Integrated Single Electricity Market (I-SEM)

Complex Bid Offer Controls in the I-SEM Balancing Market

Decision Paper

SEM-17-020

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ACRONYMS

BCOP: Bidding Code of Practice

BM: Balancing Market

BMPCOP: Balancing Market Principles Code of Practice

BOA: Bid Offer Acceptance

CER: Commission for Energy Regulation

COD: Commercial Offer Data

CMA: Competition & Markets Authority

CPM: Capacity Payment Mechanism

CRM: Capacity Remuneration Mechanism

DAM: Day Ahead Market

DS3: Delivering a Secure Sustainable Electricity System

EBNC: Electricity Balancing Network Code

EOH: Equivalent Operating Hours

ETA: Energy Trading Arrangements

ETS: Emissions Trading Scheme

FCO: Forward Contracting Obligation

GTC: Gas Transportation Capacity

IDM: Intra Day Market

IEHC: Ireland High Court

IPP: Imbalance Pricing Period

I-SEM: Integrated Single Electricity Market

ISP: Imbalance Settlement Period

LNAF: Long Notice Adjustment Factors

LTS: Long Term Schedule

MWh: Mega Watt hour

PN: Physical Notification

PQ: Price Quantity

RAs: Regulatory Authorities

RO: Reliability Option

RoCoF: Rate of Change of Frequency

RTC: Real Time Constraint

SCED: Security Constrained Economic Dispatch

SCUC: Security Constrained Unit Commitment

SEM: Single Electricity Market

SNSP: System Non Synchronous Penetration

SRMC: Short Run Marginal Cost

TFEU: Treaty on the Functioning of the European Union

TSO: Transmission System Operator

UK: United Kingdom

VOM: Variable Operating and Maintenance

1 EXECUTIVE SUMMARY

1.1 The current policy underpinning the market power mitigation strategy in the Single Electricity Market (SEM) is partially based on bidding principles for generators, which require generators to bid cost reflectively.

1.2 As part of the implementation of the bidding framework, the Regulatory Authorities (RAs) published in 2007 a Bidding Code of Practice (BCOP), (AIP-SEM-07-430). This was subsequently updated by the RAs, with the latest version of the BCOP published in 2014 (SEM-14-019).

1.3 The I-SEM Market Power Mitigation Decision Paper (SEM-16-024) confirmed that the wording of the existing bidding principles will be considered by the SEM Committee prior to the introduction of a relevant licence condition, which will be required to facilitate compliance with the principles. Additionally, the Market Power Mitigation Decision Paper confirmed, inter-alia, that:

- no ex-ante bidding controls will be applied to the bids and offers submitted by market participants in the Day Ahead Market (DAM) and the Intra-Day Market (IDM) - Section 8.13.1;

- energy actions based on simple incremental and decremental bids and offers submitted to the Balancing Market (BM) at gate closure will have no explicit ex-ante bidding controls, but the SEM Committee will, by developing a framework, implement ex-ante bidding controls either on individual participants or across the wider market if observed behaviour is deemed to warrant this - Section 8.17.5; and

- non-energy actions will be settled based on their 3-part offers, which will have an explicit ex-ante bidding control applied to them - Section 8.17.1 and Section 8.17.2.

1.4 On the 7 October 2016, the SEM Committee published a Consultation Paper "*Offers in the I-SEM Balancing Market*" (SEM-16-059), which considered two options for applying bidding controls to complex bid offer data in the I-SEM Balancing Market. Option 1 was named Offer Principles, and Option 2 was named Offer Limits.

1.5 Following the closure of the six week consultation window (i.e. 18 November 2016), the RAs participated in bilateral meetings with stakeholders (specifically, from 7-9 December 2016).

1.6 Subsequent to a consideration of responses received to the Consultation Paper "*Offers in the I-SEM Balancing Market*" and feedback received at scheduled bilateral meetings, the SEM Committee has prepared this Decision Paper "*Complex Bid Offer Controls in the I-SEM Balancing Market*".

1.7 This Decision Paper informs stakeholders of the SEM Committee's decision to proceed with an amended version of Option 1 – Offer Principles, which is based on the existing principle in the SEM that the applicable bid of a generating unit represents its Short Run Marginal Cost (SRMC).

1.8 The I-SEM is a fundamentally different market to the SEM. In the SEM, generators are mandated to bid their SRMC into the energy market for all of their output, and have an opportunity to recover their fixed costs through energy rents and the capacity market. There exists no scope for a generator to develop an independent bidding strategy outside of what is permitted in the licence and BCOP. In the I-SEM, generators will have the freedom to include any cost they deem necessary (subject to the requirements of REMIT) within their COD, with the exception of the complex bid offer data. Decisions made in the following paper will therefore only be applied to complex bids and offers. No bidding controls shall be applied to any other bid and offer submissions.

1.9 The rationale for the application of complex bid offer controls, principally to non-energy actions (identified through the tagging and flagging process) taken by the TSOs, is to mitigate against the potential for abuse of temporal and locational market power arising from constraints on the electricity system. The SEM Committee also considers that the mitigation of market power risks in respect of non-energy actions is sufficiently important to justify the application of ex ante controls to the single set of complex bid offer data submitted by generators (and, thus, also to 'early energy' actions).

1.10 The SEM Committee note that some market participants have argued that there may be a specific issue with regard to plant which is both selected in the capacity mechanism to meet local capacity requirements and that are constrained-on in the Balancing Market to meet system constraints to a very material degree, or only runs when constrained-on.

1.11 In this regard the SEM Committee recognises that this issue needs to be considered further and there may be a need to put in place targeted contracting mechanisms to address local security of supply requirements which may emerge after the auction. This possible need for contracting flexibility was recognised in the SEM-16-081 (CRM Locational Issues Decision paper) and SEM-14-108 (DS3 System Services Procurement Design and Emerging Thinking Decision paper). The SEM Committee, along with the TSOs, will continue to consider the need for an appropriate framework for any such mechanism. These considerations will

take account of the overall energy, capacity and system services market framework and relevant Grid Code requirements. Further information will be provided on this over the coming months.

1.12 By implementing an amended version of Option 1, the SEM Committee is also approving the governance approach envisaged in the Consultation Paper in terms of which the new licence condition would prescribe fewer matters than the existing "Cost Reflective Bidding in the Single Electricity Market" generation licence condition and more matters (e.g. a revised definition of SRMC) being included in a new Balancing Market Principles Code of Practice (BMPCOP) document for I-SEM.

1.13 With reference to the definition of SRMC, the SEM Committee has decided that under I-SEM the definition of SRMC will be based on per MW change in output (nominally determined over 1 MW range). The time period for the calculation of a generation unit's SRMC will be over one Imbalance Settlement Period (ISP).

1.14 This Decision Paper focuses on a number of potential cost items that a generating unit may attempt to incorporate in their complex bid offer data when participating in the I-SEM BM including Variable Operating and Maintenance (VOM) costs, foregone revenue, risk and Gas Transportation Capacity (GTC) costs. Specifically, this Decision Paper provides the SEM Committees decision as to whether such cost items are eligible for inclusion in a generating units complex bid offer data in the I-SEM BM.

1.15 Regarding the recovery of VOM costs within the I-SEM BM, the SEM Committee accepts that some maintenance costs may vary with the level of a generation unit's output on the basis that increased running may bring forward the next maintenance event for a generation unit. Therefore, generating units will be allowed to include their VOM costs when submitting their complex bid offer data in the I-SEM BM.

1.16 With reference to foregone revenue, the SEM Committee considered whether an expectation of future revenue foregone as a result of a dispatch instruction should be included in a generation units complex bid offer data in the I-SEM BM. Following a consideration of respondents' comments, the SEM Committee has decided that such foregone revenue will be permitted for inclusion in the complex bid offer data of energy limited generation units. However, elements of revenue such as capacity revenue are not permissible for inclusion in any generation units complex bid offer data in the I-SEM BM.

1.17 Having considered whether an expectation of foregone DS3 revenue may be part of a generation unit's complex bid offer data, the SEM Committee has decided that in certain circumstances some DS3 products can be considered as

forgone revenue. Consequently, in certain circumstances, a generation unit may discount or add on the revenue foregone to parts of their complex bid offer data.

1.18 In relation to the treatment of risk as a cost item, the SEM Committee has decided that risk should not be eligible for inclusion in generating units complex bid offer data in the I-SEM BM. The SEM Committee does not consider that risk to plant and equipment, or risk of incurring penalties, are marginal cost items. With regard to risk of damage to plant and equipment, the SEM Committee believes that this is best mitigated through the appropriate maintenance and insurance. As noted above the SEM Committee has allowed the recovery of variable maintenance costs as an eligible cost item in complex bid offer data. Additionally, the SEM Committee is of the view that penalties should not be permitted for inclusion in generation unit's complex bid offer data in the I-SEM BM, as their inclusion would weaken the incentives for a generation unit to incentive to operate efficiently that the penalties were designed to instil.

1.19 With reference to the inclusion of long term GTC costs in a generating unit's complex bid offer data in the I-SEM BM, the SEM Committee has decided not to proceed with a proposal within the Consultation Paper that considered allowing the inclusion of long term GTC costs in the complex bid offer data of generation units. The commodity element of GTC costs will be permitted for inclusion in complex bid offer data, as will any GTC capacity purchased within day.

1.20 The RAs will separately consult upon the details of the new licence condition regarding the cost reflectivity of complex bid offer data. Additionally, there will be a further consultation by the SEM Committee on the text of the BMPCOP document for I-SEM, which will also allow respondents an opportunity to comment on any related issues that have not been consulted on by the SEM Committee to date.

2 INTRODUCTION

2.1 BACKGROUND

2.1.1 The current policy underpinning the market power mitigation strategy in the Single Electricity Market (SEM) is partially based on bidding principles for generators. These bidding principles require generators to bid cost reflectively.

2.1.2 As part of the implementation of the bidding framework, the Regulatory Authorities (RAs) published in 2007 a Bidding Code of Practice (BCOP), (AIP-SEM-07-430), which was subsequently updated by the RAs, with the latest version of the BCOP published in 2014 (SEM-14-019).

2.1.3 In preparation for I-SEM Go-Live (i.e. May 2018), the SEM Committee reviewed current market power arrangements in the Single Electricity Market (SEM). As part of this review, the SEM Committee published an I-SEM Market Power Mitigation Discussion Paper (SEM-15-031), Market Power Mitigation Consultation Paper (SEM-15-094) and a Market Power Mitigation Decision Paper (SEM-16-024).

2.1.4 Within the I-SEM Market Power Mitigation Decision Paper, the SEM Committee outlined the framework (e.g. ex-ante bidding controls, Forward Contracting Obligations - FCOs, ring fencing, REMIT[1]) that will be applied to mitigate wider market power in the energy markets that make up the I-SEM.

2.1.5 With reference to ex-ante bidding controls, the I-SEM Market Power Mitigation Decision Paper (Section 8.13.1) confirmed that these will not apply to bids and offers submitted by market participants for use in the Day Ahead Market (DAM) and the Intra-Day Market (IDM). However, in relation to the Balancing Market (BM)[2], the I-SEM Market Power Mitigation Decision Paper confirmed that:

[1] REMIT pertains to Regulation (EU) No 1227/2011 on wholesale energy market integrity and transparency.

[2] The Electricity Balancing Network Code (EBNC) defines the Balancing Market as the market for balancing capacity and energy that is utilised post 'Balancing Energy Gate Closure Time' (one hour ahead of the delivery hour). Prior to the 'Balancing Energy Gate Closure Time' the Transmission System Operators (TSOs) will schedule and dispatch participants to manage system security.

- energy actions[3] based on simple incremental and decremental bids and offers submitted into the BM will have no explicit ex-ante bidding controls, but the SEM Committee will, by developing a framework, implement ex-ante bidding controls either on individual participants or across the wider market if observed behaviour is deemed to warrant this (Section 8.17.5); and

- non-energy[4] actions taken on units operating in the BM will be settled based on 3-part offers, which will have an explicit ex-ante bidding control applied to them (Section 8.17.1 and Section 8.17.2).

2.1.6 The SEM Committee acknowledged within the I-SEM Market Power Mitigation Decision Paper (Section 8.21.1) that the application of a bidding principle to the three part offers for non-energy actions in the BM, will need to be clear (because market participants need to have a clear understanding of what is considered reasonable behaviour) and will need to be flexible to the extent appropriate.

2.1.7 On 7 October 2016, the SEM Committee published an I-SEM Consultation Paper (SEM-16-059), hereafter referred to as the "*Consultation Paper*", which considered two options for applying ex-ante bidding controls to non-energy balancing actions. The options within the Consultation Paper are summarised as follows:

- Option 1 "*Offer Principles*": Under this option the SEMC proposed revising the current version of the BCOP, SEM-14-019, in order to reflect market changes under the I-SEM and experience from market monitoring in the SEM. Additionally, under Option 1, SEMC proposed that relevant content from the existing "*Cost Reflective Bidding in the Single Electricity Market*" generator licence would be incorporated into a revised Balancing Market Principles Code of Practice (BMPCOP) for I-SEM.[5]

- Option 2 "*Offer Limits*": This option proposed that the RAs publish explicit offer limits that would be based on the BMPCOP document, and a

[3] The I-SEM Energy Trading Arrangements Detailed Design Consultation Paper (SEM-15-026) indicated that energy actions can be broadly considered as actions taken by the TSOs to address an overall imbalance between supply and demand across the settlement period.

[4] The I-SEM Energy Trading Arrangements Detailed Design Consultation Paper (SEM-15-026) indicated that non-energy actions can be considered as actions that are taken by the TSOs to address system issues that would still exist even if the market had perfectly balanced. These non-energy requirements include Reserves, Dynamics (Inertia, RoCoF, SNSP), Voltage support and thermal transmission constraints.

[5] The Consultation Paper used the phrase Balancing Market Offer Principles (BMOP). For clarity and consistency, this decision paper uses the phrase Balancing Market Principles Code of Practice (BMPCOP) when referring to new bidding controls for I-SEM.

methodology to be developed by the RAs for the calculation of the offer limits. Under this framework, generators would be permitted to submit any offer equal to, or lower than, the published offer limits.

