



**Energia feedback to the Regulatory
Authorities and I-SEM Project Team
following 'Markets' RLG Workshops 2.1, 2.2
and 2.3**

4 March 2015

1. Summary of Recommendations

Energia fully engaged in the RLG discussions and debate and this submission aims to reflect this and other detailed feedback. Emanating from this are a number of key recommendations, summarised below.

- 1) **Interaction with renewable support schemes:** How I-SEM interacts with renewable support schemes will influence how renewables participate under I-SEM and will by default have implications for the operation of the market as a whole. However there is currently no clarity within the I-SEM project plan regarding how or when such decisions will be taken on this important topic. Due to the knock on implications of these decisions, we recommend as a matter of urgency that immediate clarity be provided in the I-SEM project plan on the process to be employed and the timeframe in which such decisions will be taken.
- 2) **HLD framework:** As proposed by EAI, we recommend that the RAs engage in structured, principled and evidence based debate on the detailed design within the framework of the HLD.
- 3) **Project risk management:** We recommend a re-configuration of the I-SEM project plan to ensure that the detailed design, including consultations and decisions, can be meaningfully informed by qualitative and quantitative analysis – e.g. EUPHEMIA testing results, modelling of TSO dispatch under the I-SEM design and the resulting intra-day and balancing market dynamics. The current project plan does not facilitate this.
- 4) **IDT experience:** Drawing from the IDT experience and its unintended consequences currently being experienced at considerable expense to the consumer, we urge the RAs to avoid hastily implementing inappropriate and expensive market changes for compliance reasons without due regard to delivering a well-functioning market. There are striking parallels in the design approach adopted for IDT and the current I-SEM process which is symptomatic as follows:
 - Results of EUPHEMIA testing not being formally worked back through the project plan and being used to inform detailed design consultations and decision making (see Recommendation 2).
 - Insufficient regard for the interconnectedness of workstreams (e.g. market power mitigation strategy or effect of RO reference price on trading incentives under ETA).
 - New capacity mechanism being implemented in parallel with suite of new energy trading arrangements and new ancillary services market under DS3.
 - Reliability options being auctioned with no operational experience of the reference market and with an insufficient lead time.

- DS3 being progressed as a separate project rather than being formally integrated into the I-SEM project.

Two key recommendations cascade from the IDT experience, namely:

- a) Contracted compliance timelines (or procurement lead times for IT delivery) should not preclude meaningful discussion with stakeholders on key issues or stifle substantive (evidence-based) debate regarding fundamental design principles; and
 - b) Market design should focus on whether the design promotes efficient market trading arrangements, and not on how the market can be designed to accommodate IT delivery (or retention of current systems) within contracted compliance timelines.
- 5) **HLD design philosophy:** With reference to recent RLG discussions we recommended that the SEM Committee clarify its intent regarding the I-SEM design philosophy and associated principles that underpin the HLD as a matter of urgency, so these can be used as a framework within which the detailed design debate takes place.
 - 6) **Blue sky thinking:** The timetable for delivery of I-SEM is exceptionally challenging and thus 'blue sky thinking' should be avoided for obvious reasons. However, unconventional and untested proposals have been put forward in relation to the balancing market design in RLG meetings. We recommend that tried and tested approaches to market design be pursued in order to minimise the risk of incoherent design decisions and of generating unanticipated incentives that could lead to costly unintended consequences for participants and consumers.
 - 7) **Expert independent briefings:** Expert independent briefings and input at RLG meetings was both informative and useful and we would recommend its continuation in future meetings and industry workshops.
 - 8) **Transparency of EUPHEMIA testing:** We strongly recommend the timely publication of all input and output data from EUPHEMIA testing. This is because transparency is of paramount importance to the integrity of the EUPHEMIA testing process and is essential to facilitate participant understanding of the EUPHEMIA algorithm. It is also important to facilitate informed debate on I-SEM market power mitigation strategies.
 - 9) **Transparency of modelling:** We recommend that the same principle of transparency should apply to any modelling of the proposed market arrangements (e.g. modelling of dispatch and balancing arrangements carried out by SEM-O) and we certainly welcome from a transparency perspective the recent (3rd March 2015) EirGrid publication 'I-SEM Modelling Methodology and Assumptions' (without commenting on its content at this stage) and the opportunity for market participants to provide feedback.
 - 10) **Avoid use of factually incorrect equivalences:** During the course of RLG meetings factually incorrect equivalences were made between the

current SEM MSP software and EUPHEMIA. Whilst this might be expedient providing factually correct explanations will better facilitate understanding and stimulate informed debate on potential design issues and associated risks for participants and consumers.

- 11) **Fallback arrangements:** We strongly emphasise the importance of robust de-coupling and internal market fall-back arrangements for I-SEM and recommend that the full set of cascading fall-back arrangements should therefore be considered and consulted upon.
- 12) **PCR membership:** We recommend an informed debate around PCR membership so that all stakeholders are cognisant of the implications of membership options when engaging in the detailed design process.
- 13) **Physical notifications:** With respect to the physical notifications (PNs) topic, it would be first helpful and important to understand the exact issues that the proposals around PNs are attempting to solve. Our concern is that the need to delink PNs may be indicative of a more fundamental problem with the I-SEM energy market design and we suggest that the following is confirmed through EUPHEMIA testing:
 - The efficiency of the DAM schedules produced by EUPHEMIA;
 - The efficiency of the risk management decision taken by the EUPHEMIA algorithm on behalf of generators;
 - The level of technical infeasibility in the schedules generator by EUPHEMIA, in particular:
 - i. Who carries the risk / cost of adjusting technically infeasible EUPHEMIA schedules?
 - ii. Does the issue affect some participants more than others?
 - iii. Does it undermine the overall quality of EUPHEMIA scheduling and pricing?

Furthermore we are concerned that implementing delinked PNs could have unintended consequences under the I-SEM design. The issues that we believe require careful consideration include:

1. Whether fully delinking PNs facilitates portfolio optimisation by a dominant participant with a large portfolio undermines the implementation of unit based bidding. This would confer further benefits onto such a participant to the detriment of other participants, further undermining the conditions for effective competition under the I-SEM design;
2. Assuming that the TSO minimises the costs of re-dispatching participants from their submitted PNs, could delinking PNs result in participants being able to influence TSO dispatch decisions (both for energy and non-energy actions) through adjustments to their PN? Does this raise significant issues for effective market power mitigation? Does it raise potential competition issues – a dominant participant with a large portfolio will have more scope to influence

dispatch decisions than any other participant? Is influencing dispatch by changing PNs away from contract positions in line with the 'philosophy' of the HLD? Does it have implications for the TSO in relation to secure system management?

