The above concerns were largely shared by the Modifications Committee (as discussed in Meeting 70 on 14/10/16).

### **3.15. Other Concerns**

Energia has a number of other miscellaneous concerns not covered under the topics above. These concerns are outlined below.

- Energia would welcome the introduction of mechanisms to facilitate representation of industry views on matters pertaining to I-SEM at a European level in relation to both ex-ante and balancing market trading arrangements. Given the exclusive/mandatory nature of the I-SEM energy markets participants face significant risks in relation to future changes to the PCR algorithm, XBID platform and cross border balancing arrangements, etc. (e.g. see comment 287 and 995).
- We are concerned that the mechanisms to ensure consistency across energy and capacity codes have not been clearly set out (e.g. see comment 172). Changes to any one of the codes could impact upon the other codes. This issue has been exacerbated by the decision not to ensure consistent representation by industry via a formal modifications panel for the capacity market code. (e.g. see comment 981).
- Energia notes that the review of the Grid Code carried out via the Working Group while welcome (e.g. see comment 502) did not identify all areas of change required for the introduction of the I-SEM. For example, no changes have been proposed in relation to the ‘Outturn Availability’ decision, or in relation to closure notices – although we appreciate this is more relevant to the Capacity Market Code. Also, no changes were outlined to the excessively long timelines required for request and authorisation of generator tests (e.g. see comment 313).

### **3.16. Requirement to proto-type and rigorously test the market rules**

The complexity within the market rules, and the unique and unorthodox mechanisms that have been introduced into the design of the I-SEM energy and capacity trading arrangements, combined with myriad of concerns outlined within this section means that robust modelling and testing of the market rules is essential “*to provide confidence that they work and do not have un-intended consequences (or that such unintended consequences are manageable)*”.<sup>80</sup> Energia therefore fully support the recommendations made in the ESP Stocktake report regarding the need to proto-type and test the market rules and we would welcome urgent clarification from the RAs of how these recommendations by ESP will be implemented.

While Energia would accept that it was ‘outside the scope’ of the Working Group to ‘provide assurance’ that policy decision on the market design and their implementation in the market rules will result in efficient energy market outcomes (e.g. see comments 508, 513 and 523), we observe that it is a statutory duty of the RAs to ensure continued security of supply and protect the interests of I-SEM consumers.

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<sup>80</sup> ESP Consulting, November 2016, I-SEM Stocktake Report, p.25

## 4. Completed response template

This section of our response includes a completed response template representing comments collated by Viridian Group based on input from each of the individual business units and from Viridian’s corporate team (including Legal, Treasury, Finance, IT, and from the Viridian I-SEM project team.

### SEM-16-075 Draft TSC Part B: Chapter A - Introduction and Interpretation

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
1	A1.1.3	Introduction	1	A1.1.3 refers to “paragraph (b)” – probably intends to refer to “A1.1.2” [suspect referencing]	Delete reference to “paragraph (b)” and replace with: “paragraph A.1.1.2”	N/A
2	A.2.1.1	Scope and Objectives	2	DS 3 arrangements are interlinked with code and should be references	Reference DS 3 arrangements appropriately through the code	N/A
3	A.2.2.2	Code Scope and objectives	2	A.2.1.2 reference to “includes” should be singular? [suspect typo]	A.2.1.2 reference to “includes” should be “include”	N/A
4	A.4.2	Calculations (a)	5	The terms “MW” and “MWh” are not defined	“MW” and “MWh” to be defined in the Glossary	Glossary
5	A.4.2	Calculations (g)	5	“ramp rates (MW/min)” Units do not appear in Glossary and should it be referring to “Ramp Rates”?- only reference to the Unit (MW/min- appears in “Net Output Function”- Para D.6.2.1 (page 93) [suspect definition/ unit]	Reference to “ramp rates” and unit “MW/min” needs to be checked- not immediately apparent they are being used correctly here.	Para D.6.2.1 (page 93)

### SEM-16-075 Draft TSC Part B: Chapter B - Legal and Governance

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
6	B.4.1.2 (b)	Priority	7	Reference to “Disputes process” should be to “Disputes Resolution Process”- parties should not be obliged to participate in some other disputes process [suspect typo]	B.4.1.2 (b) change reference to “Disputes process” to “Disputes Resolution Process”	N/A

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
7	B.13	Legal and Governance	7	The role and obligations of the System Operator should be set out clearly in the Trading and Settlement Code.	Similar to the approach taken in B13 the roles and obligations of the System Operator should be set out.	
8	B.4.1.6	Priority	8	Insert the word "Parts" to ensure consistency	B.4.1.6 before the word "Chapters" insert "Parts"	N/A
9	B.7	Registration Wind Aggregation	11	Under the current proposals wind will not be able to aggregate in-market wind units. Without being able to avail of aggregation such units will have to be traded separately, increasing the complexity of trading and settlement processes and systems, and bloating resourcing requirements. This unnecessarily increases the cost of market participation.	A practical solution to the aggregation of wind needs to be found and reflected in the TSC. One solution may be that unit participation is only mandatory for dispatchable units.	
10	B.7.2.1 (f)	Participation Notices	11	There does not seem to be any definition of who the "Agent of Last Resort" is	Define Agent of Last Resort	Glossary
11	B.8.1.2 B.8.2.1	SEM NEMOS and Shipping Agents	18	B.8.1 and B.8.2 is confusing as it has the NEMO as Scheduling Agent under B.8.1.2 but then in B.8.2.1 says that a A Party (not sure who) shall be appointed to be the Scheduling Agent of the Shipping Agent which seems to conflict with the fact under B.8.1.2 that says the Scheduling Agent is the NEMO.	Clarify SEM NEMO roles and responsibilities.	F.2.2.4
12	B.8.1.3	SEM NEMOS and Shipping Agents	19	Whilst there is an obligation created to notify there is no process or timelines for such notification	Insert appropriate process and timelines with respect to notification by Participant of changes with respect to SEM NEMOS	N/A
13	B.9.3.1	Generator Unit with Non-Firm Access	20	The term "qFAQst" is not defined in the Glossary	Insert definition into Glossary of qFAQst	Glossary



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
14	B.10.1.8	Registration	23	The term "Interconnector Technical Data" does not appear to be defined anywhere.	B.10.1.8- define what is meant by "Interconnector Technical Data"	Glossary
15	B.10.1.15	Registration	24	B.10.1.15 defines the term "Interconnector Administrator Grace Period" it would be helpful if that definition is therefore referenced in the Glossary	B.10.1.15- no change, but defined term "Interconnector Administrator Grace Period" should be cross referenced in the Glossary	Glossary
16	B.14.1.5 (d)	Obligations on Parties	31	This is a new free standing obligation it is considered that this is already adequately captured in the relevant rules surrounding submissions and licence obligates	Delete clause	
17	B.15.1.2	Balancing Market Operations Timetable	31	It is our understanding that information under paras (a); (b) and (c) are by Participants to MO- therefore references to Systems Operator should be removed	Remove references to "Systems Operator" in B.15.1.2 (a) to (c) inclusive.	
18	B.15.1.3	Balancing Market Operations Timetable	32	"Reasonable endeavours" obligation is too low a threshold- given the importance of time tables	Change "reasonable endeavours" to "best endeavours"	
19	B17.3.1 (b), limbs (i) & (ii)	Constitution of the Modifications Committee and Voting Rules	34	As drafted this leaves the code vulnerable to there being no Generation or Supply member from a jurisdiction- i.e. it is possible that all the Supply or Generation members are from one jurisdiction	Amend B.17.3.1 (b) (i) & (ii) so that there is at least 1 Generation member and 1 Supply from each respective Jurisdiction.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
20	B.18.3	Suspension	48	Given much of the trading in the NEMO will be prefunded the full extent of exposure to the Balancing Market should be reviewed and provisions considered as necessary.	Viridian request clarity supported with examples how SEMO can invoke this provision when participants default in the NEMO market resulting in suspension from the Balancing Market.	
21	B.19.9.1	DRB Procedures	59	Is the referencing correct? Should it be as per suggested draft	B.19.9.1:- For the purposes of paragraphs B.19.2.1, B.19.4.2 B.19.4.1, and B.19.6.2 and B.19.6.3, a Dispute is deemed to be referred to the DRB as of the date of the receipt or issue of the Referral Notice by the Market Operator	N/A
22	B.19.14.1 (c)	Consequences of DRB Decision	61	Word “appropriate” gives too much discretion to MO, and makes it vulnerable to accusations that it did not do what was “appropriate”	B.19.14.1:-  (c) take any other action that the Market Operator considers appropriate necessary to implement the decision.	N/A
23	B.22.1.1	Concept	64	The structuring of this paragraph is a little confusing and would benefit from being split out and renumbered- to avoid any argument that the criteria are a to i inclusive, should just be a to c inclusive, with the inclusions then split out and the exclusions split out.	B.22.1.1, split out the criteria, the inclusions and the exclusions.	N/A

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
24	B.22.3.2 & B.22.3.3	Consequences	66	These paragraphs do not apply to the MO, position in relation to the MO is set out in B.22.3.1 and the position under the current TSC should be reinstated.	<p>B.22.3.2 When an Affected Party is rendered wholly or partially unable to perform all or any of its obligations under the Code by reason of Force Majeure, the Affected Party's relevant obligations under this Code shall be suspended and the Affected Party shall be relieved from liability, subject to paragraph B.22.3.3, in respect of such obligations provided that such liability and suspension shall be of no greater scope and of no longer duration than is required by the Force Majeure.</p> <p>B.22.3.3 The Affected Party shall be relieved from liability only for so long as and to the extent that the occurrence of Force Majeure and/or the effects of such occurrence could not be overcome by measures which the Affected Party might reasonably be expected to take as a Prudent Industry Operator with a view to continuing or resuming performance of its obligations as appropriate.</p>	N/A
25	Deletion of Entire Agreement provision			The deletion of the Entire Agreement Provision (which was at 2.341 of the TSC is ill advised- the Code should represent the "entire agreement" in relation to what the Code covers	Reinstate clause 2.341 of the TSC, with suitable amendments to remove references to "pool"	
26	B.32.2	Notices to Other Parties	71	Generally- the ability to serve notices by fax- as opposed to e-fax should be preserved (i.e. fax is a fall back communication channel- if IT systems are not operating e-fax will not operate either)	Amend notice provisions to cater for service of notices by FAX.	
27	B.32.2.5	Notices to Other Parties	71	Incorrect clause reference	B.32.1.5 change reference to "B.32.2.5" to "B.32.2.6".	

