



Energy for
generations

Generation & Wholesale Markets

ESB GWM Response:
Integrated Single Electricity Market
(I-SEM)
Capacity Remuneration Mechanism
Locational Issues
Consultation Paper
SEM-16-052

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1. INTRODUCTION

ESB Generation and Wholesale Markets (GWM) welcomes the opportunity to submit a response to the Capacity Remuneration Mechanism (CRM) Locational Issues Consultation (SEM-16-052).

Section 2 below gives a summary of ESB GWM's main comments in relation to this Consultation. Specific responses to the explicit questions posed in this consultation are given in Section 3.

2. MAIN COMMENTS

Option B (additional capacity) is the only option proposed that GWM agree with, since this option maintains the principles of the HLD and in particular the principle of firm access to the transmission system. Option C (heuristic approach) would need to be associated with compensation for capacity that is in merit in the unconstrained auction and may have unintended consequences in the energy markets and potentially DS3 as well as adding complexity. Option C would result in the consumer paying for units that are not contracted under the RO and therefore not obliged to provide system security. All options A, C, D & E other than option B distort the energy market as they create the problem of potentially making an unconstrained unit uneconomical in the energy market due to lack of capacity revenue. If any option other than option B is proposed to be chosen by the RA's, GWM seeks a Euphemia dispatch schedule trial to quantify the implications to the energy market dispatch schedule due to lack of capacity revenue for some existing SEM unconstrained units. Any change from an unconstrained CRM auction needs to be considered for implications to the energy markets. GWM seek evidence of the impact on the energy market of choosing these options A, C, D & E to ensure there is no distortions created in the energy market. In this response we explain our reasoning behind this position.

2.1 Principles

To evaluate the appropriateness of inclusion of a locational element into the I-SEM CRM, it is important to first consider a number of relevant principles.

ESB GWM is strongly of the view that a single zone for I-SEM, as set out in the High Level Design (HLD) is the best way forward. This single zone does have costs relative to a multi-zone market (including the costs of resolving locational issues in the long and short term) but we are of the view that they are outweighed by the benefits of increased market size, competition and liquidity.

Some of the auction format proposals put forward by the SEM Committee in the Consultation which displace unconstrained CRM auction winners without compensation ex ante or ex post, are concerning since they would constitute a change to the principles of a single zone market as set out in the HLD and would distort economic signals entry and exit signals. In addition, ESB GWM is of the view that such a change to everyone's understanding of the HLD at this stage could derail or delay the I-SEM project. A change to the HLD should only occur if there is sufficient risk that the existing HLD principle cannot work in the current circumstances. Evidence of this risk should also be set out and the rationale for the move clearly explained. Otherwise it is essential that any changes introduced as a result of this Consultation maintain the principles of the HLD.

A key principle of the CRM is that capacity which does not received an RO contract is being sent an exit signal. Therefore, the Grid Code requirement for capacity to give 3 years notice before closing cannot apply – capacity should be able to exit at the start of the capacity delivery year if it so desires. There is an argument that capacity units without an RO should not be required to adhere to the same energy market obligations (e.g. the yet to be defined BM bidding principles) as capacity units that hold an RO.

Any concerns on managing a step change in capacity as a result of exit could be managed through a higher security standard (3 hours LOLE), a shallow demand curve and a managed transition in the capacity requirement.

2.1.1 The benefits of a single zone in I-SEM

At the core of this issue is whether the I-SEM should be a single zone or whether there should be multiple zones. Some of the options considered in the consultation, effectively propose a multi-zone CRM overlaid on a single zone energy market. ESB GWM is strongly of the view that this is inconsistent and could create unintended consequences, and a single zone for both energy and capacity is in the best interest of consumers on the island. This is a view shared by many other markets in the EU where markets adopting zonal pricing are in the minority. I-SEM is not the only market to have significant constraints; GB has constraints on the England Scotland border and Germany has north-south constraints also. These are significantly bigger markets than I-SEM and both have retained a single wholesale market zone. The existing cross jurisdictional Single Electricity Market in Ireland and Northern Ireland is small by comparison. If I-SEM was split into two zones competition in both areas would be greatly diminished; were it to split into more than two zones this would be further exacerbated.

Maintaining a single zone does incur some costs. These are seen in SEM through the constraints payments. These costs have been relatively small in SEM, with total Dispatch Balancing Costs (DBC) being circa €120m in a market worth over €2bn. Only a subset of the DBC can be attributed to the north-south constraint. In the I-SEM, these costs could manifest themselves through additional costs in the CRM or via side contracts¹, as well as through costs of system actions¹ in the Balancing Market

2.1.2 Options to address locational issues in I-SEM

We recognise that an unconstrained capacity auction may not resolve long standing transmission issues in areas where constraints exist, and thus may not procure sufficient capacity to satisfy the chosen reliability standard of 8 hours Loss of Load Expectation, once locational constraints are considered.