- 14) **Supplier PNs:** It is our recommendation that suppliers should not be obligated to offer PNs as this would be an unnecessary burden on suppliers. It is unlikely that suppliers could offer any meaningful improvements over TSO forecasts both in terms of accuracy or granularity.
- 15) **Information imbalance charges:** We have significant concerns about the efficacy of introducing Information Imbalance Charges. The rationale for such charges has not been clearly explained and their implications do not seem to have been fully considered within the wider context of the energy market design. It is not clear that the proposals around these charges, PNs and imbalance settlement form a coherent set of arrangements and we are therefore concerned that they could lead to unintended consequences for participants and consumers (e.g. incentivising people not to trade in the intra-day market or unnecessarily raising the cost / risk of participation). Similar to the proposals around PNs we believe it would be helpful to understand the exact issues that an Information Imbalance Charge is attempting to solve within the context of the I-SEM design and we would highlight that the charge is set to zero in the GB market. We would also question how information imbalance charges would work for wind.
- 16) **Philosophy of the balancing market:** At the RLG workshop there was debate regarding the 'philosophy' of the balancing market, with reference to the TSO's objective function and measures to facilitate early action. There also seemed to be a focus on maintaining the current TSO procedures and systems under the new market arrangements without sufficient consideration of the potential impacts of this on the overall integrity of the I-SEM design, the commercial risks it places on participants or its effects on cross border trade. For these reasons, Energia would strongly recommend the following: Detailed and transparent modelling of potential TSO dispatch actions, crucially drawing from EUPHEMIA testing results. In particular, participants need to have a clear understanding of the extent and frequency of pre IDM gate closure energy and non-energy balancing actions and their potential effect on day-ahead, intra-day and balancing market dynamics.
- a) The above modelling conducted as an extension of the EUPHEMIA testing workstream with its outputs used to inform a detailed consultation on the TSO's approach to managing the power system under the I-SEM trading arrangements.
 - b) A decision on appropriate approach to system management taken prior to proceeding with the detailed design of the I-SEM balancing market so there is clarity across stakeholders on the provisions

required by the TSO to facilitate appropriate management of the system, the potential scale of early intervention by the TSO and the effect that such intervention has on the overall integrity of the I-SEM HLD.

17) **Objective function of the balancing market:** We have a particular concern with the objective function that was suggested for the balancing market in the RLG as it would seem to require a fundamental change to the I-SEM HLD and it is likely to significantly change market dynamics. This is because under the proposed objective function the TSO will be more incentivised to take actions ahead of gate closure potentially further distorting the dynamics of the market. This generates concerns regarding the 'philosophy' of the HLD, whereby participants are incentivised to 'self-balance' and again underlines our Recommendation 6 above that the SEM Committee clarify its intent regarding the I-SEM design philosophy and associated principles that underpin the HLD as a matter of urgency.

18) **TSO's approach to reaching a feasible dispatch:** The substantive issues that need to be resolved under this topic are as follows:

1. The TSO's approach to managing a secure system under the I-SEM HLD;
2. Subject to 1 above, the likely extent of early intervention required and the implications this has for the balancing market design in particular and the dynamics of the HLD in general;
3. Subject to 2 above, appropriate measures that could be provided to the TSO to run the system securely without undermining the overarching philosophy of the HLD;
4. Subject to 3 above, the commercial (or other incentives) that will be in place under the market design to ensure the TSO use any such measures appropriately.

Very limited progress was made in addressing the above at the RLG and whilst we welcome the modelling process discussed at RLG meeting 2.3, its scope is insufficient to facilitate proper informed debate on these fundamental design issues. (An initial review of the recent EirGrid publication 'I-SEM Modelling Methodology and Assumptions' confirms our view the scope of the proposed modelling is insufficient). We therefore recommend the following:

- a) The proposed dispatch modelling should proceed from EUPHEMIA testing outputs (EUPEHMIA is the starting point for dispatch) and be extended to analyse potential IDM and BM trading dynamics under various contractual positions and system scenarios.
- b) Modelling scope and assumptions should be informed by market participants and the modelling conducted in a fully transparent manner with publication of all input and output data.

- c) Furthermore the results of such modelling should be made available to participants in sufficient time to inform the detailed design debate – i.e. prior to consultations.

We recommend that a decision on the appropriate approach to system management must be taken prior to proceeding with the detailed design of the I-SEM balancing market so there is clarity across stakeholders on the provisions required by the TSO to facilitate appropriate management of the system, the potential scale of early intervention by the TSO and the effect that such intervention has on the overall integrity of the I-SEM design.

- 19) **Flagging and tagging:** Energia are genuinely alarmed by the lack of qualitative or quantitative analysis that has been carried out around the balancing market design in general, and flagging and tagging in particular, to facilitate an informed debate on the appropriate balancing market design for the I-SEM. We contrast this with the 14 years of consultation and modelling that has taken place in GB. The GB market is a significantly larger market than the I-SEM with relatively fewer constraints and therefore flagging and tagging is likely to have less of an impact in terms of price formation in the GB balancing market in comparison to the I-SEM balancing market. We therefore strongly advise of the need for detailed analysis and modelling in this area. Furthermore, we would point out that the design of the I-SEM balancing market is, in itself, comparable to the design of the current SEM ex-post pool and therefore requires as much detailed consideration.
- 20) **Form of balancing market bid / offers:** We recommend that further consideration of bid / offer formats is required and should be conducted within the context of the principles and intentions of the HLD with recognition of the relationship between bid-offer formats, sufficient risk management for participants, appropriate price formation, market power mitigation strategies and appropriate incentives on participants and the TSO across market timeframes. This will facilitate informed debate and help ensure a well-functioning market design.
- 21) **Firmness of balancing market trades:** To allow participants to manage their commercial risks and to properly incentivise efficient action by the TSO, balancing market trades (BOAs) must be firm – i.e. every action taken by the TSO must be subject to a potential cost associated with the undoing of that action regardless of the IDM trading activities of participants.
- 22) **Updating of IDM / BM bids and offers:** In a continuously traded market participants must have the flexibility to update their bids and offers into the IDM and BM to reflect any underlying changes in their commercial cost base / risk profile. Not to do so will lead to increased commercial risk on

participants (commodity price exposure) and cause distortion of efficient cross border trade.

- 23) **Start up contracts:** The widespread introduction of start-up contracts in I-SEM has the potential to be distortionary and we therefore recommend that such contracts and their potential effect on market dynamics be further considered as part of the wider debate (under Recommendation 15 above) on the TSO approach to system management under I-SEM.
- 24) **Imbalance settlement:** Further explanation is needed to understand the rationale for de-linking PNs. We are concerned that any requirement to delink PNs may be indicative of a more fundamental problem with the I-SEM energy market design and could lead to unintended consequences. We are also concerned that trying to preclude self-scheduling by means of imbalance settlement (which we assume is the intention of the presented algebra) over complicates imbalance settlement. We would also welcome clarity on how uninstructed imbalances (variances between dispatch quantity and metered generation) will be settled under the design. We assume generators will be incentivised to follow dispatch instructions.
- 25) **Global aggregation:** We have a concern that the current approach and the options presented for I-SEM at the RLG penalise suppliers for an error mostly generated by centralised market assumptions that they have no control over, while not incentivising those who can exert control over it (because they make the assumptions) to minimise the associated error. We therefore recommend an alternative solution which is to assign the error to the market operator and recover the cost through a tariff similar in principle to the current recovery of constraint costs.
- 26) **Provision of metered data:** We understand the importance of early access to metered data but would recommend the provision of associated costs to take an informed view.
- 27) **Generator testing:** We would recommend more flexible arrangements with regards to generator testing provisions under I-SEM. In particular:
- Quicker response times on securing test dates.
 - Shorter lead times for setting and removing test flags.
 - Reduced commercial exposure for generators when testing (we believe this issue may be addressed by setting test flags per period but more information on the proposed dynamics around this would be useful).
 - Appropriate testing tariffs that are commensurate with the likely cost to the system of testing profiles – currently testing tariffs seem to be set on installed capacity as opposed to testing profiles.
- 28) **Instruction profiling:** We would recommend end to end examples demonstrating the intent in relation to balancing market BOAs, instructions, instruction profiling and resulting settlement.
- 29) **Local market power:** The tertiary coverage of local market power at RLG workshop 2.3 further heightened our significant concerns that the scale of

the issues to be addressed in implementing an effective and appropriate market power mitigation strategy for the I-SEM and DS3 arrangements is being seriously underestimated. Market power is a very serious issue in the context of I-SEM as we explain in this submission. Energia therefore strongly recommends that there is a holistic and coherent approach to designing the market power mitigation strategy for the I-SEM. This can only be achieved if the market power mitigation workstream incorporates energy (including the I-SEM forward market), ancillary services and capacity markets and is closely interfaced with each of the separate market design workstreams (ETA, CRM and DS3).

