Integrated Single Electricity Market (I-SEM)

High Level Design for Ireland and Northern Ireland from 2016

Consultation Response Template

5 February 2014

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1 PURPOSE OF THIS DOCUMENT

1.1 PURPOSE AND STRUCTURE OF THIS DOCUMENT

1.1.1 This supplementary document provides a template for responses to the consultation document on implementing a new High Level Design ('HLD') for the Integrated Single Electricity Market (I-SEM) in Ireland by the end of 2016. We request all responses to the consultation are submitted in this template, and in **Microsoft Word** format.

1.1.2 This template contains the questions presented in the consultation document.

1.1.3 Responses to the Consultation Paper are requested by 17.00 4th April 2014. Following a review of the responses to this paper the SEM Committee will publish its draft decision on the proposals set out in this paper in June 2014.

1.1.4 Responses should be sent to Jean-Pierre Miura (JeanPierre.Miura@uregni.gov.uk) and Philip Newsome (pnewsome@cer.ie). Please note that the SEM Committee intends to publish all responses unless marked confidential[1].

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[1] While the SEM Committee does not intend to publish responses marked confidential please note that both Regulatory Authorities are subject to Freedom of Information legislation.

2 CONSULTATION QUESTIONS

2.1 RESPONDENT DETAILS

COMPANY	Electricity Association of Ireland (EAI)
CONTACT DETAILS	27 Baggot Street Lower, Dublin 2.
MAIN INTEREST IN CONSULTATION	Representing the consensus views of our members who represent over 90% of generation and supply activities in the SEM and all distribution activities

2.2 GENERAL COMMENTS

EAI welcomes the opportunity to respond to this important consultation. The market design that will replace SEM ("ISEM") is of fundamental importance and its objective must be to provide an appropriate level of security of supply at lowest cost to electricity customers and provide reasonable returns to Generators s to ensure a sustainable market is created. EAI also welcomes the Memorandum of Understanding between both RA's and the commitment to work together to deliver a new market on the island.

In the intervening period since the introduction of the existing SEM in 2007, the European Commission has set a deadline for the completion of the Internal Energy Market by 2014.

The objective of the internal energy market is to guarantee the free movement of energy between member states in order to reduce prices across Europe and realise potential welfare benefits for European society as a whole[2]. The underlying principle is that interconnector capacity will be made available to meet common objectives thus avoiding the scenario where interconnector capacity is reserved to meet the individual interests of Member States. Significant progress has been made and price coupling of day-ahead markets in the North-West implemented covering 75% of EU power demand. However, major problems remain in developing an intra-day platform putting at risk the delivery of the market integration objective by 2014. Both the internal gas and electricity markets are underpinned by a set of guidelines which are in the process of finalisation by Member States. In recognition that its design does not conform with the target model, SEM has been granted a derogation from compliance until the end of 2016 when, approaching its 10th anniversary, it will be replaced by ISEM. It should be acknowledged that SEM design has already been adapted to facilitate trading across the East-West Interconnector at an estimated cost of €24 million to industry in terms of the changes to existing systems required to introduce the new rules. Industry now faces the prospect of further significant costs within 10 years of the development of SEM at an estimated cost of €100 million[3] therefore any measure in the new design that minimises the costs of migrating the SEM to the ISEM would be welcomed.

The RAs have asserted that ISEM must at a minimum comply with the Target Model but have emphasised that this is not the only assessment criteria given the significant changes that have occurred since the inception of SEM. It is imperative that a thorough CBA accompany any proposed decision (including system costs) referenced against a scenario where compliance is achieved with

[2] http://ec.europa.eu/energy/infrastructure/studies/doc/20130902_energy_integration_benefits.pdf
[3] John Fitzgerald ESRI Research Series Number 21 p. 20

minimal change to the existing SEM (including original SEM system costs and intraday system changes). In this context, Option 4 appears to reflect a scenario of minimal change to the existing SEM. Arguably, detailed CBAs should have accompanied the four options respectively to facilitate thorough and informed input at this stage of the project.

