



**Energia response to I-SEM Energy Trading
Arrangements Detailed Design**

Markets Consultation Paper SEM-15-026

5 June 2015

Contents

Executive Summary	2
1. Introduction	7
2. Request for a proposed decision on I-SEM ETA.....	7
2.1 Significance of I-SEM market rule changes	7
2.2 Proposed market design criteria for electricity markets.....	8
2.3 Summary of concerns.....	10
2.3.1 A TSO centric approach to market design.....	10
2.3.2 Potentially problematic approach to dispatch and system management	10
2.3.3 Ambiguity regarding the philosophy of the energy market design.....	10
2.3.4 Need for further detailed analysis of key design proposals	11
2.3.5 Potential implications of unrealistic project timelines.....	11
2.4 Benefits of a Proposed Decision	12
3. Request for further clarity on TSO approach to system management	13
3.1 The objective function of the balancing market.....	13
3.2 Appropriate balancing market price signals.....	14
3.2 Frequency and type of early TSO action.....	14
3.3 Nature of system management issues.....	15
4. Request for further analysis of design proposals.....	16
4.1 Modelling of the I-SEM Balancing Market	16
4.2 Recommendations for the EUPHEMIA Trial	16
4.3 Importance of continued transparency	17
4.4 Independent expert briefings	17
4.5 Dedicated I-SEM modelling workstream.....	17
4.6 Management of transitional risks for participants.....	18
4.7 Continuing need for transitional arrangements	18
5. General principles to guide the I-SEM energy market design	18
6. Response to specific consultation questions	22
2 CONSULTATION QUESTIONS	22
2.1 RESPONDENT DETAILS	22
2.2 GENERAL COMMENTS	22
2.3 SYSTEM OPERATION IN THE I-SEM (CHAPTER 2)	23
2.4 EX-ANTE MARKETS (SECTION 3).....	27
2.5 PHYSICAL NOTIFICATIONS (SECTION 4)	29
2.6 FORM OF OFFERS, BIDS AND ACCEPTANCES (SECTION 5)	33
2.7 INTERACTIONS BETWEEN THE BALANCING MARKET AND INTRADAY MARKET (SECTION 6)	40
2.8 TREATMENT OF SYSTEM SERVICES (SECTION 7)	46
2.9 IMBALANCE PRICING (SECTION 8)	50
2.10 IMBALANCE SETTLEMENT (SECTION 9).....	57
2.11 OTHER ISSUES (SECTION 10)	61
7. Other comments.....	64
7.1 Granularity of Physical Notifications.....	64
7.2 Efficiency of early TSO action under PN options.....	64
7.3 Other issues not covered in the ETA consultation process	65
7.3.1 Participant registration	65
7.3.2 Clearing and settlement.....	65
7.3.3 Collateral Requirements.....	66
7.3.4 Treatment of VAT.....	66
8. Conclusions.....	66

Executive Summary

The detailed design of the I-SEM energy trading arrangements is a daunting and unenviably difficult task. Designing the I-SEM balancing market alone is equivalent in scale to the detailed design of the current SEM ex-post pool. Therefore the risks associated with this endeavour should not be underestimated.

At the recent workshop in Dundalk on 13th May 2015 it was stated that a Final Decision on I-SEM energy trading arrangements will be taken in September 2015 with the possibility of one (or more) further RLG meeting(s) in the interim period. Energia does not believe this is a sufficiently robust process to ensure delivery of efficient, well–design energy spot markets. We have set out the reasons for this in detail in this response.

Significance of I-SEM market rule changes

The introduction of the I-SEM represents a wholesale change of market rules and therefore has the potential to fundamentally change market outcomes even if there is no change in the underlying physical structure of the market. It is therefore essential that there are sufficiently robust safeguards within the market design process to mitigate these risks and to help ensure the I-SEM energy market design will work as intended. We make recommendations regarding these in section 4.5 of the response.

Request for a Proposed Decision

Energia strongly supports best regulatory practice which, in conjunction with the Third Directive, requires regulatory decisions to be fully reasoned and justified based on strong evidence and supported by impact assessments where appropriate. Adherence to such best practices enhances the reliability, suitability and transparency of regulatory decisions which is in the overwhelming interest of the consumer.

Given the significance of the I-SEM market rule changes, the lack of rigorous analysis to support presented design options, combined with the fundamental nature of the issues highlighted in this response, it is difficult to envisage how a Final Decision on I-SEM energy trading arrangements in September could be consistent with best regulatory practice and requirements under the Third Directive. It is imperative, therefore, consistent with the views of EAI, that the SEM Committee move to a Proposed Decision in advance of a Final Decision to facilitate the further work that is required on the I-SEM energy trading arrangements (e.g. full and detailed analysis of design proposals and further significant, informed industry engagement and consultation).

The current unrealistic implementation timeline for I-SEM has also hindered best regulatory practice and fulfilment of Third Directive requirements. A

more realistic implementation timeline is therefore warranted in the overwhelming interest of the consumer.

Constructive proposals for next steps

Energia would urge the SEM Committee to clarify the TSO approach to system management under I-SEM arrangements and conduct a careful review and refinement, where appropriate, of the emerging energy market design. We propose that such a review should be guided by a precise, practical and objective framework combined with a set of general high-level principles. We have made constructive, detailed proposals on these in section 2.2 and 5 of this response.

Summary of concerns

Energia has summarised its concerns with the energy market design and ETA consultation process below.

TSO centric approach to market design: Discussion of design proposals in the Markets consultation paper predominantly focus on their potential implications for TSO operations without sufficient regard for other concerns essential to the proper functioning of energy markets (e.g. provision of adequate commercial risk management for participants).

Problematic approach to TSO dispatch and system management: There are a large number of proposals designed to facilitate extensive early action by the TSO. The requirement for these provisions has not been rigorously assessed. Implementation of the proposals would weaken the concept of 'gate closure' (the point in time when the TSO takes control of the system) and significantly increase the risk of TSO action distorting I-SEM energy market dynamics.

Ambiguity regarding the philosophy of the energy market design: The consultation proposals reflect an ambiguity in the fundamental design philosophy of the energy trading arrangements. In particular, whether TSO dispatch decisions proceed relative to PNs that must, to some degree, reflect ex-ante contract positions (a centrally scheduled and dispatched market), or whether TSO dispatch decision proceed relative to submitted PNs that do not need to reference ex-ante contract positions (a hybrid form of a self-scheduled and dispatched market). This fundamental ambiguity complicates the interpretation of design proposals and increases the complexity of some of the design proposals themselves (e.g. the settlement algebra). Therefore, until this ambiguity is resolved, it is extremely difficult to evaluate the emerging design, underlining the need for a proposed decision as the next step.

Pressing need for further detailed analysis: The ongoing uncertainties outlined above, combined with the substantial risks associated with the concurrent redesign and implementation of energy, capacity and ancillary

services markets, mean it is in the overwhelming interest of I-SEM consumers to conduct further detailed analysis of, and informed consultation on, the energy trading arrangements for I-SEM, regardless of compliance timelines.

Unrealistic project timelines: Energia does not believe that the project timeline is commensurate with the scale of the task of redesigning and implementing the I-SEM and DS3 projects simultaneously and therefore we conclude that the current project plan presents significant, unnecessary risks for participants and I-SEM consumers. These risks include: implementation of a flawed market design that would increase costs to consumers and undermine security of supply over the longer term; significant inflation of central system costs (which will ultimately be recovered from consumers) due to an inefficient procurement approach (e.g. central system procurement proceeding with incomplete, ambiguous or inaccurate functional specifications); significant inflation of participant project costs (which similarly will ultimately be recovered from consumers) in order to keep pace with unrealistic regulatory timelines and to shadow ongoing changes to central system specifications; and unpredictable outcomes and a heightened perception of regulatory risk in the all-island market, increasing the cost of capital and discouraging future investment, with negative implications for competition, security of supply and renewable targets.

Other substantive areas covered in this response

The other substantive areas addressed in the consultation response are summarised below.

The objective function of the balancing market: Energia requests that the objective of the TSO in relation to dispatch (the objective function of the I-SEM balancing market) is explicitly clarified by the SEM Committee

Frequency and type of early TSO action: To avoid implementing complex, untested and potentially unnecessary mechanisms, Energia requests that the type and extent of early TSO actions under I-SEM energy market arrangements are clarified by the SEM Committee.

Nature of TSO system management issues: Energia requests clarification of whether the problems associated with a strict implementation of the European intra-day gate closure for I-SEM are transitory or more fundamental in nature. If transitory, Energia suggests consideration of implementing an earlier gate closure time (e.g. 4 hours ahead of delivery) with appropriately robust incentives on the TSO to move, within a pre-agreed timeframe, to the European intra-day gate closure. Assuming this removed the need for parallel opening of the intra-day and balancing markets this would significantly simplify the I-SEM energy market design process. Otherwise, Energia requests that a thorough re-evaluation of the proposed I-SEM energy market design is carried out as parallel opening of the intra-day and balancing

markets currently presents unqualified and unquantified risks for I-SEM participants and consumers.

Request for modelling of the I-SEM balancing market: Energia requests that a working group is set up to provide quantitative analysis of the I-SEM balancing market design. This is consistent with a similar request made by the EAI. Such a working group would greatly help to inform the design of the I-SEM balancing market and therefore is in the overwhelming interests of I-SEM consumers.

Specific recommendations regarding the EUPHEMIA Trial: Energia recommends that the EUPHEMIA trial should: compare SEM ex-post price outcomes to I-SEM DAM price outcomes to objectively assess the potential impacts of I-SEM on consumers; baseline the efficiency of the generation schedules produced by EUPHEMIA (e.g. production costs and level of plant commitment) against the SEM ex-post pool; provide data necessary to form a view on the frequency and type of TSO actions under I-SEM energy trading arrangements to support quantitative analysis of balancing market dynamics; and analyse the potential commercial risks of trading in the I-SEM day-ahead market to ensure those risks are properly considered in the design of other areas of the I-SEM.

Request for a dedicated I-SEM modelling workstream: To co-ordinate and properly manage all I-SEM modelling activities Energia fully supports the EAI request for a dedicated modelling workstream that would facilitate the full integration of modelling activities into the detailed design process. Such an approach would facilitate inclusion of additional safeguards (i.e. check points) to help ensure the I-SEM energy market design will work as intended.

Management of transitional risks for participants: Energia emphasise that modelling of the I-SEM energy markets will provide participants with an understanding of spot energy market dynamics prior to I-SEM market trials. Given the current project timetable that envisages capacity auctions being held in January 2017, providing initial information on likely market dynamics as early as possible in the design process is essential.

Continuing need for transitional arrangements: Even with such information Energia emphasises that the ‘big bang’ approach to implementation is extremely risky and, in the case of the I-SEM capacity mechanism, is likely to result in an incorrect valuation of “missing money”. We therefore recommend that these risks are given serious consideration, and that a transitional, phased approach for introduction of the I-SEM capacity market is considered. Such an approach would allow participants to obtain operational experience of the new energy market and DS3 arrangements.

Other important design issues not consulted upon: The following important market design areas have not been consulted upon in the Building

Blocks or Markets consultation papers: registration; settlement; credit cover; collateral; and VAT. We provide our initial views on these in section 7 of this response. Energia requests that these areas are formally consulted upon before a Final Decision is taken on the I-SEM energy trading arrangements.

1. Introduction

Energia welcomes this opportunity to respond to the SEM Committee Consultation Paper (SEM-15-026) on the Markets component of the detailed design for the I-SEM energy trading arrangements. We observe that the consultation paper discusses a large number of important and complex issues that we recommend require further careful consideration and analysis.

In this response we therefore ask that the SEM Committee to move to a Proposed Decision on the I-SEM energy market trading arrangements. A Proposed Decision will facilitate the further work and industry engagement required on the energy trading arrangements for I-SEM. The substantive justification for this request is provided in section 2 and section 6 of this response. In section 3 we request further clarity on the TSO approach to system management under I-SEM. Section 4 requests further analysis of design proposals, particularly relating to the I-SEM balancing market, and recommends that a dedicated modelling workstream is set up under the I-SEM project. Section 5 advocates a set of high level principles that, in conjunction with the evaluation framework proposed by NERA and set out in section 2 of this response, would provide a helpful framework for the market design process. Section 6 responds to the questions set out in the Markets consultation response template; our answers to these questions should be read in conjunction with the response as a whole. Section 7 provides our views on areas not explicitly covered by the consultation questions but where feedback was requested. It also provides views on important areas of the market design that have been omitted from the consultation process. Section 8 sets out our considered conclusions.

2. Request for a proposed decision on I-SEM ETA

This section substantiates why a proposed decision on the I-SEM energy trading arrangements is necessary. It explains the risks associated with implementing fundamental changes to market rules, presents practical market design criteria that can be used to evaluate design proposals moving forward and summarises our key concerns with the emerging design and the benefits of moving to a Proposed Decision.

2.1 Significance of I-SEM market rule changes

Market outcomes, while influenced by underlying physical structures, are predominantly driven by the incentives that are created by the market rules. Therefore, a wholesale change of market rules has the potential to fundamentally change market outcomes, even if there is no substantive change in the underlying physical structure of the market. This is a fact evidenced by changes made to the SEM market rules to facilitate intra-day trading (IDT) to comply with European congestion management guidelines.

The implementation of IDT in SEM resulted in undesired trading activities that required a modification to the T&SC to help remove the unanticipated trading incentives. Given the scale of the changes being implementing under I-SEM and DS3 (which are fundamental changes to the market rules rather than amendments) the risk of unintended consequences is significantly higher and their impact could be substantially greater. It is therefore essential that there are sufficiently robust safeguards within the market design process to mitigate these risks and to help ensure the I-SEM energy market design will work as intended.

2.2 Proposed market design criteria for electricity markets

The Markets consultation paper references the I-SEM HLD as being in keeping with the statutory objectives of the SEM Committee but it does not specify the evaluation criteria being applied (if any) in the detailed design process, or in the determination of the final ETA decision, that are required to give practical effect to those objectives¹. We therefore believe it would be greatly beneficial to the process, and its resulting outcome, to establish a precise, practical and objective framework for the evaluation of design proposals moving forward, based on established principles of electricity market design that are in keeping with the SEM Committee's statutory objectives.

Text box 2.1 below provides market design criteria, put forward by NERA, which are consistent with the SEM Committee's HLD criteria (in square brackets) and that can be applied in practical, precise and objective terms to help ensure economically efficient outcomes that would benefit I-SEM consumers. We subsequently refer to this framework later in this response.

¹ More specifically, page 2 of SEM-15-026 states "Following extensive consultation over 2014, the SEM Committee published the Decision Paper on the High Level Design (HLD) for the I-SEM in keeping with its statutory objectives. Namely, the SEM Committee HLD Decision seeks to maximise benefits for consumers in the short-term and long-term, while ensuring security of supply and meeting environmental requirements".