However, it is far from clear that it should be the role of the CRM to resolve locational issues (and as set out below, this was not intended in the HLD). As a general principle in a non-nodal electricity market, locational issues should be managed by the TSOs, and costs shared with consumers via the appropriate recovery mechanism and incentive scheme. Where these costs are high in the short run, options for investment in the network or longer term contracting of services should be explored that may deliver a higher social welfare benefit. As far as we are aware, there are no international precedents for the inclusion of locational constraints in an auction procuring capacity for a single energy zone. We would welcome evidence of how this has worked if this is available, or evidence on a modelled basis for the interaction between the markets and the consequences on the financial viability of the participants.

An adjustment to the CRM auction is only one avenue available to resolve locational issues in I-SEM and these should also be presented and deliberated on. Alternative options that are outside of the CRM do exist and these should be explored and assessed. This could involve sharpening TLAfs and GTUoS², allowing unrestricted bidding in the Balancing Market (providing an expectation of higher revenues in constrained locations and an incentive to keep capacity open) or through a range of side contracts between the TSOs and generators. The Consultation does not explore these options, and our response is on the basis that CRM is the route that will be taken.

The SEM Committee's proposals will only apply the locational logic in the CRM to a limited number of constraints and therefore it is possible that shortages of capacity in some locations could still occur. The

¹ The capacity contract awarded to Ballylumford is an example of out of market side contract additional to the existing CPM to maintain system security. This contract will run into the transitional period of I-SEM CRM.

² Although we note that incentives on losses and on long run transmission costs may not necessary reflect the short term operational constraints that the TSOs face and hence this may not solve the locational issues

methodology the RAs will apply to decide on which constraints to include has not been set out in sufficient detail. We also would like to see further detail from the SEM Committee on how these remaining constraints will be managed.

2.1.3 Changes to the I-SEM High Level Design

The SEM Committee has elected to deal with locational issues through an adjustment to the CRM auction. However a number of the combinations of options put forward are not in line with the expectations established in previous CRM decisions. Indeed the proposals far from being supplemental, represent major changes to the HLD.

The September 2014 HLD Decision stated that:

A centralised Reliability Option mechanism involves a financial one way CfD issued by a single party, such as the TSOs, to all successful bidders in a competitive auction”.

It is very difficult to read into the above anything other than that there would be a competitive auction and that all successful bidders would get a contract. In addition, the HLD explicitly recognised the potential issues with this approach in terms of residual security of supply issues when it stated the following:

“The explicit CRM described in the HLD does not preclude any targeted contracting mechanisms to be put in place as a back stop measure in line with national legislation in Ireland and Northern Ireland and the Security of Supply Directive (Directive 2005/89/EC) to ensure that security of supply is maintained”

The above set a clear and unambiguous message in 2014 as to what industry participants could expect from the new CRM. Indeed, in that HLD, the SEM Committee considered only this approach in the draft decision and there was no discussion of including locational considerations into the competitive auction design.

This position was further confirmed by the SEM Committee in CRM Decision 1. In Consultation Paper 1, the SEM Committee considered locational issues and the auction but came to the only rational conclusion that locational issues should not be considered in the CRM auction. Specifically, the SEM Committee stated;

“the SEM Committee is not intending to introduce locational pricing into the CRM, but may separately consider a review of GTUoS locational price signals”.

While the wording in CRM Decision 1 was not as unambiguous as the HLD Decision, ESB GWM took from this that the SEM Committee is not considering any change to the stated position in the HLD.

2.1.4 Generators have paid for firm access

The Grid Code specifies that users must pay for access to the transmission system. This can be on a firm or non-firm basis, with the majority of capacity having firm access. Firm access to the transmission system for generators means that the generators has the right to inject power and to be compensated if that right is curtailed. These firm access rights are agreed within connection agreements and are therefore grandfathered.

In effect, firm transmission access gives generators the right to access the single market price. This is as true for capacity payments as it is for energy. In capacity terms, this means the right to enter the auction on an equal basis with other capacity, and not be discriminated against on the basis of transmission system issues.

Under a number of the proposed options for auction design, there is a distinct possibility that a number of generators will have their right to equal access to the capacity auction curtailed, which is a clear breach of the principles of firm access and fails the SEM Committee's Equity criterion.

2.1.5 The auction should be no more complex than it needs to be

As ESB GWM has stated in previous responses, the CRM auction should be for a single homogenous product, with a single price for that product. It should not be distorted by long term contracts, or by location or any other issue. The concept of a combinatorial auction has now been mooted by the SEM Committee in three different guises – multi-year transitional auctions, capacity lumpiness, and now locational issues³. Combinatorial auctions remove the one to one mapping of an efficient outcome to a clearing price, with clearing price having to be determined separately from the winner determination. This reduces the efficiency of the capacity price signal.

Minimising complexity in the auction design will also help with overall deliverability of the CRM ahead of the first scheduled auction in June 2017. Additional complexity will add to the existing implementation time pressures and potentially increases risks and unknown consequences. The Consultation acknowledges that Option D could not be implemented in time for the first auction, however the level of detail or evidence in some options (e.g. lack of definition of heuristics in Option C) does not allow for a confident deliberation or judgement that these could be implemented either.