The eight objectives of SEM are retained as supplementary evaluation criteria. The RAs have requested comments specifically on three of the objectives; Security of Supply, adaptive structure and efficiency. The five other objectives relate to stability, cost; equity, competition and the environment.

The following considerations are relevant in relation to the assessment of each options;

- Both RAs have a legal obligation to support delivery of their respective 2020 Renewable Energy Targets (40% RES-E), which will be mostly delivered by variable wind generation.
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- The RAs' statutory duties are to protect the interests of the all-island consumer and to deliver a competitive and, by inference, liquid market
- There is tension between the twin objectives of a stable and adaptive market. The objective of stability has been undermined by a change to the market which has been imposed by external circumstances. It has proved to be a fatal flaw of SEM that it has not been deemed sufficiently adaptive to these changed circumstances. In light of this precedent and the uncertainty around the future of the energy only market it is crucial that ISEM is compliant with the Target Model and capable of future adaptation.
- A detailed CBA referenced against a minimum change scenario is necessary to evaluate whether the efficiency objective has been achieved.
- The market must achieve a level of security of supply for the all-island market that can be delivered by the domestic market with recourse only to imports from abroad which can be relied upon
- The RAs should recognise the increased risk that suppliers are exposed to from more dynamic, more complex and unpredictable day ahead and intraday trading requirements. Suppliers will also need to respond to expected more volatile balancing prices. However there will continue to be increased risks purely by virtue of the fact that customers will take what electricity they need on any given day regardless of what suppliers may forecast. In this regard the design of the balancing regime and imbalance pricing is critical to allow management of the new risks suppliers will be exposed to. This will require careful consideration and consultation with industry.

The decision must achieve a balance between the interests of the relevant stakeholders summarised below;

- DCENR/DETI have a legal obligation to deliver compliance with both the Target Model and RES targets
- RAs have a statutory duty to protect consumer interests and deliver competition
- The TSO is charged with delivering least-cost dispatch, and have no obligation to ensure long term security of supply
- Both producers and suppliers will look to deliver sustainable returns to investors and minimise risk exposure
- Consumers must receive value in the form of competitive prices.

Context for detailed EAI Comments

EAI represents the main producers and suppliers in the SEM. Our membership straddles the spectrum from the large multinational multi-generation portfolio player to the single technology producer to the small supplier. The primary objective of our members is to create value for the all-island consumer by pursuing opportunities to minimise risk and maximise returns. Whilst, we support the objectives of the Internal Energy Market we have grave concerns that the energy only target model will not deliver the investments required to decarbonise the European economy by 2050 in a cost-efficient and secure manner. The European Commission is reviewing the energy only market in the face of increasing costs for consumers and mounting losses for industry. It is imperative, therefore, that the RAs decision at this point creates the degree of flexibility that will be required to adapt to the changing landscape at European level.

It is in this context that EAI would observe in relation to the ISEM design and the options presented in the consultation paper that:

- The investment that is required will be remunerated across four distinct revenue streams; energy, capacity, renewable (low carbon) support and system services.
- Incentives to provide each distinct product should be either market based , or obligations and penalties.
- Agents will aim to provide all of these services or some of these services depending on their comparative advantage.
- The market must facilitate optimisation across these revenue streams in an equitable and non-discriminatory manner
- As with the design of any market, market dominance and the potential for the abuse of market power are important considerations. It is essential that measures to mitigate the risks associated with these are an integral part of the design of the final options chosen for the market and the capacity mechanism.