Text Box 2.1: Proposed Market Design Criteria

- (1) Market design must permit secure operation of the system by the TSO, so that generation always matches demand. [**security of supply**]
- (2) Market pricing rules (in conjunction with any capacity remuneration mechanism) must allow total generation capacity that is efficiently selected (investment) and operated (despatch) to recover its costs. [**efficiency/environmental**]
- (3) “Gate closure”, i.e. the time when central despatch and administrative pricing take over from decentralised contracts and trading, should occur at the latest possible stage before delivery. [**security of supply, competition, efficiency/environmental**]
- (4) The market design should allow traders at all times (1) to maintain a contract portfolio that hedges the price of their expected output [consumption], and (2) to change their contract position if their expected output [consumption] changes. [**efficiency/environmental**]
- (5) The electricity market infrastructure, the format of offer/bid prices and market pricing rules should allow non-discriminatory access by all generation and DSR technologies. [**competition, equity, efficiency/environmental**]
- (6) The market or despatch algorithm should select offers (and bids) in an efficient least-cost “merit order”. [**efficiency/environmental**]
- (7) Prices should reflect marginal costs in the geographic market concerned, i.e.: (1) the “system marginal cost” for markets covering the whole system; (2) the “local marginal cost” of individual generators operating within a local market (e.g. for generators that are “constrained on” or “constrained off” and running out of merit). [**efficiency**]
- (8) Prices should reflect marginal costs over the timescale of decisions associated with trading in the market concerned. [**efficiency**]
- (9) Pricing rules should offer market participants the assurance that:
 - generators will generate whenever the price is above their marginal costs;
 - generators will not generate if the price is below their marginal costs;
 - generators will receive a price above their marginal costs when they generate; and
 - equivalent rules apply to the acceptance of offers submitted to markets;
- (10) equivalent (but obverse) rules apply to the supply of, and bids from, despatchable DSR. [**efficiency**]
- (11) Price-setting rules should be transparent (i.e. they should use objective data in pre-defined formulae). [**efficiency, stability, adaptive**]
- (12) Measures to mitigate market power should be transparent (i.e. use objective data in pre-defined procedures). [**competition, efficiency, stability, adaptive**]
- (13) The existence of market power in one market should not preclude competitive entry or supply of services in a related market. [**competition, efficiency**]

Source: NERA Report, ‘I-SEM Draft Decision SEM-14-045: A Review’, 25 July 2014.

2.3 Summary of concerns

In our response to the Building Blocks consultation paper and through our engagement in RLG meetings 2.1 to 2.3, Energia raised a number of fundamental issues not fully addressed in the Markets consultation paper. These concerns are summarised below with reference to the practical market design criteria proposed above. These concerns are further elaborated upon and substantiated in the other sections of this response where we also provide constructive solutions where possible.

2.3.1 A TSO centric approach to market design

It is evident from engagement in the RLG meetings and from reviewing the Markets consultation paper that the proposed energy market design has been disproportionately influenced by the TSO. Discussion of design proposals in the consultation paper predominantly focus on their potential implication for TSO operations (as per design criterion 1) without sufficient regard for other criteria considered important to fulfilment of SEM Committee objectives (for example design criteria 2, 3 and 4). If the energy market design does not pay sufficient regard to these other fundamental design criteria the market arrangements are unlikely to be sustainable.

2.3.2 Potentially problematic approach to dispatch and system management

Energia suggests that the TSO approach to dispatch and system management under the I-SEM energy trading arrangements is reviewed to ensure it is consistent with the overarching philosophy of the HLD. In particular, provisions to accommodate extensive early action by the TSO directly contravene design criteria 3 and 4 above by undermining the concept of 'gate closure' (the point in time when the TSO takes control of the system). This significantly increases the risk that TSO action will distort I-SEM energy market dynamics.

2.3.3 Ambiguity regarding the philosophy of the energy market design

There is a fundamental ambiguity regarding the philosophy of the energy market design. This ambiguity relates to whether TSO dispatch decisions proceed relative to PNs that must, to some degree, reflect ex-ante contract positions (a centrally scheduled and dispatched market), or whether TSO dispatch decision proceed relative to submitted PNs that do not need to reference ex-ante contract positions (a hybrid form of a self-scheduled and dispatched market). We note that the TSO seem to have concerns that the

former approach may contravene design criteria 1,² while Energia is concerned it may contravene design criteria 2, 3, 4, 6, 9 and 10.³

If the intention is to implement the latter, while Energia (subject to further clarification) may support this, we would question why the philosophy is being restricted to the balancing mechanism and not being adopted as part of the wider energy market design.⁴ Energia therefore requests definitive clarification regarding the fundamental design philosophy of the I-SEM energy markets.

2.3.4 Need for further detailed analysis of key design proposals

The ongoing uncertainty regarding fundamental elements of the energy market design combined with the substantial risks associated with the concurrent redesign and implementation of energy, capacity and ancillary services markets mean it is in the overwhelming interest of I-SEM consumers to conduct further detailed analysis and consultation on the energy trading arrangements for I-SEM, regardless of compliance timelines.

2.3.5 Potential implications of unrealistic project timelines

Energia does not believe that the project timeline is commensurate with the scale of the task of redesigning and implementing the I-SEM and DS3 projects simultaneously and therefore we conclude that the current project plan presents significant, unnecessary risks for participants and I-SEM consumers.⁵ We also believe the contracted timelines have not facilitated the detailed analysis required to allow the RAs to engage in informed debate with stakeholders on proposed design options. The risks of maintaining the current unrealistic timelines include:

- Implementation of a flawed market design that would increase costs to consumers and undermine security of supply over the longer term.

² TSO concerns focus on the quality of PN information received and ability to enforce technical feasibility through EUPHEMIA and XBID.

³ Potential areas of concern for Energia include the suitability of using EUPHEMIA as a central scheduling algorithm for the I-SEM day-ahead market (cross reference section 4.2 below), the granularity of trading products on the XBID platform compared to the I-SEM settlement period (e.g. the ability of participants to adequately manage shape and therefore imbalance exposures as discussed in our answer to question 3 in section 6, sub-section 2.10 below) and the impact of extensive early TSO actions on ex-ante market dynamics which we discuss throughout this response.

⁴ Allowing self-scheduling into the balancing market would facilitate a form of physical contracting for vertically integrated utilities allowing them to spill generation while adopting a short position against their retail demand.

⁵ In relation to the most recent project plan published by the regulators we note that some workstreams have already been scaled back, presumably to accommodate delivery timelines. We also note that the scope of the Building Blocks consultation was reduced and that the decision on I-SEM energy trading arrangements has already been delayed by a month.

- Significant inflation of central system costs (which will ultimately be recovered from consumers) due to an inefficient procurement approach – e.g. central system procurement proceeding with incomplete, ambiguous or inaccurate functional specifications.
- Significant inflation of participant project costs (which similarly will ultimately be recovered from consumers) in order to keep pace with unrealistic regulatory timelines and to shadow ongoing changes to central system specifications.
- Unpredictable outcomes and a heightened perception of regulatory risk in the all-island market, increasing the cost of capital and discouraging future investment, with negative implications for competition, security of supply and renewable targets.

To help illustrate the significant challenge of successfully delivering I-SEM as per current Project Plans (for I-SEM and DS3) we provide a direct comparison of the work that was required to deliver SEM compared to the work required to implement I-SEM below.

Simple SEM	Complex I-SEM
<p>1. Ex post mandatory pool</p> <ul style="list-style-type: none"> ▪ Only one place and time to sell energy ▪ Prices and volumes calculated after real time (SMP) ▪ Strict SRMC bidding code of practice prevents spot price manipulation <p>2. Capacity payments mechanism</p> <ul style="list-style-type: none"> ▪ Regulated administrative mechanism ▪ Limited scope for market power manipulation <p>➤ June 2005: clearly defined High Level Design</p> <p>➤ November 2007: SEM Go-Live</p> <p>2.5 years to deliver (with significant Day 2 issues)</p>	<p>1. Forward market</p> <ul style="list-style-type: none"> ▪ Development of forward exchange ▪ Use of FTRs versus PTRs <p>2. Day ahead market</p> <ul style="list-style-type: none"> ▪ Need for robust EUPHEMIA testing and fall back arrangements (given 100% reliance on EUPHEMIA). ▪ Need to manage market power appropriately and the informational advantage of the dominant portfolio player <p>3. Intra day market</p> <ul style="list-style-type: none"> ▪ Need for transitional / fall back arrangements. <p>4. Mandatory balancing market</p> <ul style="list-style-type: none"> ▪ Equivalent in scale to design of SEM ex post pool <p>5. Reliability Options capacity mechanism</p> <ul style="list-style-type: none"> ▪ Need to design auctions, manage market power and prevent inappropriate exit ▪ Need for transitional arrangements <p>6. DS3 system services regime</p> <ul style="list-style-type: none"> ▪ Need to design auctions and manage market power ▪ Development of interim tariffs based on BNE methodology ▪ Need to manage interaction with ETA and CRM. <p>➤ September 2014: less clearly defined High Level Design</p> <p>➤ October 2017: target I-SEM Go-Live</p> <p>3 years to deliver</p>

2.4 Benefits of a Proposed Decision

On the basis of the fundamental issues and substantial concerns outlined above, and further illustrated in the remaining sections of this report, and

consistent with EAI, Energia requests that the SEM Committee moves to a Proposed Decision on the I-SEM energy trading arrangements in advance of a Final Decision. This would provide an opportunity for further clarification regarding fundamental elements of the energy market design, allow for required qualitative, and where appropriate, quantitative analysis to be carried out on key design proposals and facilitate further targeted debate with stakeholders, and industry consultation, on the emerging I-SEM energy market design.

3. Request for further clarity on TSO approach to system management

Energia articulated its concerns regarding how the TSO will approach system management under the I-SEM energy trading arrangements in our response to RLG meetings 2.1. to 2.3 and the Building Blocks consultation paper. We therefore welcome the discussion of these issues in the Markets consultation paper and respond to the specific proposals that have been put forward in section 6 of this response.

In this section we discuss important issues that are not covered in the consultation paper, such as the objective function of the balancing market and the likely scale and types of pre-gate closure TSO actions. We also request clarification regarding the nature of the system management issues faced by the TSO under the I-SEM energy market design and make proposals on how these could be dealt with.

Energia emphasise that providing clarity on these fundamental issues will allow stakeholders to properly assess the impact of design proposals and determine whether they represent appropriate measures, demonstrably proportionate to the system risks they are intended to mitigate.

3.1 *The objective function of the balancing market*

The objective of the TSO under the central scheduling and dispatch arrangements of the current SEM is to minimise the cost of dispatch. Energia would emphasise that this objective is not consistent with the I-SEM energy market design as defined in the I-SEM HLD decision. Under the I-SEM HLD the stated objective of the TSO is to minimise the cost of deviations from submitted PNs. Energia is therefore concerned that confusion regarding the objectives of the TSO under I-SEM energy trading arrangements may be responsible for the more unorthodox proposals presented in the consultation paper.

Energia would stress that it is not the role of the TSO under I-SEM to manage imbalance prices and that increased volatility in imbalance pricing is the outcome that is consistent with the I-SEM energy market design philosophy, as it provides the appropriate incentives for participants to self-balance. It

also rewards the more flexible generation units required by the TSO to manage the system. Energia therefore requests that the objective of the TSO in relation to dispatch (the objective function of the balancing market) is clarified as part of a Proposed Decision on the I-SEM energy market trading arrangements.

3.2 *Appropriate balancing market price signals*

The level of price volatility in the I-SEM balancing market nevertheless needs very careful consideration. Without appropriate risk management options for participants (fully functional, liquid, efficient ex-ante forward contract and short-term spot markets) the combination of balance responsibility and volatile pricing will result in the creation of unmanageable commercial risk. Without sufficient volatility, however, imbalance pricing is unlikely to produce adequate incentives for participants to trade in ex-ante timeframes. This already difficult dynamic is further complicated under I-SEM energy trading arrangements due to the parallel opening of intra-day and balancing markets, which, as discussed later in this response, results in significant uncertainty regarding how TSO early actions will affect ex-ante energy market dynamics.⁶ Energia therefore suggests that the approach to imbalance pricing for I-SEM requires substantially more rigorous analysis, and further careful consideration, to ensure delivery of appropriate pricing signals for the I-SEM energy markets.⁷

3.2 *Frequency and type of early TSO action*

Energia noted that discussions at the ETA workshop held on the 13th May 2015 suggested that balancing actions prior to intra-day gate closure may be restricted to generator start decisions, presumably to ensure adequate provision of generation margin to maintain system security. Energia would fully support this approach, as it would mean that the requirement for some of the more unorthodox design proposals presented in the Markets consultation paper would be significantly reduced (e.g. substitutive PNs). Even if actions were limited to start decisions, robust measures would still be required to ensure early TSO intervention was appropriate and proportionate to the risk to system security, and we therefore welcome the proposal in the Markets consultation paper to implement a set of principles for the I-SEM balancing mechanism (please cross reference our response to question 2 in section 2.3 below).

Therefore, to avoid implementing complex, untested and potentially unnecessary mechanisms that seem contrary to the overarching philosophy of

⁶ This extremely unusual approach to market design contravenes design criteria 3 and 4 set out in section 2.2 above.

⁷ The requirement for robust qualitative and, where appropriate, quantitative analysis of balancing market design proposals is further discussed in section 4 below.

the energy market design, Energia requests that the type and extent of early actions taken by the TSO under I-SEM energy market arrangements is clarified in a Proposed Decision.

3.3 Nature of system management issues

Energia requests further clarification as to whether the problems associated with a strict implementation of the European intra-day gate closure for I-SEM are transitory (in the sense of being resolvable through TSO operational experience under I-SEM arrangements) or more fundamental in nature (inconsistent with the secure operation of the system). If the former, Energia would suggest that consideration be given to the temporary implementation of an earlier gate closure time (e.g. 4 hours ahead of delivery) with appropriately robust incentives on the TSO to move, within a pre-agreed timeframe, to the European intra-day gate closure. This approach would only be feasible if it removed the need for parallel opening of intra-day and balancing markets under the I-SEM energy market design. If the need for such measures remained then this indicates that the system management issues are more fundamental in nature. Energia note that implementation of an earlier gate closure was the approach adopted in GB when transitioning from pool arrangements to NETA.

If system management issues are transitional in nature then temporarily extending I-SEM intra-day gate closure would significantly simplify the I-SEM energy market design process, potentially avoiding the need for implementing unique and untested approaches to market design and therefore substantially reduce the risk for participants and consumers. It would also significantly simplify central system specifications, and potentially procurement, and would make system implementation and testing easier. This in turn is likely to reduce implementation costs and save significant time later in the project.

If the issues associated with European intra-day gate closure are more fundamental in nature, then Energia would recommend that a re-evaluation of the proposed I-SEM energy market design is carried out. This is because implementing parallel opening of the intra-day and balancing markets (which directly contravenes design criteria 3 and 4 set out in section 2.2 of this response) presents unqualified and unquantified risks for I-SEM participants and consumers.

Energia would therefore recommend that further detailed analysis and consultation is required in relation to these substantive, fundamental issues to ensure that the I-SEM energy trading arrangements strike an appropriate balance between security of supply and the commercial risks imposed on participants (design criteria 1, 3 and 4 as set out in section 2.2 above).

4. Request for further analysis of design proposals

In this section Energia supports the EAI request that a dedicated working group is initiated to support and model the I-SEM balancing market design. We make some recommendations in relation to the EUPHEMIA trial, emphasise the importance of maintaining full transparency around modelling activities and suggest further targeted briefings by independent experts on salient design issues. We then go on to fully support the EAI request that a dedicated modelling workstream is set up and integrated into the I-SEM project plan and explain the benefits that would accrue from this. Finally we set out the continuing need for implementation of transitional measures.