2.1.8 As part of considering the issue of appropriate controls for I-SEM, the SEM Committee contemplated an approach involving minimal changes to the existing BCOP. However, as the SEM Committee stated within the Consultation Paper, there are issues with the existing arrangements, for example in relation to the transparency of which costs are appropriate to be included and which are not, and these issues would be expected to continue. Accordingly, the SEM Committee decided against a minimal change option. Additionally, the SEM Committee noted that I-SEM is expected to be a more complex market (relative to the existing SEM market) with numerous timeframes in which generation units can employ differing bidding strategies and that implementing a minimal change approach to complex bid offer controls in the I-SEM BM is not a viable option.

2.1.9 Additionally, since the SEM Committee decided (SEM-16-024) to limit the scope of controls from all market participants' bids and offers in SEM, to target non energy actions by applying ex ante controls to complex bid offer data in the I-SEM BM, the SEM Committee considered it appropriate to review the overall approach when developing new market rules for I-SEM.

2.2 OVERVIEW OF RESPONSES TO THE CONSULTATION PAPER

2.2.1 Following the closure of the consultation window (i.e. 18 November 2016), the RAs received 16 responses, including 1 confidential response, to the Consultation Paper (see Table 2.1 for list of non-confidential respondents to the Consultation Paper).

Table 2.1: List of Respondents to Consultation Paper

1. AES	9. EirGrid
2. Aughinish Alumina	10. Electricity Supply Board (ESB)
3. Bord Na Mona	11. Gaelectric
4. Bord Gais Energy	12. Irish Wind Energy Association
5. Brookfield Renewable	13. Power NI Energy
6. Confederation of European Waste-to-Energy Plants	14. SSE
7. Electricity Association of Ireland (EAI)	15. Tynagh

8. Energia (included a report from their economic consultants NERA on behalf of the Viridian Group)	

2.3.2 In general, many respondents disagreed with the SEM Committee's proposals. Additionally, as part of their respective responses to the Consultation Paper, many respondents requested an industry workshop on the Consultation Paper.

2.3.3 In consideration of the respondents' requests, the RAs organised bilateral meetings with stakeholders between the 7-9 December 2016 (at the RA's Dublin and Belfast Offices).

2.3.4 Following a review of respondents' responses, and the subsequent feedback received at bilateral meetings, the primary issues concerning respondents regarding the Consultation Paper's proposals can be grouped into the following headings:

i. Governance – moving certain content from relevant RAs' licences to a BMPCOP document;

ii. Non-recovery of variable maintenance costs;

iii. Definition of SRMC;

iv. Treatment of foregone revenue and provisions for risks;

v. Treatment of long term Gas Transportation Capacity (GTC) costs in gas generator units complex bid offer data; and

vi. General issues and concerns, including interactions between various I-SEM workstreams.

2.3 APPROACH AND STRUCTURE OF THIS PAPER

2.4.1 Having considered responses to the Consultation Paper, the SEM Committee has decided to proceed with an amended version of Option 1, rather than implement Option 2.

2.4.2 Part of the rationale for not proceeding with Option 2 is that this may have resulted in inefficient market outcomes where generating units could be either over or under compensated for BOA quantities, resulting from differences between a generator units' SRMC, which could vary continuously over time and, its Offer Limit which would change relatively infrequently. In addition, Option 2 would involve a greater level of regulatory intervention and also

require additional "up-front" consultations for the development of a methodology for the calculation of Offer Limits, which would not have been very challenging and perhaps infeasible given with the current I-SEM timelines.

2.4.3 Consequently, this decision paper, "Complex Bid Offer Controls in the I-SEM Balancing Market", hereafter referred to as the "Decision Paper", is developed on the basis of implementing an amended version of Option 1. Additionally, the SEM Committee's responses, which are contained within this Decision Paper, are drafted primarily in response to respondents' comments on Option 1.

2.4.4 For clarity, this Decision Paper is structured as follows:

- **Section 2:** introduction;
- **Section 3**: outlines the aims and approach of the SEM Committee in developing complex bid offer controls[6] within the relevant framework of statutory duties, whilst clarifying the impact of such measures, notably as regards the ability of market participants to recover their costs.
- **Section 4:** presents the SEM Committee's decision on the proposed governance approach in terms of which the new licence condition would prescribe fewer matters than the existing generator licence condition (i.e. "Cost Reflective Bidding in the Single Electricity Market") with more matters being included in the BMPCOP document following consideration of respondents' comments;
- **Section 5:** presents the SEM Committee's decision on the definition of SRMC, following consideration of respondents' comments;
- **Section 6:** presents the SEM Committee's decision on the inclusion of VOM costs in market participants' complex bid offer data, following consideration of respondents' comments;
- **Section 7:** presents the SEM Committee's decision on the inclusion of foregone revenue in market participants complex bid offer data, following consideration of respondents' comments;

[6] In previous SEM Committee consultation and decision papers various phrases were used interchangeably when describing the BCOP (e.g. ex-ante bidding principles or offer controls/principles). For clarity and consistency, this Decision Paper shall use the phrase 'complex bid offer controls'.

- **Section 8:** presents the SEM Committee's decision on the inclusion of risk in market participants' complex bid and offer data, following consideration of respondents' comments;

- **Section 9:** presents the SEM Committee's decision on the inclusion of long term GTC costs in market participants' complex bid and offer data, following consideration of respondents' comments;

- **Section 10:** presents the SEM Committee's response to general issues raised by respondents to the Consultation Paper; and

- **Section 11:** outlines next steps regarding the development of the new licence condition and BMPCOP.

3 STATUTORY RESPONSIBILITIES & DEVELOPMENT OF BIDDING CONTROLS

3.1 REGULATORY DECISION MAKING

3.1.1 The SEM Committee, in performing its role as the decision making authority for SEM and I-SEM related matters, is required to act within the relevant statutory framework in each jurisdiction in order to arrive at its policy decisions.

3.1.2 Annex B of this Decision Paper, "Statutory Framework for Decision Making", details the statutory framework governing decision making by SEM Committee.

3.1.3 As set out in subsequent sections within this Decision Paper, a number of respondents have questioned the SEM Committee's compliance with these statutory duties in the development of proposed complex bid offer controls as contained within the Consultation Paper.

3.1.4 Consequently, Section 3 of this Decision Paper provides an overview of the relevant framework of duties governing decisions of the SEM Committee and outlines the Committee's aims and approach in developing complex bid offer controls for I-SEM within the context of that statutory framework. Additionally, Section 3 of this Decision Paper clarifies the impact of such measures, notably as regards the ability of market participants to recover their costs.

3.2 OVERVIEW OF STATUTORY RESPONSIBILITIES

3.2.1 When carrying out its relevant functions in relation to the SEM and I-SEM, the SEM Committee's, principal objective is to protect the interests of consumers of electricity in Ireland and in Northern Ireland wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with the sale or purchase of electricity.

3.2.2 The SEM Committee is required to carry out its relevant functions in the manner which it considers best calculated to further its principal objective, having regard, inter-alia, to:

- the need to secure that all reasonable demands for electricity are met;
- the need to secure that Authorised Persons are able to finance their activities; and

- the need to ensure transparent pricing.

3.2.3 Additionally, when carrying out its relevant functions, the SEM Committee must operate in manner, which it considers, inter-alia, best calculated, to promote efficiency and economy on the part of Authorised Persons.

3.2.4 Whilst taking account of its various needs and considerations imposed on the SEM Committee, its principal objective remains the protection of the interests of consumers. Therefore, it is incumbent upon the SEM Committee to ensure that those interests are protected in developing policy decisions in relation to the SEM and I-SEM.

3.3 ASSESSMENT OF OPTIONS FOR IMPLEMENTING COMPLEX BID OFFER CONTROLS

3.3.1 As previously stated in Section 2.1.7, the SEM Committee's Consultation Paper considered the merits of two options when applying ex-ante bidding controls to non-energy balancing actions in I-SEM (i.e. Option 1 – Offer Principles and Option 2 – Offer Limits).

3.3.2 With reference to Option 1, the SEM Committee noted that Option 1 presented numerous benefits in that it is based upon current SEM arrangements and therefore provides a familiar framework for market participants. The SEM Committee also noted that Option 1 ensures that all generator units will be treated in a fair and equitable manner on the basis that all generating unit's complex bid offer data must reflect efficient costs (i.e. no generator unit receives an unfair advantage as their costs reflect their SRMC). Additionally, the SEM Committee noted that Option 1 should lead to competitive outcomes, thereby protecting the interest of the consumer. However, the SEM Committee noted that Option 1 may not create an incentive for a must run generating unit to innovate in order to reduce its operating costs.

3.3.3 With reference to Option 2, the SEM Committee noted that Option 2 would, inter-alia, incentivise must run generator units to increase their efficiency in order to maximise their infra-marginal rent and reduce potential ambiguity for generation units when submitting their complex bid offer data. Additionally, from a regulatory perspective, it was noted that Option 2 would potentially be less resource intensive than the monitoring that would be required under Option 1. However, the SEM Committee noted that Option 2 could potential lead to a potentially suboptimal solution, as generators units could just submit their complex bid offer data up to the limits set by the RAs.

3.3.4 Following a review of respondents' comments to the Consultation Paper, the SEM Committee notes that respondents' generally viewed Option 2 as their

least preferred option. In particular, respondents expressed concerns over the level of regulatory intervention associated with Option 2, as the RAs would be involved in setting the associated limits. Some respondents were of the view that Option 2 was not a fully developed option, could cause a delay in the development of complex bid offer controls and uncertainty within the industry. Additionally, some respondents queried the practicality of Option 2 and the ability of the RAs to distinguish between different types of market participants when setting the relevant limits.

3.3.5 Having considered respondents' comments, the SEM Committee has decided not to proceed with Option 2. As stated in Section 2.4.2 of this Decision Paper, part of the rationale for not proceeding with Option 2 is that this may have resulted in inefficient market outcomes where the TSO is using COD for inputting into their dispatch and scheduling tools, that do not represent generation units costs, and therefore undermining efficient re-dispatch actions. Additionally, generator units could be either over or under compensated for BOA quantities, resulting from differences between a generator units' SRMC, which varies over time and an Offer Limit that would change infrequently. In addition, Option 2 would involve a greater level of regulatory intervention and also require additional consultations for the development of a methodology for the calculation of Offer Limits, which the SEM Committee considers not to be feasible with the current I-SEM timelines.

3.4 DEVELOPMENT OF I-SEM COMPLEX BID OFFER CONTROLS

3.4.1 The SEM Committee outlined in the Market Power Decision Paper (SEM-16-024) the measures it deems necessary and appropriate to deal with market power in the I-SEM energy markets (i.e. Forward Market, DAM, IDM and BM).

3.4.2 These measures included: the application of a Forward Contracting Obligation (FCO) on generators to mitigate market power in the spot markets, the requirements of REMIT on all generators; the application of ex-ante controls to all generators' complex bid offer data, and the market monitoring by the RAs MMU. This means that bids and offers submitted by generators to the DAM and IDM, and for simple bids and offers submitted by generators to the BM, generators would not be subject to explicit ex-ante controls, as the market is deemed sufficiently competitive, taking account of the measures outlined above.

3.4.3 In addition to this, if the SEM Committee observed anti-competitive behaviour in the simple bid offer data submitted to the BM, the SEM Committee reserves the right to impose ex-ante controls on this bid offer data.

3.4.4 The rationale for the application of ex-ante controls to non-energy actions, identified through the tagging and flagging process, is to mitigate against the potential for abuse of temporal and locational market power arising from constraints on the electricity system. The TSOs may be severely limited in the choice of generators that they could select to resolve the issues concerned and this could result in the subset of generators who are able to relieve certain constraints being able to exercise a form of local market power.

3.4.5 Specifically, the SEM Committee's objective is to replicate competitive market behaviour in potentially non-competitive elements of the BM, by requiring market participants to submit their complex bid offer data so as to reflect the SRMC of the relevant generation set or unit (calculated in accordance with principles determined by the SEM Committee), thereby contributing to a socially optimal outcome.

3.4.6 Due to the uncertainty around the location and timing of system constraints, the SEM Committee decided to apply ex-ante controls to all TSO actions deemed to be non-energy, as opposed to targeting actions on only a specific set of generation units. Therefore these ex-ante controls will be applied to all generation units' complex bid offer data, in order to protect I-SEM customers from the potential risk of abuse from temporal and locational market power.

3.4.7 In preparing its decision to implement ex-ante controls, the SEM Committee has come to recognise that there are certain situations in which the TSOs may be required to take 'early energy' actions after BM gate closure 1 and before BM gate closure 2 (such as where large energy imbalances, giving rise to a security constraint, are indicated by initial Physical Notifications (PNs) from participants). In such situations the TSOs might have no choice but to instruct the start-up of additional generation, with notice times greater than one hour, before BM gate closure 2 in order to satisfy the system security constraint.

3.4.8 The SEM Committee has considered [with the TSOs] whether it would be feasible to permit generators to submit two separate sets of complex bid offer data, one for 'early energy' purposes and the other for 'non-energy' purposes, but has concluded that this is not technically feasible at present. Pending the development of any such technical solution, and taking into account the mitigating factors mentioned below, the SEM Committee considers that the mitigation of market power risks in respect of non-energy actions is sufficiently important to justify the application of ex ante controls to the single set of complex bid offer data submitted by generators (and, thus, also to 'early energy' actions).

3.4.9 It is anticipated that these early energy actions will be unusual as the market would be expected to respond to significant forecast energy imbalances in the

IDM. In addition to this, the TSOs will be discouraged from taking early energy actions by the use of Long-Notice Adjustment Factors (LNAFs) in their scheduling and dispatch systems, and will issue dispatch instructions that deviate from Physical Notifications (PNs) only where they have no choice but to start a long notice unit to satisfy a security constraint. Given a choice of a number of resources with the same (or similar) cost, application of the LNAFs will tend to favour shorter notice resources in the scheduling process. (see annex A for a high-level overview of Complex Bid Offer Data).

3.4.10 The SEM Committee intends to keep under review, following I-SEM 'Go Live', the activities of the TSOs in relation to 'early energy' actions and their resulting impacts and will be prepared to intervene should this be merited in light of experience and feedback from market participants.