2.1.6 Further challenges for implementation

The latest I-SEM Level 2 plan does not include a date for the publication of a decision on this Consultation.

With the introduction of the uncertainties mentioned above in section 2.1 it is difficult to see how the drafting of the Capacity Market Code (CMC) can progress in parallel when the decision on locational issues is unlikely to be known until shortly before the full CMC consultation, which is now scheduled for December 2016. The SEM Committee has also delayed the publication of the CRM Parameters consultation. An initial view of the CRM Parameter values (e.g. shape of the demand curve) would have been of benefit in responding to this Consultation. Given the recently announced delay to the Bidding Principles consultation we do not know what the SEM Committee is proposing with regards to actions on constrained units, which prevents holistic consideration of the end-to-end impacts for generators in constrained locations. It is an imperative that all of the markets are considered in relation to each other and evidence of the interrelated impact set out.

The implementation timeline is already under considerable strain and this only adds to that and increases delivery risk for the CRM ahead of the first scheduled auction in June 2017 which is now flagged as “a milestone at risk”⁴ (there is also no published date for the first T-4 auction). We stress the importance of a comprehensive review of the programme's deliverability before taking further decisions.

2.2 Grid Code requirements

The SEM Committee has asked for views on the requirement under the Grid Code to give three years' notice of intention to close. ESB GWM is strongly of the view that if a generation unit has not received an RO then it should be under no obligation to remain open in the delivery year. Otherwise, there are essentially no avoidable costs (since no generator can close) and the auction results may be distorted.

ESB GWM understands the rationale behind the clause in the Grid Code is to give the TSOs sufficient forward looking data to enable them to carry out security of supply assessment and to report to the relevant authorities its findings. The current CPM does not have a forward commitment and the notice period helps address this. The new CRM largely negates the requirement for the three year notice period.

³ It was also proposed for the DS3 auction in an extremely complex variant

⁴ I-SEM Level 2 Plan version 15 dated 16 September 2016.

This is because the T-4 auction places an upfront obligation on the generator which is successful in the auction. Given this, the TSOs may feel that they do not need the three year notice requirement anymore as the competitive means of allocation is meant to provide the route to deliver this security and not the Grid Code.

For the T-1 auction, the notice period for capacity which does not receive a contract should be set to match the time until start of the delivery year. The Consultation distinguishes between generators being insolvent versus not; such a distinction is not relevant. If a generator has no prospects of earning revenues to remain operational, then this generator should not be forced to stay in the market. To require them to do so for the transitional period 2017-2020 would appear to fail any level of reasonableness test. If a generator has no revenue coming in they would be unable to spend money staffing or maintaining its operations rendering any enforcement useless.

For the T-4 auction, generators should not be forced to give notice of closure until after the T-1 auction for that delivery year, as they should have the option of exiting, or staying open if they then receive a T-1 contract for the same delivery year.

2.3 Auction design framework

The Consultation considers approaches to address locational issues within three elements of the auction design framework that were left open in the CRM 3 decision paper as well as the lumpiness issue. There is an interrelationship between these elements as the choice made in the first element impacts the choice on the remaining elements. For this reason, ESB GWM has considered these elements collectively:

- Auction design and winner determination
- Clearing price determination
- Constrained off payments
- The interaction with the lumpiness issue

2.3.1 Auction format and winners determination

The Consultation proposes five options to determine winners in the I-SEM CRM auction. Four of the five options involve two steps. A brief description of each option is set out in Table 1.

Table 1: Proposed options to determine auction winners

Option	Step 1	Step 2
Option A	Identify ex-ante “must not exit” units and take them out of market and agree mutually acceptable terms	Run a simple sealed bid auction for remaining units and remaining capacity requirement
Option B	Run an unconstrained simple sealed bid auction	Purchase any additional capacity to meet identified constraints
Option C	Run an unconstrained simple sealed bid auction	Use “heuristic-based” rules to reduce capacity surplus in surplus regions to satisfy locational and inflexibility constraints. Some capacity may then lose awarded RO contracts
Option D	Run a sealed bid combinatorial auction	n/a
Option E	Run an unconstrained simple sealed bid auction	TSOs analyse system security ex-post and purchase any “must not exit” units pay as bid. Some capacity may then lose awarded RO contracts

The SEM Committee set out a number of criteria to evaluate the options. Table 2 shows the SEM Committee’s evaluation of each option against a positive (✓), neutral (-) or negative (x) scoring system. Competition and transparency is split into separate criteria. Practicality and cost are also split into separate criteria⁵. Security of supply is also added as a further criteria as it appears in Table 2 of the Consultation.

GWM is of the view that there is no standout option to manage short-term locational issues against this criteria, and all options have one or more drawbacks. Based on the SEM Committee’s own analysis option A and E are not suitable to implement and can therefore be discounted. Options B, C and D warrant further consideration.

The following bullet points provide a short description of the scoring in Table 2. This should be read in conjunction with the SEM Committee’s own analysis in the Consultation.