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2. Introduction

Energia welcomed the opportunity to engage with the RAs, the TSO, SEMO and their supporting consultants on the detailed design of the I-SEM Energy Trading Arrangements through the recent RLG meetings and we appreciated their willingness to engage in open debate.

As a major investor and participant in this market our objective is to ensure a well-functioning, efficient, competitive and sustainable market across all timeframes. Our commitment to the Detailed Design process, and of constructively engaging in it, is therefore unquestionable, as demonstrated to date.

We note the constructive suggestions made by the EAI in their letter to the regulatory authorities (RAs) dated 9 February 2015 and take this opportunity to fully endorse those proposals, in particular the principles for engagement with industry the letter sets out. We firmly believe that following the EAI principles and, in particular, engaging in structured, principled and evidence based debate on the detailed design within the framework of the HLD will maximise the utility of the RLG workshops and will help ensure the I-SEM is an efficient and well-functioning market.

In this submission we provide further general comments on the detailed design process and specific feedback from materials presented and discussed in RLG workshops 2.1, 2.2 and 2.3.

3. General comments on detailed design process

3.1 Interaction with renewable support schemes

How I-SEM interacts with renewable support schemes will influence how renewables participate under I-SEM and will by default have implications for the operation of the market as a whole. However we remain concerned that there is currently no clarity within the I-SEM project plan regarding how or when such decisions will be taken on this important topic. Due to the knock on implications of these decisions, we recommend as a matter of urgency that immediate clarity be provided in the I-SEM project plan on the process to be employed and the timeframe in which such decisions will be taken.

3.2 Appropriate project risk management

Under the current project plan (published 30 January 2015) decisions relating to the detailed design of I-SEM (e.g. the Energy Trading Arrangements) are to be taken prior to the conclusion of EUPHEMIA testing. In addition there is currently no formal feedback mechanism within the project plan to allow for the outputs of EUPHEMIA testing to inform the detailed design process. This gives particular cause for concern that the detailed design proceeds on the basis of implicit assumptions regarding the functioning of the EUPHEMIA algorithm that could later be proven incorrect by EUPHEMIA testing. We therefore strongly recommend that the detailed design process and project plan be re-configured so that EUPHEMIA testing results inform the detailed design of I-SEM and related consultations, decision making and systems procurement in relation to ETA and Market Power. Such an approach would facilitate a more informed debate on design options and provide for evidence-based decision making.

If the SEM Committee proceeds as currently planned, contrary to the above recommendation, we see an absolute minimum need for any material assumptions regarding the functioning of EUPHEMIA (or other untested / unmodelled areas of the proposed I-SEM market design) to be explicitly acknowledged so their accuracy can be verified when testing / modelling completes. And if these assumptions are inconsistent with the evidence then any affected detailed design decision should be revisited through further consultation. We strongly caution that the risk of implicit assumptions underpinning design decisions and systems procurement remains high under such an approach but this would at least go some way to reduce the risk to participants and consumers of costly, inappropriate design decisions. Energia has similar concerns regarding the design of the balancing market (see section 5.1 below).

3.3 'Design philosophy' underpinning the HLD

The RLG presentations and discussions betrayed a seeming lack of clarity or understanding regarding the design philosophy and intent of the HLD. This is a concern because the HLD should determine the context for the detailed design debate and should therefore be unambiguous and clear on the key principles that will apply during it, providing the common framework or 'design philosophy' that will ensure the final I-SEM functions as a well thought through and coherent set of market trading arrangements. It is genuinely surprising and concerning therefore that debates regarding the 'philosophy' of the balancing market are being conducted now as part of the detailed design phase when this should be clear from the HLD (see section 5.1 below). Adopting such an ad hoc approach to fundamental design philosophy and principles during the detailed design process significantly increases the likelihood of incoherent trading arrangements, unanticipated incentives and unintended and potentially costly consequences for participants and consumers.

3.4 IDT and the risk of unintended consequences

The risks associated with hastily implementing inappropriate and expensive market changes for compliance purposes (i.e. without sufficient understanding of their utility for promoting efficient trade and therefore delivering an efficient functioning market) is evidenced by IDT¹. There are striking parallels in the design approach adopted for IDT and the current I-SEM process. These include: (1) the absence of substantive debate regarding fundamental design principles; (2) a lack of focus on whether the design promotes efficient market trading arrangements; and (3) constant reference to contracted compliance timelines that has the effect of closing down the opportunity for meaningful discussion and debate with stakeholders on key issues. The first two concerns are evidenced by the NERA report submitted to the SEM Committee on 25 July 2014. The final concern is self-evident from the HLD process and the detailed design process to date – e.g. no 'proof of concept' testing regarding proposed unique use of EUPHEMIA ahead of HLD decision, results of EUPHEMIA testing not being formally worked back through the project plan and being used to inform ETA and market power consultations and decisions, insufficient regard for the interconnectedness of workstreams (market power mitigation strategy or effect of RO reference price on trading incentives under ETA), new capacity mechanism being implemented in parallel with new energy trading arrangements and ancillary services market, reliability options being auctioned with no operational experience of the reference market and with an insufficient lead time.

¹ The unintended consequences of the current SEM IDT arrangements directly result from the unanticipated incentives placed on IC users through the IDT design.

We strongly caution the SEM Committee to consider that the obvious issues with the current IDT arrangements in SEM would represent only the 'tip of the iceberg' regarding the potentially serious issues that could arise under I-SEM and DS3 given the scale of the proposed market changes. We also suggest as a matter of urgency that the SEM Committee clarifies its intent regarding the I-SEM design philosophy and associated principles that underpin the HLD, so these can be used as the framework within which the detailed design debate takes place. This will remove unhelpful ambiguity from the detailed design process, help identify key implicit assumptions regarding the implied functioning of the design and promote informed and constructive debate on appropriate design options.

3.5 Risk of 'blue sky thinking'

Energia is acutely aware of the scale of the endeavour being attempted by the SEM Committee. The detailed design and implementation of SEM, a reasonably standard pool market design with regulated capacity price calculation, took two and half years. Under I-SEM however the SEM Committee is attempting to design substantially more complex energy trading arrangements (forward, day-ahead, intra-day and balancing markets), a substantially more complex auction based capacity market and an ancillary services market, all with associated market power mitigation measures, in three years. The timelines for the I-SEM project are therefore extremely challenging, creating unprecedented risk for participants and consumers. This risk is only increased if the design process embraces radical and untested design approaches.

Energia has elaborated its view at length regarding the risks associated with the unique proposed use of EUPHEMIA within the I-SEM but this anxiety has been further heightened by the unconventional and untested proposals being put forward in relation to the balancing market design. These include (but are not limited to):

1. Wholesale 'swapping' of BM trade positions for IDM trade positions without seemingly any meaningful consideration of the potential impact on wider market dynamics or incentives / risks for participants;
2. Non-monotonically increasing bid / offer formats in the balancing market;
3. Potential restrictions on update of bids / offers in continuously traded markets; and
4. A 'dispatch philosophy' that seems potentially inconsistent with the implied 'design philosophy' of the energy trading arrangements.

Given the already highly ambitious design and implementation timelines and associated risk on participants and consumers, Energia strongly suggests that tried and tested approaches to market design are pursued. This will allow the issues that these generate for the I-SEM to be clearly identified and

communicated so they can be discussed and understood by stakeholders rather than consultants and participants having to speculate the potential implications (including feasibility) of the design options being put forward. This will minimise the risk of incoherent design decisions and of generating unanticipated incentives that could lead to costly unintended consequences for participants and consumers².