3.4.11 The impacts of ex-ante controls, placed on the complex bid offer data relating to these early energy actions, are further mitigated by the ability of a generator unit (which has an early BOA) to trade the same volume ex-ante up to IDM gate closure using the substitutive PN approach available in the market rules. Through this substitutive PN approach a generator unit can swap out an early BOA for an ex-ante trade in the IDM if they believe the price in the IDM to be more advantageous. Furthermore, and in the absence of a substitutive IDM trade, in the BM the generation unit will be paid the greater of their complex bid offer data and the BM price for incremental actions, and will pay back the lower of their complex bid offer data and the BM price for decremental actions.

3.5 IMPACT OF I-SEM BID OFFER CONTROLS

3.5.1 The SEM Committee notes that respondents have expressed concerns regarding the impact of the new complex bid offer controls identified for I-SEM on issues such as cost recovery, efficiency and competition.

3.5.2 In the SEM Committee's view, its statutory duties cannot be interpreted in a way that absolutely guarantees that all industry participants recover their costs. Such an approach would neither be consistent with the statutory scheme, nor with the protection of consumers through the promotion of competition. A necessary incident of competition is that inefficient market participants do not recover their inefficient costs.

3.5.3 It is not the SEM Committee's intention to restrict generators from recovering their efficient costs, if needed, across all aspects of the market. Including energy, capacity and system services. Instead, the SEM Committee's proposal seeks to support efficient costs through complex bid offer data in the I-SEM BM, by replicating competitive bidding behaviour, in light of potential market

constraints that give rise to plants that are constrained either above or below the levels determined by the market. In this way, the SEM Committee will seek to protect the interests of consumers and secure that all reasonable demands for electricity are met.

3.5.4 Additionally, it should be noted by market participants that the BMPCOP will not materially affect the majority of energy traded in I-SEM, as it is intended that the BMPCOP will only be applied to complex bid offer data in the I-SEM BM, which primarily affect non-energy actions, a relatively smaller subset of the overall I-SEM electricity market. By way of comparison, based on how the system was dispatched under the SEM, the level of non-energy actions may correspond on a value basis to 10% or less of total system revenue.

3.5.5 Whilst the SEM Committee are not guaranteeing cost-recovery within the complex bid offer data except for SRMC, it believes that the proposed I-SEM arrangements provide a reasonable opportunity for efficient generators to recover their going forward costs and further believe that the proposed arrangements provide signals for new investment when new investment is needed. The SEM Committee notes that the design of I-SEM will enable market participants to earn revenue in multiple markets including DAM, IDM, BM, CRM and DS3.

3.5.6 The SEM Committee notes that the amended version of Option 1 will enable the SEM Committee to promote efficient market behaviour by mitigating the risk to consumers of market participants, who may be operating in a non-competitive part of the BM (due to system constraints), submitting complex bids and offers that are not cost reflective.

3.5.7 Furthermore, the SEM Committee is of the view that its complex bid offer controls for I-SEM will facilitate the continuation of competitive market behaviour in a scenario whereby a generating unit is a must run plant (due to system constraints) and could potentially exert localised market power.

3.5.8 The SEM Committee notes that some market participants have argued that there may be a specific issue with regard to plant which selected in the capacity market to meet a local capacity constraint and is dispatched to meet system constraints in the Balancing Market to a very material degree, or only operates to meet system constraints.

3.5.9 The SEM Committee also note that we have consistently stated during I-SEM High Level Design process and the I-SEM CRM Detailed Design process that the RAs do not preclude the need for other targeted mechanisms designed to ensure security of supply. For example, this may include mechanisms to

address local system service requirements and income from such a mechanism may also help a generator recover additional efficiently incurred costs.

3.5.10 The SEM Committee recognises that there is a possibility that a generator which is critical to meet local system service requirements but not local capacity requirements, does not get awarded a Reliability Option. This could happen if it has high net going forward costs, and reflects those costs in its CRM auction offer. The CRM auction constraints do not reflect local system service requirements, and if the bidder is out-of-merit in the unconstrained CRM merit order, and not required for local capacity reasons, it will not receive a Reliability Option. After the auction, the TSOs will need to identify whether there are any local system service requirements that are not met by generation plants that are expected to remain available for the following capacity year, and identify economic and efficient solution to those issues.

3.5.11 Additionally, consistent with the SEM Committee decision set out in the Locational Issues decision (SEM-16-081), a locational need capacity requirement would only be included in the CRM mechanism where the need is "clear and significant". There remains the possibility that following the auction, the TSOs identify an unexpected localised security of supply issue - one that did not meet the definition of "clear and significant" before the CRM auction, but which the TSOs judge, following the results of the auction, may be a material risk to local security of supply. Whilst this is not expected, there remains the possibility that a targeted contracting mechanism may need to be put in place by the TSOs to address such an eventuality.

3.5.12 Constrained on plant will only be scheduled in the Balancing Market, and when constrained-on will be paid on the basis of its complex bid offer data, that are subject to regulatory limitations. Some market participants have argued that because they will be selling predominantly or exclusively at the level of their complex offers, rather than at the Balancing Market price, they may not be able to recover their sunk efficient costs in either the energy market or the capacity market, or from revenue from system services tariffs despite being critical to security of supply.

3.5.13 The SEM Committee is clear, given that complex bid offer controls are designed to ensure that complex bid offer data reflects short run marginal cost, that such controls should not permit the inclusion of sunk costs in such bid offer data. The decision in relation to the capacity market, is set out in the CRM parameters decision paper.

3.5.14 However, in considering such concerns the SEM Committee, along with the TSOs, will continue to consider the need for and an appropriate framework for any additional mechanism to address particular local security of supply

concerns. These considerations will take account of the overall energy, capacity and system services market framework and relevant Grid Code requirements. Further information will be provided on this over the coming months.

4 GOVERNANCE – TRANSFERRING CONTENT FROM LICENCE TO BMPCOP

4.1 SEM COMMITTEE'S PROPOSAL

4.1.1 The SEM Committee's Consultation Paper proposed the development of a generic generator licence condition, which would require, inter-alia, generators to comply with the I-SEM BMPCOP document. Furthermore, the Consultation Paper proposed that the licence condition would not define what cost items should be included within a generator's complex bid or offer, or contain a definition of SRMC. Instead, the definition of SRMC and the costs that could be recovered by generators would be specified in the proposed BMPCOP document.

4.1.2 As part of its rationale, the Consultation Paper stated that such an approach would provide greater clarity, flexibility, and detail to generators and other relevant market participants regarding the application of the BMPCOP document in I-SEM.

4.2 SUMMARY OF RESPONDENTS COMMENTS

4.2.1 The majority of respondents disagreed with the SEM Committee's proposal to transfer content from generators' cost-reflective bidding licence condition to the proposed BMPCOP document. In particular, respondents were of the view that the definition of SRMC and the principle of cost recovery should be contained within the generator licence. Furthermore, a number of respondents stated that the SEM Committee provided no rationale to justify its proposal, and stated that the current generator licence already provides clarity on what can be included in generators' complex bids and offers.

4.2.2 One of the main arguments put forward by respondents was that the transfer of content from the generator licence to a "*subsidiary document*" of "*uncertain legal standing"* would create a regulatory risk for generators, particularly in the area of cost recovery. Such respondents noted that generators must have the right to appropriately finance its operations through the market, and the key principles that give rise to generators' cost recovery in I-SEM must be established in the generator licence.

4.2.3 Several respondents expressed concerns that SEM Committee's proposal would undermine the statutory framework governing licence modifications. Specifically, these respondents argued that the SEM Committee could make decisions regarding the BMPCOP document that would materially affect a

generator's ability to continue its operations, and that there would be limited recourse for generators to challenge such a decision.

4.2.4 One respondent, who objected to the SEM Committee's proposal, stated that the establishment of a modification committee could be used as a mechanism to partly mitigate their concerns (i.e. "*if alternative arrangements are decided upon certainty in the governance of the secondary document must be provided, an approach such as a robust framework along the lines of the existing modifications committee, could be introduced to govern the process for the approval of any subsidiary documents referenced in the licence*").

4.2.5 However, during the bilateral meetings with the RAs, other respondents were of the view that a modification committee would be ineffective due to associated commercial sensitivities. Such respondents also expressed a view that generators' objections at a modification committee would not be taken into account satisfactorily and that generators would have limited recourse for legal appeal/review of any SEM Committee decision regarding the BMPCOP document.

4.2.6 As part of their overall response to the Consultation Paper, some respondents expressed significant legal concerns over the merits of such a proposal. These legal concerns are summarised in Section 4.2.7 to 4.2.10 below:

4.2.7 **Unlawful exercise of powers by the RAs:** It was alleged that the licence modification would deprive market participants of their statutory right of appeal and that the degree of flexibility sought by the RAs is impermissible and ultra vires their power under the relevant statutory framework.

4.2.8 **Failure by the RAs to provide legal certainty:** It was alleged that the proposed revised licence condition would create potential legal uncertainty, and that discretion would be retained by the RAs, which would render the proposed condition void or unlawful.

4.2.9 **Insufficient detail within licence condition and contrary to Case Law:** It was alleged that the terms and conditions that a licensee is subject to must be contained within a licence, and the licence conditions should be substantive and contain the necessary principles and terms as required by statute. One respondent noted that the SEM Committee proposal is contrary to case law and referenced the matter of Viridian and Endesa v. CER (2011):

"*IEHC 266, Clarke J in the High Court found that there is no reason in principle why a document, such as a licence, by which a statutory body exercises a public law power, cannot retain to the statutory body the power to make further decisions or interpretation in accordance with the provisions of the licence in*

question. It is only if the retention of such added flexibility is in itself a breach of the overriding statutory power being exercised that the retention of such flexibility would be impermissible".

4.2.10 **Failure by the RAs to have regard to their statutory duties:** It was alleged that the implementation of such a proposal would in effect mean that the RAs have not fulfilled their statutory duties, and that the RAs in particular have not taken account of the need to efficiency and economy on the part of authorised persons.

4.3 SEM COMMITTEE'S RESPONSE

4.3.1 The SEM Committee's proposal to create a generic licence condition and transfer content (e.g. definition of SRMC) from the existing "*Cost Reflective Bidding in the Single Electricity Marke*t" licence condition is consistent with previous SEM Committee communications to stakeholders regarding I-SEM. With reference to the I-SEM Market Power Mitigation Decision Paper (SEM-16-024), the SEM Committee acknowledged the need to offer clarity and flexibility regarding offer principles (i.e. the BMPCOP), and that the detailed working of such principles would be considered by SEM Committee.

4.3.2 The SEM Committee considers the transfer of content from the "*Cost Reflective Bidding in the Single Electricity Market*" licence condition necessary to facilitate the creation of a dynamic BMPCOP document for I-SEM that can give greater clarity to industry regarding eligible costs, particularly given the evolving nature of energy markets and the growth in new generation technologies.

4.3.3 Additionally, the SEM Committee is of the view that its proposal will ensure that, in the future, doubts as to the meaning or application of the BMPCOP can be definitively resolved by the SEM Committee and recorded in the BMPCOP document, which would be updated by the SEM Committee to reflect particular circumstances following the appropriate consultation process.

4.3.4 From a consumer interest perspective, and a market design and market power perspective, the SEM Committee considers it reasonable and prudent to have a framework that allows timely amendments to any future BMPCOP document should potential deficiencies arise or need for changes be identified.

4.3.5 Under a minimal change approach (i.e. retain existing cost reflective bidding licence condition), the SEM Committee believes that there would remain the risk that doubts could arise in relation to elements of the principles that remain in the relevant licence condition, and that those doubts could only be

definitively resolved through court proceedings or licence modification, both of which processes are expensive and time-consuming. The SEM Committee is of the view that such a scenario is not in the interest of industry or consumers, and therefore proposed transferring relevant content from the generation licence into the BMPCOP document. Such an approach also improves transparency and thus is in line with the better regulation principles.

4.3.6 **Unlawful exercise of powers by the RAs:** The SEM Committee notes respondents' concerns that the SEM Committee proposal to transfer content from the relevant generation licence condition to the BMPCOP document could result in limited recourse for generators to challenge such a decision. Whilst cognisant of respondents' concerns, the SEM Committee notes that any decision to amend the future BMPCOP document would still be subject to a public consultation process whereby the SEM Committee has to abide by its statutory objectives in its decision making. Additionally, the SEM Committee is bound by substantive legal constraints. Specifically, any future decision to amend the BMPCOP document could still be challenged by market participants in the High Court in either jurisdiction in a judicial review.

4.3.7 In a judicial review proceeding, the court would rule on whether, in taking such a decision, the relevant RA had complied with their various statutory and public law duties. In making its decision, the court would consider if SEM Committee had discharged its principal objective of protecting the interests of consumers having regard to various factors such as the need to secure that all reasonable demands for electricity are satisfied, need for transparent pricing in the SEM and the other factors (e.g. ability of licence holders to finance their activities, the need to promote efficiency and avoid distortion of competition, and the need to avoid discrimination between licence holders).

4.3.8 Furthermore, the court would consider, whether the RA as public law bodies acted fairly, whether in substantive terms (e.g. by acting proportionately) or in procedural terms (e.g. by allowing affected persons an adequate right to be heard before taking decisions). To that extent, both process and substantive arguments could be made by market participants in the event that they decide to challenge a decision by the SEM Committee to amend any future BMPCOP.

4.3.9 Notwithstanding the legal constraints to modifying the BMPCOP document, it should be noted that the SEM Committee would publicly consult with market participants prior to making a decision to amend the BMPCOP (as indicated in Section 4.3.6 of this Decision Paper). Such an approach will enable market participants to scrutinise proposals and detail any concerns regarding proposed future measures, thereby negating the need for a modification committee. Before reaching any decision on proposed amendments that the SEM Committee would take account of representations received. The SEM

Committee considers the proposed process will provide adequate opportunity for market participants to comment on proposed changes without there being the need for a formal modification committee.

4.3.10 The SEM Committee notes respondents' concerns that the SEM Committee's proposal to transfer content from the relevant generation licence condition to the BMPCOP could materially affect a generator's ability to finance its operations. Whilst cognisant of respondents' concerns, it should be noted by market participants that the SEM Committee are 'creatures of statute' and are therefore required to comply with their statutory duties. Consequently, when making decisions in relation to a subsidiary document such as the BMPCOP as well as in relation to a licence condition, the SEM Committee are required to have, inter-alia, regard to the ability of licence holders to finance their activities, whether or not the decision relates to the content of the licence or a subsidiary document.