**SEM-16-075 Draft TSC Part B: Chapter D – Balancing Market Data Submission**

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
28	Chapter D	Dual Order Formats	N/A	The use of dual order formats within the I-SEM balancing market (complex and simple orders) is unorthodox and could result in an anomaly in imbalance price formation – i.e. the start costs associated with longer notice plants may tend to not be included in the imbalance price calculation. This could result in a systemic difference in price formation between the intra-day and balancing market that could distort trade incentives.		
29	D.2.1.2 (a)	Gate Closure	85	GC1 could occur prior to receipt of day-ahead market results (e.g. in the event of full decoupling). This presents potential commercial risks to participants and if inaccurate data is used in scheduling systems it could result in inefficient early dispatch decisions. GC1 is not really a gate closure as there is further opportunity to change all data, it is a requirement to submit initial data.	Consideration should be given as to whether use of the term ‘Gate Closure’ is appropriate and the deadline for submission of data should be amended to be the later of either 13:30 TD-1 or 30mins after publication of EUPHEMIA results.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
30	D.2.1.2 (a)	Submission of Initial PNs	85	If timing of GC1 are not changed and requirement to submit Initial PNs remains 13:30 TD-1 then if EUPHEMIA results are delayed beyond this deadline participants should be exempt from any information imbalance charging. Our objections to the concept of Information Imbalance Charging are set out in detail in Section 2 of this response. We appreciate the charge will be set at zero for go live but its presence represents a latent risk for participants and if the mechanism is not removed from the code participants should be exempted from the charge, at the very least until the time that EUPHEMIA results are published.	If Information Imbalance Charging mechanism is not removed from the code participants should be exempted from the charge under the circumstances described in our commentary, at the very least until the time that EUPHEMIA results are published.	F.10
31	D.3.2.2	Data Submission	85	This clause implies that a Validation Data Set Number is required to be submitted at every GC1 gate. This however seems to contradict D.5.4.1 and D.5.4.2 taken in conjunction with paragraphs 7 and 8 in appendix I, which imply submission of a A Validation Data Set Number is optional.	Clarify the code so there is no ambiguity for participants in this area.	D.5.4.1, D.5.4.2 and Appendix I paragraphs 7 and 8
32	D.3.2.2 (c)	Physical Notification Data	85	Term is not defined in glossary	Define term in glossary	Glossary
33	D.3.2.2.(d) to (f)	Forecast Profiles	85-86	Reference to paragraphs is inconsistent across paragraph sub-section (a) to (e).	Either remove referencing and ensure it is included correctly in Glossary or add relevant referencing across all terms.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
34	D.3.2.3	Submission of TOD Data	94	Participants should be able to change their TOD data within day to provide additional flexibility. The scheduling and dispatch risk for multi-mode units could be significantly reduced if multi-mode is facilitated.	The market rules and central market systems should facilitate mutually exclusive submission of commercial and technical data for different potential operating configurations, or allow intra-day changes to technical parameters – i.e. the ability for a generator to switch between operating modes within day.	
35	D.3.2.3 (c) to (e)	Forecast Profiles	86	Reference to paragraphs is inconsistent across paragraph sub-section (a) to (e).	Either remove referencing and ensure it is included correctly in Glossary or add relevant referencing across all terms.	
36	D.3.2.6	Prudent Electric Utility Practice	86	We do not believe that Prudent Electricity Utility Practice is relevant to submission of commercial offers to the balancing market?	Remove reference to Prudent Electricity Utility Practice and if provision is maintained then find an alternative suitable criteria for MO.	
37	D.4.2.7	Simple Bid Offer Data	88	Reference to D.4.3.4 looks incorrect? Should be D.4.4?	Amend reference from D.4.3.4 to D.4.4	
38	D.4.2.9.	Minimum Output Profile	88	The last sentence states that Forecast Minimum Output values must be zero except as otherwise specified – where is this specified?	Add reference as to how/where this is specified. We do not believe it is included in Appendix I but suggest it could be included there.	Appendix I
39	D.4.2.8 to D.4.2.13	Obligations relating to submission of data	88	Unclear what the rationale is for the difference in the drafting of the obligation across these paragraphs.		
40	D.4.4.3	Price Cap and Floor	89	Unclear why price cap and floor are being applied to bids and to price outcomes.	Application of price caps and floor to bids and offers and market prices must not prevent recovery of costs or restrict the proper function of the market – i.e. introduce missing money.	E.3.6.3
41	D.5.1.1	Units for TOD data items	90	No units are set out in code, appendix I or glossary for technical data items not referenced in D.5.1.4 or D.5.1.5.	Units for technical data items should be clearly set out.	Glossary – List of Variables

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
42	D.5.1.4 and D.5.1.5	Additional TOD Items for 'Special Units'	90 and 91	Unclear why these provisions are required as already covered in D.5.1.1 to D.5.1.3 given inclusive definition of 'Generator Units'. Specific data items to be submitted by each generator class are then set out in Appendix I.	Consider removing paragraphs D.5.1.4 and D.5.1.5 subject to adequate description being included in referenced appendix I including units for each data item.	Appendix I
43	D.5.2.3	Approved Validation Set Number	92	This is not defined in glossary	Define term	Glossary
44	D.5.3.1	Drafting	92	Wording of final sentence in paragraph is confusing.	We believe the last reference to "Validation Data Sets" should be changed to "Approved Validation Data Set"	
45	D.5.4.1	Submission of TOD	92	Participants should be able to update their TOD within day and have them reflected in settlement for that day. See comments on provisions for multi-mode operations.		
46	D.5.4.1	Validation of Data Transactions containing Validation Technical Offer Data	92	It is not clear why submission of change in TOD is required 10 minutes before GC1 given the extensive time still available prior to real time physical dispatch. The importance associated with correct TOD for the initial scheduling run seems inconsistent with the lack of concern regarding accurate PNs (when EUPHEMIA results are delayed) – see comments on D.2.1.2 (a) above. We also observe that a Validation Data Set Number could be submitted as part of every submission – if this is how participants chose to set up their systems and processes. This clause therefore could override Clause D.3.2.2 which only requires TOD submissions prior to GC1.	Remove the words "at least 10 minutes".	D.3.2.2
47	D.5.4.3	Notification of Technical Data to SO by MO	92	The need for this paragraph is unclear as this data transaction is covered via Appendix J. It does not seem to be explicitly stated for COD.	Suggest removal of D.5.4.3.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
48	D.5.4.4	Drafting	93	We do not believe the wording “in respect of that Imbalance Settlement Period and any subsequent Imbalance Settlement Period in the same Trading Day” is required unless participants can update TOD within day.		
49	D.6.2.1	Net Output Function	93	Should this condition be at the start of chapter D as a blanket statement.	Consider revising the placement of this paragraph within Chapter and make section D.6.2 specific about SO translations using Net Output Function.	
50	D.6.4.2	Derivation of Actual Availability	95	We would welcome confirmation that using the average outturn availability in conjunction with the mechanism used to adjust offers under D.4.4.6 will not result in errors in settlement.	Use maximum instead of average and confirm appropriateness of mechanism for adjusting bid and offer prices	D.4.4.6
51	D.6.5	Interconnector Availability	95 to 96	There are a large number of undefined terms used in this section.	Provide definitions to all terms used within the glossary.	Glossary
52	D.6.5.4 and D.6.5.5	Interconnector Availability	96	References to “relevant agreement” should be made more specific. What types of agreements?	Provide more clarity.	
53	D.7	Physical Notification Data	96	Physical Notification Data is not defined in glossary, nor is ‘some other capitalised terms in this section.	Please provide definitions in glossary.	
54	D.7.1.3	Physical Notification Data	96	This clause seems problematic as participants may not be able to achieve an ex-ante contract position that meets their intended running profile and therefore in conjunction with D.7.1.5 they would be subject to potential adverse treatment under the settlements algebra (e.g. PN bias) or potential sanction by the MMO.	Revise clause to make it consistent with the intended market design.	D.7.1.5
55	D.7.1.4	Physical Notification Data	96	It is not clear what “consistent with” means. Does it mean it must comply with the TOD or is there some discretion?	Clarify what “consistent with” means in this context.	



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
56	D.7.1.6	Physical Notification Data	97	We do not believe defaulting to zero in all circumstances is optimal. It could make PNs inconsistent with technical data as there could be large ramps down to and ramp ups from zero. This could have an adverse impact on TSO scheduling.	Consider extrapolating between PN data submissions in some cases – e.g. if only a single settlement period is missing.	
57	D.7.3	Generator Unit Under Test	97-98	There are a large number of undefined terms used in this section	Please provide definitions of these terms in the glossary.	Glossary

### SEM-16-075 Draft TSC Part B: Chapter E – Imbalance Pricing

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
58	Chapter E	Imbalance Pricing Period	N/A	The use of a 5 minute imbalance pricing period increases scheduling and dispatch risk.	Implement appropriate mechanisms under the code to exclude capacity market participants from making difference payments due to circumstances that are beyond their control.	
59	E.1.1.2 (C)	Definition of term 'Operational'	99	"Operational" is not a defined term and believe this should refer to "Operational Constraint"	Define or change term	Glossary
60	E.1.1.2 (d)	Referencing	99	E.3.4 is a section and not a paragraph	Change "paragraph" to "section"	
61	E.1.1.4	Curtailment Price	99	"Curtailment Price" is undefined in glossary	Define term	Glossary
62	E.2	Imbalance Pricing – SO Data Provision		Viridian would welcome clarification of the data transactions required between the System Operator and SEMO to facilitate the calculation of the imbalance price by SEMO. These do not seem to be included in Appendix K.	Include references to where these transactions are captured within the code.	Appendix K
63	E.2.1.1	Parameter Setting	99-100	Viridian would welcome confirmation that these parameters will be fully consulted upon and that industry inclusive testing of the imbalance pricing methodology will be carried out on 'real-world' scenarios to inform this consultation process.	N/A	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
64	E.2.1.2 & E.2.1.3	Role of MO	100	It does not seem consistent with the role of the MO to advise the RAs on the setting of these policy parameters. The role of the MO is to perform the administrative functions required to operate the market.	Suggest removal of paragraph	
65	E.2.2.1 and E.2.2.2	Imbalance Price Publication Times	100	Given the importance of the imbalance price to trading decisions Viridian would appreciate if the maximum time afforded to the MO to publish imbalance prices on a pricing period and settlement period basis could be reduced. The Markets decision references a typical time of 15 minutes for publication of the imbalance price in the GB market. We would also welcome reassurance that following system testing this maximum time will not be increased.	Reduce the maximum time for publication of the imbalance settlement price if possible.	
66	E.2.2.3	Timing of imbalance pricing	100	System environments should be designed to minimise the need for scheduled outages. If scheduled outages do occur they should be of minimal duration and carried out at off-peak times - e.g. overnight or weekends?	We would welcome an obligation reflecting our comments in this area being introduced into the TSC.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
67	E.2.2.4	Use of Market Back Up Price	100	<p>If an issue is expected to last a reasonably short time period (one or two Imbalance Settlement Periods) then it may be more appropriate to use the last available imbalance price and switch to the back-up price for the next open imbalance settlement period following appropriate prior notification to market participants if the issue is expected to be longer term. Similarly, if the issue is only for a few Imbalance Pricing Periods it may be better to calculate the price using the available pricing periods in that imbalance settlement period. These measures could avoid large swings in the imbalance price for short or even single periods. If these issues can be corrected post-event then we would expect the imbalance price to be corrected and the periods re-priced under manifest error because the market back up price is unlikely to equal the imbalance price that should have been published. We would welcome confirmation that this will occur under the code.</p>	<p>Revise use of market back-up price as set out in comment and confirm re-pricing will occur under E.3.8.1.</p>	E.3.8.1