- 1) Option A and E score negatively as they will likely complicate the State Aid process, as they distort or reduce competition at the discretion of the TSO with lack of transparency on the process. Options B, C and D score neutral in this regard as they could all hinder that process, but perhaps not to the same extent.
- 2) Option B scores favourably against maintaining security of supply due the additive nature of its design which is a particular benefit in the transitional period. Option E, by its nature, results in a locational secure system (as judged by the TSOs) Options A, C, and D score neutrally on this front.
- 3) Option A, C, D and E distort competition in the CRM auction in one form or another. Option A by taking plant out of the market ahead of the CRM auction, option C under the heuristic rules, option D under the mixed integer programs optimisation and Option E ex post at the TSO’s discretion. Option B is neutral to competition.

⁵ The SEM Committee consider cost as part of the efficiency criteria whereas we have considered efficiency in terms of the auction and cost as the cost to customers from the auction. Practicality relates to the deliverability of the option.

- 4) Option A, D and E contain real concerns with transparency due to the subjective nature of the mechanisms, and score negatively on this criteria. Option C scores neutral so far as the heuristic rules remove discretion from the TSOs and are transparent. Option B is transparent and scores positively.
- 5) The SEM Committee defines efficiency in the consultation as the likelihood the option will maximise social welfare. Option B is less likely to achieve this through its additive approach in the short run where more capacity is procured. This additive capacity is likely to be paid at a higher price than the auction clearing price. The SEM Committee’s proposal to limit locational capacity deliverability issues to the north-south constraint and constraints in the Dublin area limits the potential cost burden on customers. Option C’s ability to maximise welfare depends on precision of the heuristic rules. Option D is most likely to deliver a socially optimal outcome for a single auction (i.e. in the short term). Option A and E score neutral as the TSOs is afforded discretion, either ex-ante or ex-post, to determine an optimal solution, which will not necessarily maximise social welfare.
- 6) Option C and D are considerably more complex than the other options, and score negatively against this criteria. Option A and E are by comparison more practical. Options A, C, D and E all require subsequent development of rules or processes that should be consulted on prior to their implementation, adding to the already strained timeline. Option B is easier to implement and scores favourably against this criterion.

Table 2: Evaluation of the proposed options against the RAs’ criteria

Criteria	Option A	Option B	Option C	Option D	Option E
1. Internal Energy Market (State Aid)	✘	-	-	-	✘
2. Security of supply	-	✓	-	-	✓
3. Competition	✘	-	✘	✘	✘
4. Transparency	✘	✓	-	✘	✘
5. Efficiency	-	✘	-	✓	-
6. Practicality	-	✓	✘	✘	-

ESB GWM has also assessed the SEM Committee’s proposed options against the principles described in Section 0. This evaluation is set out in Table 3 and uses the same positive (✓), neutral (-) or negative (✘) scoring system used above.

The I-SEM HLD set out a single zone for energy and capacity, and stated “any future decision to divide or not divide the all island market into more than one bidding zone would be taken as part of the zonal reviews required by the EU Target Model”.⁶ (see Section 2.1.3).

ESB GWM considers that options C, D and E represent a major shift away from the HLD, unless combined with compensation for unsuccessful in-merit bidders. The heuristic rules in option C establish capacity

⁶ SEM-14-85a, p. 10.

areas that could be considered to amount to a zonal auction. The outcome of the combinatorial optimisation in option D reflects a constrained capacity market. ESB GWM considers it highly likely that all three options will effectively optimise according to multiple capacity zones, depending on the applicable locational constraints and potentially lumpiness. Without visibility of either the heuristic rules or the design of the combinatorial auction, we have real concerns that these options potentially erode the benefits of the single I-SEM bidding zone that applies in the energy market. This also introduces a major divergence between the I-SEM capacity and energy markets as the latter will operate as a single zone. As such, we have scored options C and D negative against this principle. Options A and B score positively against this principle as they do not suffer from this drawback.

Section 2.1.4 describes the nature of firm access to the transmission system, and that that right applies to both energy and capacity. In terms of the CRM, firm access means the right to enter the auction on an equal basis with other capacity without being discriminated against on the basis of transmission constraints. ESB GWM is concerned that under options C, D and E one or more generators will potentially have their right to equal access to the CRM auction curtailed (unless combined with compensation for unsuccessful in-merit bidders). This represents a clear breach of this principle and also fails the SEM Committee's equity criterion. Options C, D and E therefore score negatively against this principle. Option A removes 'in merit' capacity from the CRM auction and also scores negatively. Option B does not suffer from this drawback and therefore scores positively against the principle.

ESB GWM strongly believes the CRM auction should be no more complex than it needs to be. All of the five proposed options add varying degrees of complexity to the capacity procurement process. Option A requires the development of some criteria or rules to identify and determine "must-not exit" units and must also choose between units in similar locations before CRM bids have been submitted. Option C depends on the development of heuristic rules to apply. A mixed integer programme solver is necessary to run the combinatorial auction in option D. In option E the TSOs would need to develop a form of system security analysis to run after the unconstrained auction to determine "must-not exit" units. Option B is simple by comparison, as any additional capacity can be clearly quantified and procured through a mechanistic procedure. For this reason, option B scores positively while the other options score negatively.