4.3.11 The SEM Committee notes respondents' legal concerns regarding the proposed generator licence modification and the alleged removal of market participants' statutory right of appeal. However, the SEM Committee does not consider the proposal put forward in the Consultation Paper to be depriving generators of their statutory right of appeal. From the SEM Committee's perspective, the rights in question are those exercisable in the event of a licence modification (i.e. the right to request establishment of an appeal panel in Ireland and the right to appeal to the CMA in the UK). There is no proposal to exclude those rights in relation to any licence modification in this situation. As and when a licence modification is introduced in order to underpin the BMPCOP, then all of the relevant rights of appeal will be exercisable in relation to that modification. Market participants can also seek judicial review of the decisions related to the BMPCOP.

4.3.12 **Failure by the RAs to provide legal certainty:** The SEM Committee does not agree with respondents' comments that the proposed licence modification would be a breach of the principle of legal certainty. Specifically, it is the SEM Committee's view that any assessment of legal certainty in the present situation would have to encompass not only the terms of the relevant licence condition but also the terms of the proposed BMPCOP document. This is because the rights and obligations of those subject to the licence condition can only properly be understood by reference to the BMPCOP document. The SEM Committee considers that the effect of this approach would be to improve transparency as the BMPCOP will include a greater level of detail as compared to the existing licence condition.

4.3.13 **Insufficient detail within licence condition and contrary to Case Law:** Taking account of respondents' legal concerns regarding insufficient detail within the relevant licence condition, the SEM Committee does not consider its proposal to be ultra vires or contrary to case law.

4.3.14 Regarding the dicta of Clarke J and the legal proceedings concerning the carbon revenue levy, the SEM Committee is of the view that the courts in Ireland implicitly accept the proposition that conditions of a licence granted under Section 14 of the 1999 Act may legitimately authorise the imposition of substantive rights and obligations by virtue of the exercise of delegated authority. The dicta of Clarke J refers to a different proposition (i.e. that a person exercising delegated authority must operate within the ambit of the delegation). In the High Court decision there was no suggestion that there is some substantive demarcation line to be drawn between those matters, which ought to properly be contained on the face of the licence and those which may permissibly be delegated to a derivative document such as the BMPCOP.

4.3.15 With reference to the governing legislation in Northern Ireland, the SEM Committee notes that under the licensing powers provisions of the Electricity (NI) Order 1992, UREGNI is explicitly empowered to create licence conditions, which *"instead of containing any provisions which fall to be made, refer to provisions set out in documents so designated and direct that those provisions shall have such effect as may be specified in the conditions".*

4.3.16 **Failure by the RAs to have regard to their statutory duties:** The SEM Committee notes respondents' allegations that the RAs/SEM Committee have failed to have regard to their statutory duties, particularly on the requirement to ensure proposals were best calculated to promote efficiency and economy on the part of authorised persons. However, it is the SEM Committee's view, that when viewed in the proper context, such allegations are without merit.

4.3.17 Specifically, the proposals contained in the Consultation Paper were the product of an extensive consultation and engagement exercise which began prior to the Consultation Paper and involved, notably, a consultation which commenced in November 2015 with the publication of a consultation paper on I-SEM Market Power Mitigation (SEM-15-094), followed by a decision paper on I-SEM Market Power Mitigation (SEM-16-024) in May 2016.

4.3.18 Both of those papers explored in detail the rationale for ex ante bidding controls in the I-SEM along with other market power mitigation measures and did so explicitly within the context of our statutory duties (which includes having regard to economy and efficiency). Section 1.2 of SEM-15-094, for instance, explained that the strategy for market power mitigation within the I-

SEM, as well as the design of individual measures, was designed to meet (among other things), the objectives of:

- enabling efficient and transparent price formation in I-SEM's physical and financial markets;
- promoting competition in I-SEM's physical and financial markets, including appropriate generation entry / exit; and
- allowing for the development of liquid physical short-term and forward financial trading in I-SEM, with the latter to be progressed as part of policy developed in the I-SEM "forwards and liquidity" work stream.

4.3.19 Section 8 of SEM-15-094 developed five key principles as a basis for assessing various market power mitigation policies for the I-SEM, namely (1) effective, (2) targeted, (3) flexible, (4) practical and (5) transparent. These are consistent with our better regulation principles. Section 8 proceeded to lay out three different options for market mitigation in the context of the BM (including an option for ex ante bidding controls) and to assess these against those five principles. It also took account of two types of error to which those options might be subject, i.e., "false positive" or over-mitigation ("Type 1 error") involving false identification of a competitive behaviour as an exercise of market power and "false negative" or under-mitigation ("Type 2 error") involving the failure to identify market power abuse when it exists. SEM-15-094 also asked respondents, on the assumption that ex ante bidding principles were to be adopted, how flexible should they be and how would this be facilitated/enshrined in their wording.

4.3.20 Taking into account the discussion of SEM-15-094 set out above, the SEM Committee is of the view that the specific proposals for ex ante bidding controls put forward in the Consultation Paper can readily be shown to have been arrived at via a process designed to address the relevant statutory obligations.

4.4 SEM COMMITTEE'S DECISION

4.4.1 Taking account of respondents' comments, the SEM Committee is satisfied with its proposal to establish a generic generator licence condition, which would require, inter-alia, generators to comply with the I-SEM BMPCOP document.

5 DEFINITION OF SRMC

5.1 SEM COMMITTEE'S PROPOSAL

5.1.1 The SEM Committee's Consultation Paper proposed that the current SEM definition of SRMC be updated to align with the features of the I-SEM BM.

5.1.2 The proposed redefinition of SRMC for I-SEM included a proposal to move from a reference to differences in total daily costs to changes in total costs corresponding to an increment (or decrement where appropriate) of 1MWh in output, noting that no-load and start-up costs are represented separately in the complex bid offer data[7].

5.1.3 The other main change in the SEM Committee's proposed definition of SRMC was to change the reference period for the calculation of SRMC from a trading day in SEM to ISP in the BM.

5.2 SUMMARY OF RESPONDENTS' COMMENTS

5.2.1 There was a mixture of responses to the SEMC's proposed redefinition of SRMC for I-SEM, with some respondents agreeing with the SEM Committee's proposals, while others respondents disagreed with all or some of the proposed redefinition of SRMC. Additionally, many respondents did not make any specific comments on the proposed redefinition of SRMC.

5.2.2 In relation to the SEM Committee's proposal to remove the reference to differences in total daily costs from the definition of SRMC, some respondents questioned the practicality of using 1MWh as the increment or decrement in SRMC, on the basis that it ignores *"joint costs"* that apply over multiple settlement periods. In particular, these respondents claimed that examples of such joint costs included the:

- cost of reconfiguring a plant for a change in output;
- efficiency loss during ramping;
- cost of any minimum change in output; and
- cost of buying minimum traded volumes of gas.

[7] In previous SEM Committee Consultation and Decision Papers various phrases were used interchangeably when describing the Complex Bid Offer Data (e.g. Three part offers, complex bids etc.) for clarity and consistency this Decision paper will use 'Complex Bid Offer Data'.

5.2.3 These respondents also supported the definition of SRMC in the current licence that determines SRMC as the difference in total costs, which effectively nets out fixed costs and therefore represents incremental costs.

5.2.4 One respondent identified the omission of decremental costs in paragraph 7A of the BMPCOP, in annex A of the Consultation Paper, stating that complex bid offer data in the BM will contain both incremental and decremental price curves.

5.2.5 There was a range of views expressed by respondents on the appropriate reference period for the calculation of SRMC. One respondent agreed with the SEM Committee's proposal to use the ISP as the timeframe in which to calculate SRMC and stated that it would be "*a more cost-reflective definition [that] would account for the more granular nature of such decisions, and specifically within an Imbalance Settlement Period*".

5.2.6 However, a number of respondents challenged the use of an ISP as a suitable reference period for the calculation of SRMC. One respondent suggested that since complex bid offer data are required to be submitted on a daily basis, not on a half hourly basis, a trading day would be the appropriate reference period. They also stated that the format of complex bid offer data would need to be revised to support the use of an ISP reference period and this would have implications for I-SEM system implementation. Another respondent agreed with the change from a trading day but stated that an ISP was "*unnecessarily short and risks depriving generators of recovery of their SRMC*". They proposed the use of a balancing market action as the appropriate reference period for the calculation of SRMC.

5.2.7 Some respondents argued that the application of the BMPCOP to complex bid offer data would end up potentially applying to both energy and non energy actions taken by the TSOs, irrespective of the SEM Committee's decision to regulate the complex bid offer data of non-energy actions only. One respondent suggested that there should be two sets of complex bid offer data (i.e. one for non-energy actions and the other for energy actions). The former could be subject to SRMC and the latter would not as this "*would identify and not penalise the energy actions in the LTS and RTC models*"[8].

5.2.8 One response stated that the decremental price in the SEM Committee's proposal presented a risk to market participants. They suggested that market participants would be exposed to costs as a result of TSO actions, such as being constrained off, if decremental prices were structured similar to incremental

[8] LTS is the Long Term Schedule model also known as Security Constrained Unit Commitment (SCUC) and RTC model is the Real Time Constraint model which is known as Security Constrained Economic Dispatch (SCED).

prices. A scenario was given where a generator was constrained down by the TSO in advance of their EUPHEMIA bid offer submission, which would commercially disadvantage the generator having to include a start-up cost in their complex bid offer data. They also provided details of a response to this scenario from the I-SEM Rules Working Group where the proposed solution was to use negative decremental prices, which would result in a payment to the generator for being constrained off, therefore compensating them for having to incur another start.

5.2.9 The inclusion of shut down costs in SRMC was raised in one response, which was described as the equivalent to start-up costs for a demand side unit. This respondent also requested consideration for priority dispatch units to be reflected in the BMPCOP, as well as the need for consistency with decisions taken in the ETA's building blocks decision paper (SEM-15-064).

5.3 SEM COMMITTEE'S RESPONSE

5.3.1 The SEM Committee is of the opinion that the proposed definition of SRMC and the format of complex bid offer data (start up, no-load, incremental and decremental costs) provides generation units with the necessary flexibility to represent their eligible costs in the BM. Specifically, the SEM Committee notes that market participants will be able to use up to ten PQ pairs. This should accommodate a range of generation costs on a forward looking basis. Given the expected level(s) of operation of a generation unit, it should be possible to assess the marginal cost at each possible operating level, without the issue of joint costs being material (similar to the determination of generator costs in SEM).

5.3.2 Further, the suggestion that "joint costs", not represented by the complex bid offer data, could be calculated over a balancing market action is not realistic because these actions will not be known until after the offers have been accepted.

5.3.3 The practicality of using SRMC corresponding to a 1MW[9] change in output is similar to the SEM, as market participants have up to 10 PQ pairs, and they need to represent their SRMC over the full range of their possible output levels with these.

5.3.4 It is not clear that the suggested alternatives by respondents, either the trading day or a balancing market action, are appropriate for the BM. Employing a

[9] The definition of SRMC will be changed from 1MWh to 1MW to be consistent with the ISP which is a 30 minute duration.

trading day would be similar to assuming that all actions by the TSOs, using the complex bid offer data, would extend to a full trading day. The SEM Committee does not view this as a realistic assumption. In particular, market participants are free to update their complex bid offer data in advance of and throughout the trading day. Further, SRMC refers to incremental costs associated with a change in a generator's output. Any costs that vary between trading days but not directly with the output of a generator are not part of its SRMC. In summary, the SEM Committee has cncluded the trading day is not the appropriate time period for the calculation of SRMC in the context of the BM, and given that start-up and no load costs are accounted for separately from incremental energy costs.

5.3.5 The substitution of an ISP with a balancing market action, to facilitate the incorporation of joint costs, to be estimated by a market participant is not practicable or possible, as noted above, because it is the TSO that issues dispatch instructions (leading to BOAs) based on already submitted complex bid offer data. At the time of submission, market participants would have no way of knowing the BOA quantities or the duration of the TSO dispatch instruction, and therefore they would be unable to formulate complex bid offer data to match those actions. The ISP is the shortest period over which complex bid offer data is settled for. On the basis of this complex bid offer data, the TSO takes actions to keep the system in balance. To ensure that the total cost of balancing is minimised, it is important that the TSO bases its non-energy or early energy actions on offers that reflect the SRMC of each generator during the shortest period to which the offers apply (i.e. the ISP). This is particularly important for generators with SRMC that varies during the course of the trading day. Therefore, in the BM the ISP has the most relevance as the time period for calculating SRMC.

5.3.6 The SEM Committee considers that any cost item that would be included in the SRMC of incremental prices would also be included in decremental prices. The SEM Committee notes that incremental cost should represent the benefit forgone or a cost avoided which should be included in both the incremental prices and the decremental prices, otherwise it is a sunk cost and should not be included in either.

5.3.7 The SEM Committee accepts that the current I-SEM BM systems do not cater for separate sets of complex bid offer data for non-energy actions and early energy actions, and that referring to complex bid offer data for non-energy actions could create some confusion. The SEM Committee's intention in the Consultation Paper was that the BMPCOP would apply to complex bid offer data submitted by market participants and that this would be used to settle non-energy actions although in some cases it may apply to early energy actions taken by the TSO. The TSOs are discouraged from taking early energy actions

by the use of LNAFs in their scheduling and dispatch systems and will issue dispatch instructions that deviate from PNs only where necessary (see Annex A for an overview of Complex Bid Offer Data).

5.3.8 The definition of shutdown costs will be incorporated into the BMPCOP for demand side units. Similar to SEM, priority dispatch units will be required to include complex bid offer data subject to the principles set out in the BMPCOP.

5.4 SEM COMMITTEE'S DECISION

5.4.1 Taking account of respondents' comments, the SEM Committee is satisfied with the proposed definition of SRMC in the Consultation Paper, subject to limited redrafting in the BMPCOP.