3.6 Independent expert briefings

Energia welcomes the independent presentations on EUPHEMIA and XBID presented by Thibault Henri and the presentation by Baringa on the GB balancing mechanism. We found these presentations informative and useful in facilitating a better understanding of the European coupling arrangements – e.g. trading systems and processes – and the GB balancing arrangements. They provided valuable context for the consideration of detailed design issues and we would strongly support further dissemination of information of this sort by independent experts to incentivise constructive and wide ranging debate on the I-SEM detailed design to the benefit of all stakeholders.

3.7 Open engagement

Energia appreciated the willingness of the RAs, the TSO, SEMO and their supporting consultants to engage in open debate with participants on detailed design proposals. Given the complexity of the I-SEM design Energia believes open and informed discussion, supported by qualitative, and where appropriate, quantitative analysis, is essential to deliver well-designed and efficient market arrangements.

² It is worth noting again issues with current SEM in relation to IDT that were costly to implement, have not facilitated improved cross border trade and have generated unintended incentives that have generated unanticipated costs for consumers.

4. Comments on RLG Workshop 2.1

4.1 EUPHEMIA testing

Energia welcomes the commitment of SEM-O and the RAs to test the EUPHEMIA algorithm implementation for I-SEM and we look forward to continuing to engage constructively in this process.

We restate our view that transparency around testing is key – i.e. timely publication of all input and output data. Transparency is of paramount importance to the integrity of the testing process and is essential to facilitate participant understanding of the EUPHEMIA algorithm. We should stress that the same principle of transparency should apply to any modelling of the proposed market arrangements – e.g. modelling of dispatch and balancing arrangements carried out by SEM-O. If transparent testing is combined with independent expert briefings on salient issues this will help to further incentivise informed debate around the impact on the detailed design. It will also build market confidence that the detailed design process will deliver a well-designed and efficient market. Transparent testing is also essential to facilitate informed discussion and evidenced based decision making on the market power mitigation strategy for the I-SEM.

Energia would like to point out that the implied equivalences made between the EUPHEMIA algorithm and the current MSP software are unhelpful in stimulating informed debate on the I-SEM detailed design. For example, is it true to state that using MIC offers through EUPHEMIA is “more like the MSP in the SEM” or that “the algorithm selects the best schedules based on the economic cost”? From the answers provided to questions raised at the workshop the minimum income condition does not seem to be taken into account in the objective function of the algorithm. Therefore the selection of schedules (matching) does not take into account any potential fixed costs only represented through the minimum income condition. It is therefore not guaranteed to be economic and could result in generation schedules that are less efficient than the current MSP software. It is also unhelpful to maintain that the objective function of EUPHEMIA, to maximise social welfare, is equivalent to the objective function of the current MSP software to minimise production costs because the production costs of generators cannot be dynamically represented (in the sense of being accurately represented across all possible load points subject to modelled generator technical constraints) through EUPHEMIA order formats. The current MSP software utilises 3-part complex offers specifically to allow the algorithm to accurately and dynamically model generator costs to deliver upon its objective function to minimise the cost of production. The error in this implied equivalence was confirmed by Thibault Henri during the workshop. Energia would emphasise that making factually incorrect implied equivalences is genuinely unhelpful in

facilitating informed debate amongst participants around the EUPHEMIA algorithm.

4.2 Fall-back arrangements

Energia would like to strongly emphasise the importance of robust de-coupling and internal market fall-back arrangements for I-SEM. While the occurrence of de-coupling to date has been infrequent day-ahead coupling has only recently been introduced and the complexity of the day-ahead coupling process could increase significantly over time as more countries implement the target model. The risk is therefore likely to increase. The issue of fall-back arrangements for de-coupling scenarios consequently does require serious consideration and every effort should be made to ensure de-coupling causes the minimum amount of disruption to the functioning of the I-SEM market while being cognisant of the cost of implementing and operating fall back arrangements. Furthermore, Energia note that further fall-back arrangements are required to manage the possibility of the failure of the de-coupling fall-back arrangements. In effect, where the current SEM requires only one set of fall-back arrangements, the I-SEM needs at least two. The full set of cascading fall-back arrangements should therefore be considered and consulted upon.

With regards to the options presented at the workshop, in line with Energia's stated principle of ensuring least disruption to market participants, on initial review the second option would seem favourable but we would like to understand the process and steps that need to be followed to implement this option and any potential barriers so participants can make an informed response. On the assumption that option 2 is regional coupling of some form it would seem that option 1 may also be required if this fails. Moreover, as stated above, it is also possible that under option 1 a local auction (i.e. with interconnectors set to zero) could also fail in which case further back up arrangements would be required to ensure continuity in market operations. Again Energia would strongly emphasise the requirement for well thought through and designed fall-back arrangements as the risks faced by participants under such scenarios are real commercial risks and the costs of inappropriate arrangements could potentially be substantial.

4.3 PCR membership and governance debate

Energia would like clarity regarding how the approach to de-coupling arrangements is linked to PCR membership options. We also support the EAI submission to the RAs and SEMO on 28 January 2015 requesting an informed debate around PCR membership so that all stakeholders are cognisant of the implications of membership options when engaging in the detailed design process. Not to do so risks either predetermining the

membership decision based on detail design choices, or pursuing options that may become invalid once the membership decision has been taken.

It is also essential that there is an informed debate on the governance arrangements for the DAM and IDM. Given the I-SEM relies solely on EUPHEMIA and XBID to schedule the day-ahead and intra-day markets (they are the only means by which participants can secure a contract position prior to dispatch by the TSO via the balancing market) it is essential that participants understand the governance arrangements that are in place or that will be put in place for these markets and the potential risks they present for participants and consumers under the I-SEM design.

4.4 Physical notifications (PNs)

It would be helpful and important to understand the exact issues that the proposals around PNs are attempting to solve to facilitate informed debate on the topic. From the RLG meetings the issues seem to stem from the translation of EUPHEMIA contract positions (schedules) into PNs for submission to the TSO. It is difficult however to form a view on the options presented without a clear understanding of how EUPHEMIA will function as the scheduling algorithm for I-SEM and without visibility of what the resulting contract positions for individual units are likely to be. We presume this will become apparent through EUPHEMIA testing but note the risk of implicit assumptions being taken in this area is extremely high given the current project plan (see section 3.1 above). The potential issues that could arise however would seem likely to include:

- A general inefficiency if using EUPHEMIA contract positions as the starting point of dispatch.
- How output can be physically dispatched to match the contract positions achieved through EUPHEMIA / IDM to minimise generator production cost and ensure full cost recovery through the DAM and IDM.
- If EUPHEMIA cannot be made to respect certain key generator technical characteristics (e.g. MSG) how the design ensures adequate risk management for generators assuming technically feasible PNs must be submitted to the TSO.
- If a participant has an issue that does not allow it to deliver upon its contracted position how this can be notified as early as possible to the TSO.

While Energia would broadly agree that participants are best placed to convert contract positions into PNs we would also point out that the need to do so under the market design does not seem consistent with the 'philosophy' of a centrally scheduled market (which the I-SEM is in virtue of its 'exclusivity' condition). It indicates that there could be a general inefficiency in the schedules produced by EUPHEMIA (and therefore the appropriateness of

using them as the starting point for dispatch) and potentially a lack of detailed modelling of commercial and technical generator characteristics in the EUPHEMIA algorithm. It is therefore essential that EUPHEMIA testing confirms that using EUPHEMIA as the central scheduling algorithm for I-SEM will not increase costs for consumers. Energia suggests that the efficiency of EUPHEMIA schedules is confirmed by comparing the production costs for I-SEM under EUPHEMIA against the production costs under the current SEM arrangements – we would assume they should be lower given more efficient use of interconnection.