It is important that any proposed option maintains the integrity of the CRM auction in that it does not distort or reduce competition or introduce incentives for gaming. ESB GWM is concerned that options A, C, D and E potentially have weaknesses in this area. In option A, purchasing "must-not exit" units and taking them out of the market may distort long term investment signals through reduction of the clearing price. Applying a heuristic second step in option C undermines the unconstrained auction from step 1. While this option could deliver higher social welfare in the short term it would possibly do so with a cost to the capacity providers who are uneconomically displaced.

ESB GWM is cognisant of the significant implementation and delivery challenge the I-SEM programme faces. The latest I-SEM project plans now denote the first CRM auction as "a milestone at risk".⁷ The complexity of each of the proposed options will heighten the delivery risk of what is an already stretched timetable. To implement options A, C, D or E will require further the development of the applicable detailed rules and procedures. This will take time, including sufficient time to consult market participants. It is important that standard industry engagement is maintained throughout any process. On this basis ESB GWM has scored options A, C, D and E negatively reflecting the higher delivery risk and option B as neutral.

⁷ I-SEM Level 2 Plan version 15 dated 16 September 2016.

Table 3: Evaluation of the proposed options against ESB principles

ESB principle	Option A	Option B	Option C	Option D	Option E
1. Consistency with HLD and the single bidding zone	✓	✓	✗	✗	✗
2. Respects firm transmission access	✗	✓	✗	✗	✗
3. Minimises auction complexity	-	✓	✗	✗	-
4. Auction efficiency	✗	✗	✗	✗	✗
5. Deliverability	✗	-	✗	✗	✗

It is clear from the above analysis that no single option satisfies all of the SEM Committee’s criteria or our principles, and that all options have one or more shortcoming. Options C, D, and E represent a material change to the HLD and are inconsistent with the principle of firm transmission access (unless unsuccessful in-merit winners are compensated). Options A, C, D and E risk distorting competition in the CRM auction and or the I-SEM energy markets which may lead to additional costs for consumers in the long run. Further, options A, C, D and E require a more complex auction design, are not sufficiently transparent and entail considerable delivery risk. All options potentially impose higher costs on customers, albeit these costs must be viewed against the benefits of a single bidding zone in the all island market and in the context of the two capacity delivery constraints the SEM Committee identify in the Consultation. Considering this analysis and the SEM Committee’s own **assessment GWM believes that option B is the least worst option.**

2.3.2 Clearing price determination

The Consultation seeks feedback on two options to determine the clearing price in the CRM auction.

- 1) The highest priced bid accepted in the unconstrained merit order
- 2) The highest priced bid which is both a) accepted in the unconstrained merit order; and b) selected as the winning bid after lumpiness and locational considerations have been resolved.

This proposal builds on the CRM 3 Decision. In our response to CRM 3 consultation we said the clearing price should be pay as clear in all circumstances.

ESB GWM favours option 1. ESB GWM agrees with the SEM Committee’s analysis that under option 1 the resulting capacity price is likely to better reflect long run marginal costs and therefore represent a more efficient investment signal. Option 1 minimises the complexity of the auction, improves transparency and minimises the potential for distortions in the energy market. This is a desirable outcome. This option is also the best fit with the additive approach to determine CRM auction winners (option B), which ESB GWM views as the least worst option to address locational issues in the CRM.

ESB GWM is concerned that option 2 may introduce a systematic downward bias in the clearing price that does not reflect long run marginal cost, which may dampen the entry and exit signals and lead to greater price volatility. This would be counter to objectives of the I-SEM CRM. This also highlights an adverse consequence of the substitutive approaches to determine CRM auction winners.

2.3.3 Constrained off payments for unsuccessful in-merit bidders

The concept of 'unsuccessful in-merit bidders' is of concern to ESB GWM. It suggests the CRM auction outcome is potentially distorted and is therefore inefficient. Yet, there is real possibility of such an outcome if option C, D or E is the chosen form for winner determination, as the SEM Committee's Consultation states it is minded to do.

There is a close link between the winner determination approach and the decision on whether and how to compensate an 'unsuccessful in-merit bidders'. GWM believes option B is the most appropriate form of winner determination. Under this additive approach, there are no 'unsuccessful in-merit bidders' as there is no adjustments made to the unconstrained auction and hence there is no need for compensation. In this case, option B does not create a compensation problem.

If the form of winner determination involves a substitutive approach, as proposed under option C, D or E, there are legitimate equity and efficiency reasons to compensate units that are displaced, "constrained off", due to historical transmission system investment issues. The Consultation acknowledges this. Concerns about cost implications for suppliers and customers and State Aid are the main deterrents, though the cost increase of compensation may be lower than the additional cost of Option B.

Both options which involve compensation (Option 2 and 3) do involve additional cost to customers (if combined with an option under which capacity can be displaced). Two factors are important considerations here: the first is the SEM Committee's proposal that the CRM auction will only consider locational issues due to the north-south constraint and constraints in the Dublin area, limiting the number of units eligible for compensation.