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
68	E.3.1.2	Accepted Offer Quantity and Bid Offer Price for Demand Control	101	We are still unclear as to why these provisions are required. We note under E.4.6.2 the Bid Offer Price for Demand Control is set equal to the FASP for Affected Imbalance Pricing Periods and under E.4.7.1 the Demand Control Price is set at the same level under the same conditions. Under E.4.2.3 and E.3.6.3 respectively the Administered Scarcity Price is set equal to the maximum of the Demand Control Price and the Reserve Scarcity Price and the Imbalance Price is set equal to the maximum of the Initial Imbalance Price and the ASP. As the Bid Offer Price for Demand Control is set at the same level as the Demand Control Price, and under the same conditions we do not see why the actions described under E.3.1.2 are required. We are concerned that they could result in local demand control events influencing imbalance pricing or triggering ASP. We hope this is prevented by E.4.5.1 (a). If this is prevented by E.4.5.1 (a) then there seems to be no reason for the process described under E.3.1.2 to be in the code.	Previously raised as comment 1528. Confirm if actions described under E.3.1.2 are required and if not remove this process from code.	E.4.6.2, E.4.7.1, E.4.2.3, E.3.6.3, E.4.5.1 (a) and E.3.1.2
69	E.3.2.5	Ranking Adjustments	101	We appreciate that adjustments are small and will not materially impact the imbalance price but could drafting be more explicit on this point?	Clarify drafting.	
70	E.3.3.2	System Operator Flags	102	Description of system operator flags provided in Appendix N is insufficient. See section 3 of main response and comments on Appendix N.	Provide appropriate governance arrangements and full transparency flagging and tagging process, including advanced warning of changes,	Appendix N
71	E.3.3.3	Non-Marginal Flags	102	Description of non-marginal flags provided in Appendix N is insufficient. See section 3 of main response and comments on Appendix N.	Provide appropriate governance arrangements and full transparency flagging and tagging process, including advanced warning of changes,	Appendix N
72	E.3.5.3	Imbalance Price Tag	103	Term is undefined in glossary.	Provide definition of term.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
73	E.3.6.3	Price Cap and Floor	89	Unclear why price cap and floor are being applied to bids and to price outcomes.	Application of price caps and floor to bids and offers and market prices must not prevent recovery of costs or restrict the proper function of the market – i.e. introduce missing money.	D.4.4.3
74	E.3.6.3	Market Price Cap and Floor	104	Viridian assume the Market Price Cap and Market Price Floor will be consulted upon as part of the parameter setting process for I-SEM. We would welcome confirmation of this.	Confirm that the Market Price Cap and Market Price Floor will be consulted upon.	
75	E.3.8.1	Manifest Error in Pricing	104	Cross reference our earlier comment on paragraph E.2.2.4	We would welcome confirmation that scenarios such as set out in our comment on paragraph E.2.2.4 are covered.	
76	E.4	Administered Scarcity Price	105	Viridian note that no provisions have been introduced to the market rules to prevent administered scarcity pricing being triggered due to scarcity in reserves caused by issues on the gas transmission system. Gas-fired participants should not be subject to substantial financial loss as a result of problems relating to the delivery of gas through the gas transmission system as such issues are outside of their control.	The market rules must be amended to remove this risk.	Chapter F
77	E.4.3.1	Reserve Scarcity Price Function	105	We would welcome confirmation that the role of the MO in this instance will be restricted to implementation of the RA defined curve. We would also welcome confirmation that determination of the Reserve Scarcity Price Curve will be subject to full industry consultation.	Role of MO should be clearly defined and be limited to implementation of RA decision.	
78	E.4.3.1	Reserve Scarcity Price Function	105	The policy decision regarding the basis for determining the reserve scarcity price curve has not been taken and one of the options presented was inconsistent with the description provided in this paragraph. This paragraph therefore either prejudices the outcome of the consultation or is inconsistent with it.	Align paragraph to policy decision if required.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
79	E.4.3.2	Reserve Scarcity Price Curve	106	Requirements for qRSC(N) have not been set – i.e. highest quantity under the curve.	Clarify any relevant criteria for this quantity.	
80	E.4.4.1	Determination of the Reserve Scarcity Price	106	We are concerned that the reference to the “most recent Indicative Operations Schedule” is not precise and could refer to one of the longer term dispatch runs when these are published. We would prefer the use of “Actuals” rather than a IOS that will have forecasting errors in it since the point of lockdown of inputs is not specified – e.g. it could be using a wind forecast that is 8 hours old.	Please review and clarify that it is the short term run that is used assuming this is the intention, which it seems to be given wider context. Use of the Actual Dispatch would remove forecasting errors, errors caused by IOS run failures, etc.	
81	E.4.4.1	Determination of the reserve Scarcity Price	106	The term “based on” provides no precise definition	Detail the exact process for determining the Operating Reserve Requirement Quantity.	
82	E.4.4.2	Definition of qSTR	106	Definition increases scheduling and dispatch risk – see section 3 of response and Viridian response to recent escalation.	Definition should be changed to available installed capacity.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
83	E.4.4.3	Reserve Scarcity Price	106	<p>Governance arrangements for operation reserves requirements are unclear and we are concerned that there may be a lack of transparency around System Operator reserve management policies (e.g. see comment 818). Under paragraphs E.4.4.1, E.4.4.3 and E.4.5.1 (a) the operational reserve requirement used by the System Operator within their real-time dispatch tool effects the trigger level for Reserve Scarcity Pricing. Therefore changes to operational reserve requirements will alter the likelihood of Administered Scarcity Pricing occurring, particularly at times of system stress; increasing scheduling and dispatch risk for participants (discussed later within this response). While we appreciate that reserve requirements need to be managed dynamically by the System Operator to ensure system security, given the potential financial implications for participants, it is essential there is a high-degree of transparency and appropriate governance arrangements put in place.</p>	<p>Ensure full transparency and appropriate governance for TSO reserve management.</p>	<p>E.4.4.1, E.4.4.3 and E.4.5.1 (a)</p>
84	E.4.5.1 (a)	Determination of Demand Control	106	<p>Viridian would welcome clarification that this provision results in demand control events only triggering ASP if Reserve Scarcity is also in effect – i.e. ASP cannot be triggered by local or jurisdictional demand control events.</p>	<p>Propose removal of co-triggers for an ASP event from the list (i) to (vi) under E.4.5.1 (b), that relate to jurisdictional voltage driven issues (i.e. removal of subsections E.4.5.1 (b) (i) and E.4.5.1 (b) (ii)</p>	
85	E.4.5.2 to E.4.6.2	Determination of Demand Control Quantity and Bid Offer Price for Demand Control	106	<p>We are not sure why these provisions are required – see our comments on paragraph E.3.1.2 above.</p>	<p>Confirm if provisions are required and if they are not then remove them.</p>	<p>E.3.1.2</p>
86	E.4.5.2 (b)	Determination of Demand Control Quantities	107	<p>The term “based on” provides no precise definition</p>	<p>Detail the exact process for determining the Operating Reserve Requirement Quantity.</p>	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
87	E.5	Market Back Up Price	108	This section should include algebraic formula to provide clarity on the intent of the drafting.	Set out methodology in algebraic terms.	
88	E.5	Market Back Up Price	108	Consideration should be given to using intra-day trades only for this calculation as in theory the price of such trades should be closer to the imbalance price. Inclusion of day-ahead trades may increase the error relative to imbalance pricing in previous periods when Market Back Up Price is used. We are concerned how frequently the Market Back Up Price may be used given the large number of constraints in the system.	Consider inclusion of only intra-day trades in the average.	
89	E.5.1.2	Market Backup Price	108	If intra-day products longer than the ISP are traded (e.g hourly products, or products such as EFA block, peak or baseload) use of the product price could skew average calculation.	If product durations of longer than ISP are likely to be frequent scale prices associated with products that have trade durations of longer than DISP by a recent historic typical day type price profile.	
90	E.5.1.3	Market Backup Price	108	This clause specifies that if data isn't available then the most recent available data should be used. However, this may not be appropriate if the data was more than a few hours old.	In such instances consider using prices from the previous day (or some combination thereof) to give a more realistic price.	
91	E.6	Curtailment Price	108	This section should include algebraic formula to provide clarity on the intent of the drafting.	Set out methodology in algebraic terms.	
92	E.6	Curtailment Price	108	Same potential issues as identified for E.5.1.2 and E.5.1.3 exist as identified for the methodology used in E.5. See above.	Suggested solutions are the same.	
93	E6	Curtailment Price	108	Should this price not just be calculated for wind units. Reference through section is to Generator Unit, which is nebulously defined.	Clarify the units that the price will be calculated for in the code drafting.	
94	E.6.1.2	Curtailment Price	108	We are concerned that using the absolute trade volume will result in the incorrect calculation of the average trade price achieved by a Generator Unit in the ex-ante spot markets creating exposures for wind units.	Review calculation and if incorrect do not use the absolute volume.	



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
95	E.6.1.3	Curtailment Price	108	Use of incorrect data opens up a financial exposure for wind units. We would welcome reassurance that resettlement will occur when the required information becomes available.	Ensure resettlement of the position occurs when required information becomes available.	