Under a centrally scheduled market a generator relinquishes decisions on risk management (optimisation of their contract position) to the central scheduling algorithm on the assumption that the central algorithm is efficient at carrying out this optimisation on their behalf (i.e. that the algorithm will not schedule a generator when the market price is less than its costs of production but will schedule the generator when the market price is above its cost of production). This ensures effective risk management and guarantees revenue adequacy for generators. It is therefore essential that EUPHEMIA testing confirms that the EUPHEMIA algorithm, when implemented as the central scheduling algorithm for I-SEM, will take effective risk management (scheduling) decisions on behalf of generators. The efficiency of the risk management decisions for generators implemented by the EUPHEMIA algorithm (as the central scheduling algorithm for I-SEM) can be confirmed by analysing the likely commercial exposures of generators given their DAM outcomes. We suggest the analysis should also take into account any potential exposures under financial forward contract positions (i.e. CfDs).

Confirming EUPHEMIA will deliver efficient scheduling decisions for I-SEM will ensure the market design is efficient and does not lead to risk management / revenue adequacy problems for generators or potential forward market liquidity issues, which would undermine investment and therefore security of supply.

Energia also has significant concerns that the risk of technically infeasible contract positions / schedules will be passed onto generators if it proves problematic to enforce technical feasibility through EUPHEMIA order formats. This is because it would not make sense for generators to submit PNs to the TSO that are technically infeasible – i.e. there is likely to be a standard rule that PNs must be technically feasible to facilitate TSO management of the system. Moreover, given the proposed imbalance settlement rules seem to preclude generators self-scheduling into the balancing market, fully delinking PNs in no way reduces this potential risk on generators. This is because participants are still forced to trade through the ex-ante markets to obtain a contract position (schedule) and therefore generators remain subject to the risk that the contract position they receive from EUPHEMIA is technically

infeasible (and therefore sub optimal). Energia is concerned that any potential requirement to delink PNs may be indicative of a risk management issue for generators under the design and therefore we believe it warrants further careful consideration. In particular EUPHEMIA testing should confirm:

1. The level of technical infeasibility in EUPHEMIA schedules?
2. Who carries the risk / cost of adjusting technically infeasible EUPHEMIA schedules?
3. Does the issue affect some participants more than others?
4. Does it undermine the overall quality of EUPHEMIA scheduling and pricing?

The final issue highlighted above (providing an indication to the TSO if a generator is not going to deliver upon its contract position) may already be adequately addressed through generator declarations to the TSO – e.g. availability. Regardless there could be an obligation on generators to submit the minimum of their contracted volume or availability through their PNs under any of the PN options presented – i.e. it does not seem a particularly major detailed design issue.

Energia are also concerned that fully delinking PNs could result in unintended consequences under the I-SEM design. Issues that need carefully consideration include:

1. Whether fully delinking PNs facilitates portfolio optimisation by a dominant participant with a large portfolio undermines the implementation of unit based bidding. This would confer further benefits onto such a participant to the detriment of other participants, further undermining the conditions for effective competition under the I-SEM design;
2. Assuming that the TSO minimises the costs of re-dispatching participants from their submitted PNs, could delinking PNs result in participants being able to influence TSO dispatch decisions (both for energy and non-energy actions) through adjustments to their PN. Does this raise significant issues for effective market power mitigation? Does it raise potential competition issues – a dominant participant with a large portfolio will have more scope to influence dispatch decisions than any other participant? Is influencing dispatch by changing PNs away from contract positions in line with the 'philosophy' of the HLD? Does it have implications for the TSO in relation to secure system management?

Energia would strongly emphasise the need for the rationale behind design proposals to be clearly stated. Furthermore, it is essential to explain how the implications of design proposals deliver upon the intent of the HLD. Understanding the rationale behind proposals, along with how they deliver upon the intent of the HLD, will help facilitate informed and focused debate and ensure design options are appropriate, well thought through, responses to salient issues. It will also minimise the possibility of unintended

consequences by promoting a holistic approach to the design of the market arrangements.

4.4.1 Supplier PNs

From a supplier perspective, we agree with the RAs that it would be an unnecessary burden to require submission of Supplier PNs. The TSOs have their own demand forecasts and realistically suppliers are not in a position to offer meaningful improvements in the accuracy or granularity of these forecasts.

4.5 Information Imbalance Charge

Energia has concerns with the concept of introducing Information Imbalance Charges. The rationale behind the charges was unclear but seemed to be to incentivise provision of accurate information regarding participant generation / consumption behaviours to the TSO as early as possible. Under the proposed market design however participants will not know if they will be able to trade to achieve their preferred final contract position (which we assume will be the basis of their PN submissions) until they reach the intra-day market gate closure. Therefore penalising participants for providing PNs at the day-ahead or during the intra-day stage that subsequently turn out to be inaccurate will not have a material effect on their behaviour because their ability to avoid the penalty (trade to achieve their desired final contract position / PN) is not wholly within their control. Rather, imposing such a penalty will increase the cost of participation in I-SEM and may dis-incentivise trading in the IDM. We would also question how information imbalance charges would work for wind.

The rationale for the charge in relation to FPNs is also hard to understand. FPNs will be submitted after the close of the intra-day market but the dispatch of the generator may still be adjusted by the TSO through the balancing market. As a result the FPN of the generator may be its best indication of its preferred running regime (presumably to cover its contract position) but the TSO may nevertheless dispatch the generator away from this profile after submission of the FPN through the balancing market. Therefore, again, penalising participants for providing FPNs that subsequently turn out to be inaccurate representations of their actual metered generation will not have a material effect on the accuracy of their FPNs in the future because their final dispatch is not within their control. Rather, imposing such a penalty will increase the cost of participation in I-SEM given the balancing market is mandatory.

If FPNs are updated to reflect bid offer acceptances in the balancing market after intra-day market gate closure then is the intention of the Information Imbalance Charge (note this applies in relation to FPNs only) that it acts as an incentive for generators (demand?) to match their meter generation (consumption) to its FPN (as updated in relation to balancing market BOAs)?

This would then make the charge similar to the current Uninstructed Imbalance penalty regime in the SEM. If this is the intention then it needs to be clearly explained and its implications for other parts of the design (e.g. around delinking PNs and imbalance settlement) carefully considered. We note however that the GB market does not use this charge, possibly because the imbalance price itself is considered a sufficient incentive for generators (demand?) to match their metered generation (demand?) to their FPNs.

Energia would again strongly emphasise the need for the rationale behind design proposals to be clearly stated and explained. Furthermore, it is essential to explain how the implications of design proposals deliver upon the intent of the HLD. Understanding the rationale behind proposals, along with how they deliver upon the intent of the HLD, will help facilitate informed and focused debate and ensure design options are appropriate, well thought through, responses to salient issues. It will also minimise the possibility of unintended consequences by promoting a holistic approach to the design of the market arrangements.

5. RLG Workshop 2.2

5.1 *Philosophy of the Balancing Market*

At the workshop there was debate regarding the 'philosophy' of the balancing market. This is unfortunate as the intent with regards to the 'philosophy' of the balancing market should have been made clear in the HLD consultations and decision. We were particularly concerned that much of the presented materials seemed to be focused on maintaining the current TSO procedures and systems under the new market arrangements without sufficient consideration of the potential impacts of this on the overall functioning of the I-SEM ETAs or the commercial risks it places on participants. Given the requirement for continuous trading intra-day, the dispatch of the system under the I-SEM arrangements is a much more fluid and dynamic problem than under the current SEM arrangements. This is because the market will be fully integrated with Europe and will trade close to the time of delivery. It is therefore unhelpful to focus on retaining the existing dispatch processes under the new market design without seemingly any consideration of the appropriateness of doing so as it may result in distortion of trade with other interconnected markets – e.g. if generators are limited in updating their offers into the I-SEM balancing market as seemed to be implied in the presented slides. Furthermore, Energia would note that most of the issues raised at the RLG meeting were a direct result of the balancing market running simultaneously with the intra-day market and the seemingly extensive early action the TSO seem minded (or required) to take under I-SEM. Depending on the extent of actions taken prior to IDM gate closure this dynamic has the potential to undermine the overall integrity of the market design as it could significantly reduce liquidity in the intra-day market and distort price formation

(and therefore market signals) in both the intra-day and balancing market, destabilising the incentives on market participants to self-balance.