The second is the consequential impact on the I-SEM energy markets. Displacing more efficient generation capacity is likely to lead to higher prices in the energy markets if displaced generation capacity exits the market and energy is produced by the higher cost plant that remains on the system. The only way that efficient capacity could then remain on the system would be by recovering all fixed costs in the energy market. This may have impacts on ex-ante market dispatch. This is an unintended consequence of having unsuccessful in-merit winner. Option 2 "lost profit" compensation goes some way to addressing the potential adverse impacts. Therefore, Option 2 would complement option C, D or E if any is the chosen form of winner's determination.

Option 3 is an unusual proposal where the 'unsuccessful in-merit bidder' receives its pay-as-bid price for a RO without the corresponding obligation associated with the RO i.e. consumers are not protected from exposure to prices above the Strike Price. GWM believes a better approach is an additive one (option B) where that unit does not require compensation because it receives a RO. This is a simpler approach to administer, removes complexity from the auction and improves its transparency and provides better value for money for suppliers and customers through the insurance like nature of the RO.

GWM agrees there may be State Aid concerns regarding option 2 and 3. However, the chosen form of the winner's determination may also attract scrutiny during the State Aid process if it distorts competition as is the case in option C, D, and E.

2.3.4 Interaction with lumpiness decision in CRM 3

The SEM Committee has noted the interaction between lumpiness and locational issues. Our combined approach to these issues is set out for clarity below.

As set out in ESB GWM's response to CRM 3, we are in favour of a simple marginal clearing price. This is consistent with the SEM Committee's logic for selecting an 8 hours LOLE standard. In CRM Decision 1, the SEM Committee said:

“The 8 hour LOLE is the “worst case” security standard for planning and procuring capacity. Capacity tends to come in large lumps (e.g. 200MW) meaning that as capacity is added, the actual LOLE will be lower than 8 hours.”

This clearly implies that the auction should never procure a lower level of capacity than that which would meet an 8 hours LOLE security standard. Of the options set out for winner determination, only option 1 of CRM 3 (accept marginal bid) would be consistent with this.

However if, under option B, the auction is likely to procure additional capacity to meet locational constraints, then the case for a net welfare calculation on whether to accept the marginal unit (option 2a in CRM consultation 3) would be stronger.

For clarity, ESB GWM maintains its opposition to acceptance of out of merit bids for lumpiness reasons (option 3c in CRM consultation 3) which the SEM Committee has stated would be used in the case of a simple sealed bid auction:

“Under Auction Format 1 (Simple sealed-bid, multi-unit auction): If the marginal bid is inflexible, and not required in its entirety, then auctioneer will use an evaluation of social welfare (Lumpiness Option 3c) to choose whether to accept the marginal bid in entirety, accept out-of-merit bids instead, or reject all marginal and out-of-merit bids.”

2.4 Representation of constraints

Under our preferred option B, there may be more flexibility in the representation of constraints, certainly in comparison to option D where these must be defined in a specific mathematical format suitable for a MIP optimisation.

The RAs have proposed two constraints, in the Dublin area and Northern Ireland, for which the sum of the capacity required is going to be significantly less than the all-island capacity requirement. However, the RAs have included an example in which there are two capacity areas which make up the whole of Ireland. This is a poor fit to the identified constraints and therefore the choice of example is not particularly enlightening. As an alternate example, under the RAs’ scenario of Dublin and Northern Ireland, it appears that all constraints would need to be defined as either:

$$\text{Dublin generation} > X \text{ MW}$$

$$\text{Northern Ireland generation} > Y \text{ MW}$$

$$\text{Capacity Requirement} = Z \text{ MW}$$

$$X + Y < Z$$

Or alternatively in unit terms:

$$\text{Dublin: } M \text{ units of } \geq [100 \text{ MW}]$$

$$\text{Northern Ireland: } N \text{ units of } \geq [100 \text{ MW}]$$

$$\text{Capacity Requirement} = Z \text{ MW}$$

In this second case, M and N cannot be directly compared to Z. A minimum unit size may need to be applied to the units to ensure they meet the TSOs’ requirements.

Of these two alternatives, ESB GWM has a preference for the unit based approach since this more closely matches the TSOs' requirements. With the MW approach, it is likely that this would have to be set in such a way to ensure a certain proportion of units in a constrained region clear in the auction.

2.5 Long term consideration of constraints in the CRM auctions

The CRM as proposed will include three different auctions types: transitional T-1 auctions, enduring T-1 auctions, and T-4 auctions.

In ESB GWM's view, locational constraints are most pertinent to the transitional T-1 auctions. The commentary in the preceding sections is in reference to these auctions, as a transitional issue and our position of supporting option B is on this basis.