**SEM-16-075 Draft TSC Part B: Chapter F – Calculation of Payments and Charges**

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
96	Chapter F	General Comment	109-217	It is a concern that the settlement algebra for suppliers is largely marked as dependent upon the Supplier Charging Decision. This contributes to the points made about process. The SEM Committee should return to Eirgrid's original drafting of net demand capped at zero.	Eirgrid's drafting of net demand capped at zero should be reinstated.	
97	F Calculation of Payments and Charges	General Comment	109-217	Viridian have significant concerns about the excessive complexity of the settlement algebra which will reduce transparency make it extremely challenging for participants to shadow settle the ISEM market which ultimately creates unnecessary commercial & resettlement risks to be managed/recovered and furthermore this complexity requires participants to develop and maintain complex and expensive systems.	Viridian would emphasise the pressing need to carry out extensive, industry inclusive, testing of the settlement algebra to ensure it generates settlement as intended by the algebra outlined in the T&SC (also noted in the ESP stocktake report) and furthermore that such testing is fully transparent and inclusive of industry.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
98	F Calculation of Payments and Charges	General Comment	109-217	The use of open instructions, which facilitated minimal change to System Operator dispatch systems, has created extensive and unnecessary complexity in the settlement algebra. This complexity will make shadow settlement of balancing market actions significantly more challenging under the I-SEM arrangements and could lead to a significant decrease in market transparency (e.g. see previous comment 821).	Closed instructions should be used to simplify settlement processes.	
99	F Calculation of Payments and Charges	General Comment	109-217	The use of two types of order format (complex and simple orders) in the balancing market further complicates the settlement algebra including a requirement for a make whole payment mechanism.	A single order type should be used to simplify settlement processes.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
100	F Calculation of Payments and Charges	General Comment	109-217	<p>Parallel opening of the intra-day market and the balancing market has required excessively complex concepts to be introduced within the settlement algebra, including but not limited to the requirement to manage:</p> <ul style="list-style-type: none"> <li>• Multiple actions for any given settlement period priced on different orders submitted by the generator at different times during the trading day (multiple acceptances);</li> <li>• Substitutive PNs whereby the volume of bid offer acceptances in the balancing market are adjusted relative to any subsequent changes in a units ex-ante contract position; and</li> <li>• The introduction of complex mechanisms to manage the payment of premiums and discount based upon the trading behaviours of balancing market participants in the intra-day market relative to bid or offer acceptances by the System Operators in the balancing market.</li> </ul>	Reconsider the parallel opening of both the intra-day and balancing markets.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
101	F Calculation of Payments and Charges	General Comment	109-217	<p>Given the lack of fully functioning prototype modelling of the settlement algebra it is unclear how SEMO will test the central systems.</p> <p>The complexity of the algebra leads to a high risk of unintended consequences, as well as errors in both its design and implementation in central market systems. It also makes proto-typing and testing the algebra extremely difficult (e.g. we note the substantial difficulty SEMO has had in providing participants with spreadsheets that model the algebra).</p>	Viridian would emphasise the pressing need to carry out extensive, industry inclusive, testing of the settlement algebra to ensure it generates settlement as intended by the algebra outlined in the T&SC (also noted in the ESP stocktake report) and furthermore that such testing is fully transparent and inclusive of industry.	
102	F.2.1.3	Interpretation	110	There is no reason why a mix of pumping and generating should not be reflected in an Imbalance Settlement Period	Delete the clause	N/A
103	F2.2.1	Ex-Ante Market Data	111	The words "for a participant" imply some participant responsibility. This is not the case	Remove the words	
104	F2.2.1	Ex-Ante Market Data	111	How are Scheduling Agents linked to NEMOs?	Clarify how scheduling agents are linked to NEMOs.	B.8.1 & B.8.2
105	F.2.2.3	Contract Refusal	112	<p>The implications of contract refusal are unclear. Does NEMO stand over the trade with the participant? If so would the refusal end up in a participant being paid twice? Eg A generator who sold in the DAM has contract refused by SEMO creating an imbalance for the participant but then the participant is dispatched in the BM and receives payment in the BM?</p>	The implications that proposals in the T&SC have on the NEMO rules, Grid code and CMC (and vice versa) must be considered holistically to ensure the effective operation of I-SEM. This should be considered in general but particularly in respect to credit requirements, trading incentives, barriers to entry and the overall commercial opportunity of I-SEM.	
106	F.2.2.4	Contract Refusal	112	Paragraph states the contract refusal does affect any submitted Physical Notification. Does this not expose participants to imbalances?	See previous comment. Implications of contract refusal need to further assessment.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
107	F.2.2.5	Ex-Ante Market Data	112	The failure of the Scheduling Agent to provide data from the DAM and IDM is not within the control of participants and it is unreasonable that participants bear the risk which affects its settlement costs, collateral calculations etc.	Clarify impact on settlement and collateral requirements including resettlement	
108	F.2.2.6	Ex-Ante Market Data	112	Linked to F.2.2.3 comment	Clarify impact on settlement and collateral requirements.	
109	F.2.4.8	Dispatch Data	114	SO Trade pricing concern – where are these rules set out and how is it ensured that SO Trades do not occur at more favourable terms than participants can access.	Clarify where the rules on SO trade will be set out.	
110	F.2.6.5	Timings Conventions	115	Does the aggregated settlement cater for Intraday products longer than 1 hour. Eg a 4 hour block.	Clarify the use of aggregated settlement period.	F.5.1.4 E.5.1.2
111	F.3.3.1(a)	COD to be used	117	Prices are not for a Trading Day” which is 24 hours but could be for the remaining 2 ½ hours only	Define as “... Trading Day or remaining part thereof ....”	
112	F.3.3.2(a)	COD to be used	118	Prices are not for a Trading Day” which is 24 hours but could be for the remaining 2 ½ hours only	Define as “... Trading Day or remaining part thereof ....”	
113	F.4.2	Setting of Loss Adjustment Factors	119	Governance & Structure – the TSC should just lift the TLAFS that are set and agreed outside the TSC and are an input to it	Delete clauses F.4.2.1 through F.4.2.4	
114	F.5.1	Setting of Imbalance Payment or Charge Parameters	123	The obligations here are not appropriate for the TSC and should be obligations in the MO’s Licence	Delete clauses F.5.1.1 through F.5.1.2	
115	Section F.5.1.1	Imbalance Weighting Factor	123	Why is the Market Operator proposing the Imbalance Weighting Factor to the RAs. Participants carry the risk associated with the Imbalance Weighting Factor chosen and therefore it should be set only after full consultation with industry.	The consultation should be RA led with views sought from independent experts.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
116	F.5.2.5	Calculation of Ex-ante Quantities	125	This is an example of unnecessary complexity brought about by the decision to have half hourly imbalance pricing. The algebra weighting methodologies will result in participants being exposed to imbalances with potentially no ability to trade the imbalance. In some instances it may incentivise participants to trade in one market over the other. Eg a supplier with an ability to forecast accurate HH profile may decide to ignore the hourly DAM and instead enter in the HH IDM1.	Change the RA decision to be that the imbalance price period will be set to lowest granularity that be traded in Ex-ante markets. So in the case of I-SEM if a half hourly solution to the IDM cannot be implemented the imbalance settlement period should be an hour. The imbalance settlement price would be the average of the 12 5min imbalance prices.	
117	F5.2.6	Calculation of Ex-ante Quantities	125	This algebra may result in both wind participants and suppliers who can accurately forecast from ignoring the DAM as trading in the DAM will create imbalances that need to be traded in the IDM. Eg. A wind unit knows its output will be 100MWh in HH1 but 0MWh in HH2. By trading in the DAM the 100MWh will be split into 50MWh in each HH period creating an imbalance in both.	Comment is highlighting that by having markets with different granularity may create trading incentives in one market over the other. Ideally all markets DAM, IDM and BM should have the same trade/settlement durations.	
118	F.6.1.1	Premium and Discount component quantities and payments	134	It doesn't seem to be good practice to swap subscripts rather than setting the rules out precisely.	The settlement algebra is difficult to interpret. It should be simplified as discussed in previous comments.	
119	F.6.7.5	Ranked Price Sets	147	The assumption employed in the ranking mechanism employed for bids and offers in the mechanisms to deal with biased PNs and uninstructed imbalances is false within the context of I-SEM and does not work in the case of multiple acceptances across time (e.g. see previous comment 201). The extent of this issue will depend upon volume of early acceptances made on a unit by the System Operator and their timing – i.e. if they are before or after gate closure.	Reconsider the parallel opening of both the intra-day and balancing markets.	
120	F.8	Curtailement Quantities, Prices, Payments and Charges	155	This section of the code will need to be amended in the event a solution to wind aggregation can be delivered.	Review the aggregation rules for I-SEM.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
121	F.10	Information Imbalance Quantities and Charges	165	There is a risk that implementing information imbalance charges will raise barriers to trading in ex-ante markets (increase costs of trading) without guaranteeing any benefit to the TSO in relation to more accurate information, unless the point of the charge is to disincentivise trade to make system management easier.	Remove charge as it acts as a levy on ex-ante trading. There does not seem to be any reason to ever move the charge from zero which it will initially be set in I-SEM.	
122	F.10.1.2 F.10.1.3	Setting of Information Imbalance Parameters	165	Viridian is concerned by the reliance upon Eirgrid, acting as System Operator, to provide recommendations on the parameters used in the Information Imbalance Charging methodology. These parameters have material commercial impacts upon participants and directly impact upon Eirgrid acting as System Operator.	Information charges should be removed completely from the code. However, in the event the charges remains the parameters used should be on the basis of analysis carried out by independent experts.	
123	F.10.1.2, F.10.2.1	Setting of Information Imbalance Parameters	165	PN Submission Period is not defined and as there can be an infinite number of submissions, how are these used?	Define PN submission period.	
124	F.11	Fixed Cost Payments and Charges	167	This section of the code has not had any prototype modelling to ensure it works appropriately. Generators should have a level playing field in cost recovery and Viridian believes there are instances the algebra for fixed cost payments and charges does not provide that.	The functionality should be rigorously tested across a large number of different scenarios to ensure that generators are not subject to under-recovery of submitted costs under the BM design. Under recovery of costs would contravene the principle of revenue adequacy and therefore undermine security of supply.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
125	F.11.2.2	Fixed Cost Payments and Charges	168	There is no compensation for a generator whose start is delayed by the TSO such that the generator moves beyond its heat state boundary - e.g. moves from hot to warm, or from warm to cold. For example, a generator may have priced a hot start into its ex-ante market trade but in dispatch its start is delayed by the TSO such that it is actually on a warm start. In such a scenario the generator has incurred additional costs (the delta between its hot and warm start costs) which are not paid to it under the mechanism. This has already been confirmed from Project team response to comment 1562 submitted during the rules process.	The functionality should be rigorously tested across a large number of different scenarios to ensure that generators are not subject to under-recovery of submitted costs under the BM design. Under recovery of costs would contravene the principle of revenue adequacy and therefore undermine security of supply.	
126	F.16.1.1 F.16.1.2	Setting of Information Imbalance Parameters	165	Viridian is concerned by the reliance upon Eirgrid, acting as System Operator, to provide recommendations on the parameters used in the setting of the strike price. These parameters have material commercial impacts upon participants and directly impact upon Eirgrid acting as System Operator.	The parameters used should be on the basis of analysis carried out by independent experts.  Relying upon recommendations from an independent expert in the setting of these parameters would therefore avoid any potential perception of a conflict of interest in these areas.	
127	F.16.1.1	Setting of Strike Price Parameters	177	It is inappropriate to use monthly fuel indices for the strike price calculation. This could result in difference charges being triggered as a result of volatility in spot commodity markets rather than reserve scarcity. Viridian note that setting the strike price on monthly fuel indices does not improve incentives on generators to maintain capacity and make it available to the System Operator but instead transfers financial risk and potential financial loss from suppliers onto generators. In effect the market rules provide suppliers with an ex-gratia cap on their exposure to commodity price movements.	Daily fuel indices should be used in the strike price calculation.	