6 VARIABLE MAINTENANCE COSTS

6.1 SEM COMMITTEE'S PROPOSAL

6.1.1 The SEM Committee's Consultation Paper proposed that generators' maintenance costs should not be deemed an eligible SRMC item. Consequently, generators would not have been able to recover maintenance costs through their complex bid offer data in the BM.

6.1.2 As part of its rationale, the Consultation Paper noted that maintenance and overhauls at power stations typically occur periodically on an annual or a multiannual basis, and that such costs do not vary with generation in the short term (i.e. are fixed long term costs).

6.2 SUMMARY OF RESPONDENTS' COMMENTS

6.2.1 The majority of respondents disagreed with the Consultation Paper's statement that "*maintenance costs are not considered variable in nature"*, and with the proposal to not allow generators to include maintenance costs in their offers for non-energy balancing actions.

6.2.2 One of the main arguments put forward by respondents was that generators' maintenance costs can vary with the number of operating hours and frequency of starts, and that the SEM Committee had provided an erroneous generalisation that "*maintenance and overhauls at power stations typically occur periodically on an annual or multiannual basis*".

6.2.3 In particular, a number of respondents stated that generators' maintenance costs are influenced by the TSO dispatch characteristics and that the number of start-ups and shut downs, and the extent of ramping, impact on generators' maintenance activities. Consequently, respondents were generally of the view that a portion of generators' maintenance costs are variable and "cannot be considered zero".

6.2.4 Some respondents stated that the SEM Committee's proposal was "unduly restrictive", "*unworkable*" and "*unacceptable*". Additionally, one respondent alleged that there were inconsistencies between the text in the main body of the Consultation Paper, which proposed excluding maintenance costs, and Annex A of the Consultation Paper.

6.2.5 In order to clarify the fixed and variable nature of generators' operational and maintenance costs, a respondent noted that "*fixed costs would tend to include*

operational staff costs, routine maintenance staff costs, rates, insurance, remote monitoring and diagnostics…..and other costs that don't depend on run hours". In contrast, the respondent noted that "*variable costs are run hour related and include items such as air filter replacements, inspections and overhauls*" and "*if the plant doesn't run then it doesn't incur these costs*".

6.2.6 Several respondents stated that by not allowing generators to recover legitimate maintenance costs there would be an impact on ex-ante energy markets because generators would include a risk premium in their DAM and IDM offer prices. Such respondents also variously argued that the SEM Committee's proposal could potentially lead to a number of negative outcomes including: overall under-recovery of costs as generators bid in below their SRMC; distortions in market competition; inefficient market exit; and price inflation, thereby resulting in negative longer term outcomes for customers.

6.2.7 With reference to broader I-SEM interactions, some respondents stated that the Consultation Paper was not consistent with the CRM Parameters consultation paper (SEM-16-073), which indicated that VOM costs are a variable function of output and that such variable costs would be recovered in the energy market.

6.2.8 Furthermore, one respondent stated that if maintenance costs could only be recovered through fixed costs (i.e. CRM payments), it would "*place locational constrained plants at an advantage, as locational constrained plants are guaranteed to recover all of their fixed costs whereas unconstrained plants have to consider bidding strategies that will be successful in the CRM auction*".

6.2.9 Many respondents highlighted the fact that the current BCoP and previous SEM Committee decisions have allowed variable maintenance costs as part of SRMC, and that the SEM Committee's proposal is inconsistent with previous SEM Committee statements/papers, e.g. "maintenance caused by start-up, ramping and shut-down should be bid into the energy market" (SEM/08/109). Several respondents also stated that there is no justification provided for excluding these costs from the proposed bidding controls for non-energy actions in the I-SEM BM.

6.3 SEM COMMITTEE'S RESPONSE

6.3.1 As indicated in Section 3 of this Decision Paper, the principal objective of the SEM Committee is to protect the interests of electricity consumers by promoting effective competition. The SEM Committee is required to carry out such functions by having regard to, inter-alia, the need to secure that all

reasonable demands for electricity are met and to promote efficiency and economy on the part of authorised persons (including generators). It is incumbent upon the SEM Committee to support efficient dispatch of generator units for non-energy actions in the I-SEM BM. Specifically, the objective of the proposed BMPCOP is to replicate competitive complex bid offer submissions in situations where sufficient competitive pressure is not expected to be present. Fixed costs would not be expected in the offers of generation units in a competitive market environment.

6.3.2 It is therefore reasonable and prudent for the SEM Committee to review what costs are eligible for generators to recover when they are dispatched away from their PNs, particularly if such costs could reasonably be deemed fixed costs.

6.3.3 With reference to maintenance costs, the SEM Committee recognises that generators' maintenance costs are a legitimate category of cost that should be recoverable by generators in I-SEM. Enabling recovery of these costs is in the long-term interests of the consumer, so as to allow the I-SEM market attract and retain sufficient investments in generation capacity when such new capacity is needed.

6.3.4 The SEM Committee notes respondents' comments regarding the Consultation Paper's proposed treatment of maintenance costs being different to that which resulted from previous decisions under SEM (in the context of the BCoP), and respondents' arguments that the SEM Committee should be consistent with past SEM decisions. However, from the SEM Committee's perspective it is clear that a new set of arrangements are being developed for a new market context (i.e. the I-SEM, and only in the context of complex bid offer data). It is not a case of merely seeking to reapply the existing set of bidding controls without consideration of the wider context. Clearly, the SEM Committee should take due account (in framing those new controls) of the experience gained in operating the existing controls. However, in deciding how much weight to give to prior decisions, the SEM Committee is constrained in the first instance by its statutory and public law duties.

6.3.5 The SEM Committee notes that there are views that maintenance costs, even those that may vary with time and mode of operation, are not a SRMC (in the context of the BMPCOP). The basis for such views is that maintenance costs are "*lumpy costs*", which the generator may incur on an annual basis but are not incurred directly as a result of generation, particularly those relating to incremental changes in MWh output. Once incurred, it could be suggested that maintenance costs are sunk and should not from part of SRMC. Therefore, the SEM Committee is of the view that there was sufficient justification, when

drafting the Consultation Paper, to consider excluding generators' maintenance costs as an eligible SRMC cost item.

6.3.6 The SEM Committee also recognises that certain maintenance costs incurred by generators may vary with the number of plant run-hours and starts, as specified in operation and maintenance contracts. Under these contracts, a plant that is not run at all in a period of time would not incur these costs. However, if the plant were dispatched, it would accrue a portion of those costs for each hour it generates and each start it initiates. Thus, one could argue that a plant dispatched by the TSO using complex bid offer data in the BM will eventually incur an otherwise avoidable maintenance cost.

6.3.7 With reference to respondents' concerns regarding the proposed BMPCOP and its broader I-SEM interactions, in particular with the CRM, the SEM Committee acknowledges market participants' concerns that the Consultation Paper was not consistent with the CRM Parameters consultation paper (SEM-16-073), which recognised the potential for maintenance costs to include a component that is a variable of output, and indicated that such VOM costs would be recovered in the energy market. If not addressed, this could result in a situation where generators cannot recover their VOM costs in any of the I-SEM markets, potentially leading to inefficient pricing and inefficient market exit. Consequently, this decision and the decision on CRM parameters by the SEM Committee regarding the recovery of maintenance costs by generators will address any inconsistencies between SEM-16-073 and the Consultation Paper.

6.4 SEM COMMITTEE'S DECISION

6.4.1 Taking account of respondents' comments, the SEM Committee has decided that variable maintenance costs should be deemed an eligible cost item for inclusion in a generator's complex bid offer data in the BM.

6.4.2 This decision reflects the SEM Committee's view that allowing VOM in BM complex bid offer data is unlikely to cause significant distortions to market pricing and dispatch in the BM. It also addresses any potential inconsistency between the design of the CRM and complex bid offer controls in the BM.

7 FOREGONE REVENUE

7.1 SEM COMMITTEE'S PROPOSAL

7.1.1 In the Consultation Paper, SEM Committee proposed that certain foregone revenue related to potential plant outages should not be deemed an eligible cost item for inclusion in a generator's complex bid offer data.

7.1.2 The rationale behind this proposal was that costs items included in SRMC should be costs incurred as a direct result of the electricity generation process and not based on probabilities and theoretical costs. Permission of such costs would open up the risk of recovery of costs that may never be incurred.

7.2 SUMMARY OF RESPONDENTS' COMMENTS

7.2.1 Respondents were generally in favour of maintaining foregone revenue as an eligible cost item. One respondent stated that the proposed changes were "*unjustified and unacceptable*", while another respondent stated that foregone revenues are "*legitimate cost items*".

7.2.2 Some respondents identified that the position taken in the Consultation Paper was a departure from the current SEM Committee position on foregone revenue. One respondent quoted a previous SEM Committee decision on the matter (SEM-08-069), which stated "*The SEM Committee also considers that the revenues foregone as a result of the particular running regime of a generator unit are an allowable cost item*".

7.2.3 Another respondent stated that a decision on this matter was made in the 2008 SEM inquiry and the SEM Committee has not expressed any specific concerns in this area. This response stated that the SEM Committee "*should have carried out analysis of historic operation of SEM and whether they had any issue with the way foregone revenues were reflected in offers*".

7.2.4 One respondent described good regulation as being stable, consistent and predictable, and questioned the SEM Committee's rationale for the proposed changes and lack of evidence provided to support them. Another respondent also stated that the consultation proposals were presented without "*any analysis or rationale"*.

7.2.5 A separate respondent stated that the exclusion of foregone revenue from a generators complex bid offer data does not make sense in an opportunity cost framework, and "*may result in bidding principles under which generators*

would expect to make a loss from having an offer accepted". This respondent stated that any risk around double counting for risk or evaluating the value of revenues foregone "*can be reasonably managed by a well resourced Market Monitoring Unit*" and that they do not believe this administrative difficulty "*is sufficient to warrant the exclusion of legitimate costs outright"*.

7.2.6 Another respondent questioned the view taken in the Consultation Paper that by allowing the inclusion of foregone revenue there is a risk that a generator may over recover. This respondent stated that this view failed to take into account the probability that, where the assessment is risk weighted, "*there is also the possibility that the risk actually materialises and the generator loses more than it had forecast*."

7.2.7 One respondent stated its view that foregone revenues "*are a well-established kind of opportunity cost, arising in this case from the loss of a generator unit*." They stated that the SEM Committee needed to address whether the disallowance would have any impact on the willingness of market participants to participate in the BM, and whether foregone revenues are legitimate components of opportunity cost and hence SRMC.

7.3 SEM COMMITTEE'S RESPONSE

7.3.1 A principal objective of the BMPCOP is to allow the replication of complex bid offer data that would be expected from generators that operate in a competitive market as this is expected to protect the interests of consumers. Any generator operating in a fully competitive (efficient) market, would be a price taker, and would submit COD that equals its SRMC in each trading period. This would produce a socially optimal outcome. The aim of the SEM Committee is to attempt to replicate this outcome by requiring generators to submit their complex bid offer data so as to reflect their SRMC in each ISP.

7.3.2 The SEM Committee notes that some respondents have referenced a number of previous SEM Committee decisions, and stated that the SEM Committee's position is inconsistent with that taken in previous decision papers in relation to the SEM. As already stated in this Decision Paper, the SEM Committee is designing a new set of rules for a new market (i.e. I-SEM) rather than merely seeking to apply the existing set of bidding controls. Clearly, the SEM Committee should take due account (in framing the BMPCOP) of the experience gained in operating the existing controls. However, in deciding how much weight to give to prior decisions, the SEM Committee is not constrained by prior precedent, but rather by its broader statutory and public law duties.

7.3.3 The I-SEM is a fundamentally different market to the SEM. In the SEM, generators are mandated to bid their SRMC into the energy market for all of their output, and have an opportunity to recover their fixed costs through energy rents and the capacity market. There exists no scope for a generator to develop an independent bidding strategy outside of what is permitted in the licence and BCOP. In the I-SEM, generators will have the freedom to include any cost they deem necessary (subject to the requirements of REMIT) within their COD, with the exception of the complex bid offer data.

7.3.4 The proposed BMPCOP for I-SEM complex bid offer data won't be applied across all the I-SEM markets, but rather primarily to non-energy actions in the BM, where units have been tagged and flagged by the TSOs for system reasons. In the majority of cases these will be generation units that operate within a constrained region, and therefore they are either being constrained up or constrained down by the TSO. In the case of plant constrained up, these will be units that have not been scheduled in the DAM and IDM. These generator units will be in a potentially monopolistic position in the market, with the possibility of exerting local market power. It is important to re-iterate that in all other energy markets that make up the I-SEM, generator units will not be constrained by any bidding principles, like they are in the SEM.

The SEM Committee notes respondents' concerns regarding the exclusion of foregone revenue from a generator's complex bid offer data, including a concern that costs might not be recovered over the duration of the generating unit's dispatch instruction.

7.3.5 In the SEM, lost capacity revenue due to an outage could potentially be considered as revenue foregone, because the capacity is paid out on a generator unit's availability (i.e. if a generator unit was available to generate then it got paid, if it was on outage then it did not receive any capacity revenue).

7.3.6 As previously stated, I-SEM is a fundamentally different market to SEM. Under I-SEM, if a generator unit is not available in a time of scarcity then under the CRM mechanism that generator unit may be exposed to penalties. When bidding into the CRM auction each generator unit will need to assess the reliability of its unit (whether baseload or mid-merit) and the costs associated with maintaining an appropriate level of reliability and will factor this into its auction price.

7.3.7 Additionally, the SEM Committee notes that a generator unit with a RO will still be paid the Fixed Option Fee even if it is on an outage. The risk it faces is that when called on during a scarcity event, it may not be able to meet its dispatch instruction, and therefore will be exposed to penalties. The generating unit has

the ability to trade this risk out through the CRM secondary market. This design is fundamentally different from the SEM capacity market where payments are paid exclusively on availability.

7.3.8 When considering foregone DS3 revenue as part of a generation unit's complex bid offer data, the SEM Committee is of view that in certain circumstances some DS3 products can be considered as foregone revenue. This may mean that a generation unit may discount or add on the revenue foregone to parts of their complex bid offer data as the circumstances deem it appropriate. A generation unit that incorporates foregone DS3 revenue in their complex bid offer data will have to provide a justification for doing so upon request by the RAs Market Monitoring Unit.