To facilitate informed debate and decision making Energia would strongly recommend: (1) specific consultation on the appropriate approach to system management by the TSO under the I-SEM trading arrangements; and (2) detailed and transparent modelling of the potential resulting TSO dispatch actions. In particular, participants need to have a clear understanding of the extent and frequency of pre IDM gate closure energy and non-energy balancing actions and their potential effect on day-ahead, intra-day and balancing market dynamics prior to engaging in the detailed design of the balancing market. Fully engaging participants in transparent detailed modelling of the TSO approach to dispatch under I-SEM and its potential effect on market dynamics is required to facilitate informed debate across stakeholders (including the TSO) and the coherent design of a well-functioning market. To proceed with the design of the balancing market without taking these necessary steps is highly inadvisable³.

5.2 Objective function of Balancing Market

Minimising the cost of dispatch is not the same as minimising the cost of deviating from physical nominations. Under the former the TSO can dispatch the system without any consideration of the physical nominations submitted by participants, whereas under the latter physical nominations provide the starting point for the re-dispatch of the system. The objective function that was suggested for the balancing market therefore requires a fundamental change to the I-SEM HLD and it is likely to significantly change market dynamics. This is because under the suggested objective function the TSO will be more incentivised to take actions ahead of gate closure potentially further distorting the dynamics of the market. This generates concerns regarding the implementation of the 'philosophy' of the HLD, whereby participants are balance responsible (i.e. incentivised to self-balance) that requires careful consideration.

If the TSO feel they cannot rely on participants to deliver self-balancing, or if the level of constraints in the I-SEM is such that it cannot be managed under a typical balancing market design (such as the GB design), then it would be

³ Similar to proceeding with the detailed design prior to completion of EUPHEMIA testing, there is an absolute minimum need to explicitly acknowledge any assumptions made regarding the likely behaviour of the TSO or resulting potential market dynamics so their accuracy can be verified if / when modelling completes. Note the risk of implicit assumptions underpinning design decisions remains high under such an approach however. If material assumptions made regarding the extent of early actions taken by the TSO and their effect on market dynamics subsequently prove incorrect then any affected detailed design consultation should be re-opened and/or detailed design decisions re-consulted upon. This approach will help promote evidence based decision making and is more likely to facilitate a final I-SEM design that will operate as intended.

prudent to review the appropriateness of the HLD. To proceed with the detailed design without embracing the overarching 'philosophy' of the HLD risks distorting incentives on participants with the potential for generating unintended consequences. IDT is a recent example, as discussed earlier, of how inappropriate market design can lead to perverse incentives and thereby generate unanticipated and costly consequences for consumers.

5.3 TSO approach to reaching a feasible dispatch

The TSO's proposal regarding their approach to dispatch under the I-SEM design seemed to be focussed on the extent of energy balancing actions taken by the TSO prior to IDM gate closure. We assume this to be the case as the 'extreme' scenario facilitated the TSO taking non-energy security actions prior to gate closure. The issue we are struggling with in relation to energy balancing unit commitment decisions taken by the TSO 10 to 14hrs ahead of real time is that these will only be required if:

1. EUPHEMIA schedules are inefficient (i.e. the wrong units have been scheduled);
2. Suppliers have not efficiently purchased sufficient generation to meet TSO expectations of out-turn demand – e.g. are carrying a significant short position following the DAM;
3. Wind has oversold through the DAM relative to TSO expectations of wind generation;
4. Asset-less participants are carrying extensive short speculative positions through to balancing that are not backed-out by output from physical assets.

We assume the efficiency of EUPHEMIA schedules will be confirmed as part of EUPHEMIA testing. Given the remaining scenarios will lead to high imbalance prices they should, in theory, be self-correcting if system warnings are issued by the TSO to the market in sufficient time – i.e. participants are given the opportunity to trade out of their positions and self-balance. If the market still fails to resolve the issue, the TSO still retains the option of taking security actions, the form and tagging of such actions to be determined as part of the detailed design.

Energia therefore appreciates that the TSO will, for system security reasons, have to take some actions prior to IDM gate closure but would emphasise that the measures provided to the TSO through the market design must be appropriately determined and the incentives they create (for participants and the TSO) carefully considered to ensure they are consistent with the principles of the HLD. We are extremely cognisant however of the small size of the I-SEM market, its constrained nature, the difficulty of the unit commitment problem and the potential for extreme and volatile pricing and therefore strongly emphasise that the approach of the TSO to system management under the I-SEM design needs informed debate across stakeholders based

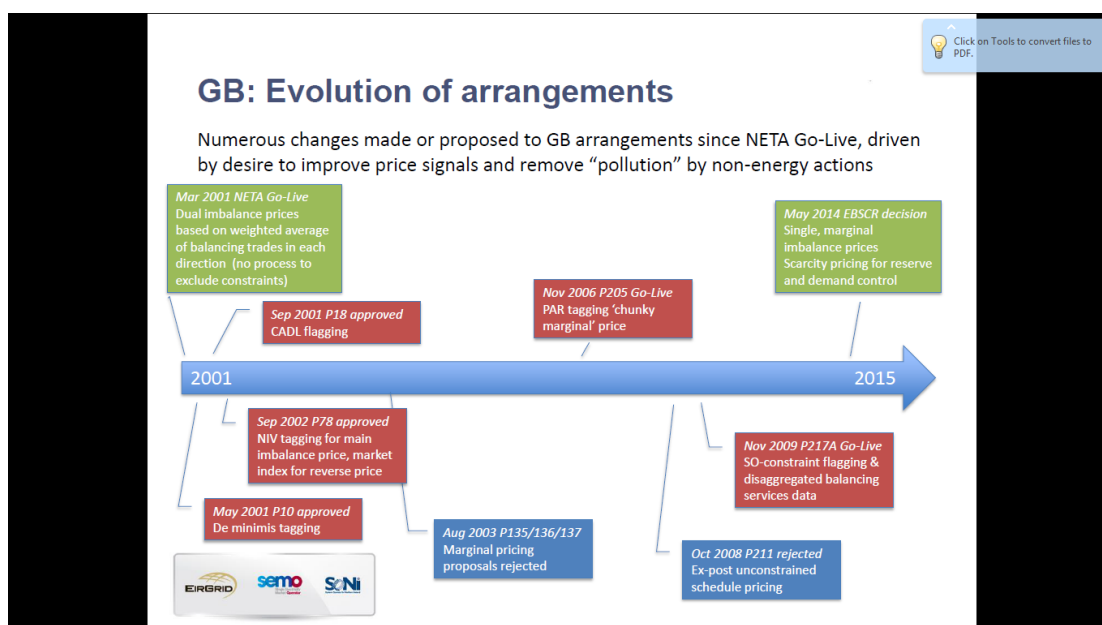
upon detailed modelling of the interaction between dispatch and market dynamics. The substantive issues that need to be resolved are:

1. The TSO's approach to managing a secure system under the I-SEM design;
2. Subject to 1 above, the likely extent of early intervention required and the implications this has for the balancing market design in particular and the dynamics of the I-SEM design in general;
3. Subject to 2 above, appropriate measures that could be provided to the TSO to run the system securely without undermining the overarching philosophy of the HLD;
4. Subject to 3 above, the commercial (or other incentives) that will be in place under the market design to ensure the TSO use any such measures appropriately.