4.1 Modelling of the I-SEM Balancing Market

Energia welcomes the initiation of the EUPHEMIA working group by SEMO and EirGrid's dispatch modelling programme and we look forward to continuing to contribute constructively to them.⁸ We further suggest that an additional working group is established, focused on the I-SEM balancing market design that would augment the activities of these other modelling initiatives. We suggest the remit of this working group should be to use the outputs from the dispatch modelling process to determine the actions required to be implemented by the TSO through the balancing market (which in turn should have been determined using outputs from the EUPHEMIA trial) to provide qualitative analysis to assist in the evaluation of I-SEM balancing market design proposals. We believe the proposed working group structure, and this comprehensive approach to modelling I-SEM arrangements, would help greatly to inform and focus the debate on the I-SEM balancing market design in particular, and the energy trading arrangements more generally. The benefit of the working group approach is clearly evident from the EUPHEMIA trial, which has helped greatly to inform the debate around the EUPHEMIA algorithm.

4.2 Recommendations for the EUPHEMIA Trial

In our recent response to SEM-O Energia recommended that the EUPHEMIA trial should:

- Compare SEM ex-post price outcomes to I-SEM DAM price outcomes to objectively assess the potential impacts of I-SEM energy trading arrangements on I-SEM consumers.
- Baseline the efficiency of the generation schedules produced by EUPHEMIA (e.g. production costs and level of plant commitment) against the SEM ex-post pool.

⁸ Energia has already provided substantive feedback to SEMO and EirGrid on these modelling initiatives and also heavily contributed to EAI responses.

- Provide the data necessary to form a view on the frequency and type of TSO actions under I-SEM energy trading arrangements to support quantitative analysis of balancing market dynamics.
- Analyse the potential commercial risks of trading in the I-SEM day-ahead market⁹ to ensure that those risks are properly considered in the design of other areas of the I-SEM.¹⁰

4.3 Importance of continued transparency

Continued transparency around I-SEM modelling activities, including key metrics such as production costs, market price and scheduling patterns of generation, is necessary to engender wider market confidence in modelling working groups and to facilitate further informed debate across stakeholders on I-SEM design issues. Energia therefore requests that all materials presented to I-SEM modelling working groups are also presented to all interested parties at an open, public forum and that dedicated repositories are set up on the EirGrid and SEMO website to facilitate the timely publication of all modelling information including data sets, presentations, reports and other relevant materials.

4.4 Independent expert briefings

Energia welcomes and fully supports the RAs' provision of briefings by independent experts such as Thibault Henri and Peter Cramton. We have found these extremely useful and informative. In relation to the design of the energy trading arrangements, Energia strongly supports further expert briefings on areas such as EUPHEMIA, XBID and the design options for the I-SEM balancing market. In conjunction with focused modelling work, such briefings would help stimulate informed debate on salient design issues, further facilitating the delivery of well-designed, efficient I-SEM spot markets, which is in the interests of regulators, participants and consumers.

4.5 Dedicated I-SEM modelling workstream

To co-ordinate and properly manage I-SEM modelling activities and ensure that the utility of modelling working groups are fully maximised during the detailed design process, Energia fully supports the EAI request that a dedicated modelling workstream is set up as part of the I-SEM project. This would fully integrate modelling work into the detailed design process and allow the inter-dependencies between modelling work and design decisions to be properly managed. It would also facilitate the introduction of formal check

⁹ Such as, commercial exposures generated by limitations in EUPHEMIA order formats, EUPHEMIA price formation and its effect on revenue adequacy, scheduling risk, etc.

¹⁰ Including, measures facilitating early TSO intervention (in particular, their potential effect on liquidity levels in the intra-day market), design of the balancing market, design of reliability options, etc.

points to confirm the validity of key assumptions made during the design process – e.g. the appropriateness of using EUPHEMIA as the central scheduling algorithm for the I-SEM DAM. Such an approach would build in the additional safeguards discussed in section 2.1 above and help to ensure that design criteria 1, 2, 4, 5, 6, 7, 8, 9 and 10 set out in section 2.2 are met and therefore that the final design performs as intended.

4.6 Management of transitional risks for participants

Setting up a dedicated workstream for I-SEM modelling activities also has the additional benefit of providing participants with information that may help them better manage the commercial risks associated with the proposed ‘big bang’ implementation of I-SEM and DS3 arrangements. Modelling activities will provide participants with an understanding of I-SEM spot energy market dynamics prior to I-SEM market trials. Given the current project timetable that envisages capacity auctions being held in January 2017, providing initial analysis on likely market dynamics as early as possible in the design process is essential.

4.7 Continuing need for transitional arrangements

Even with such information Energia would emphasise that the ‘big bang’ approach is extremely risky and, in the case of the I-SEM capacity mechanism, is likely to result in an incorrect valuation of “missing money”. If the value of “missing money” is underestimated by generators this would then have to be recovered through additional rents from the energy market (most likely the balancing market), or require side contracts with the TSO, assuming the unit is needed for system support reasons. If the value of “missing money” is over-estimated this is a direct cost for the consumer.

Energia therefore request that the significant risks associated with the proposed ‘big bang’ implementation approach are given serious consideration by the SEM Committee, and that a transitional, phased approach for introduction of the I-SEM capacity market is further considered to allow participants to obtain operational experience of the new energy market and DS3 arrangements.

5. General principles to guide the I-SEM energy market design

We have already explained the challenges faced by participants in responding to the Markets consultation paper. Therefore, prior to answering the specific questions in the response template, we provide high-level principles that could be used to guide the emerging energy market design. We have grouped these principles in the text boxes below under relevant subject areas. The principles are intended as a check-list and are therefore not necessarily

exhaustive¹¹ but they do comply with the market design criteria proposed by NERA in section 2.2 above, which in turn are consistent with the HLD criteria and the SEM Committee's statutory objectives.

Text Box 5.1: Approach to market design

- (1) The fundamental intentions of the market design (i.e. the design philosophy) should be clearly communicated; market incentives should be consistent with design intentions; and robust transparent procedures should be followed in implementing any material change to the design philosophy.
- (2) A precise, practical and objective framework for the evaluation of design proposals should be established (as suggested in section 2.2 above) and this should be consistent with the stated intentions of the market design.
- (3) Market design proposals should be qualitatively assessed and, where appropriate, quantitatively modelled, to ensure they are suitable (consistent with adopted design criteria) given the unique characteristics of the I-SEM energy market.
- (4) Unusual or unique approaches to market design should be avoided given the risk of unintended consequences, and only adopted as a last resort, and only if demonstrably necessary.
- (5) Market rules should be as simple as possible. Undue complexity in market rules may be indicative of a potential tension between the intended outcome and fundamental philosophy of the market design.

¹¹ For example, we have only included two general principles for market power mitigation. Our substantive views on this topic will be provided in more detail through responses to consultations published under the market power workstream.

Text Box 5.2: Approach to TSO system management

- (6) Measures that promote extensive early intervention by the TSO should be avoided.
- (7) Early action by the TSO should be limited to system security actions and should be focused on provision of adequate synchronised generation to facilitate secure system management.
- (8) Early actions taken by the TSO should be proportionate to the risk to system security as determined through objective metrics.
- (9) The re-positioning of plant to provide operating reserve should be carried out after intra-day gate closure.
- (10) Principles governing the TSO approach to system management under I-SEM energy trading arrangements should be clearly established and published in a framework document. When devising such principles careful consideration should be given to how the TSO measures the efficiency of early action in the context of a continuously traded energy market.
- (11) There should be transparent post-event reporting of TSO actions and regular audits of TSO dispatch decisions relative to the principles set out for system management in the framework document referenced in (10) above.
- (12) The impact of early TSO action on ex-ante energy markets should be minimised. In particular, early TSO action should not reduce liquidity in ex-ante markets, or unduly distort price formation across ex-ante and balancing markets. This is best achieved by minimising TSO early action.

Text Box 5.3: Commercial Risk Management and Investment

- (13) Where practical, self-balancing should be facilitated through timely provision of system information and the imbalance price.
- (14) The provision of ex-ante risk management instruments, including provision of forward contracts and liquid trading of products in the day-ahead and intra-day markets, should be sufficient to allow participants to adequately manage their imbalance exposure.
- (15) The granularity of products traded in the intra-day market should be sufficient to allow participants to manage shape. Participants should not be subject to imbalance exposure due to mismatches between the granularity of traded products in the intra-day market and the settlement period duration.
- (16) Bid formats should be sufficient to allow participants to adequately represent their costs (including lost opportunity costs) and manage their commercial exposures.
- (17) Rebidding rules should be sufficient to allow participants to adequately manage their commercial exposures – e.g. to commodity price movements or fixed costs, such as gas capacity.
- (18) The firmness of ex-ante and balancing market trades should be sufficient to facilitate the adequate management of the commercial risks of balancing market participants
- (19) Market pricing rules should guarantee the full recovery of submitted costs by participants. For example, for a balancing market trade, a generator should receive remuneration that is greater than or equal to its cost of generating the volume of electricity contracted by the TSO based upon its submitted costs.
- (20) Market rules should not create unmanageable commercial risk for participants.

Text Box 5.4: Market Signals / Incentives

- (21) The balancing mechanism should incentivise and reward flexibility, including demand side participation. This will improve the provision of flexibility by the generation portfolio and help reduce the requirement for early TSO intervention.
- (22) Imbalance pricing should reflect the full cost of TSO energy balancing actions, including the cost of starting up generating units. For example, if start contracts were adopted then a mechanism would need to be introduced to incorporate the cost of starting up generators for energy balancing purposes within the balancing market price.
- (23) Careful consideration should be given to the approach to imbalance pricing to ensure appropriate pricing signals are created to incentivise participants to self-balance.
- (24) The strength of balancing incentives should be carefully balanced against the ability of participants to manage imbalance exposures – e.g. the liquidity levels in ex-ante contract and spot markets.
- (25) Subject to (23) and (24) above, care should be taken to ensure that excessive early energy action by the TSO does not result in weaker balancing incentives and therefore the transfer of balance responsibility from participants to the TSO.
- (26) Subject to (23) and (24) above, care should be taken to ensure that excessive early non-energy action by the TSO does not result in a lack of liquidity in intra-day markets. Balance responsibility must not become an unmanageable exposure for participants under I-SEM energy arrangements.

Text Box 5.5: Governance, Fall-Back and Transitional Arrangements

- (27) Robust governance arrangement should be implemented for the market.
- (28) Governance arrangements should allow adequate, proportionate representation of the views of stakeholders. In the case of I-SEM this principle should also apply to representation via European market governance arrangements.
- (29) Appropriate, robust, fall-back arrangements should be implemented to facilitate continuity in market operations to support TSO dispatch processes and the risk management activities of participants.
- (30) Appropriate, robust, transitional arrangements should be implemented in areas where there are demonstrable, substantial and difficult to manage continuity risks for stakeholders, whether in relation to security of supply or commercial business activities.

Text Box 5.6: Market Power Mitigation

- (31) The energy market design should not prevent implementation of appropriate market power mitigation measures.
- (32) The market power mitigation strategy should address market power issues across all markets and with reference to the interactions between markets and not unduly focus on any one particular market – e.g. local market power in the balancing timeframe.
- (33) The market power mitigation strategy should carefully balance the requirements for sufficient risk management for commercial activities with appropriate mitigation of market power.

6. Response to specific consultation questions

Energia provides responses to the specific questions raised in the Markets consultation paper below. These are not stand alone answers and must be read in conjunction with this response as a whole. In formulating and presenting answers we have used the format contained in the response template provided by the RAs. We have noted some discrepancies between the questions in the template and those in the consultation paper. Where the two differ we have responded to the questions in the response template. The Markets consultation paper requested feedback on some additional areas not covered by the questions in the template. We have tried to provide responses on these areas in section 7 below.

2 CONSULTATION QUESTIONS

2.1 RESPONDENT DETAILS

COMPANY	Energia
CONTACT DETAILS	Kevin.hannafin@energia.ie
MAIN INTEREST IN CONSULTATION	Thermal and Renewable Generation, Domestic and Commercial Supplier, Demand Side Unit

2.2 GENERAL COMMENTS

Energia has provided general comments on the Market consultation paper in the main body of this response.

As a further recommendation we would suggest that, moving forward, inter-related options for the energy market design (or any other I-SEM / DS3 design component) are logically grouped and presented as end to end proposals that address specific, well-defined implementation issues. Such an approach would greatly assist participants in being able to provide constructive feedback to future consultations.

2.3 SYSTEM OPERATION IN THE I-SEM (CHAPTER 2)

Question	Answer
<p>1. What are the impacts of early action by the TSOs on the Intraday Market?</p>	<p>Early action by the TSO contravenes SEM design criteria 3 and 4 set out in section 2.2 of this response and therefore should be avoided where possible.</p> <p>The effects of TSO early action are:</p> <ol style="list-style-type: none"> 1. Distortion of intra-day market price formation, leading to; 2. Distortion of participant incentives, leading to; 3. Distortion of intra-day market trading dynamics. <p>Extensive early action by the TSO is likely to result in reduced liquidity in the intra-day market either due to the TSO having restricted the volume of trade (freeze PNs or additive PN options) or by changing the basis on which the intra-day market trades (substitutive PN option). It may also reduce liquidity in the day-ahead market if the effect of such action is significantly more benign balancing market prices.</p> <p>These outcomes are contrary to the stated intentions of the I-SEM HLD and therefore should be avoided.</p>
<p>2. What measures can be taken to minimise early actions by the TSOs?</p>	<p>In answering this question Energia sets out its views on measures that could be introduced to minimise early TSO action and provides recommendations in relation to the proposed consultation process regarding the role of the TSO under I-SEM arrangements. We also request further analysis and consultation is carried out around these fundamentally important areas.</p> <p>Measure to minimise early TSO actions</p> <p>Measures that could be used to minimise early TSO action are set out below.</p> <ol style="list-style-type: none"> 1. Provide further clarification regarding the role of the TSO under I-SEM arrangements by means of a consultation process as proposed in the Markets consultation paper. This consultation process should, amongst other things, include the development of balancing market principles. Energia would respectfully request that the consultation is regulatory led to avoid a conflict of interests for Eirgrid. We make further recommendations regarding the consultation process below. 2. Without prejudicing our response to the consultation process requested in 1 above, restrict early TSO intervention to system security actions focused on provision of adequate synchronised generation to