7.3.9 The SEM Committee notes that the DS3 System Services Procurement Design and Emerging Thinking decision paper (SEM-14-108) concluded that, *"the higher of a unit's market position or physical dispatch will be used to determine the available volume. Where a provider does not need to be physically exporting to provide a service it is considered available even when not exporting."* This means that a generation unit will receive DS3 System Services payments based upon the higher of its available volume to provide DS3 services at the close of the IDM or the BM. Therefore when a generation unit knows that it will be recovering DS3 revenue based on the above, it does not necessarily face a lost foregone DS3 revenue and in which case it should not be incorporating a loss into its complex bid offer data. The SEM Committee recognises the complexity of this issue, and that there are numerous other circumstances where it would be appropriate for a generation unit to either discount or add on DS3 revenue foregone to their complex bid offer data.

7.3.10 The SEM Committee considers that the foregone infra marginal revenue expected due to outages are not eligible for inclusion of complex bid offer data. By their nature, generators tend to fail from time to time. These risks can be reasonably estimated, and generation owners can normally obtain an insurance against these risks. Insurance costs generally represent fixed costs that should not be recovered through SRMC-based complex bid offer data. It is the SEM Committee's view that it would not be appropriate to charge the consumers for these risks through the BM.

7.3.11 The only scenario whereby the SEM Committee currently envisages the recovery of revenue foregone through a unit's complex bid offer data is for energy storage or energy limited plant, where by delivering an action in a current period these units predictably forego materially higher revenue from a future period. Consequently, the SEM Committee is of the view that a reasonable provision for revenue foregone can be submitted as part of such units complex bid offer data.

7.4 SEM COMMITTEE'S DECISION

7.4.1 Taking account of respondents' comments, the SEM Committee is of the view that future foregone revenue should not be considered eligible for inclusion in generation units complex bid offer data in the I-SEM, with the exception of energy limited units and DS3 revenue as appropriate.

8 RISK

8.1 SEM COMMITTEE'S PROPOSAL

8.1.1 The Consultation Paper proposed that costs related to increased risk to plant and equipment as a result of the generation unit's running regime were not eligible costs items.

8.1.2 The Consultation Paper also proposed removing the clause that allowed for the provision of costs related to increased risk to plant and equipment as a result of the operation of a generation unit. Specifically, the increased risk of a plant failure from increased production and any resulting loss of revenue was not considered to be an eligible cost item for inclusion in complex bid offer data.

8.2 SUMMARY OF RESPONDENTS' COMMENTS

8.2.1 Respondents who addressed the issue of risk disagreed with the SEM Committee's proposal and favoured including costs related to risk to plant and equipment in complex bid offer data.

8.2.2 One respondent stated that the proposal to remove wording allowing the inclusion of a "*reasonable provision for increased risks to plant and equipment as a result of the operation of a generation set*" was an attempt to constrain cost recovery. The respondent concluded that the frequency and nature of maintenance can vary greatly with the operating regime and the proposed approach could lead to under recovery of costs in the BM, or the inclusion of a risk premium in the DAM and IDM offers. This respondent also queried the statement in the Consultation Paper that "*operating mode today leads to loss of revenues in the future is arguably speculative"*.

8.2.3 The issue of under-recovery of costs was addressed by a second respondent who expressed the view that excluding risks would not "*make sense in an opportunity costs framework*" and "*may result in bidding principles under which generators would expect to make a loss from having an offer accepted"*. The respondent stated that ignoring the potential risk of equipment failure would lead to under recovery of costs and failure to account for this "*risks a system where bids based on the BMOP are insufficient for generators to willingly provide compliant Balancing Market offers*."

8.2.4 Another respondent stated that it should not be expected for generators to take all of the exposure "*especially considering the potential impact the BMOP will have on the DAM and IDM*". A further respondent indicated that if a

generator cannot reflect risk in the energy market then it would look to the capacity market and could cause unintended consequences there.

8.2.5 One respondent raised the issue of fuel price risk. This respondent stated that "*even in a short window the "Actual price" could be very different to the price forecast at the time the Offer is made*." This respondent also viewed the proposal to remove the right to include provision for risk to plant and equipment as not justified with the consequence being that the market will not provide for "*the recovery of legitimate costs*."

8.2.6 A number of respondents also highlighted that the proposal was in conflict with previous SEM Committee decisions. One respondent commented that the Consultation Paper was contrary to decisions reached in SEM-08-069. A second respondent reasoned that since the 2008 bidding inquiry, the SEM Committee has made "*no further pronouncements on this matter and has on a number of occasions stated that the SEM has been operating efficiently*", and concluded that "*given that the three part offers serve the same purpose for constrained on plants in I-SEM as they do in SEM we don't understand the rationale for this change."* A third respondent quoted a number of SEM Committee decisions from the SEM, and stated that the SEM Committee has previously expressed an unequivocal view that increased risk to plant and machinery are allowable costs, and to deny their recovery *"would threaten the development of effective competition in the market*."

8.3 SEM COMMITTEE'S RESPONSE

8.3.1 The SEM Committee accepts that this position is a departure from the BCOP currently in force in the SEM. However, as indicated in Section 6.3.4 and Section 7.3.2 of this Decision Paper, the SEM Committee is not seeking to apply the existing set of bidding controls to I-SEM, as I-SEM will be a fundamentally different market design relative to SEM. As a result the SEM Committee does not consider the current bidding controls to be appropriate for the complex bid offer data in the BM.

8.3.2 The SEM Committee acknowledges that any decision should take account of experience gained in applying the existing controls. In order to satisfy statutory and wider public law duties, the SEM Committee needs to carefully evaluate criticisms levelled at the proposed complex bid offer controls. All criticism, including the departure from previous SEM Committee decisions around this area in the SEM has been considered in detail, and will be addressed in the subsequent sections.

8.3.3 As previously stated, the SEM Committee views the design of I-SEM as being fundamentally different to the SEM. When operating in the SEM, generating units were mandated to bid their SRMC into the market. A market schedule, based on meeting demand over the trading day at least cost, determined which units were in merit, and which were out of merit. Generators operating in the SEM also received separate capacity payments that contributed towards their fixed costs, when they are available to generate. The calculation of the SEM capacity pot is carried out on an annual basis by the RAs.

8.3.4 In contrast, under I-SEM generator units will have the freedom to include any cost they deem necessary (subject to the requirements of REMIT) within their COD for DAM, IDM and BM, with the exception of the complex bid offer data in the BM. Complex bid offer data won't be applied across all the I-SEM markets as it currently is in the SEM, but primarily in a subset of the BM, where generation units have been tagged and flagged for system reasons. Complex bid offer data will be used by the TSO in its SCUC dispatch of plant which may, in some instances, mean that it is used to settle early energy actions.

8.3.5 In the majority of cases where generation units have been tagged and flagged by the TSO these will be plant that operate within a constrained region and for that reason are either being constrained up or down by the TSO. In the case of plant constrained up, these will be units that have not been competitive in the DAM and IDM. Constrained plant will be in a potentially monopolistic position in the market, potentially exerting local market power. SEMC's principal objective is to protect consumers and so it is appropriate to take relevant steps to address risks associated with local market power. It is important to re-iterate that in all other energy markets that make up the I-SEM generation units will not be constrained by any bidding principles, like they are currently in the SEM.

8.3.6 The differences in market design, as outlined above, have led the SEM Committee to conclude that it would not be appropriate for the construction of the complex bid offer data to mirror the SEM and that some costs that were permitted under the BCOP for SEM should not be permitted in complex bid offer data for the I-SEM BM.

8.3.7 Regarding respondents' comments on the under recovery of costs, the SEM Committee acknowledges points made by respondents that a plant's operating regime can impact on its maintenance requirements and can increase the risk of equipment failure. This is incorporated into the Equivalent Operating Hours (EOH) methodology that is used by some generation units to determine maintenance outages. However, risk related costs are by definition uncertain, and very difficult to verify. There is no certainty that the potential risk will

actually materialise. Furthermore, if the risk does not materialise then the generation units may be compensated twice.

8.3.8 The SEM Committee notes that in other markets there are provisions that allow generators to offer some generation capacity above their normal operating limits, including an allowance for additional costs and risks associated with such operation to be included in generator offers. In those markets, the TSO only utilises these offers during system emergencies. The I-SEM, just like the SEM, does not contain provisions for generators to offer such emergency capacity, and the SEM Committee's expectation is that the TSO will not dispatch generators above their normal operating limit in the BM.

8.3.9 Costs associated with the risk of outages are normally costs that are priced into investment decisions, not the actual SRMC used as the basis for electricity generation decisions. It is the SEM Committee's view that generation units can best mitigate against risk to plant and equipment through insurance. There exists a global insurance market for power generation that offer various risk management solutions to cover such events. It is not unreasonable to expect prudent generation units to have taken out such policies to cover against such events. The SEM Committee views the cost of such a policy as generally being a fixed cost, it should therefore not be included in a generator unit's complex bid offer data.

8.3.10 With reference to comments regarding fuel price risks, the SEM Committee accepts that there is risk that movements in fuel price could result in a generation unit paying more for its fuel than what it forecast at the time it submitted its complex bid offer data. However, there is also the potential that the actual fuel price could be lower than estimated. The SEM Committee is not aware of any systematic bias in this price differential, and therefore does not see merit in allowing this form of price risk in the complex bid offer data. If such a bias were demonstrated to exist, then the SEM Committee would reconsider this position. In addition, in the I-SEM, generators will be able to update their complex offers throughout the day if the value of their cost items changes, which is not currently the case in the SEM.

8.3.11 The SEM Committee would like to provide clarity on an issue that was not explicitly stated in the Consultation Paper nor in responses regarding the inclusion of penalties as an eligible costs item in complex bid offer data. The SEM Committee is of the view that it would not be appropriate to allow the inclusion of penalties in the complex bid offer data. Penalties are developed to incentive appropriate generator unit behaviour and good performance, including plant reliability and availability. Their inclusion would allow generators to reduce or even eliminate these incentives, thus negating the purpose of the penalties.

8.4 SEM COMMITTEE'S DECISION

8.4.1 Taking account of respondents' comments, the SEM Committee has decided that all elements of risk will not be permitted as eligible cost items for inclusion in a generator unit's complex bid offer data, this includes but is not limited to the following:

- Costs associated with risk to plant and equipment will not be eligible for inclusion in a generator unit's complex bid offer data because this risk can be mitigated by the unit taking out insurance to cover such risks.

- Costs associated with fuel price risk will not be permitted for inclusion in a generator unit's complex bid offer data.

- Penalties shall not be permitted for inclusion in a generator unit's complex bid offer data.

9 GAS TRANSPORTATION COSTS

9.1 SEM COMMITTEE'S PROPOSAL

9.1.1 The SEM Committee's Consultation Paper proposed that generation units would be able to include GTC costs, including long term capacity, in their complex bid offer data.

9.1.2 As part of its rationale, the Consultation Paper proposed such an approach on the basis that not all standard daily GTC products are currently available in Northern Ireland, and that the inclusion of long term GTC costs would facilitate equitable treatment of generators in Ireland and Northern Ireland.

9.2 SUMMARY OF RESPONDENTS' COMMENTS

9.2.1 A minority of respondents addressed the issue of GTC inclusion in their responses to the Consultation Paper, with mixed opinions being expressed by respondents.

9.2.2 Only one respondent explicitly welcomed the proposal to include long term GTC costs in a generation unit's complex bid offer data. This respondent stated their support for the proposal "*due to the inability of generators to procure short term gas capacity products and to facilitate equitable treatment of generators on Northern Ireland*".

9.2.3 In contrast, some respondents expressed concerns regarding the Consultation Paper's proposal on GTC costs. One respondent stated that the inclusion of long term GTC costs has the potential to overstate the marginal cost of GTC products. Specifically, the respondent stated the following:

"*the proposed BMOP overlooks some legitimate costs, such as maintenance costs but also potentially over-states the marginal cost of others such as Gas Transportation Costs. The proposed BMOP provides for Gas Transportation Costs to be included within bids at one of 2 cost levels – i.e. gas fired generators bidding into the balancing market are obliged to include these costs in one of two forms. It is not clear that such costs would automatically or always vary in response to Balancing Market actions*".

9.2.4 Another respondent with concerns regarding the SEM Committee's Consultation Paper, stated that the proposed treatment of gas transportation

is not appropriate, as the "*proposal is effectively restricting the procurement strategy of gas fuelled generators in order to ensure their costs are recoverable. This will only provide certainty to the network and could be considered, in effect, a cross subsidy of the gas market*".

9.2.5 Some respondents expressed mixed views regarding the SEM Committee's proposal. One respondent saw some merit in the inclusion of long term GTC cost in a generator unit's complex bid offer data, but stated that the removal of daily and monthly gas capacity costs will not provide the greatest benefit to consumers. Specifically, the respondent stated that "*If plants are only able to bid in annual gas capacity costs, then they will need to recover these over their projected running*". It was the respondent's view that if a unit rarely runs, the cost could be higher than bidding in daily gas capacity, and the SEM Committee should consider allowing units' complex bid offer data "*a split of annual and daily with direct reference to their previous years physical running*".

9.2.6 Additionally, one respondent stated that the "proposals are unworkable and would not provide for recovery of costs for a generator unless they were running continually throughout the year". In particular, the respondent noted that a peaking or low mid-merit generator whose output is heavily dictated by wind will not recover all of their gas exit transportation costs. Consequently, the respondent stated that this issue should be addressed by ensuring there is equitable access to gas capacity products.

9.2.7 Another respondent stated that the "*absence of short term gas capacity at exit amount to a discriminatory locational signal for Northern Ireland generators*", and stated that the SEM Committee's proposal was unclear. In particular, the respondent highlighted the lack of clarity regarding paragraph 17 of the draft bidding document and the use of the phrase "relevant gas pricing point" (i.e. does relevant gas pricing point refer to the onshore network or the actual power station). Additionally, the respondent was unclear to the SEM Committee's proposed treatment of secondary entry capacity (i.e. if it is permitted in generators costs) and noted that the SEM Committee's proposal "*appears to prohibit generators from reflecting the cost of regulated daily gas products in their offers to the market*".