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
128	F.16.1.5	Setting of Strike Price Parameters	178	The determination of the values is vague. They should be inputs with Governance relating to their determination specified outside the TSC	These parameters should be provided 4 months prior to the commencement of the CRM Auction and must then be applied in the relevant capacity year. Query can there is different strike prices and indexation arising from different auctions e.g. Y-4 vs Y-1 and also from contracts awarded for more than one year.	
129	F.18 F.20	Difference Charges and Difference Payments	180 & 208	The decision to proceed with mixed reference pricing for reliability options has added further significant complexity to the settlement algebra. There is also the risk that the settlement algebra required to facilitate mixed reference pricing could result in unanticipated trading incentives, given the lack of modelling that has been carried out on the market rules.	Extensive prototype modelling of the Capacity settlement algebra is required.	
130	F.18.1	Setting of Difference Charge Parameters	180	Same as for F.16.1.5 – also should these not be fixed when bidding in to a T-4 auction and applied in the capacity year otherwise regulatory risk	These parameters should be provided 4 months prior to the commencement of the CRM Auction and must then be applied in the relevant capacity year	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
131	F.18.2	Capacity Quantity Scaling Factor	180	<p>Viridian observe that the application of load following adjustments does not provide adequate protection to CRM participants from the financial exposures associated with scheduling and dispatch risk within the context of the capacity market design because the reduction in capacity market obligations under the load following adjustment is implemented pro-rata across all capacity market units relative to market demand consumption, not proportional to the ex-ante contract or dispatch levels of capacity market participants. The load following adjustment consequently does not remove exposure to difference payments for CRM participants, who through no fault of their own, may receive a contract position, or be dispatched to a level that is below their capacity obligation, due to scheduling and dispatch risk. A proper solution to this issue is therefore required (e.g. see comment 535).</p>	<p>Viridian has made a number of reasonable and constructive suggestions below.</p> <ul style="list-style-type: none"> <li>• Restrict the obligation on CRM participants to make difference payments under the CRM by making it contingent upon ex-ante scarcity warnings being issued by the System Operators (e.g. see comment 698).</li> <li>• Change the definition of scarcity so it is based upon the available capacity margin rather than operational reserve (e.g. see Viridian escalation response).</li> <li>• Utilise the concept of a “valid offer” to determine the liability of capacity market participants to make difference payments under the CRM (e.g. see comment 535 and Viridian escalation response).</li> <li>• Implement an ex-post appeals mechanism to allow CRM participants to appeal difference charges if certain criteria are met (e.g. see Viridian escalation response).</li> </ul>	
132	F.18.2.3		181	qCDERATEGLF is not defined	Define the term	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
133	F.18.3.1	Calculation of Stop Loss Limits	185	By setting stop loss limits on the maximum of the secondary trade price or primary trade price means that trading in the secondary market at a price below the primary auction price will increase stop loss limits more than the value of the trade warrants. We are concerned this could act as a barrier to secondary trade and further exacerbate liquidity issues.	Extensive prototype modelling of the Capacity settlement algebra is required.	
134	F.18.3.1(c)	Calculation of Stop Loss Limits	183	There could be up to 20 different PCIPAs for year Y given there will be Y-4, Y-1 auctions and the potential for units with 10 year contracts.	Extensive prototype modelling of the Capacity settlement algebra is required.	F.18.3.2
135	F.18.6	Calculation of Non-Performance Difference Charges	200	There is no provision in the current algebra to account for the inability of capacity providers being unable to meet their obligations due issues outside of their control. Reasons a capacity participant may not be able to deliver on its capacity obligation include gas transmission outage, electric transmission network outage, firm access and being held back for operating reserve.	Rules must be changed to not impose financial risks to capacity participants who cannot deliver for reasons outside of their control.	
136	F.20.3.1	Calculation of Imbalance Difference Payments	212	Imbalance Difference Payments are calculated using QMLF which can change significantly between initial and M+ 13 settlement. That M+13 resettlement of volume should be allowed to filter through to the tracked difference shortfall amount. This will not be possible	Remove F.20.5.3 and F.20.5.5 from the code. Viridian does not believe there is any scenario where it is acceptable to either reduce the tracked difference shortfall amount or set it to zero. The inclusion of these measures within the code suggests there may be some more fundamental flaws with the design of the I-SEM CRM.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
137	F.20.5.3	Tracked Difference Shortfall Amount	215	<p>The inclusion of SEMO having the capability to propose changes to the tracked difference shortfall amount removes the supplier hedge against the RO strike price. SEMO indicate (see previous comment 1584) that the inclusion is consistent with the RA CRM decision. It can also be argued that the RA decisions were not consistent from one consultation to the next.</p>	<p>Remove paragraph from the code. Viridian does not believe this is consistent with the RA decision to provide suppliers a perfect hedge against the RO strike price. It is also unclear how SEMO could propose changes to individual supplier units in an equitable manner. Viridian does not believe there are any circumstances where the reduction in this amount would be acceptable. The fact that measures like this have been included in the code suggests some fundamental flaws with the market design.</p>	
138	F.20.5.5	Tracked Difference Shortfall Amount	215	<p>Like F.20.5.3 this measure removes the hedge against the RO strike price for suppliers.</p>	<p>Remove from code. It is not appropriate to set the tracked difference payment shortfall amount to zero at the start of each capacity year.</p>	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
139	F.21	Socialisation Fund	216	<p>Eirgrid, acting as SEMO, have extensive provisions to manage shortfalls in the CRM Socialisation Fund (e.g. see comments 1584, 1585 and Viridian’s response to the recent escalation “Exposure to the CRM Difference Payment due to Operational Constraints”). These include the ability for SEMO, with approval from the Regulatory Authorities, to change the capacity charge within year (paragraph F.19.1.6), reduce payments owed to suppliers by changing their Tracked Difference Payment Shortfall Amount (paragraph F.20.5.3) and the standing provision that a supplier’s Tracked Difference Payment Shortfall Amount is set to zero at the start of each capacity year (paragraph F.20.5.5).</p> <p>It is unclear how these provisions will be used by Eirgrid, or the cash flow risk Eirgrid will manage, but these measures facilitate the wholesale transfer of risk from Eirgrid onto suppliers undermining incentives to prudently manage the level of the socialisation fund. One of the stated benefits of the RO scheme is that it provides suppliers with a perfect hedge at times when the market price is above the RO strike price. The inclusion of these measures within the T&amp;SC however means that suppliers are no longer guaranteed to be held whole against the strike price, but rather could be subject to large financial exposures, and be forced to manage substantial cash flow issues.</p>	<p>Remove F.20.5.3 and F.20.5.5 from the code. Viridian does not believe there is any scenario where it is acceptable to either reduce the tracked difference shortfall amount or set it to zero.</p>	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
140	F.12.1.4 F.13.1.4 F15.2.4 F.19.1.6 F.20.5.3	Within year changes to tariffs	109-217	Eirgrid, acting as SEMO, have extensive mechanisms under the T&SC to manage cash flow issues. These include a number of provisions for managing shortfalls in the CRM Socialisation Fund (discussed in detail in the next bullet point) and provisions to facilitate potential changes to the Imperfections Charge and Currency Cost Charge within year. Use of these provisions can be prompted by Eirgrid and implemented with the approval of the Regulatory Authorities (e.g. see paragraph F.12.1.4 and F.15.2.4). This translates a cash flow issue for Eirgrid into a potential financial exposure for suppliers (e.g. see previous comment 1568)	Ability for mid-year reviews of tariffs should be removed.	
141	F.12.1.4 F.13.1.4 F15.2.4 F.19.1.6 F.20.5.3	Within year changes to tariffs	109-217	In all cases where the code facilitates changes to a market charge within year a minimum lead time between the decision to change the charge and its effective date should be set out in the code to provide suppliers with an opportunity to make required changes.	Ability for mid-year reviews of tariffs should be removed.	
142	F.21	Socialisation Fund	216	Due to the design of the CRM the socialisation fund has significant importance to suppliers as it acts to fill the "hole in the hedge". The fund must be able to ensure that suppliers are not exposed to the full ASP price. Shortfalls in the fund represent a major risk and financial burden which endangers asset light suppliers.	In order to alleviate the cash flow burden the socialisation could be prefunded by suppliers before the start of I-SEM.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
143	F.21	Socialisation Fund	216	The provisions included for management of the socialisation fund allow wholesale transference of cash flow risk from Eirgrid to suppliers. Under provisions this risk could result in substantial financial loss for suppliers. It is unclear how these provisions will be used while no analysis has been presented to the working group in relation to the potential financial (e.g. see previous comments 1584 and 1585).	Extensive modelling on issues affecting the socialisation fund and its size should be carried out ahead of the first CRM auction.	
144	F.21.1.2	Socialisation Fund	216	Paragraph F.21.1.1 provides the detail for calculating the socialisation fund balance. Paragraph F.21.1.2 then allows the MO to apply adjustments.	Clarify what these adjustments are?	

### SEM-16-075 Draft TSC Part B: Chapter G – Financial and Settlement

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
145	Chapter G	General Credit Parameters	218-278	Viridian has long advocated or a reduction in the undefined exposure period for Suppliers. Currently this is set at 16 days. As illustrated by the recent SoLR event in Northern Ireland an event can happen in as little as 2/3 days.	Reduce the undefined exposure period.	
146	Chapter G	General Over Collateralisation	218-278	Viridian recognise that credit & collateral provisions in relation to Exante and Capacity markets are outside the scope of this consultation but consider that given the significant impact to participants a combined review of the credit & collateral provisions across all markets is necessary to ascertain a complete impact assessment and to make a proper informed evaluation of the appropriateness of the current design and provisions.	Viridian believe that prototype modelling and stress testing of the market rules on bad debt and credit requirements is required to ensure participants are not exposed to excessive financial exposures and costs of participation are not excessive. Eg.Default of a significant participant, sustained periods of high prices and administered scarcity pricing.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
147	Chapter G	General Credit Cover Parameters	218-278	Viridian acknowledge that there will be a parameter consultation phase and strongly recommend that credit parameters are appropriately reviewed to ensure that credit requirements are not excessive and also validate the assumptions used in the proposed parameters, for example the UDE makes assumptions on SOLR timelines which have a significant impact on credit.	See previous	
148	G.2.4	Settlement Calendar	226	Calendar should also be republished in a timely manner should errors be discovered or ad hoc settlement be required. This should be included in the T&SC drafting. Within 1WD would be our preference.	Clarify that the calendar will be updated as and when required.	
149	G2.7.5	Bad Debt	230	Viridian has concerns about the potential domino effect when a participant defaults during sustained periods of high prices and administered scarcity pricing.	Viridian believe that prototype modelling and stress testing of the market rules on bad debt and credit requirements is required to ensure participants are not exposed to excessive financial exposures and costs of participation are not excessive	
150	G.14.7	Undefined Exposure for Supplier Units	260	Viridian believes the use of 100% gross demand for the undefined exposure calculation will result in a significant over collateralisation of I-SEM. Some suppliers will likely purchase much of their demand requirements in the ex-ante markets.	Supplier historic ex-ante positions should be taken into account when determining the credit requirement that participant will have in the balancing market.	
151	G.14.8.1	Calculations in respect to capacity charges	263	If participants are replicating the calculation, ( CCP for all units for the full undefined exposure period) results of the capacity auction will be only available from the MO website.	This should be a published annual value.	
152	G.14.8.1	Calculations in respect to capacity charges	263	The QUPEB for all Supplier units is not available to participants.	This should be a published annual value.	