	<p>facilitate secure system management (i.e. a version of Proposal 2 set out on p 21 and 22 of the Markets consultation paper).</p> <ol style="list-style-type: none">3. Without prejudicing our response to the consultation process requested in 1 above, and in conjunction with 2 above, implement transparent, timely, post-event reporting of TSO actions and conduct regular audits of TSO dispatch decisions against established balancing market principles (i.e. a version of Proposal 3 set out on p.23 of the Markets consultation paper).4. As requested by the EAI, commission an expert review and international benchmark of Eirgrid's approach to system management within the context of the I-SEM energy market arrangements and provide a report of recommendations to minimise early TSO actions.5. Implement appropriate dispatch and system management incentives for Eirgrid via explicit mechanisms and appropriate energy market rules.6. Ensure the provision of appropriate incentives and adequate information to facilitate the market to self-balance.7. Only implement measures to facilitate early action by the TSO if demonstrably appropriate. In particular, care should be taken to ensure that measures are: commensurate with the designated role of the TSO under the I-SEM energy trading arrangements; consistent with the I-SEM energy market design philosophy and; proportionate to the risks associated with the system issues the measures are designed to mitigate.8. Facilitate the simultaneous submission of bids/offers that reflect the commercial costs of various potential operating configurations of generating units as part of the balancing market design. This would help maximise the flexibility offered by generators to the TSO and provide appropriate market incentives by facilitating the reward of flexible generating units. This proposal is discussed in more detail in our response to question 2.8 in sub-section 3 below.9. Facilitate, incentivise and reward flexible generation and dispatchable demand under the I-SEM energy market design.10. Ensure successful delivery of DS3 with appropriate incentives to drive the investment needed to deliver the services required to increase the flexibility of the generation portfolio.11. Based on rigorous cost benefit analysis, ensure there is appropriate investment in transmission infrastructure to reduce the overall number of constraints on the all-island transmission system.
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	<p>Further recommendations for consultation</p> <p>In relation to the consultation process outlined in measure 1 above Energia makes the following further recommendations:</p> <ol style="list-style-type: none">1. The timing of the consultation process should be determined with reference to the proposed decision on energy trading arrangements requested in section 2 of this response and which is consistent with the request made by the EAI.2. That prior to being asked to respond to a proposed decision on I-SEM energy trading arrangements participants should be provided with clarity regarding the intended role of the TSO under I-SEM arrangements and provided with a view on the type and frequency of TSO early action (i.e. have access to relevant results from the I-SEM modelling workstream that was requested in section 4 of this response).3. That the consultation includes a review of TSO incentives. Furthermore, that care is taken not to create perverse incentives whereby the TSO execute early 'energy' actions (as opposed to non-energy actions) to reduce dispatch balancing costs, thereby distorting energy market dynamics.4. That the option of the TSO trading via the energy market for energy actions taken prior to gate closure is considered.5. That the option of the TSO trading out energy positions resulting from early non-energy actions via the energy market is also considered.6. That the scope of the consultation includes, as a minimum: the role of the TSO, principles for the balancing mechanism; frequency and type of early TSO intervention; appropriate reporting metrics around TSO dispatch/system actions; a discussion on appropriate incentives for the TSO; options around TSO trading in the intra-day market; and an expert review and international benchmark of Eirgrid's approach to system management within the context of the I-SEM energy market arrangements. <p>In relation to points 4 and 5 above, Energia would caution that TSO trades in the energy market are still likely to be distortionary to intra-day market dynamic. Furthermore, early energy balancing actions conducted by the TSO via the energy market may be less transparent to participants than via the balancing market and therefore may incentive the TSO to intervene more extensively and earlier. The option however may be worth further careful consideration if early action by the TSO is proven unavoidable following further review. As clearly stated throughout this response, however, the safest approach under the I-SEM energy market design is to minimise all such</p>
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	<p>action.</p> <p>Need for further analysis and consultation</p> <p>Energia recommend that further detailed qualitative and quantitative analysis, and informed consultation is required around these areas to ensure that the I-SEM energy trading arrangements strike an appropriate balance between security of supply and the commercial risks imposed on participants (design criteria 1, 3 and 4 as set out in section 2.2 above).</p>
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2.4 EX-ANTE MARKETS (SECTION 3)

Question	Answer
<p>1. Which of the three options put forward for interim IDM arrangements is most appropriate?</p>	<p>Participants require a functional, liquid intra-day market to manage their exposure to imbalance prices. I-SEM energy trading arrangements therefore cannot go-live without an intra-day market that is fit for purpose. Hence Energia welcome the options proposed in the consultation paper for interim arrangements for the I-SEM intra-day market and suggest that the interim arrangements put in place should also function as the fall-back arrangements for XBID. Furthermore, that this dual purpose should be explicitly taken into account when considering their design.</p> <p>Energia would prefer a regional approach to be taken for the interim / fall-back solution. This could be supported by either the second or third option presented in the consultation paper; regional continuous intra-day trading or regional intra-day auctions; our views on regional auctions are discussed in more detail in our response to question 2 below. Assuming sufficient interest from participants from other jurisdictions, a regional approach would facilitate increased liquidity levels in the I-SEM intra-day market. Energia therefore suggest that a working group is set up to look in more detail at the feasibility of setting up a regional intra-day market / auctions for I-SEM.</p> <p>If a regional interim / fall-back solution is adopted for the I-SEM intra-day market then the first option (an intra-day market for the I-SEM zone only) is still required as the fall-back arrangement to the regional intra-day market to ensure continuity in market arrangements. This is important to minimise disruption to TSO dispatch processes and participant hedging activities.</p>
<p>2. Should intraday auctions be implemented in I-SEM? Are there any advantages to those auctions not described in this paper?</p>	<p>Energia suggests that there is merit in further consideration of intra-day auctions. If liquidity in the intra-day timeframe is low (e.g. due to early TSO action), intra-day auctions may help pool volumes, but there is also a risk that auctions would then lead to reduced liquidity on the European intra-day coupling platform (XBID). On the other hand X-BID may not provide I-SEM participants with products that are traded at a sufficiently low granularity to facilitate shape management (design criteria 4 as set out in section 2.2 above). Energia therefore suggests that a working group is set up to look at this area in more detail. The working group could consider whether the functionality of XBID is sufficient to support the requirements of the I-SEM intra-day market and investigate the feasibility of implementing a regional intra-day market and / or auctions on the I-SEM / GB border to augment XBID if required. Furthermore, Energia recommend that relevant entities in other jurisdictions are</p>

	approached as soon as possible to initiate this feasibility study.
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2.5 PHYSICAL NOTIFICATIONS (SECTION 4)

Question	Answer
<p>1. What are your views on the timing of PN submissions to the TSO</p>	<p>Energia observe that the proposed triggers for the resubmission of PNs are only relevant if PNs are fully linked to ex-ante contract positions. Under delinked options, regardless of the trigger selected, PNs will be updated by participants, in practice, based upon their view as to whether or not it is required, at least prior to intra-day gate closure. Under de-linked options, however, participants are likely to resubmit PNs if intra-day trading necessitates a change to offer and bid submissions to the balancing market to cover potential exposures. This is most likely to occur under MW relative bid formats where bids and offers are priced relative to the PN of the participant – see our answer to question 1 in sub-section 2.6 below.</p> <p>If PNs are fully linked to ex-ante contract positions then either a MW trigger or a regular submission time would seem most appropriate. Care should be taken, however, to ensure that the information requirements of the TSO are appropriately balanced against the operational overhead for participants, with account being taken of the fact that participants may be incentivised to update PNs (when updating balancing market bids and offers) to reflect changes in their costs / commercial risks following intra-day trades.</p>
<p>2. What are your views on the removal of the requirement on wind generation and non-dispatchable demand to submit PNs</p>	<p>The submission of PNs by non-dispatchable demand and wind generation is an unnecessary operational overhead on participants and should be avoided.</p> <p>Energia agree with the general approach outlined in the Markets consultation paper that priority dispatch for wind should be managed through settlement arrangements, and we made detailed proposals on how this could be implemented in our response to the Building Blocks consultation paper (see section 3.3 of that response). However, we fundamentally disagree with the proposal that the decremental price submitted by wind should be set equal to zero. Such a rule would not allow wind units to accurately reflect their lost opportunity cost under renewable support mechanisms when constrained down. We therefore respectfully request that there is further consultation on this matter.</p>
<p>3. What are your views on how PNs from participants should be linked to their ex-ante trades and what are your opinions</p>	<p>The relationship between PNs and ex-ante contract positions represents a fundamentally unhelpful ambiguity at the heart of the market design discussed in detail in section 2.3.3 of this response. Energia observe that fully de-linking PNs only makes sense if the I-SEM is intended to be a self-scheduling and dispatching market with physical contracting. While Energia (subject to further clarification) would support this, we would question why self-scheduling and physical contracting is being</p>

<p>on which of the three options outlined in this chapter is optimal for I-SEM.</p>	<p>restricted to the balancing market and not being adopted as part of the wider energy market design.¹²</p> <p>If this is not the intent of the SEM Committee then Energia would supports partial de-linking of PNs. This is because if de-linked PNs were implemented under a centrally scheduled and dispatched design philosophy then the market would rely on other measures such as financial incentives or the TSO approach to dispatch to avoid self-scheduling and dispatching behaviours. This would be an unorthodox approach (compared to a market rule linking PNs to ex-ante contract positions) and would significantly overcomplicate the energy market trading arrangements, increasing risks for participants and consumers (please cross reference the discussion of market incentives in section 2.1 of this response). Potential over-complication of the energy market design is already evident from the settlement algebra and other proposals presented in relation to facilitating early TSO action throughout the Markets consultation paper. Energia suggests that functional inefficiency in the design may be a result of a desire to implement measures that are not consistent with the underlying philosophy of the market design.</p> <p>Need for tolerances under linked PN options</p> <p>If linked or partially de-linked PNs are adopted for I-SEM then Energia strongly recommend tolerances for PN submissions are implemented to minimise potential imbalance exposures due to technically infeasible contract positions. This will help to mitigate the risk of inadequate risk management being available for participants under the energy market design. As discussed in our answer to question 3 in sub-section 2.10 below, the European trading platforms are predominantly designed to facilitate trade at a macro level between markets.</p>
<p>4. What are your views on the potential for the inclusion of an information imbalance charge. In addition, comment is sought as to whether this</p>	<p>In our response to this question Energia explains why levying an information imbalance charge is inappropriate and will not improve the accuracy of information received by the TSO and we request clarification of whether the issue information imbalance charging is trying to address (provision of accurate information to the TSO early in the dispatch process) is symptomatic of a more fundamental issue with the proposed energy market design.</p> <p>Linked PNs</p> <p>Under the linked PN option a generator must resubmit a PN every time it trades and therefore by definition each time it</p>

¹² Allowing self-scheduling into the balancing market would facilitate a form of physical contracting for vertically integrated utilities allowing them to spill generation while adopting a short position against their retail demand.

<p>issue is best addressed under the generator performance incentives.</p>	<p>trades its previous PN will be inaccurate. Therefore implementing an information imbalance charge under the linked PN option for PNs submitted prior to the FPN would act as a disincentive on participants to trade in the intra-day market (contravening design criteria 4 in section 2.2 above), or at best act as a levy on trading, without improving the ability of the TSO to manage the system (contravening design criteria 4 and 2 in section 2.2 above without materially improving compliance with design criteria 1). Implementation of such a charge should therefore be avoided.</p> <p>Partially de-linked PNs</p> <p>Implementing an information imbalance charge under the partially de-linked PN option for PNs submitted prior to the FPN is an attempt to reduce the system security risk faced by the TSO under the energy market design by imposing a commercial incentive, in the form of a penalty, on participants. The efficacy of penalties depend upon the ability of participants to alter behaviour to avoid them, and Energia would emphasise that a participant may not, through no fault of their own, be able to trade to an ex-ante contract position that achieves their PN. Levying such a charge is therefore an unmanageable commercial risk for participants and will be ineffectual as an incentive. It is therefore subject to the same short coming as highlighted under the linked PN option. Implementation of such a charge should therefore be avoided.</p> <p>Fully de-linked PNs</p> <p>The same argument as made above for the partially de-linked PN option holds in relation to the fully de-linked PN option and Energia therefore recommend that the implementation of information imbalance charges for PNs submitted prior to the FPN under the de-linked PN option is avoided.</p> <p>Energia assumes that the rationale for the implementation of information imbalance charges for PNs submitted prior to the FPN is the assumption that it will significantly improve the quality of the information received by the TSO early in the dispatch process. As discussed in section 7.2 below this assumption is fundamentally incorrect.</p> <p>Information imbalance charges in relation to FPNs</p> <p>Generators are obliged under grid code to follow instructions from the TSO. Therefore failure to follow instructions subject to unavoidable deviations (e.g. due to frequency response) is a breach of license. We are therefore confused as to why the I-SEM energy market rules need to deliver a further financial incentivise on generators to comply with their obligations under</p>
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	<p>grid code.</p> <p>Energia note that National Grid decided to set the information imbalance charge in the GB market to zero because they did not want to put a financial value on breaching license conditions. We believe a similar principle should be adopted for I-SEM and that information imbalance charges and uninstructed imbalance charges should not be implemented. Furthermore, we would note that implementation of uninstructed imbalance charges would effectively result in implementation of a dual imbalance price for generators under certain conditions. This would seem contrary to the I-SEM HLD decision.</p> <p>Frequency response</p> <p>Energia emphasises that generators may not be able to exactly follow TSO dispatch instruction due to the grid code requirement to respond to frequency changes on the transmission system. This physical reality for generators needs to be properly recognised through the introduction of appropriate tolerances when assessing compliance with dispatch instructions. In particular, generators should not be subject to undue financial penalties due to providing frequency response, which is an obligation under grid code.</p> <p>A more fundamental design issue?</p> <p>The proposal to implement information imbalance charges would seem to highlight a more fundamental issue in relation to the I-SEM energy market design. Whether the TSO will be able to manage a secure system under I-SEM energy trading arrangements if the information contained in participant PNs submitted prior to gate closure is either incomplete (under the linked PN option), or inaccurate (under de-linked PN options regardless of the implementation of information imbalance charges). Energia respectfully request that this issue (which is related to design criteria 1 in section 2.2 above) is given further careful consideration by the SEM Committee. Furthermore, we suggest that the issue may be linked to ongoing confusion regarding the role of the TSO under the I-SEM energy trading arrangements.</p>
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2.6 FORM OF OFFERS, BIDS AND ACCEPTANCES (SECTION 5)

Question	Answer
<p>1. Which of the proposed formats should be used for bids and offers for deviating from PNs?</p> <ul style="list-style-type: none"> • Simple MWh • Relative MWh • Absolute MWh 	<p>In answering this question Energia first point out that there may be a potential typo in the question before going on to explain the difficulty of taking a definitive position. We then go on to provisionally support the relative MW bid format and observing that there would be a need for separate incremental and decremental curves if the Absolute MW bid format was adopted. Finally we explain why a simple MWh approach is not suitable and highlight the need for more analysis and consultation in this, and other related design areas.</p> <p>Typo in question?</p> <p>Energia assume that there is a typo in the question and that the relative and absolute options are based upon a point MW approach consistent with the consultation paper rather than a MWh approach. We discuss the fundamental issues with a MWh approach later in our answer to this question.</p> <p>Difficulty in providing a definitive answer on bid formats</p> <p>Energia would emphasise that it is difficult to provide a definitive answer to this question because of the ongoing uncertainty regarding the scale of potential early action by the TSO and the likely approach adopted for treatment of fixed costs and imbalance pricing. The views expressed below therefore represent Energia’s current opinions and may be subject to change if further consultation on this matter is facilitated.</p> <p>Benefits of a Relative MW bid format</p> <p>Based upon the information currently available, Energia supports the introduction of relative MW bid formats for the I-SEM balancing market. The relative format should facilitate better risk management options for balancing market participants and will better incentivise resubmission of PNs to the TSO as discussed in our answer to question 1 in sub-section 2.5 above.</p> <p>Need for adjustment to PNs following early TSO action</p> <p>Energia are cognisant of an issue in relation to early TSO action. If the TSO make a bid / offer acceptance prior to gate closure but PNs are not updated by participants to reflect this action, then under the relative MW bid format the cost curves for subsequent TSO action may be inaccurate. We</p>