9.2.8 Given the proposed changes to GTC costs, one respondent stated that the SEM Committee's proposal could impact on the revenue recovery for the gas network operators and that the SEM Committee should engage further with the network operators and the gas industry. Whilst the respondent was in favour of maintaining the principles of the current BCOP with regard to gas capacity (with an addition added that would allow holders of annual capacity to recover the cost of that annual capacity product even where no secondary product is available), the respondent stated that the SEM Committee needs to

give further consideration to the potential unintended consequences of its proposal.

9.3 SEM COMMITTEE'S RESPONSE

9.3.1 The SEM Committee notes that the issue of GTC cost recovery was only covered in a minority of responses and acknowledges the view taken by the majority of those who responded on this issue, was that these costs should be included in generator bids.

9.3.2 The SEM Committee acknowledges respondents' concerns regarding the ambiguity of the proposals on the inclusion of GTC costs in gas generation units' complex bid offer data as set out in the Consultation Paper. The purpose of the proposal was to consider allowing gas generation units' to include long term GTC products (monthly and quarterly in addition to annual GTC products), in addition to the short term GTC products that are currently allowed under the BCOP.

9.3.3 With reference to respondents' comments regarding the practicality of the SEM Committee's proposal for the inclusion of long term GTC in generation units' complex bid offer data, the SEM Committee acknowledges these concerns. Within the Consultation Paper, it was proposed that the calculation of the annual GTC product for inclusion within the complex bid offer data would be using the assumption of base load operation. This assumption was made to facilitate a simple and transparent methodology for this calculation. The SEM Committee acknowledges that this proposal did not cater for alternative modes of operation from base load but this may have led to greater ambiguity around the inclusion of long term GTC costs in gas generation units' complex bid offer data.

9.3.4 The SEM Committee notes some respondents' concerns regarding the proposal to include long term GTC costs in gas generation units' complex bid offer data. The SEM Committee accepts that long term GTC costs are not marginal in the BM and therefore their inclusion would not be consistent with the definition of SRMC proposed in the Consultation Paper.

9.3.5 Regarding concerns expressed over the lack of clarity in paragraph 17 of the Annex A of the Consultation Paper, this issue will be considered in the SEM Committee's forthcoming consultation on the BMPCOP. On the issue of including secondary traded entry GTC in gas generation units' complex bid offer data, the SEM Committee consider it appropriate to include these products only when there is a recognisable and generally accessible trading market.

9.4 SEM COMMITTEE'S DECISION

9.4.1 The SEM Committee believes in the principle that, where possible, recovery of costs should be fair and equitable, and that to vary from this position could potentially create distortions in I-SEM.

9.4.2 However, unlike in electricity, there are two separate gas markets that currently exist across the island of Ireland. These gas markets offer separate, and unique product offerings. When it comes to deciding if these products can be considered part of gas generation units' SRMC, the SEM Committee need to consider both markets separately.

9.4.3 In the Republic of Ireland (ROI) a number of GTC products for both entry and exit gas capacity exist. An overview of these products are shown in the table below.

Table 9.1: Gas Capacity Products in the Republic of Ireland

Product Durations:	IP Entry Capacity	Non-IP Entry Capacity	Exit Capacity
Multi _ Annual	✓	✓	✓
Annual	✓	✓	✓
Quarterly	✓		
Monthly	✓	✓	✓
Daily	✓	✓	✓
Within Day	✓	✓	✓

9.4.4 The ROI market consists of a number of products ranging from annual to within day capacity bookings at both entry and exit, coupled with a penalty regime of overrun charges. Transmission tariffs are split between a capacity and commodity charge, with 90% being capacity and 10% commodity.

9.4.5 In Northern Ireland there are also a number of GTC products for entry gas capacity. However there only exists an annual product for exit capacity bookings. Transmission tariffs are split between a capacity and commodity charge, with 75% being capacity and 25% commodity. An overview of these products are shown in the table below.

Table 9.2: Gas Capacity Products in Northern Ireland

Product Durations:	IP Entry Capacity	Exit Capacity
Multi _ Annual	✓	✓
Annual	✓	✓
Quarterly	✓	
Monthly	✓	
Daily	✓	
Within Day	✓	

9.4.6 The main difference between the two markets is the granularity of product offerings for exit capacity. Shippers in Northern Ireland can purchase exit capacity on an annual basis only, whereas shippers in ROI can also purchase the capacity in shorter term frames including monthly and within-day.

9.4.7 Currently, gas generation units are able to include the commodity part of the gas transportation tariffs as part of their bids in the SEM. The SEM Committee considers that the commodity element of the gas transportation tariffs should also be considered as an eligible SRMC cost item in I-SEM.

9.4.8 The SRMC definition for complex bid offer data in the I-SEM is based upon the incremental/decremental change of 1MWh in an ISP. This is to be measured at opportunity cost, which is the benefit foregone by reference to the most valuable realisable alternative to electricity generation on a recognised and generally accessible trading market or replacement cost.

9.4.9 Based on this definition of SRMC, the SEM Committee is of the view that any GTC purchased within day is an avoidable cost and can be included as part of a gas generation unit's complex bid offer data. On the issue of including secondary traded entry GTC in gas generation units' complex bid offer data, the SEM Committee consider it appropriate to include these products only when there is a recognisable and generally accessible trading market.

9.4.10 With regard to all other GTC product offerings, the SEM Committee does not view these as being a legitimate cost item for inclusion in a gas generating unit's complex bid offer data. This is a departure from the proposal in the Consultation Paper. The SEM Committee view all these other products as not consistent with the definition of SRMC in the BM. Products purchased ahead of the trading day are not a short-run cost, but rather a fixed cost for a generating unit.

10 GENERAL ISSUES

10.1 OVERVIEW

10.1.1 A number of additional issues were raised by respondents regarding the SEM Committee's Consultation Paper. This section summarises these issues and the SEM Committee's associated response.

10.2 SUMMARY OF RESPONDENTS' ADDITIONAL COMMENTS

10.2.1 Separate to the legal concerns raised by respondents regarding the transferring of content from the generator licence to the BMPCOP (as identified in Section 4 of this Decision Paper), respondents raised additional legal concerns regarding the SEM Committee's Consultation Paper. These additional legal concerns include the following:

- Proposals are contrary to competition law; and
- Proposals impact on generators' property rights and right to a livelihood.

10.2.2 With reference to concerns regarding competition law, one respondent alleged that the proposals are contrary to competition law, including Article 102 of the Treaty on the Functioning of the European Union and Section 5 of the Competition Act 2002 to 2014. As part of their response, the respondent stated the following:

"*To the extent that the prescriptive bidding rules proposed by the SEM Committee, applicable to both Options 1 and 2, would impose a requirement on generators to submit offers in the I-SEM BM that were below their SRMC, such an obligation could be contrary to competition law, specifically Article 102 of the Treaty on the Functioning of the European Union (TFEU) and Section 5 of the Competition Act 2002 to 2014; the provisions of which prohibit predatory pricing. This particular concern arises in light of the ongoing dominance of ESB and the pre-existing concerns over the exercise of market power*".

10.2.3 With reference to respondents' concerns regarding impact on generators' property rights and right to earn a livelihood, one respondent stated the following:

"The RAs' proposals as regards bidding controls on the BM and the changes being contemplated to the generation licences directly and significantly affect the property rights of existing generators such as Energia, and their shareholders. As participation in the market designed by the RAs is the only means available to existing generators such as Energia and its shareholders to exercise their property rights and right to earn a livelihood, it is incumbent upon the RAs, and essential, that the market design respects such property rights and allows a generator to recover its costs – any design which does not allow a generator to recover its costs would amount to a form of unconstitutional expropriation".

10.2.4 In addition to the legal concerns raised, respondents' expressed additional concerns, including:

- **The SEM Committee's Consultation Paper is not clear on the issue it is trying to address.** One respondent stated that "*the definition of the problem that the proposed bidding controls seek to solve is not sufficiently clear*." Additionally, the respondent stated that "*in the absence of a clearly defined problem, the proposed bidding controls may affect more than just the targeted problem*."

- **The SEM Committee has abandoned a principles based approach.** Some respondents described Option 1 as being "a highly prescriptive set of bidding rules". Another respondent was of the view that both options were "overly prescriptive, pose genuine risk to generators ability to recover their variable costs and introduce an unacceptably high risk of unintended consequences on other I-SEM markets".

- **The SEM Committee's proposals will impact on ex-ante price formation and efficient functioning in the DAM and IDM and potentially the CRM and DS3 markets.** One respondent stated that "*suppliers, renewable and thermal generators will be less inclined to balance their positions if imbalance prices are dampened by the bidding controls, potentially undermining liquidity in the ex-ante markets*." Another respondent stated that Options presented in the consultation paper will introduce implementation risk that could have unintended consequences "*on price formation and market liquidity*".

10.3 SEM COMMITTEE'S RESPONSE

10.3.1 With reference to the additional legal concerns raised by respondents, the SEM Committee notes the following:

Proposals are contrary to competition law: The SEM Committee recognises that it would be contrary to Article 102 for a Member State regulatory authority to require a dominant undertaking to engage in abusive pricing behaviour. However, in relation to the proposals contained within the Consultation Paper, the SEM Committee is of the view that its proposals are designed to ensure that market participants complex bid offer data are legitimate, cost reflective and based on their SRMC, thereby seeking to ensure competitive market outcomes. Consequently, the SEM Committee is of the view that its proposals are not contrary to competition law.

Impact on Generators' property rights and right to a livelihood: The SEM Committee does not agree with respondents' comments that the proposals within the Consultation Paper impact on generators property rights and their right to earn a livelihood. The purpose of the BMPCOP is to allow generators recover their legitimate SRMC. Furthermore, the SEM Committee is not aware of any authority that would support the (apparent) proposition that the imposition of a regulatory burden which would make it harder (compared with the status quo ante) for a regulated firm to recover the costs of its investment is a form of expropriation. Additionally, the SEM Committee notes that the respondent's assertion was made without reference to any EU or ECHR authority.

10.3.2 With reference to the additional concerns raised by respondents, the SEM Committee notes the following:

Issue being addressed by the SEM Committee: The SEM Committee's Market Power Mitigation Decision Paper addressed the issue of the application of new bidding controls for I-SEM. Additionally, Section 2 and Section 3 of this Decision Paper sets out the rationale for applying complex bid offer controls and the development process for the application of new complex bid offers controls for I-SEM.

Abandonment of Principles Based Approach: The SEM Committee is cognisant of respondents' concerns that the SEM Committee had taken a targeted/prescriptive approach towards the BMPCOP. In light of respondents' concerns regarding the level of prescription in the BMPCOP and suggestions that the BMPCOP should allow greater latitude to generators, the SEM Committee will consult on the level of prescription in the BMPCOP in the follow-on consultation discussed in section 11 below.

Impact on the efficient functioning of other I-SEM Markets: The SEM Committee notes that any generator operating in a competitive market would find that the profit maximisation of output occurs when price equals SRMC in each trading period. In the I-SEM Market Power Mitigation Decision Paper

(SEM-16-024), the SEM Committee proposed to utilise generators' three part offers, which are submitted to the TSOs, as part of option 2b for actions of units deemed to be non-energy for the purposes of the market power mitigation functionality as part of imbalance pricing. The SEM Committee stated that it would apply a bidding principle "*due to the largely uncompetitive nature to the non-energy services that the TSO will be seeking*".

The purpose of the bids and offer principles, as laid out in the BMPCOP, is to allow replication of the type of offers that would be expected from generators that operate in a competitive market. The SEM Committee has deemed the DAM and IDM to be competitive, therefore we do not believe the three part bids and offers price to be lower than that what would be expected in the DAM and IDM.

The proposed BMPCOP for I-SEM bids and offers will not be applied across all the I-SEM markets, but rather primarily non-energy actions in the balancing market, where units have been tagged and flagged by the TSOs for system reasons. Any unit that has been tagged and flagged will not be able to set the BM price and will be settled at the higher of its complex bid offer data and the BM price. The only instance where the SEM Committee can see that the complex bid offer data affect price formation is if units do not submit any simple bids and offers. In this instance units would be taken on their complex bids and offers.

11 NEXT STEPS

11.1.1 Following the publication of this Decision Paper, the RAs will proceed with the development of the new licence condition (based upon the draft annexed to the Consultation Paper) and the SEM Committee will issue a consultation on the proposed BMPCOP (again, based upon the draft annexed to the Consultation Paper) in line with decisions taken in this Decision Paper.

11.1.2 The forthcoming consultation on the BMPCOP will also allow respondents an opportunity to comment on any related issues that have not been consulted upon to date.

11.1.3 The statutory consultation on modification to generation and supply licences for I-SEM purposes (which will also cover the new licence condition mentioned above) will be published by the 2nd June.

11.1.4 The timeline for the consultation on the BMPCOP is as follows:

- Publication of BMPCOP Consultation 13th April 2017
- Close of BMPCOP Consultation 12th May 2017
- Publication of BMPCOP Decision 3rd July 2017

ANNEX A: OVERVIEW OF COMPLEX BID OFFER DATA

What are Complex Bid Offer Data?

The I-SEM Trading and Settlement Code (T&SC) requires each participant to submit Commercial Offer Data (COD) to the Market Operator (MO) for each generator unit that is dispatchable[10] [T&SC D.3.2.2 (a)] for the Trading day, prior to gate closure 1 (see below) for the Balancing Market (BM). T&SC Appendix I sets out the components of COD. There are two types of COD: 1) simple bid offer data; and 2) complex bid offer data. The complex bid offer data is comprised of the follow components:

i. Incremental Price Quantity Pairs;
ii. Decremental Price Quantity Pairs;
iii. No Load Costs;
iv. Start Up Costs; and
v. Shut Down Costs.

Table 1 below outlines which type of units market participants need to submit the different elements of COD for.