Energia welcomes the modelling process discussed at RLG meeting 2.3 but its scope is insufficient to facilitate proper informed debate on these fundamental design issues. We strongly recommended that the proposed dispatch modelling should proceed from EUPHEMIA testing outputs (EUPHEMIA is the starting point for dispatch) and be extended to analyse potential IDM and BM trading dynamics under various contractual positions and system scenarios. Modelling scope and assumptions should be informed by market participants and the modelling conducted in a fully transparent manner with publication of all input and output data. Furthermore the results of such modelling should be made available to participants in sufficient time to inform the detailed design debate – i.e. prior to consultations. In essence we feel that this testing should be conducted as an extension of the EUPHEMIA testing workstream and its outputs should be used to inform a detailed consultation on the TSO's approach to managing the power system under the I-SEM design (see section 5.1 above). Furthermore, we suggest that a decision on appropriate approach to system management must be taken prior to proceeding with the detailed design of the I-SEM balancing market so there is clarity across stakeholders on the provisions required by the TSO to facilitate appropriate management of the system, the potential scale of early intervention by the TSO and the effect that such intervention has on the overall integrity of the I-SEM design.

5.4 Flagging and Tagging

Energia note from Baringa's presentation the extensive debate that has been ongoing in GB for 14 years regarding price formation in the balancing market and flagging and tagging processes. Energia would also reference the extensive consultations and modelling work that has been carried out in GB to facilitate and inform this debate.



We would emphasise that the GB market is a significantly larger market than the I-SEM with relatively fewer constraints and therefore flagging and tagging is likely to have less of an impact in terms of price formation in the GB balancing market in comparison to the I-SEM balancing market. We are therefore genuinely alarmed by the lack of qualitative or quantitative analysis that has been carried out around the balancing market design for I-SEM in general, and flagging and tagging in particular, to facilitate informed debate. Furthermore, we would point out that the design of the I-SEM balancing market is, in itself, comparable to the design of the current SEM ex-post pool and therefore requires as much detailed consideration.

5.5 Form of Balancing Market bids / offers

Energia would welcome further informed debate on the bid / offer format options for the I-SEM balancing market. We are not against minimising operational overhead if cognisant of the flexibility required by participants to adequately manage commercial risk. Our main concern with the discussion of bid /offer formats as presented at RLG meeting 2.2 was that it seemed to be aimed at converting the HLD (which, in line with the EU target model, is a continuously traded, dynamic market) into a more 'steady-state' market compatible with dispatch determined by means of a full-scale unit commitment algorithm (similar to the current RCUC system) implemented via extensive pre-gate closure actions by the TSO – i.e. the current TSO dispatch processes and systems. We do not believe this is the appropriate starting point or context for conducting discussions on the I-SEM balancing market and, as discussed in 5.1 and 5.2 above, risks undermining required incentives in the market and therefore the integrity of the intended market design.

Energia therefore requests that future discussions on bid / offer formats are conducted within the context of the principles and intentions of the HLD with

recognition of the relationship between bid-offer formats, sufficient risk management for participants, appropriate price formation, market power mitigation strategies and appropriate incentives on participants and the TSO across market timeframes. This will facilitate informed debate and help ensure a well-functioning market design. For example, introducing bid / offer formats in the I-SEM balancing market that are radically different than the IDM (e.g. non-convex curves or 3 part complex bids) may lead to systemic differences in price formation that could undermine market signals and incentives. The form of offers may also have a material impact on the market power mitigation strategy that could be adopted for the I-SEM.

5.6 Firmness of Balancing Market trades

To allow participants to manage their commercial risks and to properly incentivise efficient action by the TSO, balancing market trades (BOAs) must be firm – i.e. every action taken by the TSO must be subject to a potential cost associated with the undoing of that action regardless of the IDM trading activities of participants. Furthermore, we have concerns regarding the status of non-firm BM trades in relation to REMIT regulations – e.g. if the TSO carries out a BOA that it subsequently backs out because of an IDM trade what is the status of the BOA under REMIT? Energia again notes that the issues being discussed at RLG meetings 2.2 and 2.3 stem from the BM being open simultaneously with the IDM and that much of the discussion seemed focused on how extensive early energy and non-energy actions by the TSO could be facilitated under the HLD. Energia felt that proposals were presented without adequate explanation of the rationale for such extensive measures or any consideration of the effect that such extensive measures could have on the proper functioning of the IDM or the BM and therefore the overall integrity of the I-SEM design.

5.7 Updating IDM / BM bids and offers

In a continuously traded market participants must have the flexibility to update their bids and offers into the IDM and BM to reflect any underlying changes in their commercial cost base / risk profile. Not to do so will lead to increased commercial risk on participants (commodity price exposure) and cause distortion of efficient cross border trade. The issues relating to placing restrictions on the updating of bids and offers were discussed in more detail in section 4.2.2 of our response to the HLD consultation SEM-14-008 in relation to Option 4. For example, imposing restrictions would mean I-SEM gas generators, although subject to the same underlying commodity costs as the GB gas generators, forced to offer different commodity cost bases into coupled markets, resulting in market distortions and increased commercial exposure for I-SEM gas generators (see table 4.2.2.5.1 of our response to SEM-14-008). With regards to updating prices for accepted BOAs, to the extent BM trades are firm the issue does not arise.

5.8 Start up contracts

Widespread introduction of start-up contracts could distort market signals, particularly in a small market like I-SEM or could act as a perverse incentive on generators to reduce the flexibility they offer to the TSO – i.e. increasing notice times. However, as discussed earlier in section 5.1, we are cognisant of the need for urgent debate and clarity regarding the TSO approach to system management under the HLD and believe start up contracts and their potential effect on market dynamics could be further considered as part of this wider debate.

5.9 Imbalance settlement

Energia welcomes the examples (including the additional examples from a supplier perspective) provided for imbalance settlement. Numerical examples help communicate the intent behind the design proposals put forward. We note from the examples provided that the rules around imbalance settlement for generators would seem to preclude self-dispatching of generators into the balancing market by limiting payment of the imbalance price to TSO dispatch away from ex-ante contracted positions and limiting payment of any bid / offer price discount / premium to dispatch quantities below / above FPN. Assuming that a generator will be dispatched by the TSO based on its merit order position, under the algebra its FPN has no effect on its access to the imbalance price – to access the imbalance price a generator needs to have a bid or offer accepted in the balancing market that moves it relative to its ex-ante contract position. However, to the extent the generator is out of merit and is dispatched for non-energy balancing actions, submitting a FPN that does not reflect its ex-ante contract position could leave it exposed to differences between the imbalance price and its bid / offer price. This is because compensation may be limited by the generator's FPN if this does not reflect ex-ante contract positions. Therefore the overriding incentive placed on generators under the imbalance settlement rules would seem to be to submit FPNs in line with ex-ante contract positions. We would however welcome further clarity on how uninstructed imbalances (variances between dispatch quantity and metered generation) will be settled under the design.

Assuming generators are incentivised to submit PNs in line with contract positions (and will also be incentivised to follow dispatch instructions) it is difficult to understand the rationale for delinking PNs from ex-ante contract positions because even if the rules around PNs facilitate such delinking the imbalance settlement rules presumably will incentivise submission of FPNs in line with ex-ante contract positions. Therefore de-linking of PNs if actually required, must be required for other reasons - see section 4.4 above.