	<p>therefore suggest that if a relative MW bid format is adopted then there is a standard convention whereby the bids and offers of participants are understood to be relative to PN submissions as adjusted for bid offer acceptances made by the TSO prior to gate closure. This adjustment could either be made by the participant or the TSO. Please note that this issue would not arise if the TSO did not take action via the balancing market prior to intra-day gate closure.</p> <p>Separate incremental and decremental cost curves under an Absolute MW approach</p> <p>If absolute MW formats are adopted Energia recommends that central systems support separate cost curves for incremental and decremental costs. This would facilitate better risk management options for participants whose costs of increasing output may vary from their costs of decreasing output – e.g. due to gas capacity. Energia would emphasise that any participants wanting to use a single cost curve could still do so by submitting the same cost curve for their incremental and decremental submissions.</p> <p>Summary of issues with a simple MWh bid format</p> <p>Given the commercial realities of operating a power plant a MWh format for bids will result in ambiguity in the cost associated with bid offer acceptances. This is because the costs of producing a volume of energy will depend upon the profile of the energy that is procured. Using a MWh convention would therefore contravene design criteria 2 and 4 and design principles 16 and 19 set out in sections 2.2 and 5 of this response and therefore should be avoided.</p> <p>Request for further analysis and consultation</p> <p>Energia observe that any decision on bid formats for the I-SEM balancing market should take into consideration the criteria and principles referenced above. It also needs to be mindful of the scale of TSO early intervention, the treatment of fixed costs and its implications for the approach to imbalance pricing. We therefore respectfully request that further significant analysis and consultation is carried out across these areas to ensure an appropriate approach is selected for the I-SEM balancing market.</p>
<p>2. How should fixed costs be represented within bids and offers?</p> <ul style="list-style-type: none"> • Explicit start up 	<p>In responding to this question Energia first sets out some fundamental principles in relation to imbalance price formation before going on to assess each of the options presented in the consultation paper. We observe that the implementation of explicit fixed costs (start and no load costs) given their implications for imbalance pricing would</p>

<p>contracts</p> <ul style="list-style-type: none"> • Block bids • Explicit start-up (and no load) costs 	<p>seem to represent a significant change to the HLD that needs to be subject to proper regulatory process to ensure it does not undermine the integrity of the wider I-SEM energy market design. Finally we recommend that significant further work is required in this, and related, design areas to determine an appropriate approach for the I-SEM balancing market.</p> <p>Fundamental Principles</p> <p>Regardless of the approach adopted for the treatment of start costs it is essential that the cost of generator starts are properly reflected in the balancing market price. If start costs are not properly reflected in balancing market prices then this would distort market price signals and therefore incentives for demand side participation and provision of flexible generation. It would also undermine incentives for participants to trade in ex-ante markets. Collectively these are principles 21, 22 and 23 set out in section 5 of this response. Whatever approach is selected in relation to the treatment of fixed costs we would also emphasise that it is essential that the principle of revenue adequacy (represented by design criteria 2 in section 2.2 of this response) is also respected, otherwise the energy market design could lead to fundamental long term issues in relation to investment and security of supply.</p> <p>Review of Options</p> <p>It is not possible to provide a definitive position on the options provided at the current time because the treatment of fixed costs needs to be considered in conjunction with imbalance pricing, which itself requires significantly more qualitative and quantitative analysis of the proposed options. This is discussed in more detail in our answers to the questions posed in sub-section 2.9 below. Furthermore, it is not clear to Energia why a simple incremental and decremental bid format would not work for the I-SEM. We would therefore welcome further consultation on this matter.</p> <p>Despite the uncertainties outlined above, Energia provides its current views on the proposed design options below. These views may be subject to change during any future consultations.</p> <p>Block Bids</p> <p>Energia agree with the view expressed in the consultation paper that block bids are not a feasible solution for the I-SEM balancing market. Furthermore, we note that the volume</p>
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	<p>certainty provided by block bids would also be provided under simple inc and dec bids if the TSO respect the technical operating parameters of units when making bid / offer acceptances via the balancing market (e.g. loading profiles and min on times). We would therefore welcome further consultation on this matter.</p> <p>Start Up Contracts</p> <p>Energia has concerns regarding how start costs would be incorporated into the balancing market price under start contracts. There is a further potential issue regarding how generators could update the maintenance component of their start costs under contracts and whether the fuel element of starts would be recoverable via balancing market bids.</p> <p>Explicit Start Costs</p> <p>Energia caution that a move to explicit start costs without an appropriate approach to imbalance pricing would result in many of the same issues as start-up contracts. This is discussed in more detail below.</p> <p>Explicit Fixed Costs (including no load costs)</p> <p>While a move towards three part complex offers (explicit start costs and no load costs) would seem, on the face of it, an attractive proposition for the I-SEM balancing market, careful consideration is required of their implication for imbalance price formation. To ensure appropriate price signals are generated by the balancing market to incentivise self-balancing and to incentivise future investment in generation, explicit no-load and start costs need to be fully incorporated into the imbalance pricing mechanism. This is not a trivial task and would require some form of uplift mechanism necessitating implementation of an inter-temporal scheduling and pricing algorithm. This does not seem to be consistent with the original the intention of the SEM Committee under the I-SEM HLD (see our answer to question 3 in sub-section 2.9 below).</p> <p>Proposed Next Steps</p> <p>Given this area is integrally linked with the approach to imbalance pricing, Energia recommend that further informed consultation, supported by robust qualitative and, where appropriate, quantitative analysis, is required (cross reference sub-section 2.9 below). This will help ensure that the approach to fixed costs selected for I-SEM is appropriate. Energia therefore respectfully observe that it would not</p>
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	<p>seem in the best interest of I-SEM consumers for the SEM Committee to take a decision on this matter on the basis of the current consultation paper.</p>
<p>3. Should it be possible to rebid offer and bid prices following an acceptance? Three options are proposed:</p> <ul style="list-style-type: none"> • Fixing prices of accepted bids and offers • Undo prices • Freezing all prices 	<p>In our response to this question Energia first sets out the importance of facilitating appropriate risk management by participants before going on to provide views on the various re-pricing options presented in the consultation paper.</p> <p>Need for firm balancing market trades</p> <p>The market rules should facilitate participants to adequately manage commercial risk (see design principles in Table 5.3 in section 5 above). In the context of the current discussion this translates into a requirement for all trades via the balancing market to provide a firm commitment by the TSO in relation to price and volume. If balancing market trades do not represent a firm price and volume commitment by the TSO then participants cannot manage their commercial exposure to underlying commodity prices – i.e. fuel and carbon costs. They would also be unable to manage their exposure to certain fixed costs such as gas capacity. This would equate to inadequate provisions for risk management activities under the energy market design that would result in revenue adequacy issues, which in turn would undermine investment and therefore long term security of supply.</p> <p>Discussion of re-bidding options</p> <p>In the discussion of re-bidding options below Energia is assuming a relative MW bid format but we would emphasise that the principles being espoused are relevant under any balancing market bid formats and are not contingent upon a relative MW bid format being selected for the I-SEM balancing market.</p> <p>Option 1: Fixing the price of only accepted offers and bids</p> <p>Energia agrees with the SEM Committee proposal that the price of accepted balancing market bids or offers should be fixed at the time of acceptance. However, we fundamentally disagree that the effective undo price for such acceptances (the reverse price of the accepted bid or offer) should also be frozen. Commodity markets are continuously traded and therefore it is essential that participants can accurately reflect the real time cost associated with changing their energy market position as a result of the unwinding of a position by the TSO. The same argument holds for other fixed costs – such as gas capacity. Exposing the TSO to the same commercial risks as participants creates appropriate incentives for the TSO under the market rules to efficiently</p>

	<p>implement dispatch decisions. This is discussed in more detail later in the answer to this question.</p> <p>Option 2: Undo Prices</p> <p>Energia would stress that undo prices are required for final bid and offer submissions to the balancing market – i.e. at intra-day market gate closure. This is because participants are subject to commodity price risk from gate closure to physical delivery and therefore require undo prices to manage this commercial risk.</p> <p>Providing participants are afforded the opportunity to rebid the offer and bid prices associated with unaccepted volumes (which we have argued should be a fundamental principle in the I-SEM balancing market design) the requirement for undo prices prior to gate closure is reduced, assuming balancing market bids and offers are relative to PNs as updated for balancing market bid offer acceptances prior to gate closure (i.e. adjusted PNs). If balancing market bid and offers are not relative to adjusted PNs then undo prices may be required to allow participants to reflect the cost of the TSO unwinding an action. Furthermore, Energia would stress that participants would need to be able to update those undo prices through until intra-day market gate closure. We believe such an approach may be too complicated and therefore suggest PNs should be adjusted for bid offer acceptances prior to gate closure (see our answer to question 1 above).</p> <p>Even if balancing market bids and offers were relative to adjusted PNs, Energia nevertheless believe there is merit in facilitating undo prices to provide participants with adequate cover between changing of bid / offer price submissions following a TSO acceptance. This is because operationally it will take time to resubmit bids and offers to the TSO creating an exposure for participants if commodity markets move sharply and TSO unwinds their position quickly.</p> <p>Energia would also emphasise that undo prices create proper incentives for the TSO to efficiently approach their trading activities in the balancing market. Removing such incentives will result in less efficient (and most likely earlier) action by the TSO because they will not be directly subject to the cost of getting dispatch decisions wrong. This will pass commercial risk onto participants, undermining revenue adequacy, and therefore security of supply, and increasing system costs over the longer term.</p> <p>Energia therefore recommend that the I-SEM balancing market facilitates submission and updating of undo prices for</p>
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	<p>all balancing market actions – i.e. both before and after day-ahead gate closure.</p> <p>Option 3: Freezing all Prices</p> <p>This is an unworkable suggestion as it does not facilitate participants to adequately manage their commercial risks and therefore should not be implemented as part of the energy market design.</p>
<p>4. Should open or closed instructions be used to move participants away from their PN?</p>	<p>The debate on open and closed instructions seems to be somewhat misguided. The key issue is whether instructions are the primary form of balancing market bid offer acceptances given the balancing market is open in parallel with the intra-day market under the I-SEM design.</p> <p>Energia would have concerns if open instructions were maintained and those instructions also functioned as the form of balancing market bid offer acceptances. This is because it is not clear that there will necessarily be a one to one correlation between TSO bid offer acceptances and instructions, and it is possible that several bid offer acceptances, spread out over time, could be subsumed into a single open instruction – e.g. if there are actions and then subsequent undo actions. Energia therefore suggest that if open instructions are maintained TSO bid offer acceptances in the balancing market need to be communicated separately to participants to remove any possible ambiguity – e.g. that bid offer acceptances are communicated by the TSO to participant trading departments and instructions continue to be issued directly to the operation teams of generating units via EDIL. We believe this approach would greatly simplify the settlement of bid offer acceptance by the TSO and participants.</p> <p>This issue is removed if closed instructions are implemented but we assume this would require significant redesign of systems both on the TSO and participant side, and should be avoided unless it is a likely requirement of the evolving balancing market arrangement under the EU target model.</p> <p>In the case of the latter consideration should be given to implementing such changes as part of the I-SEM redesign to remove the need for further changes to the market in the future.</p>

2.7 INTERACTIONS BETWEEN THE BALANCING MARKET AND INTRADAY MARKET (SECTION 6)

Question	Answer
<p>1. Which of the options put forward should apply to participation in the IDM in the event that the TSOs take a balancing action pre-gate closure:</p> <ul style="list-style-type: none"> • Freeze PNs • Additive PN Changes • Substitutive PN Changes 	<p>In our response to this question Energia notes that early intervention by the TSO does not seem consistent with the philosophy of the energy market design and therefore recommends such intervention is minimised. We suggest that any measures introduced to facilitate such intervention should be limited to what is necessary and sufficient to maintain system security and explain the difficulty of providing a definitive view on the proposals without clarification of the frequency and type of TSO early action under I-SEM energy trading arrangements. We then go on to provide our current views on the suggested options, emphasising our concerns with the substitutive approach.</p> <p>Measures should be necessary and sufficient</p> <p>The measures provided under the energy market rules themselves will influence the extent of early intervention by the TSO. Therefore the rationale for introducing such measures needs to be carefully assessed to ensure they are limited to what is necessary and sufficient to maintain system security. We have made suggestions regarding how this could be achieved in our answer to question 2 in section 2.3 above.</p> <p>Unorthodox approach to market design</p> <p>Measures to facilitate extensive early intervention by the TSO are unorthodox, and seem inconsistent with the philosophy of the I-SEM energy market design. Energia therefore observe that designing ‘blanket’ measures to facilitate such action therefore presents unqualified and unquantified risks for I-SEM participants and consumers.</p> <p>Need to minimise early TSO action</p> <p>Given the unorthodox nature of introducing measure to facilitate extensive early intervention by the TSO Energia suggest that the safest approach is to limit such intervention. We have made suggestions regarding how this could be achieved in our answer to question 2 in section 2.3 above.</p> <p>Difficulty in providing a definitive answer</p> <p>Energia would emphasise that it is difficult to provide a</p>

	<p>definitive answer to this question without first understanding the frequency and type of early action by the TSO. We have therefore requested clarification regarding this in section 3.2 of this response. The opinions expressed below therefore represent Energia's current views and may be subject to change if further consultation on this matter is facilitated.</p> <p>Option 1: Freezing PNs</p> <p>If early action by the TSO was extremely rare, limited to non-energy actions only and participants were able to recover their lost opportunity of trading in energy markets then freezing participant PNs could prove a workable option.</p> <p>The fact that the SEM Committee seems to be ruling out this option may suggest that early TSO action could be reasonably frequent under I-SEM arrangements. Under such a scenario Energia would agree that freezing PNs would be overly restrictive.</p> <p>Option 2: Additive PNs</p> <p>If early action by the TSO was infrequent, limited to non-energy actions only (i.e. essential start decisions) and participants were able to recover their lost opportunity associated with restricted trading in energy markets then additive PNs could also be a workable option. Under the conditions outlined above such an approach could reduce the impact of TSO actions on intra-day market trading relative to the previous option (Freezing PNs). Energia, however, would nevertheless emphasise that intervention, even if limited to essential start decisions, could still significantly distort intra-day market dynamics under the additive PN approach, if such early actions were frequent.</p> <p>Option 3: Substitutive PNs</p> <p>Energia has significant concerns regarding the complexity of implementing substitutive PNs within the I-SEM energy trading arrangements and we are not aware of this approach being attempted in any other market. We are concerned that their implementation could result in unanticipated consequences. Some of the potential issues with this option are discussed in our answer to the next question.</p> <p>We would observe that the perceived need for substitutive PNs would suggest that extensive early action</p>
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	<p>by the TSO was envisaged under the I-SEM energy trading arrangements. As previously outlined, Energia is concerned that extensive early action by the TSO is not consistent with philosophy of the I-SEM energy market design and therefore should be avoided. If the contrary is the case, and TSO early intervention is infrequent, then it is unclear why substitutive PNs are required, given the unnecessary complexity they would add to the energy market design.</p> <p>Proposed Next Steps</p> <p>Energia observe that it would not seem in the best interest of I-SEM consumers for the SEM Committee to take a decision on the treatment of PNs without first clarifying the frequency and type of early intervention envisaged by the TSO under the I-SEM arrangements. To facilitate stakeholders to provide their views following such clarification Energia request further consultation on this matter. Adopting this approach would help to ensure that the appropriate option for updating PNs is selected for the I-SEM energy markets.</p>
<p>2. If the substitutive PN Changes option is taken, there are two further options for swapping out or netting IDM trades against bid-offer acceptances:</p> <ul style="list-style-type: none"> • If the participant wishes to trade in the IDM and substitute the bid-offer acceptance they will need to achieve a more advantageous price in the IDM than the bid-offer acceptance price • Implement a methodology which sees the unit lock in the premium above or below the imbalance price through the bid-offer acceptance 	<p>These proposals are directly linked to substitutive PNs. For the reasons set out in our answer to the previous question, Energia does not think it is in the interests of I-SEM consumers to take a decision on the PN options set out in the question above, and consequently the options presented by this question, until the frequency and type of early intervention envisaged by the TSO under the I-SEM arrangements has been clarified. We nevertheless provide some initial views on the proposals for substitutive PNs below. These views may be subject to change if further consultation on this matter is facilitated.</p> <p>Option 1: Lock in bid price</p> <p>Energia is concerned that this proposal is likely to distort the incentives for trading in the intra-day market. For example, if a generator has an offer accepted prior to gate closure in the balancing market then it will only sell in the intra-day market if the intra-day market price is higher than its accepted offer price. The generator will not trade if the intra-day market price is lower than its accepted offer price. Therefore, if relevant underlying commodity prices were to fall relative to their level when the balancing market offer was accepted the generator would effectively be locked out of the intra-day market. A similar issue arises with bid acceptances, except the dynamics are the other way around. Therefore the mechanism has the potential to lock a generator with an</p>

early bid / offer acceptance from the TSO out of the intra-day market depending on underlying commodity price movements. This does not seem a particularly helpful dynamic and therefore Energia would welcome clarification if this approach has been adopted in any other energy markets.