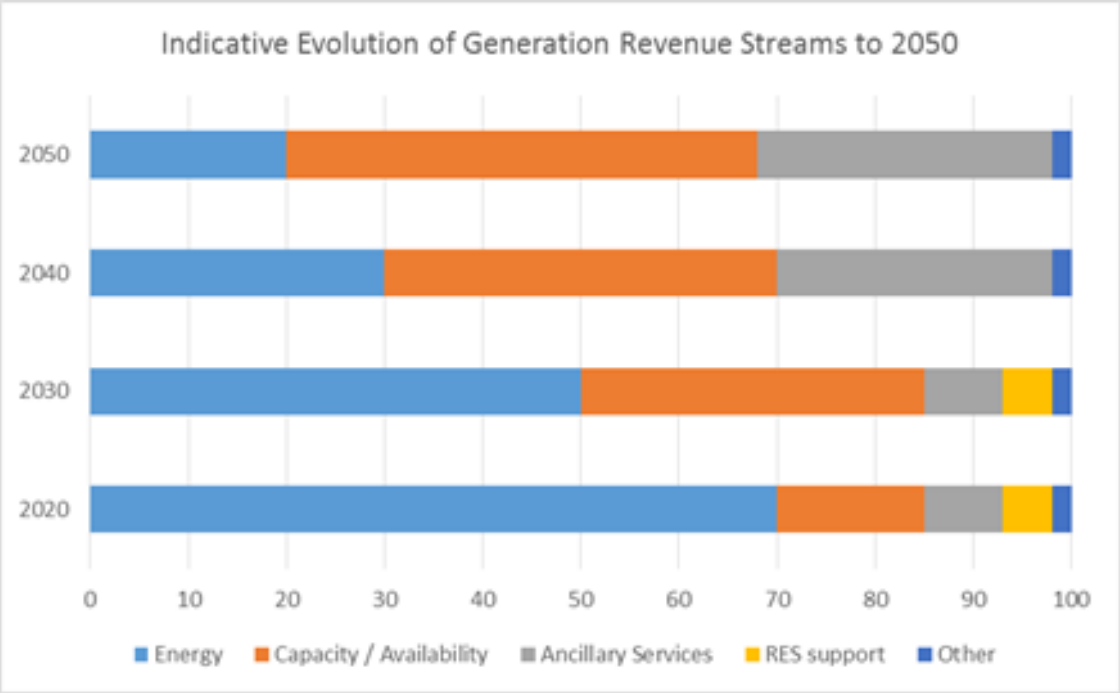
Additional observations in relation to this Consultation include:

- It should be recognised that the market design may not be capable of serving all the HLD principles simultaneously.
- An important consideration of the re-design should be to deliver efficient cross border trade. Local market design must not unduly inhibit participation in the various market elements/timescales (subject to long-term security and on-going continuity of electricity supplies being secured and taking into consideration market characteristics, competition and consumer prices).
- Renewable generation will provide the majority of electricity supplies post 2020 and should be central to market design – otherwise significant uncertainty and costs will arise.
- The provision of an Impact Assessment with the Final Decision Paper is noted. However, a quantified Cost Benefit Analysis of the options most preferred by those submitting responses should also be undertaken and provided with the consultation on the draft Decision Paper. Detailed consideration of risks and uncertainties should also be brought forward as a high degree of confidence is required that the HLD is feasible and fit-for-purpose.
- Consideration of DS3 should be integral to the market design as it may form a significant element of generator revenues in the future. DS3 must ensure generators receive remuneration for services demanded i.e. non-remuneration is also avoided and value must be properly rewarded.
- As previously proposed by EAI, expert Technical Working Groups should be established to allow proper industry participation and expertise input into the detailed design process.
- In considering energy storage, this concept should not be limited to electrical energy only. The use of thermal energy (electric water and space heating) must also be considered in the

context of smart metering, demand management and maximising the contribution of both renewable generation and high efficiency combined heat and power generation (as required under the Energy Efficiency Directive).