Table 1 – Commercial Offer Data Elements in I-SEM

Data Element	Energy Limited Unit	Demand Side Unit	Other Generator Units not included in paragraph 1 of this Appendix
Simple Incremental Price Quantity Pairs	Yes	Yes	Yes
Simple Decremental Price Quantity Pairs	Yes	Yes	Yes
Complex Incremental Price Quantity Pairs	Yes	Yes	Yes
Complex Decremental Price Quantity Pairs	Yes	Yes	Yes
No Load Costs	Yes		Yes
Start Up Costs	Yes		Yes
Shut Down Cost		Yes	
Energy Limit	Yes		
Forecast Availability Profile	Yes	Yes	Yes
Forecast Minimum Output Profile	Yes	Yes	Yes
Forecast Minimum Stable Generation Profile	Yes	Yes	Yes

(Source: Table 2 in T&SC Appendix I: Offer Data)

The T&SC outlines the timelines that market participants need adhere to for the submission of their COD:

- Gate opening is 19 days prior to the trading day [D.2.1.1];

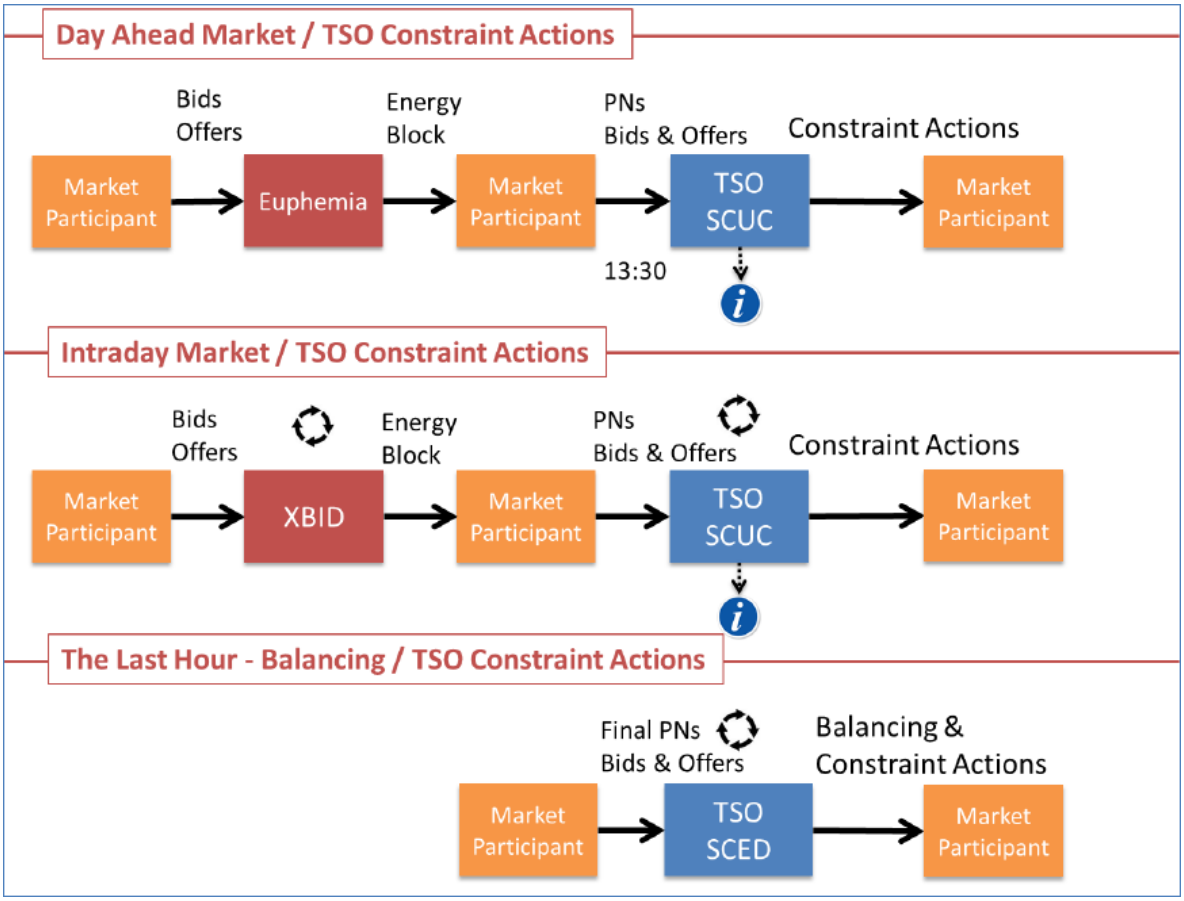
[10] This excludes the following units from submitting COD; assetless units; trading Units; interconnector Error Units; and interconnector residual capacity units (T&SC Appendix I: Offer Data – 4).

- Gate closure 1 for a trading day is 13:30 on the day prior to the trading day [D.2.1.2 (a)]; and
- Gate closure 2 for an imbalance settlement period is 1 hour prior to the start of the imbalance settlement period [D.2.1.2 (b)].

Background (System design)

Complex bid offer data is used along with other data (for example forecast demand) by the TSOs in their tools, Security Constrained Unit Commitment (SCUC) and Security Constrained Economic Dispatch (SCED), to determine schedules (plans) that help determine dispatch instructions issued to market participants, as illustrated in the figure 1 below.

Figure 1 – Scheduling and Dispatch in I-SEM



The objectives of the scheduling and dispatch process can be separated into two timeframes:

1. Before intraday gate closure:
    - energy balancing actions should be taken as late as possible; and
    - the cost of constraint (non-energy) actions should be minimised.

2. After intraday gate closure:
    - The cost of all energy and non-energy actions should be minimised.

In practice, however, actions to balance energy requirements are not fully distinguishable from non-energy actions, or vice versa. The scheduling and dispatch of generator units to balance energy supply and demand can cause or relieve constraints or other system security requirements. Similarly, non-energy actions, taken to maintain system security, can increase or decrease energy imbalances. In addition, actions taken to accommodate priority dispatch

units can affect energy imbalances and/or system security. The following sections outline the distinction between non-energy and energy actions in I-SEM.

Balancing Market Non-Energy Actions

Non-energy actions taken in the BM can be considered as actions that are taken by the TSOs to address system issues that would still exist even if the market had perfectly balanced energy supply and demand. These non-energy requirements include reserves, dynamics (Inertia, RoCoF, SNSP), voltage support and thermal transmission constraints. Satisfying these requirements will likely require the TSOs to reposition resources away from their Physical Notifications (PNs) by accepting incremental offers and decremental bids in the Balancing Market. Operational limits for a given day may vary from time to time due to changing system conditions and network outages. This will be carried out with the aim of minimising the cost of constraints/ non-energy actions before and after the intra-day gate closure.

The SEM Committee have decided that the TSOs will adopt a caused based methodology for distinguishing between energy and non-energy actions, known as Flagging and Tagging. The following is the list of flagging and tagging categories that will be applied in I-SEM that will identify non-energy actions:

A.	System Operator flags (SO flags)	This is used of the identifying balancing actions related to the management of transmission constraints
B.	Non-marginal flags	This applies to units that are at their minimum stable level, maximum capacity or at maximum ramping.
C.	Net Imbalance Volume tagging (NIV tagging)	This is where the TSO is taking actions in both directions (instructions for both incremental and decremental actions) in a given settlement period to resolve a transmission constraint or to re-position resources for reserve.

SO flags and Non-marginal flags will be determined by the TSO's SCUD and SCED tools and the NIV tagging will be determined by the Market Operators (MO's) imbalance pricing algorithm using data provided by the SCUD and SCED.

Balancing Market Energy Actions

Energy actions in the balancing market are actions taken by the TSOs to address an overall imbalance between energy supply and demand. The majority of energy actions taken in the balancing market will take place after gate closure 2 and will be settled on simple bid offer data, where they are submitted by the market participant and have not been flagged or tagged.

In addition to this there maybe instances where the TSO is required to take early actions after BM gate closure 1 but before BM gate closure 2, such as where large energy imbalances are indicated by initial Physical Notifications (PNs) from participants. This could involve the TSOs instructing the start-up of additional generation, with notice times greater than one hour, before BM gate closure in order to address the imbalance. There is a risk that such actions may interfere with the signals and activity in the intraday market and therefore SCUC will

include Long Notice Adjustment Factors (LNAFs) that apply weightings which increase the costs of offline units to the scheduling process, depending on their notice times. If the scheduler has no choice but to start a long notice unit to satisfy a security constraint then it will do so. However, given a choice of a number of resources with the same (or similar) cost, application of the LNAFs will tend to favour shorter notice resources in the scheduling process.

Balancing Market Pricing

The imbalance pricing algorithm will then use a standard linear programming approach to calculate the marginal price of the unconstrained energy balancing action for every Imbalance Pricing Period (IPP), which is period of 5 minutes. Then the average of all IPPs within an ISP is used to determine the price in the BM. This means that complex bid offer data will not have an impact on the pricing in the BM, unless a market participant does not submit simple bid offers into the BM before gate closure 2, in which case the incremental and decremental component of the complex offers may be used for setting the imbalance price in the IPP.

Balancing Market Settlement for BOA Quantities

Where a generator unit has BOA quantities which are flagged or tagged, the make whole payment mechanism in the settlement systems will calculate and make whole any shortfall in its costs, based on its submitted complex bid offers, not met by the imbalance price in every ISP over the generator unit's contiguous operating period.

ANNEX B: STATUTORY FRAMEWORK FOR DECISION MAKING

Ireland

1. In terms of s.9BC(1) of the Electricity Regulation Act 1999, the principal objective of the Commission for Energy Regulation (in giving effect to any decision of the SEM Committee) and of the SEM Committee (in taking decisions on behalf of the Commission), is to protect the interests of consumers of electricity in the State and Northern Ireland supplied by the holders of licences or exemptions under a provision of the 1999 Act relating to electricity or under any corresponding provision of the law of Northern Ireland (**Authorised Persons**), wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the sale or purchase of electricity through the Single Electricity Market.

2. In terms of s.9BC(2) of the 1999 Act, the Commission and the SEM Committee must carry out their respective s.9BC(1) functions in the manner which each considers is best calculated to further the principal objective, having regard to:

(a) the need to secure that all reasonable demands for electricity in the State and Northern Ireland are met;

(b) the need to secure that Authorised Persons are able to finance the activities which are the subject of conditions or obligations imposed by or under the 1999 Act or the European Communities (Internal Market in Electricity) Regulations 2000 and 2005 or any corresponding provision of the law of Northern Ireland;

(c). the need to secure that the functions of the relevant Irish Minister, the Commission, the Northern Ireland Authority for Utility Regulation, and the relevant NI Department in relation to the Single Electricity Market are exercised in a coordinated manner;

(d) the need to ensure transparent pricing in the Single Electricity Market; and

(e) the need to avoid unfair discrimination between consumers in the State and consumers in Northern Ireland.

3. Subject to s.9BC(2), the Commission and the SEM Committee must (according to s.9BC(4)) carry out s.9BC(1) functions in the manner which each of them consider is best calculated:

   (a) to promote efficiency and economy on the part of Authorised Persons;

   (b) to secure a diverse, viable and environmentally sustainable long-term energy supply in the State and Northern Ireland; and

   (c) to promote research into, and the development and use of (i) new techniques by or on behalf of Authorised Persons, and (ii) methods of increasing efficiency in the use and generation of electricity.

4. Subject again to s.9BC(2), the Commission and the SEM Committee must (according to s.9BC(5)), in carrying out any s.9BC(1) functions, have regard to:

   (a). the effect on the environment in the State and Northern Ireland of the activities of Authorised Persons; and

   (b). the need, where appropriate, to promote the use of energy from renewable energy sources.

5. According to s.9BC(6) of the 1999 Act, in carrying out any s.9BC(1) functions, the Commission and the SEM Committee must not discriminate unfairly as regards terms and conditions (a) between Authorised Persons, or (b) between persons who are applying to become Authorised Persons.

6. Finally, according to s.9BD of the 1999 Act, the Commission and the SEM Committee must have regard to the objective that the performance of any of their respective functions in relation to the Single Electricity Market should, to the extent that the person exercising the function believes is practical in the circumstances, be transparent, accountable, proportionate, consistent and targeted only at cases where action is needed.

Northern Ireland

1. In terms of Article 9(1) of the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007, the principal objective of the Northern Ireland Authority for Utility Regulation (in giving effect to any decision of the SEM Committee) and of the SEM Committee (in taking decisions on behalf of the Authority), is to protect the interests of consumers of electricity in Northern Ireland and Ireland supplied by authorised persons, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the sale or purchase of electricity through the SEM. (emphasis added)

2. In terms of Article 9(2) of the 2007 Order, the Authority and the SEM Committee must carry out their respective Art.9(1) functions in the manner which each considers is best calculated to further the principal objective, having regard to:

   (a) the need to secure that all reasonable demands for electricity in Northern Ireland and Ireland are met;

   (c) the need to secure that authorised persons are able to finance the activities which are the subject of conditions or obligations imposed by or under Part II of the Electricity (Northern Ireland) Order 1992 or the Energy (Northern Ireland) Order 2003 or any corresponding provision of the law of Ireland;

   (d) the need to secure that the functions of the relevant NI Department, the Authority, the relevant Irish Minister and CER in relation to the SEM are exercised in a coordinated manner;

   (e) the need to ensure transparent pricing in the Single Electricity Market; and

   (f) the need to avoid unfair discrimination between consumers in Northern Ireland and consumers in Ireland.

3. Subject to article 9(2), the Authority and the SEM Committee must (in accordance with Article 9(4) carry out Art.9(1) functions in the manner which each of them consider is best calculated:

   (a) to promote efficiency and economy on the part of authorised persons;

   (b) to secure a diverse, viable and environmentally sustainable long-term energy supply in Northern Ireland and Ireland; and

(c). to promote research into, and the development and use of (i) new techniques by or on behalf of authorised persons, and (ii) methods of increasing efficiency in the use and generation of electricity.

4. Subject again to Article 9(2), the Authority and the SEM Committee must (according to Article 9(5)), in carrying out any Art.9(1) functions, have regard to:

(a) the effect on the environment in Northern Ireland and Ireland of the activities of authorised persons; and

(b) the need, where appropriate, to promote the use of energy from renewable energy sources.

5. According to Article 9(6) of the 2007 Order, in carrying out any Art.9(1) functions, the Authority and the SEM Committee must not discriminate unfairly as regards terms and conditions (a) between authorised persons, or (b) between persons who are applying to become authorised persons.

6. Finally, according to Article 9(7), the Authority and the SEM Committee must have regard to a) the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases where action is needed and b) any other principles appearing to it to represent best regulatory practice.