Option 2: Lock in bid / offer premium

Energia has studied this proposal in detail but is unable to understand exactly how it would work in practice. Our main concerns are that it seems overly complex and, similar to the previous option, is likely to distort the incentives for trading in the intra-day market. For example, if a generator has an offer accepted prior to gate closure in the balancing mechanism (and thereby locks in a potential premium) it will only sell in the intra-day market if it expects the intra-day price to be greater than the imbalance price, but if the market expectation is that the intra-day price will be greater than the imbalance price no one is likely to want to buy from the generator in the intra-day market. A similar issue arises with bid acceptances, except the dynamics are the other way around. Therefore the incentive created by the mechanism seems to be to only trade in a direction contrary to the market expectation of the imbalance price. However, the incentive required to support liquidity is the opposite. Energia may have misinterpreted the proposal, as we are struggling to understand it, but the dynamics outlined above do not seem particularly helpful and we would therefore welcome clarification if this approach has been adopted in any other energy markets.

Need to minimise early TSO action

Given the unorthodox nature of introducing measure to facilitate extensive early intervention by the TSO, Energia suggest that the safest approach is to limit such intervention. We have made suggestions regarding how this could be achieved in our answer to question 2 in section 2.3 above. If early intervention is limited then there may not be a requirement for substitutive PNs, thereby removing the need for the options discussed above. If on the other hand, the I-SEM system cannot be run securely without extensive early intervention by the TSO then Energia recommend that a re-evaluation of the proposed I-SEM energy market design is carried out. This is because extensive early intervention would contravenes design criteria 3 and 4 as set out in section 2.2 of this response and therefore presents unqualified and

	unquantified risks for I-SEM participants and consumers.
<p>3. Which of the three options put forward for dealing with “Trading in the Opposite Direction” should be implemented:</p> <ul style="list-style-type: none"> • No specific consideration of this would be reflected in the market design • Implementing a rule that would prohibit PN changes that increase the quantity of any offer or bid acceptances • Permit PN changes in either direction but, in the settlement of the offer or bid acceptances, to limit the quantity on which the premium is payable, such that a change in PN cannot increase this quantity 	<p>Energia observe that the scale of this issue again depends on the type and frequency of early action taken by the TSO. The appropriate approach is also linked to the decision taken in relation to the PN options discussed in our answer to question 1 above. It is therefore not possible to provide definitive views on the proposals referenced in the question at the present time. We have nevertheless provided our current views below but these may be subject to change if further consultation on this matter is facilitated.</p> <p>Option 1: No specific measures</p> <p>If early intervention is infrequent and limited to non-energy actions then no specific measure within the rules may be required and the problem could be adequately managed through the local market power mitigation framework. We have provided our views on the appropriate approach to local market power mitigation in our answer to question 2 in sub-section 2.8 and question 2 in sub-section 2.11 below. We note, however, if either the freeze PN option or additive PN option is introduced (see question 1 above) then measures would already have been introduced that deal with this potential issue.</p> <p>Option 2: Additive PNs</p> <p>From reviewing this option we believe it is the same as the additive PN option discussed in question 1 above, which also excludes PN changes that are in the opposite direction to TSO balancing actions. We would therefore refer the reader to our comments in relation to the additive PN option provided in our answer to question 1 above.</p> <p>Option 3: Settlement rules</p> <p>If early intervention is infrequent and limited to non-energy actions then it would seem unwarranted to add additional, potentially unnecessary complexity to settlement algebra, and therefore further complicate the energy market design. We would also note that pursuing this approach would seem to be an attempt to achieve outcomes consistent with option 2 above by implementing financial incentives not to trade in the opposite direction to a TSO balancing action. Therefore if it was introduced, and there was extensive early intervention by the TSO, it would be subject to the same issues as outlined for the Additive PN option in our</p>

	<p>response to question 1 above – i.e. cause distortion to intra-day market dynamics. Energia therefore does not support this proposal.</p> <p>Need to limit early TSO intervention</p> <p>Energia again observe that the best way to manage this problem is to minimise early balancing actions by the TSO and we have made suggestions regarding how this could be achieved in our answer to question 2 in sub-section 2.3 above.</p>
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2.8 TREATMENT OF SYSTEM SERVICES (SECTION 7)

Question	Answer
<p>1. What are your views on the proposal whereby a unit that is deployed for reserves should be constrained to the minimum extent possible in the IDM</p>	<p>Energia has significant concerns regarding the treatment of reserves under the I-SEM energy trading arrangements.</p> <p>The consultation paper seems to envisage that the TSO will be able to implement an optimised position for operating reserve prior to intra-day market gate closure. Under I-SEM energy trading arrangements, however, the TSO will only have full control of the system after the intra-day market closes, and only then for a short time horizon. The TSO, therefore, cannot implement a full optimisation of reserve until after gate closure, unless, through extensive early action, they lock participants into positions and therefore out of trading in the energy market. Such an approach, as already set out in our answers to previous questions, would have a significant negative impact on intra-day market liquidity.</p> <p>Energia therefore recommends that further careful consideration is given to the TSO approach to managing operating reserve under the I-SEM energy market design (and to TSO system management more generally) to ensure that the implemented approach does not undermine the proper functioning of I-SEM energy markets.</p> <p>In relation to the management of reserves, Energia recommends that changes to the dispatch level of committed plants to provide operating reserve should only be carried out via the balancing market after intra-day market gate closure.</p>
<p>2. Are there any market power issues that need to be specifically addressed in relation to System Services?</p>	<p>Energia suggest that an approach to local market power similar to the approach implemented in the BETTA market is considered and consulted upon as part of the I-SEM market power workstream.</p> <p>Energia would emphasise that while it is important to appropriately address local market power concerns in the I-SEM balancing market, a major focus of the market power workstream must be to appropriately manage ESB market dominance across I-SEM energy, capacity and ancillary service markets in the interest of sustaining conditions that support long term competition.</p> <p>Energia also recommend care is taken to ensure that local market power mitigation measures do not restrict the legitimate commercial activities of participants, undermining conditions for investment, long term competition and security of supply.</p>

	<p>Energia looks forward to constructive engagement in the I-SEM Market Power Mitigation workstream in the near future.</p>
<p>3. Which of the two approaches should be utilised where the TSOs have to schedule a plant before the opening of the Balancing Market:</p> <ul style="list-style-type: none"> • A system services framework would be used to contract with those generators that need to be scheduled prior to the BM opening. • The TSOs would use incremental offers and decremental bids from previous trading day to call a plant pre-BM. 	<p>In our answer to this question Energia again set out the risks of early TSO action, the need to minimise such intervention and the importance of ensuring any measures introduced to facilitate it are appropriate. We request that the I-SEM balancing market incentivises flexibility and facilitates multi-mode generators to offer their flexibility to the TSO. We set out our preferred approach to TSO actions prior to the opening of the balancing market and explain the issues with an ancillary services contract approach. Finally we request the introduction of safeguards to ensure the TSO only take actions prior to the opening of the balancing market in exceptional circumstances.</p> <p>TSO Action Prior to Opening of the I-SEM Balancing Market</p> <p>For the reasons previously discussed in this and other responses Energia recommends that early action by the TSO is minimised to ensure the proper functioning of the I-SEM energy markets. We also recommend that care is taken when designing provisions that facilitate intervention by the TSO prior to balancing market opening (which is already unorthodoxly early under the I-SEM energy market design) to ensure such measures are appropriate and proportionate to the system security risks they are designed to mitigate. Furthermore, in this specific instance, it is important that such measures do not undermine market incentives for provision of flexibility.</p> <p>I-SEM balancing market should incentivise flexibility</p> <p>As a general principle the I-SEM balancing market should incentivise and accommodate the provision of flexibility (see design principle 21 in section 5 above). Allowing the submission of multiple, simultaneous, but mutually exclusive, bids and offers to the I-SEM balancing market, would help deliver upon this objective and limit the requirement for early TSO action. This is discussed in more detail below.</p> <p>Accommodating multi-mode generators</p> <p>Energia observe that the notice periods of some units presented on p.96 of the Markets consultation paper are based upon their CCGT operating mode. Some of these units, however, can operate in different configurations – e.g. as OCGTs or multiple CCGT configurations. Allowing generating units to offer simultaneously the costs and technical parameters associated with their different operating modes would significantly increase the flexibility available to the TSO via the balancing mechanism. It would also reduce effective notice times and, thereby, potentially reduce the need for actions</p>

	<p>before balancing market opening. Furthermore, accommodating the possibility of transition from one operating mode to another (e.g. OCGT to CCGT) through the balancing market (allowing units to submit bids and offers that reflect the cost of transitioning from one operating mode to another) would further improve the provision of flexibility. For example, under the proposed approach the TSO could call a unit in OCGT mode quicker than dispatching them as a CCGT but retain the option to then subsequently switch that unit over to CCGT operations should it be required. Adopting such an approach would complement the policy objectives of DS3 to incentivise delivery of a more flexible generation portfolio to facilitate renewable targets.</p> <p>Energia strongly emphasises that the approach to multi-mode generators outlined above will only work if the balancing market design facilitates adequate commercial risk management for these units and delivers price signals that are sufficient to incentivise provision of such flexibility.</p> <p>Option 1: Ancillary services contracts</p> <p>Energia is concerned that implementation of ancillary services contracts would perversely incentivise inflexibility and make it too easy for the TSO to take action prior to the opening of the balancing market, which already opens unusually early under the market design. Furthermore, it would not make sense to fund such arrangements from the ancillary services budget. Such an approach would reduce the available funding for DS3 products, thereby undermining the policy objectives of the DS3 programme, in order to fund an energy market mechanism that is designed to accommodate inflexible generation. Therefore if ancillary service contracts were introduced, a decision we would not support, they would need to be funded via dispatch balancing costs.</p> <p>Option 2: Balancing market bids and offers</p> <p>Energia suggest a variant of option 2 but recommend that the price of an action taken by the TSO prior to balancing market opening is based upon the bids or offers subsequently submitted by the contracted generator for the period in question, as per the normal operations of the market design. This suggested approach would ensure adequate incentives for both participants and the TSO to act reasonably in such exceptional circumstances, but also maintain provision of adequate commercial risk management for generators (see design principles 17 and 19 in Table 5.3 in section 5 above). If there is a concern regarding local market power then this could be managed as proposed in our answer to question 2 above and question 2 in sub-section 2.11 below.</p>
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	<p>Need for safeguards</p> <p>If either of the options discussed above are introduced, Energia requests that they are accompanied by extensive safeguards to ensure they are only used by the TSO in exceptional circumstances, as they constitute actions that are outside the normal operating parameters of the market design.</p>
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2.9 IMBALANCE PRICING (SECTION 8)

Question	Answer
<p>1. What are your views on the Tagging and Flagging Approach. A “cause” based method for identifying energy and non-energy actions with the imbalance price being set only on energy actions.</p>	<p>Difficulty in providing a definitive answer</p> <p>Energia strongly emphasise that it is not possible to provide a definitive view on the appropriate approach to imbalance pricing without clarification of the frequency and type of TSO actions under I-SEM energy markets, and robust qualitative and quantitative analysis of the design proposals. The views expressed below therefore represent Energia’s current opinions and may be subject to change if further consultation on this matter is facilitated.</p> <p>Potential change in approach to imbalance pricing</p> <p>Energia would note that the “Tagging and Flagging” approach to imbalance pricing is clearly consistent with the I-SEM HLD decision (cross reference our answer to question 3 below) but we note a potential change in approach is being considered. Energia are concerned that this change is being precipitated by untested assumptions regarding the frequency and type of TSO actions under I-SEM energy markets. Therefore, before a decision can be taken on imbalance pricing in I-SEM, these assumptions must be verified. We therefore welcome the initiative by Eirgrid to model dispatch under the I-SEM energy market arrangements but caution that the modelling needs to accurately reflect the fundamental elements of the I-SEM energy trading arrangements (please cross reference our response to Eirgrid on this matter for further information).</p> <p>More fundamental issue with the energy market design?</p> <p>Energia would observe that if the volume of non-energy actions taken by the TSO meant that it was frequently the case that no imbalance price could be determined from the “Tagging and Flagging” approach, this would suggest a more fundamental issue with the energy market design. This is because it would imply extensive early action by the TSO which would undermine the proper functioning of I-SEM energy markets.</p> <p>Approach to “Tagging and Flagging”</p> <p>If as envisaged by the I-SEM HLD, a “Tagging and Flagging” approach to imbalance pricing is adopted Energia would emphasise the importance of ensuring appropriate incentives for the TSO to accurately flag and tag actions. We suggested this could be consulted upon in our answer to question 2 in sub-section 2.3 above. Energia also recommend that the rules</p>