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
153	G.14.9	Undefined Exposure for Generator Units	263	Maintaining the use of historic outcomes to determine collateral requirements will result in generators that are consistently constrained down from their ex-ante position having to post credit. The cost of posting this credit will make that generator less competitive as it will be an additional cost the generator has to recover.	Review I-SEM credit requirements across all market timeframes.	
154	G.14.15.3	Calculation of Forecast Amounts of Settlement Reallocation Amounts	270	Formula requires (DEDARA) which equals the end date of Reallocation Agreement however in workshops it was agreed that Agreement could be evergreen.	Redraft of formula or ensure system meets principle	
155	G.14.15.4.5	Calculation of Forecast Amounts of Settlement Reallocation Amounts	270	Formula makes primary and secondary reallocation equal. Unsure if this is correct in feeding into future calculations	Requires validation and signage. Believe primary should not equal secondary.	

### **SEM-16-075 Draft TSC Part B: Chapter H- Interim Arrangements**

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
156	General	Supplier Charging		We would welcome clarification as to whether one of the Supplier Charging options would require Interim Arrangements drafting. This has not been included in the draft.		

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
157	Section H	Credit Requirements	279	There is no information in the interim arrangements for the management of credit and collateral postings.	Clarity is required on the transitional credit cover arrangements and how this can be managed effectively minimising additional credit and collateral (and resultant cost) during the transition from SEM to ISEM whilst making sure that the operational management of this for participants is streamlined.	
158	H.2.1.1	Start of New Trading Arrangements: Modifications	279	Incorrect referencing?	Change "B.17.22" to "B.17.16"	
159	H.2.1.3	Fast Track Modifications	279	Viridian is generally uncomfortable with the concept of fast track modifications. See individual business response for details.		
160	H.2.1.2 to H.2.1.6	Start of New Trading Arrangements: Modifications	279	If this section is retained rather than using the existing Urgent Modification process then a number of revisions would be required including more precise criteria to ensure only exceptional modifications are progressed through this arrangement. Communications should also be to all market participants and not just the Modifications Committee since all participants will be affected by the modification and members of the modifications Committee will not be able to take representation from the other participants who belong to the type of party they represent.	See comments	B.17.3.2
161	H.4	Curtailment Price	280	We do not believe these interim arrangements are required given the delay in I-SEM go live.	Delete H.4	

### SEM-16-075 Draft TSC Part B – Appendix D: List of Agreed Procedures

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
162	Appendix D	Description of APs	N/A	We would welcome confirmation that this appendix provides a full list of APs. We note discussion at the RLG regarding numbering and whether or not it should be changed so we are unsure if any have actually been omitted.	Please review appendix and include any omitted APs. Confirm that the APs listed and the description provided are accurate and consistent with what will be published as part of the TSC.	TSC and APs

### SEM-16-075 Draft TSC Part B – Appendix E: Data Publication

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
163	Appendix E	Data Publication Table 7	A23	We would welcome confirmation that all QBOA and PBOA will be published by unit for each imbalance pricing period?	Ensure all QBOA and PBOA are published at the same time as the imbalance price.	
164	Appendix E	Operating Reserve	N/A	We do not see any publications relating to operating reserve. Given operational definition of reserves used in RSP there needs to be full transparency around management of operating reserves including requirements (policy in dispatch systems) and information on forecast and real time provision.	Implement a reporting solution that provides the required information.	
165	Appendix E	Transmission Outage Schedule	A22	The transmission outage schedule is only published daily (prior to 17.00). This will not cover within day changes to that published.	Implement a reporting solution that provides the required information.	

### SEM-16-075 Draft Appendix I – Offer Data

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
166	Appendix I	General	N/A	There are a lot of references to paragraph 1 of appendix but should these not be to AP4 directly.	Please review referencing to ensure it is appropriate.	
167	Appendix I	Paragraph 2	A42	Forecast profiles and energy limit are missing from the COD data elements but are included in chapter D of code.	Add in Forecast Availability Profile, Forecast Minimum Output Profile, Forecast MSG Profile and Energy Limit	
168	Appendix I	Table 2 – Commercial Offer Data Elements	A43	Title of last column is confusing, should this not be “Other Generator Units not explicitly referenced in table”? Definition of Generator Unit used in paragraph 1 is very open.	Change title on 3 <sup>rd</sup> column of table as suggested.	
169	Appendix I	Paragraphs 6 to 12	A43 and A44	Incorrect internal referencing throughout these paragraphs	Please correct these references	
170	Appendix I	Paragraphs 16	A54	Incorrect internal paragraph references.	Please correct these references	
171	Appendix I	Paragraph 16 (d) (ii) and d (iii)	A54	Is the same caveat regarding first MW level and time not required in 16 (d) (ii) and (iii)	Confirm if caveat is required and if so include.	

### SEM-16-075 Draft TSC Part B – Appendix K: Other Market Data Transactions

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
172	Appendix K			The data transactions required to support the role of the MO in relation to the imbalance pricing methodology do not seem to be included in this appendix – e.g. SO and Non-Marginal flags.	Include these data transactions.	Chapter E

## SEM-16-075 Draft TSC Part B – Appendix N: Flagging and Tagging

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
173	Appendix N	Flagging and Tagging	A86	There is a lack of transparency in relation to the F&TRs meaning it is unclear whether actions taken on non-priority dispatch units to accommodate the dispatch of priority dispatch units (e.g. dec actions taken on thermal units) will be flagged under the imbalance pricing methodology (e.g. see comment 472).	The treatment of such actions could have a significant impact on the imbalance price at times of high wind penetration and therefore how they are classified under the F&TRs should be clearly set out.	
174	Appendix N	Flagging and Tagging	A86	The current obligation imposed upon the Market Operator under paragraph 3 of Appendix N is extremely vague and is insufficient to address the concerns raised in our comments (e.g. see comments 1065, 1532, 1533 and 1544).	We note the high degree of transparency and robust governance arrangements implemented for the scheduling and pricing algorithm used in the current SEM. This engenders a high degree of confidence in SEM market outcomes. We therefore recommend a similar approach is adopted for dispatch and pricing processes under the I-SEM trading arrangements.	
175	Appendix N	Flagging and Tagging	A86	There is a lack of transparency regarding how SO-SO trading activities will be conducted under the I-SEM trading arrangements and how they will impact upon the imbalance price (e.g. see comments 308, 474, 518, 1064, 1486, 1544).	Full transparency around SO-SO trading activities under I-SEM trading arrangements is required regardless of the introduction of European balancing arrangements because of the significant impact they could have on balancing market outcomes.	

**SEM-16-075 Draft TSC Part B – Appendix O: Instruction Profiling Calculations**

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
176	Appendix O	Instruction Profile	A90-A109	We are concerned system vendors are experiencing difficulty in implementing the complex functionality required to facilitate the use of open instructions in the central systems. We are concerned at the overall level of complexity in the market design and, in particular, the settlement algebra. This complexity is likely to cause significant problems for shadow settlement of market outcomes (resulting in reduced transparency around market processes) and increased central system costs and participant operating costs. This could act as a barrier to entry to the market.	Closed instructions should be use to simplify settlement processes.	

**SEM-16-075 Draft TSC Part B – Glossary**

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
177	Definitions	General	1 to 50	There are extensive issues with the accuracy of the completeness and accuracy of the ‘Definitions’, including referencing errors and omissions, as well as other inaccuracies. The examples captured throughout this response template and in the rows immediately below may not be exhaustive.	Carry out an extensive review of the glossary and address errors and omissions.	All of the TSC
178	Definitions	“Acting as Intermediary Flag”	1	Term does not appear to be used in Part B	Check where this term is used/ if it is used	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
179	Definitions	"Administered Imbalance Settlement"	2	This does not appear to be referencing the correct section G.9 deals with credit cover- should this be referring to G.18- Implementation of Administered Imbalance Settlement?	Change reference to "G.9" to "G.18"	
180	Definitions	"Annual Capacity Charge Exchange Rate"	3	Should the reference to "year" be Capacity Year? (i.e. 1 Oct to 30 Sept?) F.19 requires MO to propose Annual Capacity Charge Exchange rate for each "Capacity Year"	Change reference to "year" to "Capacity Year"	
181	Definitions	AoLR Active	4	The term "AoLR Active" does not appear to be used in Part B, the Term "Agent of Last Resort" does not appear to be defined. What is this definition intended to do? (Agent of Last Resort is referenced in B.7.2.1 (f)- but there is no definition of what it actually is. It is also used briefly in AP1- page 36 as a reference to a "AoLR Trading Contract"	A Definition of what a "Agent of Last Resort" is required to understand what is intended.	
182	Definitions	Assetless Participant	4	Reference to "NEMO"- NEMO does not appear to be a defined term- "SEM NEMO" is a defined term. Should all references to "NEMO" be change to "SEM NEMO"?	See comments	
183	Definitions	Availability Profile Quantity	4	D 6.3.3 relates to the "Availability Profile Quantity" a typo?	Insert the words "Availability Profile" before the word "Quantity"	
184	Definitions	Available Credit Cover	5	The term "Interconnector Unit Traded Exposure" is not defined	Define "Interconnector Unit Traded Exposure"	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
185	Definitions	Average System Frequency	5	Incorrect clause reference	Reference to "F.9.2.1" should be to "F.9.2.2"	
186	Definitions	Battery Storage Unit	6	"generating mode" is probably intended to refer to the defined term "Generating Mode"	Change reference to "generating mode" to "Generating Mode"	
187	Definitions	Billing Period Stop-Loss Limit Factor	6	The term "Non-Performance Difference Charges" does not appear to be defined.	Define "Non-Performance Difference Charges"	
188	Definitions	Breach Limit	6	Incorrect clause reference- G.10.1 should be "section G.10". Under section G.10 there is provision for the RA's to make a determination but not actually approve- there should be provision in G.10 for the RAs to approve the various parameters within a discrete time scale	Incorrect clause reference- G.10.1 should be "section G.10". Under section G.10 there is provision for the RA's to make a determination but not actually approve- there should be provision in G.10 for the RAs to approve the various parameters within a discrete time scale	Part B. G.10
189	Definitions	Capacity Payments	7	The term "Awarded Capacity" is not defined, presumably this is done by reference to the Capacity Market Code	Define what is meant by "Awarded Capacity"	
190	Definitions	Combined Cycle Unit Flag	8	The term "Combined Cycle Unit" is not defined	Define a "Combine Cycle Unit"	
191	Definitions	Credit Cover Adjustment Trigger	10	Incorrect reference?	Change "G.10.1" to "G.10"	
192	Definitions	Difference Payment	14	Is the reference to lower case "suppliers" correct? Should it be "Suppliers" or perhaps Supplier Units?	See comments	
193	Definitions	EU Guideline on Electricity Transmission System Operation	17	It is noted this is still to be drafted, what is the effect if this is not in place/ how will it be dealt with?	It is noted this is still be drafted, , what is the effect if this is not in place/ how will it be dealt with??	
194	Definitions	Emergency Meeting	17	Incorrect clause reference, should refer to paragraph B.17.16.4	Change reference to "B.17.6.4" to "B.17.16.4"	
195	Definitions	Fixed Credit Requirement	18	Incorrect reference?	Change "G.10.1" to "G.10"	
196	Definitions	Flags	19	Incorrect reference?	Change "E.3.4" to "E.3.3"	