The concern therefore is why the rules around imbalance settlement are being complicated by the potential delinking of PNs if delinking PNs is unlikely to occur in practice other than for reasons of technical infeasibility? This

therefore begs the question of the extent of commercial risk being placed on participants and the associated cost to I-SEM consumers because of any such inefficiency in the market design.

6. RLG Workshop 2.3

6.1 Global Aggregation

The market error caused by Global Aggregation is largely a result of assumptions necessary to allow the market trading arrangements and settlement functions to work – e.g. transmission and distribution loss factors, half-hourly profiling of meter data, etc. The mechanism used to deal with this error should therefore be designed to provide appropriate incentives on the institution responsible for those assumptions to minimise the associated error. As the institutions responsible for making these assumptions are regulated services – e.g. network operators, meter data providers, etc. – the primary incentive that can be placed upon them is transparency around, and accountability for, the cost of the error to the consumer. To the extent this cost is passed onto suppliers as an ex-post charge it is effectively concealed from consumers and therefore undermines this incentive. Over the longer term this will lead to increases in the error and therefore inefficiency in the market arrangements. To the extent the ex-post cost passed onto suppliers cannot be accurately forecasted or predicted it becomes a commercial risk that cannot be adequately managed or recovered. In other words you penalise suppliers for an error mostly generated by centralised market assumptions that they have no control over, while not incentivising those who can exert control over it (because they make the assumptions) to minimise the associated error.

The issues described above are present in the current approach to managing the NDLF error in the SEM and remain under both options presented at the RLG meeting. Alternative solutions should therefore be considered and progressed, one option would be to assign the error to the market operator and recover the cost through a tariff similar in principle to the current recovery of constraint costs.

6.2 Provision of metered data

Energia agreed with the general comments at the RLG meeting stating the importance of early access to metered data to generally facilitate management of imbalance exposures – e.g. so errors in internal meters or forecasting assumptions can be identified as early as possible, etc.

With regards to specific proposals it is difficult to take an informed view as the costs associated with maintaining the referenced arrangements were not available.

6.3 Generator testing

Energia would emphasise the need for more flexible arrangements with regards to generator testing provisions under I-SEM. These include:

1. Quicker response times on securing test dates.
2. Shorter lead times for setting and removing test flags.
3. Reduced commercial exposure for generators when testing (we believe this issue may be addressed by setting test flags per period but more information on the proposed dynamics around this would be useful).
4. Appropriate testing tariffs that are commensurate with the likely cost to the system of testing profiles – currently testing tariffs seem to be set on installed capacity as opposed to testing profiles.

6.4 Instruction profiling

Energia supports the general principle of minimising unnecessary changes to market systems and processes where this is appropriate. However, the salient issue in relation to instruction profiling would seem to be the status and settlement treatment of the balancing market BOAs that make up the final instructions issued by the TSO to generators (see sections 5.6 and 5.7 above). Therefore Energia would welcome end to end examples demonstrating the intent in relation to balancing market BOAs, instructions, instruction profiling and resulting settlement. This will remove any potential ambiguity from future discussions around these areas.

6.5 Local market power

Discussion of local market power at RLG workshop 2.3 further heightened Energia's significant concern that the scale of the issues to be addressed in implementing an effective and appropriate market power mitigation strategy for the I-SEM and DS3 arrangements has been seriously underestimated. We would again emphasise that competitive mechanisms are unlikely to deliver competitive outcomes in scenarios where a dominant player can exert market power. Furthermore market outcomes will not be consistent under different trading arrangements (e.g. SEM to I-SEM) even if there are no underlying changes in fundamental market structure because the nature of the restrictions placed upon participants and the incentives created by the market arrangements will be different under the I-SEM design.

Given the additional complexity of the energy, capacity and DS3 markets proposed under I-SEM, Energia would stress that the opportunities for a dominant participant with a large portfolio to exert market power will be significantly greater and their impact significantly wider (as behaviour in any one market will effect dynamics in the other markets). At the same time the options for implementing an effective market mitigation strategy that works across all markets will be significantly more difficult; this is because any market power mitigation measures will need to be carefully balanced against

the legitimate requirement for participants to manage commercial risk. For example, the implementation of ex-ante bidding rules / principles for the energy market will need to consider the need for generators to have flexibility to choose how best to represent fixed costs (such as start-up and no load) under available offer formats. The implications for coupling would also need to be carefully considered (i.e. that bidding rules / principles do not introduce a systemic asymmetry between markets or provide coupled markets with an information advantage over I-SEM). They would also need to accommodate the potential need for generators (particularly marginal units) to extract revenues via scarcity rents, subject to the strike price for ROs, based upon the capacity price. This is because capacity bids will be based upon forecasts of revenues and therefore actual revenues may not deliver upon expectations. This will result in a substantially greater level of subjectivity regarding the formation of energy market offers and make identification of market power significantly more difficult to identify and prove.

Control of a large fuel diverse generation portfolio in the I-SEM bestows a significant informational advantage under the I-SEM design and potentially could allow the adoption of portfolio bidding strategies across energy, capacity and ancillary services markets to the detriment of other participants and consumers. Given I-SEM's reliance on market based mechanisms there is considerable potential for abuse of market power and this is validated in the academic literature. For example a recent ESRI study⁴ shows that in 2011, allowing firms to freely compete could have increased prices by 52%, using Irish-specific estimates for the price elasticity of demand. Another study⁵ co-authored by Professor Ignacio Perez-Arriaga, the former Independent Member of the SEM Committee, states that "[T]he Achilles' heel of the reliability options scheme is the potential for market power that can appear in the capacity auction...The workability of the mechanism depends critically on the ability of the auction to attract several potential new entrants and on the role of the incumbents." (p. 7).

Within the context of I-SEM energy markets, assuming there is no self-dispatch under the I-SEM design, and in the likely absence of robust ex-ante bidding rules (such as the current BCoP), information asymmetry translates into a market access issue. By virtue of the commercial advantage that could be conferred on a large fuel diverse portfolio player, their access to market could be significantly greater than other I-SEM generation companies. This issue is discussed at length in section 4.1.4, 4.1.6 and 4.2.3.6 of our response

⁴ ESRI Working Paper 488, 'Gaming in the Irish Single Electricity Market and Potential Effects on Wholesale Prices', August 2014, available online: <https://www.esri.ie/UserFiles/publications/WP488/WP488.pdf>.

⁵ IIT Working Paper 'A Regulatory Instrument to Enhance Security of Supply in the Spanish Wholesale Electricity Market', March 2006' available online: http://www.hks.harvard.edu/hepg/Papers/IIT_Supply_Security%20_0306.pdf

to the HLD consultation paper SEM-14-008 and sections 3.2.10, 5.1 and 5.8 of our response to the HLD proposed decision SEM-14-045 and is further corroborated in the Baringa reports⁶ that were submitted in support of our responses. Inequality of market access is a serious competition issue that has severe ramifications for competitive dynamics not just in the generation sector but also the retail sector due to its implications for forward market liquidity / opportunities for retail hedging.

Energia therefore strongly recommends that there is a holistic and coherent approach to designing the market power mitigation strategy for the I-SEM. This can only be achieved if the market power mitigation workstream incorporates energy (including the I-SEM forward market), ancillary services and capacity markets and is closely interfaced with each of the separate market design workstreams (ETA, CRM and DS3).

Furthermore assuming a link between thermal market share and market power across energy market timeframes, Energia suggests it may be prudent to review the appropriate measure of market concentration for I-SEM energy markets. Furthermore, assuming thermal generation is required to hedge forward contract sales it may also be worth considering whether market concentration should be measured differently in spot and forward timeframes.

⁶ See Baringa Report (April 2014), 'Promoting forward liquidity and mitigating market power in the I-SEM' and Baringa Report (July 2014), 'Scheduling Risk under the Proposed I-SEM High Level Design'.