	<p>around tagging and flagging of actions are consulted upon further and included as part of the balancing market principles discussed in our answer to question 2 in sub-section 2.2 above. Furthermore, that there is full transparency around TSO actions via the balancing market and regular audits of the TSO against the agreed I-SEM balancing market principles. This approach will help to ensure that there is robust price formation in the I-SEM balancing market under a “Tagging and Flagging” approach.</p> <p>Potential benefits of a “Tagging and Flagging” approach</p> <p>Subject to the extent of non-energy action by the TSO and the safeguards outlined in the paragraph above, Energia believe “Tagging and Flagging” is a workable option for imbalance pricing in the I-SEM. While it is difficult to comment definitively without any detailed analysis of the option, we believe “Tagging and Flagging” may be more likely to deliver the appropriate pricing signals required under the I-SEM energy market design (subject to the treatment of fixed costs which was discussed in our answer to question 2 in section 2.6 above). It also has the benefit of allowing early publication of the imbalance price, which provides useful, real-time information to the market regarding the position of the system, and therefore creates market incentives that should help reduce the volume of TSO action. We therefore suggest that this option is investigated further and request rigorous qualitative and quantitative analysis is completed by the balancing market working group requested in section 4 above.</p> <p>Potential drawbacks of a “Tagging and Flagging” approach</p> <p>The level of price volatility resulting from a “Tagging and Flagging” approach requires careful analysis and consideration as discussed in section 3.2 above. This is discussed further in our answer to question 5 below.</p> <p>Back-up approach to “Tagging and Flagging”</p> <p>Energia would caution that care needs to be taken if implementing a back-up option to “Tagging and Flagging” to ensure that the mechanism selected delivers the appropriate market price signals. This is because the periods when it is likely to be used (when there will be extensive non-energy actions by the TSO) are likely to coincide with periods of system stress. It is during these periods when delivery of appropriate market pricing signals is most important. We would therefore request further careful consideration of this matter.</p>
<p>2. What are your</p>	<p>Energia do not believe that the ‘Simple Stack’ option is a</p>

<p>views on the Simple Stack? With this approach there would be a simple stack of the available bids and offers and the price would be set based on the net imbalance volume.</p>	<p>suitable approach to imbalance pricing in the I-SEM. While it is difficult to comment definitively without any detailed analysis of the option, Energia believe it is unlikely to provide the appropriate pricing signals required under the market design, and therefore could undermine its integrity. For similar reasons we do not think it is an appropriate back up to the “Tagging and Flagging” approach (please cross reference the last paragraph of our previous answer). Energia would also note that it would not seem to be consistent with the I-SEM HLD. We discuss this further in our answer to question 3 below. We therefore do not believe it is appropriate to pursue this option further at the present time.</p>
<p>3. What are your views on the unconstrained stack with plant dynamics included. These are two additions that this option would have over the simple stack:</p> <ul style="list-style-type: none"> • Plant Dynamics • An optimisation time horizon 	<p>Difficulty in providing a definitive answer</p> <p>Energia would again emphasise that it is not possible to provide a definitive view on the appropriate approach to imbalance pricing without clarification of the frequency and type of TSO actions under I-SEM energy markets, and robust qualitative and quantitative analysis of the design proposals. The views expressed below therefore represent Energia’s current opinions, and may be subject to change if further consultation on this matter is facilitated.</p> <p>Rationale for change in approach to imbalance pricing?</p> <p>Energia are concerned that this approach to imbalance pricing is being suggested because of untested assumptions regarding the frequency and type of TSO actions under I-SEM energy markets. Therefore, as discussed in our answer to question 1 above, before a decision can be taken on the appropriate approach to imbalance pricing in I-SEM, these assumptions must be verified.</p> <p>The removal of the obligation on the TSO to account for dispatch decisions (tag and flag) would also seem to be a motivating factor in this proposal, which is a possible concern in the context of question 2 in section 2.3 above.</p> <p>Proposal is inconsistent with HLD</p> <p>Energia believe that introduction of an inter-temporal pricing algorithm, which this option would require, represent a fundamental change to the I-SEM high-level design decision; a move towards a hybrid form of option 2 as presented in the HLD consultation paper that was rejected by the SEM Committee. This view is evidenced by the quotes from the HLD Draft Decision, the HLD Final Decision and the Market consultation paper provided below.</p> <p>“6.4.45 ... The identification of energy and non-energy</p>

	<p>balancing actions will be a key feature of the balancing market. ... Therefore the TSOs will be required to put in place a system to identify energy and non-energy actions. This process is known as tagging and flagging in the current GB market.” P.47 Draft Decision Paper SEM-14-045</p> <p>And again:</p> <p>“4.5.17 The classification of energy and non-energy balancing actions will be a key feature of the balancing market. ... Therefore the TSOs will be required to put in place a system to identify energy and non-energy actions. “ P.16 SEM Committee Decision on High Level Design SEM-14-085a</p> <p>This compares with the rationale given in the Markets consultation paper supporting the implementation of a simple bid stack for the imbalance market.</p> <p>“The SEM Committee is of the view that there is potential merit in this option. In particular allowing the balancing energy price to be determined on the basis of bids and offers that could have been used to achieve energy balancing would eliminate the need to carry out detailed identification of the reasons for each action taken by the TSOs – which is a characteristic of the flagging and tagging approach.” P.112 Markets Consultation Paper SEM-15-026</p> <p>And again, in relation to a more complex algorithm:</p> <p>“The addition of plant dynamics and an optimisation time horizon should see this option becoming a much more robust option than the previous option. As with the simple stack it would eliminate the need to carry out detailed identification of the reasons for each action taken by the TSOs.” P.112 Markets Consultation Paper SEM-15-026</p> <p>Energia therefore conclude that this proposal is not consistent with the I-SEM HLD.</p> <p>Need for robust change process</p> <p>To protect the interests of I-SEM consumers, Energia would request that any changes to the HLD decision are identified as such and made subject to an open consultation through the normal regulatory process. This is to ensure that they do not undermine the overall integrity of the HLD; a significant risk if fundamental aspects of the HLD decision (e.g. the approach to the balancing market) can be changed on an ad hoc basis, in response to inadequately assessed implementation problems.</p> <p>Potential benefits of a ‘Complex Stack’ approach</p>
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	<p>The main benefit of this approach would seem to be that it could be used if “Tagging and Flagging” cannot be made to work, which in turn is dependent upon the volume of non-energy action by the TSO. The appropriateness of the approach would very much depend upon the configuration of the algorithm. As set out in question 2 in sub-section 2.6 above, the algorithm would have to include fixed costs in the imbalance price to ensure appropriate market price signals are produced (see Table 5.4 in section 5). It is also possible that the imbalance price may be easier to forecast under this option but this would be subject to the algorithm used.</p> <p>Potential draw-backs of a ‘Complex Stack’</p> <p>The main drawback of the approach is that it may not provide appropriate incentives for the market to encourage self-balancing. Depending on how the algorithm is configured, and its optimisation horizon, it could significantly dampen the price signal which in turn may have negative consequences for liquidity in ex-ante markets (again see Table 5.4 in section 5). Another issue is that the inter-temporal nature of the algorithm may result in a significantly delay to the publication of the imbalance price. This would further weaken incentives on the market to trade in a direction that will assist the TSO and therefore may result in the need for increase TSO early action. While it may be easier to forecast the imbalance price under this option, this will depend upon the configuration of the algorithm. It may turn out that the algorithm is, in effect, a “black box”. If the algorithm is not easily configurable it may also make it more difficult to manage price signals from the balancing market compared to the “Tagging and Flagging” approach, where a PAR could be introduced (see our answer to question 5 below). The removal of the requirement on the TSO to appropriately account for dispatch decision through tagging and flagging is also a concern in the context of question 2 in section 2.3 above.</p> <p>Next Steps</p> <p>Energia believe further consideration, including more detailed analysis of this option, would be prudent given the potential issues extensive TSO non-energy actions may cause for the “Tagging and Flagging” approach. However, we would note that such action is likely to cause other fundamental issues for the I-SEM energy markets, as has been discussed throughout this response. While it is difficult to comment definitively on the matter without any detailed analysis of the option, introducing the ‘Complex Stack’ approach to imbalance pricing may just compound the issues associated with TSO early action; i.e. result in weaker balancing incentives on participants, reducing liquidity in ex-ante markets and</p>
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	<p>therefore reinforcing the continuing requirement for extensive early TSO intervention via the balancing market. This seems contrary to the intent of the I-SEM HLD and therefore Energia would strongly recommend that the approach to imbalance pricing in I-SEM needs further, very careful, consideration to ensure an appropriate balancing is struck across design principles 23 to 26 set out in section 5 of this response.</p>
<p>4. What are your views on the price based method – unconstrained unit from actual dispatch?</p>	<p>Difficulty in providing a definitive answer</p> <p>Energia would again emphasise that it is not possible to provide a definitive view on the appropriate approach to imbalance pricing without clarification of the frequency and type of TSO actions under I-SEM energy markets, and robust qualitative and quantitative analysis of the design proposals. The views expressed below therefore represent Energia’s current opinions, and may be subject to change if further consultation on this matter is facilitated.</p> <p>Rationale for change in approach to imbalance pricing?</p> <p>Energia is concerned that this approach to imbalance pricing is again being suggested because of untested assumptions regarding the frequency and type of TSO actions. Therefore, as discussed in our answer to question 1 above, before a decision can be taken on the appropriate approach to imbalance pricing in I-SEM, these assumptions must be verified.</p> <p>The removal of the obligation on the TSO to account for dispatch decisions (tag and flag) would also, again, seem to be a motivating factor in this proposal, which is a possible concern in the context of question 2 in section 2.3 above.</p> <p>Proposal is inconsistent with HLD</p> <p>While closer to the intent of the HLD than the ‘Simple Stack’ and ‘Complex Stack’ options, Energia, again, believe that introduction of a ‘Constrained Stack’ approach represent a change to the I-SEM HLD decision which explicitly referenced the requirement for the TSO “... to put in place a system to identify energy and non-energy actions.” P.16 SEM Committee Decision on High Level Design SEM-14-085a</p> <p>Potential benefits of a ‘Constrained Stack’ approach</p> <p>Energia view this approach as being closer in principle to the “Tagging and Flagging” approach. However, the appropriateness of the approach would very much depend upon the performance of the algorithm. As set out in question 2 in sub-section 2.6 above, the algorithm would have to include fixed costs in the imbalance price to ensure</p>

	<p>appropriate market price signals are produced (see Table 5.4 in section 5).</p> <p>Potential draw-backs of a ‘Constrained Stack’</p> <p>The main drawback that Energia see with the approach is the potential for I-SEM imbalance pricing to be a “black box”. Given the possibility of extensive early non-energy action by the TSO, and therefore potentially a large number of constrained generators, it may be very difficult for participants to work out where the imbalance price is coming from. At least under the “Tagging and Flagging” option, if the approach is clearly defined and balancing market bid / offer acceptances published, participants, can, in principle, work out how the price is set. Extensive non-energy action may also cause problems for the stable operation of this type of algorithm, and therefore rigorous testing, under I-SEM conditions, would need to be carried out. If the ‘Constrained Stack’ pricing algorithm is not easily configurable, it may also make it more difficult to manage price signals from the balancing market compared to the “Tagging and Flagging” approach, where a PAR could be introduced (see our answer to question 5 below).</p> <p>Next Steps</p> <p>Energia believe further consideration, including more detailed analysis of this option, would be prudent given the potential issues extensive TSO non-energy actions may cause for the “Tagging and Flagging” approach. However, we would note that such action is likely to cause other fundamental issues for the I-SEM energy markets as discussed throughout this response.</p> <p>Furthermore, Energia believe the introduction of a ‘Constrained Stack’ approach to imbalance pricing is a change to the I-SEM HLD and we would therefore suggest the need for an open consultation on this change as per normal regulatory process.</p>
<p>5. What are your views on the sharpness of the marginal imbalance price? Do any concerns relate to the transition between SEM and I-SEM or are there other broader concerns?</p>	<p>In response to this question Energia references the potential effect of early TSO action on imbalance pricing. We provide qualified support for further consultation on potential transitional measures around imbalance price volatility, and recommend the approach to imbalance pricing is determined prior to any decision regarding a transitional measure.</p> <p>Interaction between TSO early action and imbalance prices</p> <p>Energia would ask the reader to cross reference section 3.2 of this response and balancing principles 23 to 26 in Section 5 above.</p>

	<p>As set out in these sections the uncertainty relating to the frequency and type of early TSO actions under I-SEM arrangements complicates the discussion around the appropriate price signals (level of volatility) emanating from the I-SEM balancing market.</p> <p>Transitional Mechanism</p> <p>Energia, however, further acknowledge that there may be a need to manage volatility in imbalance prices on a transitional basis, at least until participants have significant operational experience of the new market dynamics, and we would therefore support further consultation on this area. We note that under a “Tagging and Flagging” approach to imbalance pricing one approach to this would be to set a PAR value. However, if any such approach was adopted, care would need to be taken to ensure the mechanism did not become habitual or, through excessive dampening of the imbalance price, re-enforce the need for extensive early TSO actions. The design of any potential transitional mechanism would also have to carefully consider any potential effects the mechanism may have on revenue adequacy for balancing market participants.</p> <p>Next Steps</p> <p>Energia emphasise that prior to taking a decision on transitional measures further consultation on the approach to imbalance pricing, supported by robust qualitative and quantitative analysis, is required to ensure that the mechanism selected is appropriate for I-SEM. Until the imbalance pricing mechanism is selected it is not possible to determine what transitional measures, if any, are required. Furthermore, the approach selected for imbalance pricing, should, if possible, not materially restrict the ability for transitional measures to be introduced.</p> <p>Furthermore, Energia believe the introduction of a ‘PAR type mechanism’ represents a change to the I-SEM HLD and we would therefore suggest the need for an open consultation on this change as per normal regulatory process.</p>
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2.10 IMBALANCE SETTLEMENT (SECTION 9)

Question	Answer
1. What are your views on the issues set out in the imbalance	<p>Need to address fundamental design issues</p> <p>Energia request that the fundamental issues pertaining to the frequency and extent of early TSO action and the design</p>