There is then the consideration of whether locational constraints should be included in the enduring T-1 and T-4 auctions. In the T-1 auctions, if there is clearly a locational constraint then this should be included in the same manner as for the transitional T-1 auctions. However, there are additional issues which the SEM Committee has not considered. For example, if the capacity requirement (as adjusted for T-1) is already met by capacity procured in the T-4 auction, but there is a locational constraint that has not been met, then the T-1 auction will effectively be for capacity in one region only. The SEM Committee would need to develop rules to handle this outcome. This scenario could occur whether or not locational constraints are included in T-4.

In the T-4 timeframe transmission reinforcement becomes a valid alternative and hence any locational constraints should take account of the (annualised) costs of a viable transmission reinforcement solution as an upper limit on the difference between the clearing price and a pay-as-bid price for capacity required for locational reasons.

ESB GWM's view is that a decision on the treatment of locational constraints in T-4 and enduring T-1 auctions should be the subject of a specific consultation, potentially after the first transitional auction has taken place.

In general ESB GWM does not agree with the need for long term capacity agreements, and specifically disagrees with the outcome of a new generator receiving a multi-year contract at a pay as bid price that is above the market clearing price. Since there is a) no consideration of contract duration in the auction winner determination and b) no proposed method to take account of a transmission constraint that may persist for only a small number of years out of the 10 year contract duration, we believe that if long term contracts are let these should only ever receive a maximum of the auction clearing price.

2.6 The potential for market power

Alongside the wide suite of ex-ante market power mitigation measures set out in CRM 3 Decision and summarised in this Consultation, the RAs have very powerful and effective ex-post regulatory tools at their disposal and the power to investigate and take enforcement actions against any market abuse⁸. They are also proposing that specific anti-gaming clauses may be included in the CRM contractual rules. Striking the right balance between ex-ante and ex-post measures will be essential to make sure the overall package is proportionate, and that the value of capacity in I-SEM can be revealed by competitive processes, as envisaged in the EU Integrated Electricity Market (IEM), and not by regulators who will have imperfect information on costs and market risks.

ESB GWM is of the view that in the T-1 timeframe further ex-ante market power mitigation measures are not warranted. The Uniform Price Taker Offer Cap gives the RAs more than sufficient discretion to mitigate the potential for market power. Options proposed to cap prices *below* the Uniform Price Taker

⁸ See Article 101 and 102 of the Treaty on the Functioning of the European Union and the Regulation (EU) No 1227/2011, Regulation on Wholesale Energy Market Integrity and Transparency (REMIT).

Offer Cap for capacity in constrained locations would lead directly to a regulated price for capacity for some units.

With regards to market power concerns for new plant, this is only relevant if constraints are included in the T-4 auction, for which we do not believe the case has yet been conclusively made (as set out above). In the T-4 timeframe transmission reinforcement becomes a valid alternative and hence any locational constraints should take account of the (annualised) costs of a viable transmission reinforcement solution as an upper limit on the difference between the clearing price and a pay-as-bid price for capacity required for locational reasons. This should in any case apply to all capacity.

Were constraints to be included in the T-4 auction, we would share the RAs' concern regarding new capacity receiving a long term pay-as-bid contract in a potentially uncompetitive process.

3. RESPONSES TO CONSULTATION QUESTIONS

Question	Answer
<p>2.6.1 Do you agree with the assessment of the potential for exit and lack of new entry during the transition period set out in this section, and do you think that the potential for exit creates a security of supply issue given locational constraints?</p>	<p>Yes. It is expected that a generator which is unsuccessful in the CRM auction may have little prospect of earning sufficient revenues to remain operational, and as a result could decide to exit the market. If these unsuccessful generators exit the market, and the generators awarded ROs do not satisfy location constraints this could create security of supply issues.</p> <p>The risk of security of supply issues is exacerbated by the low security standard (8 hours LOLE).</p>
<p>2.6.2 Do you agree that locational constraints should be incorporated in the CRM? Please elaborate your rationale in your response.</p>	<p>It is far from clear that it should be the role of the CRM to resolve locational issues. As a general principle in a non-nodal electricity market, locational issues should be managed by the TSOs, and costs shared with consumers via the appropriate recovery mechanism and incentive scheme. Where these costs are high in the short run, options for investment in the network or longer term contracting of services should be explored. As far as we are aware, there are no international precedents for the inclusion of locational constraints in an auction procuring capacity for a single energy zone.</p> <p>Alternative ways to address locational issues in I-SEM other than the CRM include:</p> <ul style="list-style-type: none"> • Sharpening TLAfs and GTUoS; or • Allowing unrestricted bidding in the Balancing Market (providing an expectation of higher revenues and an incentive to keep capacity open); or • Side contracts between TSOs and generators. <p>The Consultation does not explore these options, and our response is on the basis that CRM is the route that will be taken.</p> <p>The SEM Committee's proposals will only apply the locational logic in the CRM to a limited number of constraints and therefore it is possible that shortages of capacity in some locations could still occur. We would like to see further detail from the SEM Committee on how these remaining issues will be managed</p>
<p>2.6.3 Feedback in relation to the specific Grid Code requirements are sought in respect of the following:</p> <ul style="list-style-type: none"> • The extent to which the Grid Code requirements can be relied upon to manage exit of plant which does not obtain a Reliability Option; • Whether it is appropriate to provide assurances that generators which do not obtain a Reliability Option in the 	<p>Please refer to section 2.2 of our response.</p>