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
197	Definitions	Historical Assessment Period	21	Incorrect reference?	Change "G.10.1" to "G.10"	
198	Definitions	Imbalance Price Flag	22	Incorrect reference?	Change "E.3.4.4" to "E.3.3.4"	
199	Definitions	Imperfections Charge	22	The term "Dispatch Balancing Costs" does not appear to be defined	Define "Dispatch Balancing Costs"	
200	Definitions	Initial Imbalance Price	23	Incorrect reference?	Change "E.3.7.2" to "E.3.6.2"	
201	Definitions	Intermediary	24	Incorrect reference?	Change "B.10" to "B.11"	
203	Definitions	Licence	25	Typo	Change "Section 10" to "Article 10"	
204	Definitions	Licence Reference Number	26	Query whether Licence Reference Numbers have ever been issued by all RAs in relation to licences, and the term does not appear to be used- therefore suggest that it is deleted	Delete the definition "Licence Reference Number"	
205	Definitions	Net Imbalance Volume	31	Incorrect reference?	Change "E.3.5.1" to "E.3.4.1"	
206	Definitions	Net Imbalance Volume Tag	31	Incorrect reference?	Change "E.3.6." to "E.3.5"	
207	Definitions	Net Output Function	31	Incorrect reference?	Change "D.2." to "D.6.2."	
208	Definitions	Nominal System Frequency	31	Incorrect reference?	Change "F9.2.1" to "F.9.2.2"	
209	Definitions	Nominating Participant Election	32	Incorrect references?	Change "B.17.5 to B.17.7" to "B.17.4.4 to B.17.7.10"	
210	Definitions	Panel	34	Incorrect references?	Change "paragraphs B.19.6.5, B.19.6.6, B.19.6.7 and B.19.6.9." to "paragraphs B.19.6.6, B.19.6.7, B.19.6.8 and B.19.6.9"	
211	Definitions	Peaking Unit Theoretical Efficiency	35	Term "Higher Heating Value" does not appear to be defined	Define "Higher Heating Value"	
212	Definitions	Period of Market Operation	35	Incorrect reference?	Change "F.11.1.2." to "F.11.1.3"	
213	Definitions	Period of Physical Operation	35	Incorrect reference?	Change "F.11.1.3" to "F.11.1.2"	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
214	Definitions	Premium Component Payments and Charges	35	Incorrect referencing? "Premium Component Payments" seem to be calculated under Para G.4.3.	See comments	F.1.2.1 (b)
215	Definitions	Price Average Reference Tag (TPAR)	36	Incorrect referencing?	Change "E3.6" to "E.3.5"	
216	Definitions	Ramp Rate	38	What is the position in relation to the square brackets?	See comments	
217	Definitions	REMIT Reporting Flag	39	The term does not appear to be used in Part B- does it need to be catered for?	See comments	
218	Definitions	Replaced Bid Offer	39	Incorrect clause reference?	Change "E.3.5.3" to "E.3.4.3"	
219	Definitions	Scheduling Agent	40	How will this be dealt with in the absence of the EU Guideline on Electricity Transmission System Operation?	See comments	
220	Definitions	Short Notice Unit Flag	42	Definition does not appear to be used in Part B	See comments	
221	Definitions	Short Term Maximisation Capability	42	Definition does not appear to be used in Part B Term "Maximisation Instruction" does not appear to be defined	See comments	
222	Definitions	Short Term Maximisation Time	42	Definition does not appear to be used in Part B Term "Maximisation Instruction" does not appear to be defined	See comments	
223	Definitions	Supplier	43	Typo	Change "Section 10" to "Article 10"	
224	Definitions	Warm Start	50	What is the status of the square brackets?	See comments	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
225	List of Subscripts	General	51 to 54	As a result of the excessive complexity of the settlement algebra there are a large number of subscripts used within the code. We note however that subscripts that are not used within the code are also listed in this section. We suggest these are removed and that only subscripts actually used within the TSC are included. This will make it easier to reference.	Remove unused subscripts and carry out an extensive review of the table. If there are any errors or omissions address them.	All of the TSC
226	List of Variables	General	55	Table includes parameters.	Suggest changing name to "List of Variables and Parameters"	
227	List of Variables	General	51 to 54	It has been difficult to confirm whether the list of variables provided in the table is complete and therefore whether the units for all data items can be determined. The fact that it has been ordered alphabetically by the 'Element' column has made reviewing the section extremely difficult.	Switch positioning of the 'Long Name' and 'Element' columns and order alphabetically by 'Long Name'. Carry out an extensive review of the table. If there are any errors or omissions address them.	All of the TSC
228	List of Variables	General	55 to 103	It is unclear what the purpose of the 'Plain Text' column is as it is the same as the 'Element' column except for the font.	Consider removing the 'Plain Text' column.	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
229	List of Variables	Technical Offer Data	55 to 103	Data items relating to technical offer data submissions do not seem to have been included in the list of variables but are essential to the proper functioning of the TSC – e.g. profiling of dispatch instructions to allow determination of the price and volume of bid offer acceptances in the balancing market. We could not find a direct reference to grid code to source this data but even if included in grid code it should be contained somewhere in the TSC (e.g. as part of the table in Appendix I) given its central importance to the proper functioning of the BM. We note incorrect technical offer data submissions caused issues during SEM market trials.	Provide units for technical data submissions.	Section D and Appendix O
230	List of Variables	Adjusted Dispatch Quantity	90	It is not clear what the adjustment does or how it is effected		
231	List of Variables	Day-Ahead Trade Quantity	98	“h” is not a subscript for this variable	Delete the words “in Day Ahead Trading period h”	
232	List of Variables	Intraday Trade Quantity	98	“h” is not a subscript for this variable	Delete the words “in Day Ahead Trading period h”	
233	List of Variables	Intraday Trade Quantity	98	First part of definition is a repeat of the qTDA definition which should be deleted	Delete the text	

### SEM-16-075 Draft TSC Part C Transitional Arrangements

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
234	General	Transitional Credit Cover		We would welcome the inclusion of drafting which would facilitate the existing SEM posted collateral transitioning through into the ISEM calculations. Separate calculations and requirements increases the burden on suppliers as unnecessary headroom and cost will be incurred in managing two distinct positions with the same counterparty (SEMO).		
235	C.6 Modifications	'in flight' modifications		The processing of modifications to the current version of the T&SC which have been approved but have not been considered in the new T&SC ISEM version should be addressed by the SEM Committee. The current Modifications Committee has no jurisdiction in this area therefore the SEM Committee is the only party which can make such amendments. The SEM Committee should also provide clarity on its intentions in relation to Modifications which have been recommended for approval under the current T&SC at the time of transition.		
236	C.6.1.1	Modifications Committee Membership	4	The current drafting requires all Modifications Committee members to resign after one year. We would suggest that removing the full committee membership in one go would create an unhelpful transitional and future consequence. Currently 50% of the Committee seats are re-elected annually. We would recommend the SEM Committee retaining the current schedule. Considering current timelines this would mean that 50% of the Committee seats are open for election in June 2018, one month after go-live. We consider this to be acceptable as it gives an early opportunity for new participants to take up roles on the Committee while retaining at least 50% of the membership, aiding continuity.		

### SEM-16-075 Draft Agreed Procedure 1 – Registration

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
237	AP1 Section 3.3	Registration of Supplier of Last Resort	AP1-24	All steps require review and redraft. A SoLR Unit should be already registered in systems with a future start date which can be amended at short notice to facilitate an event. SEMO will not receive 5 days notice, it may be the case that SEMO will only receive a number of hours notice.	Redraft of all SoLR Steps required	

### SEM-16-075 Draft Agreed Procedure 4 – Transaction Submission and Validation

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
238	2.3.2 Table 1	Class	AP4 – 7&8	Reference to “MI” in the class column is I assume the “BMI” as listed in the abbreviations?	Amend either MI to read BMI or include appropriate abbreviation	
239	2.3.3(b)	2.3.3(b) Query of System Data	AP4-8	Typo – “associate0d”	Correct typo to “associated”	
240	2.3.4(c)	2.3.4(c) Data transaction Validation	AP 4-8	Reference to section 2.3.4 incorrect – should be 2.3.5?	Correct reference	
241	2.6.5	2.6.5 Standing Offer Data	AP14-14	Open brackets in first line – not closed	Insert close bracket as appropriate	
242	Table 6	GC1 Gate Closure Data	AP4-16	It is not clear from this table that the terms in 2.6.5 “Each generator unit must have a standing offer data set of type “All””.	Confirm this requirement is covered	2.6.5
243	2.7.2	Validation	AP4-16	Viridian believe that participants should be able to update TOD within day to allow for multi-mode operation. This will facilitate more flexible operation of the system consistent with the DS3 programme.	Multi-mode operation should be facilitated in central systems.	

### SEM-16-075 Draft Agreed Procedure 6 – Data Publication and Data Reporting

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
244	General	Timings	All	A number of timings are not specific – e.g. Page AP6-32 “Physical Notifications – Member Private” is published “After each Balancing Market Gate Closure”, however there is no specific time line for this.		

### SEM-16-075 Draft Agreed Procedure 9 – Management of Credit Cover and Credit Default

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
245	AP9 Section 2.3	Inputs to the Calculation of Required Credit Cover	AP9-6	Drafting of required data appears to require metered demand. Viridian believes that should be loss adjusted net demand.		
246	AP9 Section 2.10.4	Depositing Cash in a SEM Collateral Account	AP9-10	Typo in paragraph. Erroneous “=” sign to be removed.		
247	AP9 – General	SoLR Event		Viridian would welcome the inclusion of some drafting which allows for special dispensation in relation to the 2 day response to an increase notice to be given to the supplier acting as a SoLR in a SoLR event .		
248	AP9 Appendix 2 Part B	Calculation of VAT for required credit cover	AP9-37	Part (a) and (b) of Appendix 2 includes reference to Variable Market Operator charges being included in the credit cover. Variable Market Operator charges are not included in the credit cover calculation.	Remove reference	

### SEM-16-075 Draft Agreed Procedure 14 - Disputes

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
249	Appendix 2	Forms	AP14-22	Typo – text box reminder to insert forms however forms are included.		

### SEM-16-075 Draft Agreed Procedure 15 – Settlement and Billing

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
250	2.4	Market Operator Charges	AP15-6	Drafting error. Refers to a monthly invoice containing both the Variable Market Operator Charge and the Fixed Market Operator Charge however the Variable Market Operator Charge is to be levied weekly.		