<p>settlement section?</p>	<p>philosophy of the I-SEM energy trading arrangements, summarised in section 2.3.2 and 2.3.3 above, are addressed prior to determining the appropriate settlement algebra for the I-SEM spot energy markets. This is because such clarification may have the potential to significantly simplify the algebra. For example, if the intent of the design is for a centrally scheduled and dispatched market, this can be achieved by means of a market rule linking PNs to ex-ante contract positions, removing the need for algebra that make the payment of discounts / premiums on balancing market bids / offers relative to ex-ante contract positions, which seems to be designed to prevent self-scheduling. We however note the potential issues regarding the provision of inadequate risk management for generators and other concerns under linked PN approaches (discussed in section 2.3.3 of this response), and cross reference our comments relating to the requirement for tolerances in our answer to question 3 in section 2.5 above, and the ability to manage shape through the imbalance market in question 3 below. The ability to manage imbalance risk associated with potentially technical infeasible schedules from EUPHEMIA will also depend on liquidity levels in the intra-day market which, as discussed throughout this response, in turn may be negatively affected by extensive early TSO intervention.</p> <p>Risk of unintended consequences</p> <p>Energia would emphasise that providing clarity in relation to the fundamental principles of the energy market design will also help to guard against the introduction of unintended and undesired incentives through the settlement algebra. We note the recent issues caused by make whole payments under the current SEM trading arrangements following the introduction of intra-day trading.</p> <p>High-level comments on settlement algebra</p> <p>Some areas that require further consideration in relation to the settlement algebra include:</p> <ul style="list-style-type: none"> • Consistency with stated principles. We are not sure the algebra supports the principle stated in the Building Blocks consultation and revised on P138 in section 9.7 of the Markets consultation as payment of discounts / premiums on bids / offers are relative to ex-ante contract position and not PN – see 9.3 a and 9.3 b. • Algebra needs to accommodate the possibility of multiple intra-day and balancing market trades <p>Settlement of curtailment</p> <p>For our views on settlement of curtailment for wind units please cross reference section 3.4 in our response to the Building</p>
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	<p>Blocks consultation.</p> <p>The settlement of constraints for generators with priority dispatch</p> <p>For our views on the settlement of constraints for generators with priority dispatch please cross reference sections 3.1.6 and 3.3 in our response to the Building Blocks consultation paper.</p> <p>Uninstructed imbalances</p> <p>For our views on uninstructed imbalances please cross reference our answer to question 4 in sub-section 2.5 above.</p> <p>Settlement granularity</p> <p>Energia would prefer a half-hourly settlement granularity but care needs to be taken to ensure there are not future compliance issues with the European Target Model.</p>
<p>2. What are your views on the refined proposal whereby the payment rule applies only to incremental offer acceptance volumes above the PN and to decremental bid acceptance volumes below the PN?</p>	<p>Need to address fundamental design issues</p> <p>Energia request that the fundamental issues pertaining to the frequency and extent of early TSO action and the design philosophy of the I-SEM energy trading arrangements, summarised in section 2.3.2 and 2.3.3 above, are addressed prior to determining the appropriate settlement algebra for the I-SEM spot energy markets. We therefore do not comment in detail on this section.</p> <p>Concerns regarding settlement of bid / offer acceptances by TSO</p> <p>Energia is concerned that the proposed settlement of bid offer acceptances by the TSO implied within this section may not facilitate participants to adequately manage their commercial risks. We therefore request further analysis of and consultation on this area to ensure the appropriate approach is selected for I-SEM.</p> <p>General comment on settlement algebra</p> <p>Energia believe that the appropriate settlement algebra for I-SEM will be much easier to determine once there is more clarity on the emerging energy market design.</p>
<p>3. What are your views on the possible consequences of ex-ante trades</p>	<p>Energia is concerned that the granularity of trading products on the XBID platform may be greater than the settlement time period adopted for the I-SEM balancing market. Assuming XBID is the exclusive trading platform for the I-SEM intra-day market this would significantly undermine the ability of I-SEM</p>

<p>based on trading periods of different duration to the Imbalance Settlement Period (ISP) and what are your views on the options put forward in the paper.</p>	<p>participants to adequately manage shape, and therefore their imbalance exposure. Hence we request that further careful consideration is given to these issues to ensure the I-SEM energy market design does not contravene design criteria 4 as set out in section 2.2 of this response.</p> <p>Energia are concerned that some of the implementation issues with the detailed design are a result of using European platforms as the core trading systems for the I-SEM market. The European platforms have been designed (in the case of XBID, are being designed) to perform a macro function, optimising trade across interconnectors between European markets, not to deliver core underlying market functionality for a centrally scheduled and dispatched market. We believe the approach adopted for I-SEM therefore presents significant risk for the I-SEM design and therefore request that the issue is given further careful consideration.</p> <p>While the issue may be able to be addressed by means of settlement rules (or supplier / generator PN submissions) we believe in principle that the market design should facilitate participants to trade at a granularity that adequately allows them to manage their exposure to imbalance prices – see design criteria 4 in section 2.2 above. Furthermore, care would need to be taken if managing this issues by means of a settlement rule that the mechanism does not result in unmanageable residual imbalance exposure for participants (see principle 20 in section 5 above).</p>
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2.11 OTHER ISSUES (SECTION 10)

Question	Answer
<p>1. Global Aggregation – what are your views on the current policy and the three alternative options put forward in the paper for dealing with global aggregation</p>	<p>Market rules should not create unmanageable commercial risk for participants. Furthermore, financial incentives (or penalties) within the market rules should aim at improving the overall efficiency of the market, and should be targeted at the parties responsible for the actions or behaviours that can bring the intended improvement in market efficiency about. In relation to global aggregation, Energia note that the first two options presented in the consultation paper fail on both of these counts.</p> <p>Unmanageable commercial risk</p> <p>Energia would emphasise that under option 1 and option 2 suppliers are unable to forecast their allocation of the errors associated with global aggregation, and therefore are unable to effectively hedge these through retail prices. Therefore, the global aggregation error under these options is converted into an unmanageable commercial risk, and therefore cost. Energia notes that this risk is likely to increase under I-SEM arrangements due to more volatile imbalance pricing and therefore we do not believe option 1 or option 2 are appropriate mechanisms to deal with the global aggregation error.</p> <p>Lack of appropriate incentives</p> <p>The error associated with global aggregation is a result of a number of component elements outside the control of suppliers. These include the accuracy of TLAFs, DLAFs and metering profiles, as well as other issues such as unmetered supplies and theft. Therefore, to transfer the cost of the error associated with global aggregation onto suppliers, as suggested under option 1 or option 2, does not provide the transparency, and consequently, the appropriate incentives for the parties responsible for the component errors to minimise them and therefore bring a greater overall market efficiency about. In fact, the lack of appropriate incentives on these parties under option 1 or option 2 is likely to increase the inefficiency around global aggregation. Energia, therefore, does not support implementation of either option1 or option 2 to deal with the global aggregation error under I-SEM.</p> <p>Recommend implementation of option 3a)</p> <p>Energia recommend that option 3a) is implemented for the I-SEM. This approach will provide the appropriate market</p>

	<p>incentives and will ensure that the cost of the global aggregation error can be appropriately managed by suppliers. We would emphasise, however, that the duration of the tariff would need to be annual to better align with retail contract sales.</p> <p>Energia believe the volume based approach 3b) should be avoided as it is likely to distort TSO actions and therefore balancing market pricing.</p>
<p>2. Local Market Power – What are your views on whether there are any specific issues in relation to local market power which need to be considered at this stage.</p>	<p>Please cross reference the high-level design principles in Text Box 5.6 in section 5 of this response and our answer to question 2 in section 2.8 above.</p> <p>Energia suggest that an approach to local market power similar to the approach implemented in the BETTA market is considered and consulted upon as part of the I-SEM market power workstream. Such an approach would have limited impact on central systems other than the need for transparent reporting of market information.</p> <p>Energia would stress that the principle of revenue adequacy must be considered in relation to the debate on local market power. If a generator does not secure a capacity contract under the I-SEM CRM, receives minimal revenues from DS3 but is required for system support reasons, then Energia would emphasise that it is perfectly legitimate for that generator to recover both its fixed and variable costs, and achieve a reasonable rate of return, via I-SEM spot energy markets. Therefore, determination of whether local market power is being exercised must take these considerations adequately into account.</p> <p>Energia would emphasise the importance of taking a holistic approach to market power mitigation across I-SEM markets and would caution against a lopsided focus on any one specific area (e.g. local market power). A major objective of the market power workstream must be appropriate management of ESB market dominance across I-SEM energy, capacity and ancillary service markets in the interest of sustaining conditions that support long term competition.</p> <p>Energia looks forward to constructive engagement in the I-SEM Market Power Mitigation workstream in the near future.</p>
<p>3. Metering – What are your views on the proposal for metering put forward in the</p>	<p>Energia emphasise that the provision of timely and accurate meter data is a fundamental market requirement and therefore support the proposal for industry consultation on ‘market facing issues’. We also support the proposal for dedicated workshops but request that participant representation is accommodated (e.g. for suppliers) to ensure all potential</p>

<p>Consultation Paper.</p>	<p>'market facing issues' are identified, and therefore consulted upon.</p>
<p>4. Instruction Profiling – What are your views on the instruction profiling section. In particular, is it feasible to more accurately model the precise loading of units and whether more technical characteristics need to be accommodated in the technical offer data.</p>	<p>It is essential that the I-SEM energy market rules do not impose unmanageable commercial risk on participants. We would therefore welcome further discussion on the role and approach to instruction profiling under I-SEM.</p> <p>From operational experience of the SEM we have observed that the current market rules do not accommodate provision of flexibility by multi-mode generators. In particular, under the current SEM it is not possible to submit multiple, mutually exclusive commercial and technical offer submissions that represent the different potential operating modes of a unit. This limitation in the current SEM systems and market rules prevents generators from offering their full flexibility to the TSO, and we would strongly recommend that the design of the I-SEM balancing market does not impose the same restrictions. For a more detailed discussion of the benefits of accommodating multi-mode generators please see our answer to question 3 in sub-section 2.8 above.</p> <p>In relation to the modelling of loading profiles, Energia suggests the inclusion of additional heat states. We recommend an increase in the number of heat states from the current 3 (e.g. hot, warm and cold) to 9 (e.g. 3 hot, 3 warm and 3 cold), with each state accruing its own set of loading rates, soak times, etc. Such an approach would greatly improve the ability of CCGTs to accurately reflect their loading profiles, given the relationship between these and the residual heat state of the unit, and therefore help them to avoid unnecessary imbalance exposure under I-SEM energy trading arrangements. This recommendation is based upon thirteen years of operational experience in the original RoI, and subsequent SEM, electricity markets.</p>
<p>5. Units Under Test – What are your views on the two options put forward for units under test in I-SEM.</p>	<p>Energia would emphasise the need for flexible arrangements with regards to generator testing provisions under I-SEM. These include:</p> <ol style="list-style-type: none"> 1. Where possible, quicker response times from the TSO on securing test dates. 2. Shorter lead times for setting and removing test flags. 3. Ability to set test flags per period as well as per day. 4. Reduced commercial exposure for generators when testing (e.g. by setting test flags per period). <p>We would also welcome a review of the testing tariffs and methodology to ensure consistency with I-SEM energy market arrangements.</p> <p>Energia would appreciate further clarification of the testing</p>

	<p>options presented in the paper in terms of their implication for switching between ‘on test’ status and commercial operations. This is linked to the treatment of test flags. It is important that generators can easily extend test flags if return to service after an outage is delayed, or switch back quickly to commercial operation once an outage has completed. Subject to the treatment of test flags, we would have a concern if Option 1 locked participants out of the commercial participation in the balancing market on return from outage – e.g. if test flags were of daily duration. Option 2 in this instance may provide participants with more flexibility assuming they could easily update their bids and offers to the balancing market. It remains unclear under both options what would happen if generators were moved from their test profile by the TSO. We would therefore welcome further consultation on this matter.</p>
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7. Other comments

The consultation paper request views from respondents on a number of topics not captured in the questions in section 4 above. Energia provides its views on these areas below. We also provide views on other areas not directly covered in the consultation.

7.1 Granularity of Physical Notifications

To facilitate accurate settlement and to provide generators with sufficient flexibility to manage commercial risks associated with technically infeasible ex-ante contract positions, Energia suggest that the granularity of PN submissions should be minute by minute. The possibility of implementing some form of linear interpolation rules or profiling rules could be considered however to minimise the data points that are required to be submitted to the TSO.

7.2 Efficiency of early TSO action under PN options

Energia would emphasise that the implicit assumption made when discussing linked and de-linked PN options that provision of early information to the TSO will necessarily result in efficient early action is unwarranted in the context of a continuously traded market and therefore requires further careful consideration.

The efficiency of early TSO action will depend upon the accuracy of the PNs received by the TSO prior to gate closure relative to the corresponding FPNs. If the discrepancy is significant then early action is likely to prove to be inefficient due to the resulting subsequent changes to PNs. We would strongly emphasise that implementation of an imbalance charge will not improve the quality of the information received by the TSO. Please cross reference our answer to question 4 in section 6, sub-section 2.5 above.

The other extreme (that the TSO lock down the system early by trading generators into fixed positions and freezing PNs) would make it extremely difficult for the demand side to balance positions unless the TSO traded the resulting energy positions back through the intra-day market. Under this extreme scenario, however, the TSO would be effectively managing the intra-day price. Given the difference between the intra-day market price and the balancing market price will determine the cost of managing constraints the TSO will be incentivised to sell higher than its cost of purchase and buy lower than its revenue from sales distorting intra-day market price formation and trade dynamics.

Energia would therefore again emphasise that the approach the TSO takes to dispatching the system under the I-SEM design is of fundamental importance to the integrity of the I-SEM energy market design philosophy and therefore request that these issues are given further serious consideration by the SEM Committee in the interests of I-SEM consumers.

7.3 Other issues not covered in the ETA consultation process

In this section Energia provides views on a number of important energy market design areas not directly consulted upon in either the Building Blocks or Markets consultations. Energia request that these areas are consulted upon before a final decision on the I-SEM energy trading arrangements is taken.

7.3.1 Participant registration

Energia recommend implementation of a simple, flexible and expedient registration process. This would seem to be most easily facilitated by a single point of contact for registration across I-SEM markets. We also request that the concept of an intermediary is maintained under I-SEM arrangements to facilitate market access.

7.3.2 Clearing and settlement

Energia accept that settlement terms for ex-ante spot markets are likely to be determined by European requirements. However, we request that the SEM Committee are mindful of the increase in working capital required to manage daily settlement activities and suggest that this overhead is taken into account in the design of other areas of the I-SEM. We suggest that the introduction of a single central clearing party, operating across all I-SEM markets (including forward contract markets and the capacity market), should be considered to facilitate the netting of participant positions for settlement purposes. This would help reduce the cost of participating in I-SEM markets, reduce barriers to new entry and ultimately lower costs to consumers.

7.3.3 Collateral Requirements

Energia request that care is taken to balance collateral requirements against increases in working capital. In general, Energia would prefer a longer settlement timeline to reduce working capital requirements, providing appropriate collateral requirements are introduced. We would emphasise that it is important to strike an appropriate balance between minimising the burden of collateral on participants against maintaining sufficiently robust credit cover to ensure the financial security of the I-SEM. Energia therefore request that other forms of credit cover are considered (other than cash or Letter of Credit) such as Credit Insurance, or Parent Company Guarantees. Facilitating other forms of credit cover could help lower the cost of participating in the I-SEM, without necessarily undermining the financial security of the market.

7.3.4 Treatment of VAT

Energia request that there is early engagement with VAT authorities to provide clarity for participants regarding their obligations under I-SEM arrangements and to ensure appropriate ratification of implementation decisions.

8. Conclusions

Energia strongly supports best regulatory practice which, in conjunction with the Third Directive, requires regulatory decisions to be fully reasoned and justified based on strong evidence and supported by impact assessments where appropriate. Adherence to such best practices enhances the reliability, suitability and transparency of regulatory decisions which is in the overwhelming interest of the consumer.

Given the significance of the I-SEM market rule changes, the lack of rigorous analysis to support presented design options, combined with the fundamental nature of the issues highlighted in this response, it is difficult to envisage how a Final Decision on I-SEM energy trading arrangements in September could be consistent with best regulatory practice and requirements under the Third Directive. It is imperative, therefore, consistent with the views of EAI, that the SEM Committee move to a Proposed Decision in advance of a Final Decision to facilitate the further work that is required on the I-SEM energy trading arrangements (e.g. full and detailed analysis of design proposals and further significant, informed industry engagement and consultation).

The current unrealistic implementation timeline for I-SEM has also hindered best regulatory practice and fulfilment of Third Directive requirements. A more realistic implementation timeline is therefore warranted in the overwhelming interest of the consumer.