<p>transitional auctions (which happen on a T-1 basis) be released from their obligations to give 3 years notice in accordance with the Grid Code; and</p> <ul style="list-style-type: none"> • Whether the Grid Code requirement should be extended from 3 years notice, to say 3 years 6 months to align with T-4 auction timings. 	
<p>2.6.4 Do you agree with the key principles proposed for any locational capacity framework within the CRM?</p>	<p>We agree with the principles 1 and 2.</p> <p>We agree with principle 3 that the means by which local capacity deliverability constraints should be identified and quantified should be simple and transparent. But we note that the Consultation provides no approach for this identification and quantification.</p> <p>This reduces certainty and transparency for market participants as it provides considerable discretion to the SEM Committee. It is not clear what constitutes a 'local' constraint or what is 'clear and 'large'.</p>
<p>2.6.5 Do stakeholders agree that clear and large existing capacity delivery constraints should be reflected within the CRM auction, for example limiting this to the North-South constraint and the Dublin area constraint?</p>	<p>ESB GWM agrees it is prudent to consider constraints of a certain level of materiality. However, is not clear to us what exactly the SEM Committee consider to be 'clear' or 'large' in this context. It would be helpful to see more this in more explicit detail, especially as this is an annual process.</p>
<p>2.6.6 Do stakeholders agree with the high level proposed solution for dealing with locational capacity issues?</p>	<p>Within the context of solving locational issues through the CRM auction, ESB GWM considers using an "out-of-merit" RO is a reasonable way to address locational constraints to the extent that it adheres to our principles set out in section 2.1 of this response.</p>
<p>2.6.7 If you do not agree with or have further view any of the proposals or assessment set out in this section, please outline why and where relevant suggest alternatives</p>	<p>ESB GWM's view in regard to this question is explained throughout our response.</p>
<p>3.6.1 Which option do you prefer for the Auction Design Framework and why?</p>	<p>ESB GWM's preference is for option B, since this option maintains the principles of the HLD and in particular the principle of firm access to the transmission system. Option C is potentially a workable alternative but requires compensating capacity that is in merit in the unconstrained auction but does not end up receiving a RO.</p> <p>Our reasons for this position is explained further in section 2.3.</p>
<p>3.6.2 Should the capacity price be set equal to: a) the highest-priced bid accepted in the unconstrained merit order; or b) the highest-priced bid which is both: accepted in the unconstrained merit order; and selected as a winning bid after</p>	<p>ESB GWM favours option 1, the highest priced bid accepted in the unconstrained merit order. The rationale for our view is set out in section 2.3.2 and should be read in conjunction with section 2.3.4 that addresses the lumpiness issue.</p>

<p>lumpiness and locational considerations have been resolved?</p>	
<p>3.6.3 Should a bidder that would have been accepted in an unconstrained auction but which is not awarded an RO receive a “constrained-off” payment in the CRM? If yes, how should the “constrained-off” payment be determined, and why?</p>	<p>Please refer to section 2.3.3 of our response. Under ESB GWM’ preferred option B, there should be no unsuccessful in-merit bidder and therefore this discussion is moot.</p>
<p>3.6.4 How should local capacity deliverability constraints be defined?</p>	<p>ESB GWM has a preference for the unit based approach since this more closely matches the TSOs’ requirements. With the MW approach, it is likely that this would have to be set in such a way to ensure a certain proportion of units in a constrained region clear in the auction. Section 2.4 sets out our reasoning in more detail.</p>
<p>4.4.1 Should the inclusion of locational capacity delivery constraints in the CRM occur in T-1 auctions, T-4 auctions, or both?</p>	<p>ESB GWM considers locational constraints are most pertinent to the transitional T-1 auctions.</p> <p>Section 2.5 sets out our reasoning for this view.</p>
<p>4.4.2 What circumstances or criteria should be considered in relation to the T-4 auctions being conducted without explicit consideration of locational capacity delivery constraints?</p>	<p>A decision on the treatment of locational constraints in T-4 and enduring T-1 auctions should be the subject of a specific consultation, potentially after the first transitional auction has taken place. T-4 needs to be balanced against the counterfactual of transmission reinforcement.</p> <p>Section 2.5 sets out our reasoning for this view.</p>
<p>4.4.3 Are there any further considerations that should be taken account of regarding the longer term management of locational capacity delivery constraints? If so please detail your rationale for these.</p>	<p>Any consideration of addressing location constraints through the CRM needs to be balanced against the counterfactual of transmission reinforcement. ESB GWM believes such analysis is a helpful compliment to this process.</p>
<p>5.1.1 Do you believe that the suite of market power controls set out in CRM Decision 3 are sufficient to address any additional market power issues raised by local security of supply considerations? If not, what additional measure would you propose, and why?</p>	<p>Please refer to section 2.6 of our response.</p>