### SEM-16-075 Draft Agreed Procedure 18 - Suspension and Termination

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
251	Entire Procedure		All pages	Presumably the page numbering should be adjusted from "AP13-[X]" to "AP18-[X]"	See comments	
252	2 Overview	2.1 Deregistration	AP 13-5	The Code does not make provision for the review of the Deregistration Form by either the MDP or the SO- the decision is the MO's so second paragraph should be adjusted	The Market Operator shall review the Deregistration Form, <del>in conjunction with the appropriate Meter Data Provider and / or System Operator</del> and shall make a decision to approve or reject the Deregistration request in respect of the Unit(s).	
253	2 Overview	2.2 Voluntary Termination	AP 13-5	A Party can apply to cease to be a party at any time- but in order to cease it needs to go through the steps of the code- i.e. it can't just cease to be a party at any time. There are also some minor typos- reword as suggested	In accordance with the Code, a Party may apply to cease to be a Party at any time. The procedure in relation to Voluntary Termination is set out at section 3.1 below. In order to voluntarily Terminate a Party must provide 90 Working Days notice of its intention to the Termination to the Market Operator, obtain the consent of the Regulatory Authorities and comply with the Deregistration procedure set out at section 3.5 below. The Market Operator issues a Voluntary Termination Consent Order specifying an effective date of termination once all relevant criteria under the Code are met.	
254	2.3	2.3.2	AP 13-6	As highlighted through the rules process the suspension process does not align with the regulators statutory and licence requirements in relation to the SoLR process. In effect there is no such thing as a suspension of a supplier it is either licence revocation or not. Further work is required in relation to the SoLR process.		



ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross- Referenc e for any impacted section
255	2 Overview	2.3.2 Issuing of a Suspension Order	AP13-6	Limbs a to c do not appear to line up with what the Code says is required – under B.18.5.1, delete limbs a) to c) and replace with suggested drafting	Delete limbs a) to c) and replace with:- (a) Specify the Units to which the Suspension Order shall apply; (b) The data and time from which the Suspension Order will take effect; and (c) the terms of the suspension	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
256	2 Overview	2.5 Removal of Intermediary	AP13-6	<p>Limbs (d) to (f) do not seem to line up with B.11.1. There does not seem to be provision within the Code for RA's to withdraw consent. Are there 4 grounds under which an Intermediary can be removed?</p> <ol style="list-style-type: none"> <li>1. Expiration of Form of Authority</li> <li>2. Voluntary deregistration</li> <li>3. Unit Owner revoking authority/ or revoked in accordance with Legal Requirements and</li> <li>4. Suspension Order?</li> </ol>	<p>Delete the following:-  <del>The procedural steps for the removal of an Intermediary are set out at section 3 below.</del>  <del>Three are three circumstances in which an Intermediary may be removed:</del>  <del>(d) an Intermediary's consent is revoked by the Regulatory Authorities, or the expiration of Form of Authority;</del>  <del>(e) an Intermediary wishes to voluntarily deregister any or all of the Units; or</del>  <del>(f) an Intermediary ceases participating in respect of any Units without first voluntarily deregistering the Units or the Unit Owner wishing to revoke the Intermediary.</del></p> <p>Replace it with the following:-  The procedural steps for the removal of an Intermediary are set out at section 3.6 below.  There are four circumstances in which an Intermediary may be removed:</p> <ol style="list-style-type: none"> <li>(a) the expiration of a Form of Authority;</li> <li>(b) an Intermediary wishes to voluntarily deregister any or all of the Units;</li> <li>(c) the Unit Owner or Legal Requirements revoking the authority of the Intermediary; and</li> <li>(d) a Suspension Order having effect.</li> </ol>	

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
257	3 Procedural Steps	3.1 Voluntary Termination	AP13-7	Steps 1 & 2. Notice provisions under the code require confirmatory registered post to follow where notice given by email/ e-fax- so suggest the Method is adjusted.	Method in Steps 1 & 2- change from "Registered post/ e-fax" to "email/ e-fax with confirmatory copy by registered post"	
258	3 Procedural Steps	3.2 Issuing a Suspension Order- 3.2.1 {in respect of B.18.3.1}	AP13-8, Steps 1 to 3	It is not a requirement under B.18.2.1 of the code for a Default Notice to have issued in order for a Suspension Notice to issue. Defaults are just 2 of the 15 grounds under which a Suspension Order may issue. So Steps 1 to 3 should be deleted (and the "swim lanes" in 4.2 adjusted	Delete Steps 1 to 3, and insert as first step carried out by Market Operator:- Assess whether if any of the events listed in B.18.3.1 (a) to (o) inclusive have occurred Renummer subsequent steps accordingly	Swim Lanes in 4.2 need to be adjusted to take into account the procedure
259	3 Procedural Steps	3.2 Issuing a Suspension Order- 3.2.1 {in respect of B.18.3.1}		Generally	Method - change from "Registered post/ e-fax" to "email/ e-fax with confirmatory copy by registered post"	
260	3 Procedural Steps	3.2 Issuing a Suspension Order- 3.2.1 {in respect of B.18.3.1}	AP 13-9	At the end of the steps there should be additional steps to cater for a) the Suspension Order being amended or lifted- with notice by MO going the Defaulting Party b) the Suspension Order being amended or lifted- with notice going by MO to the Regulatory Authorities, System Operators, Relevant Distribution System Operators; and c) the Suspension Order being amended or lifted- with the listing or amendment of Suspension Order being published by the MO on the Market Operator website	See comments	Swim Lanes in 4.2 need to be adjusted to take into account steps

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
261	3 Procedural Steps	3.2 Issuing a Suspension Order- 3.2.2 {in respect of B.18.3.2}	AP13-9 Steps 1-6	<p>The Step Description and the timing is wrong- and do not line up with B.18.3.2. under which there are two grounds for immediate suspension- a Credit Call which is not met by the Credit Cover Provider OR failure to provide Required Credit Cover- subject to the grace periods to replenish- these are the "triggers". Default or limb (ii) are not "triggers". Having said that if the triggers apply then a Default Notice must issue at the same time as a Suspension Order.</p> <p>So would suggest Step 1 deleted and redrafted in line with the following:-  Step Description- "(i) a Credit Call is made and the Participant's Credit Provider fails to meet the demand within the timeframe provided under the Code (subject to the replenishment provisions in the Code) OR (ii) a Participant fails to provide the Required Credit Cover as required under the Code"  Timing:- "Immediate"  From/ By:- "Market Operator"  Step 2 should then cater for issue of Default Notice and Suspension Order  At the same time as Suspension Order and Default Notice being issued there should be a step to cater for the issue of a Statutory Demand under B.18.3.4</p>		Swim Lanes in 4.3 need to be adjusted to take into account steps

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
262	3 Procedural Steps	3.2 Issuing a Suspension Order- 3.2.2 {in respect of B.18.3.2}	AP13-9 Steps 1-6 (continued)	<p>At the end of the steps there should be additional steps to cater for</p> <ul style="list-style-type: none"> <li>a) the Suspension Order being amended or lifted-with notice by MO going the Defaulting Party</li> <li>b) the Suspension Order being amended or lifted-with notice going by MO to the Regulatory Authorities, System Operators, Relevant Distribution System Operators; and</li> <li>c) the Suspension Order being amended or lifted-with the listing or amendment of Suspension Order being published by the MO on the Market Operator website</li> </ul>	See comments	Swim Lanes in 4.3 need to be adjusted to take into account steps
263	3 Procedural Steps	3.2 Issuing a Suspension Order- 3.2.2 {in respect of B.18.3.2}	AP13-9 Steps 1-6 (continued)	Generally	Method - change from "Registered post/ e-fax" to "email/ e-fax with confirmatory copy by registered post	
264	3 Procedural Steps	3.3 Suspension	AP13-11	This procedure needs to be completely redrafted to take into account B18.4 properly- it appears to be currently drafted on the basis of a Supplier Unit (to which Supplier of Last Resort would apply) and does not seem to take into account Generator Units or other Units which may be Suspended and needs to take into account A) amendment steps described in 12 above and B) comments in relation to Method- described in 13 above.	See comments, this step needs to be completely redrafted.	Swim Lanes in 4.4 need to be adjusted to take into account revised drafted procedure
265	3 Procedural Steps	3.4 Issuing of a Termination Order	AP13-12	Step 5. The Deregistration Procedure may not be applicable – under the Termination Order it may specify when Deregistration takes effect	Step 5- redraft as: "Where applicable commence Deregistration"	Swim lines under 4.5 to be adjusted in line with procedures

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
266	3 Procedural Steps	3.4 Issuing of a Termination Order	AP13-12	Step 6 seems to be referring to Voluntary Termination- which has a separate process, and the Termination Order Specifies the time and date on which Termination or Deregistration takes effect	Delete Step Description and replace with: "Termination takes effect (Party must comply with B.18.6.3)"  Delete Timing and replace with:- "time and date of Termination and Deregistration as specified in the Termination Order"	Swim lines under 4.5 be adjusted in line with procedures
267	3 Procedural Steps	3.4 Issuing of a Termination Order	AP13-12	Generally	Method - change from "Registered post/ e-fax" to "email/ e-fax with confirmatory copy by registered post"	
268	3 Procedural Steps	3.5 Deregistration	AP13-13	Step 1- B12.1.1 requires MO and RAs to be notified	Change Method to "email/ e-fax with confirmatory copy by registered post"  Add "Regulatory Authorities" to the "To" column.	Swim lines under 4.6 adjusted in line with revised procedures
269	Procedural Steps	3.5 Deregistration	AP13-13 to 14	The Steps also need to cover the specific circumstances applicable to Deregistration in respect of:- a) Interconnector, Interconnector Administrator, and Interconnector Error Unit under B.10.1 b) Intermediary, under B.11.1.9; and c) Deregistration under Voluntary Termination under B.18.8	See comments	Swim lines under 4.6 adjusted in line with revised procedures

ID	I-SEM TSC Reference	Short Title	Page	Commentary / Explanation	Suggested Drafting Change to the TSC	Relevant Cross-Reference for any impacted section
270	Procedural Steps	3.5 Deregistration	AP13-13 to 14	Steps needed to cover:- A) Any amounts due under SEM Code; B) Any continuing obligations under Capacity Market Code C) Metering Code appears only to be relevant in relation to Supplier Unit(s) D) Grid Code in relation to Generator Units (s) needs to be catered for E) Automatic Deregistration of Aggregated Generator Units (under B.12.1.5) needs to be catered for	See comments	Swim lines under 4.6 adjusted in line with revised procedures
271	Procedural Steps	3.6 Intermediary Removal	AP13-15 All Steps	Does not seem to follow code- as per comments at 5 above should the initial step not be on any of the below events?: 1. Expiration of Form of Authority 2. Voluntary deregistration 3. Unit Owner revoking authority/ or revoked in accordance with Legal Requirements and 4. Suspension Order?	See comments	Swim lines adjusted under 4.7 adjusted in line with revised procedure
272	Procedural Steps	3.6 Intermediary Removal	AP13-15 Step 3	This should refer to B.7 of the Code, as opposed to the Agreed Procedure 1.	See comments.	