More generally it is observed that:

- The RAs must "have regard to the need to secure that licence holders are capable of financing the undertaking of the activities which they are licensed to undertake"[4]. In this context, the market must be designed to ensure that, in its totality, it is made financially whole. Absent this requirement the market is not sustainable. The new design should seek to avoid retrospectively damaging existing investments.
- Domestic and recent EU experience indicates 4 revenue streams are necessary to ensure market sustainability:
    - Energy (the marginal revenue from which will decrease with increasing RES penetration)
    - Capacity adequacy (to ensure long-term security of supply and reliability (capacity must necessarily be available, and be incentivised to be available, at periods of scarcity))
    - RES support / ETS price (RES support should be progressively removed as the carbon price firms with a decreasing cap and other ETS supply management measures)
    - Ancillary services to include measures which support flexibility - which should be delivered primarily through the DS3 programme
- These revenue streams will re-balance with time as the electricity system is progressively, and ultimately fully, decarbonised.
- A complete discussion of energy and capacity components requires an understanding of their interaction with RES and ancillary services components. This has not yet been provided.



[4] Section 9 (4) (c) of the 1999 Electricity Act (RoI)

2.3 PURPOSE OF THE DOCUMENT (SECTION 1)

Question	Answer
• Which option for energy trading arrangements would be your preferred choice for the I-SEM market, and why?	• The Options describe (i) the future structure for energy payments, which given the system characteristics is only one component of the market design, and (ii) a capacity payment intervention in this market. • It is not possible to definitively state which is the optimum solution for energy trading without also knowing the choices that will be made in relation to RES integration / payments and ancillary services / flexibility payment mechanisms. • An option that models an integrated energy and capacity market (which would have been of value given that state aid assessments with capacity payments become redundant) would have been of benefit. • Of the choices presented EAI considers that: a. Option 2 is not viable. b. Option 4 must address compliance concerns to be viable c. Options 1 and 3 may be viewed as similar to Target Model compliant designs in place in other markets in Europe
• Is there a requirement for a CRM in the revised HLD, and why?	***Please refer to the Report prepared by Frontier Economics supporting the requirement for a Capacity Remuneration Mechanism (CRM) that accompanies this submission.*** Other points that EAI considers of importance include: • Capacity is a specific and essential characteristic of an electricity market, distinct from energy, that has tangible value and should be addressed up front • The underlying presumption of the energy only market (EOM) is that the system marginal price (SMP) will increase as demand increases, providing inframarginal rent to new, efficient baseload generation that allows full investment cost recovery. This assumption is no longer valid in a market comprising substantial or majority generation with low or zero marginal cost and out of market supports • A long-term security of supply concern thus arises that must be addressed using an approach that is acceptable to investors. • Separately and distinct from a long-term capacity mechanism , a requirement for short-term flexible firm capacity arises as a result of variable renewables and must be incentivised to participate in the market in order to ensure continuity of supplies • It is unclear that a capacity mechanism can address both requirements. • CRMs that interfere with the market design must comply with the State Aid Guidelines. Capacity remuneration that is integral to market design does not, ab initio, constitute a State Aid.

• If there is a requirement for a CRM in the revised HLD, what form would be your preferred choice for the I-SEM, and why?	• The market must remunerate capacity as otherwise it will not be sustainable. The performance of markets in north-western Europe increasingly demonstrate this fact. • The design of the capacity mechanism needs first and foremost to meet the requirements of the single electricity market before assessing its state aid compatibility. • A capacity remuneration regime that is integral to market design and, consequently does not constitute a State Aid is the preferred option • The CRM should be universal, centralised and related to capacity only (per MW) • Of the choices presented EAI considers that Options 1, 4, 5A and 5B are not viable

2.4 TOPICS FOR THE HIGH LEVEL DESIGN OF ENERGY TRADING ARRANGEMENTS (SECTION 4)

Question	Answer
• Are these the most important topics to consider in the description of the HLD for the revised energy trading arrangements for the single electricity market on the island of Ireland?	• Yes in terms of the energy market structure. • However, the process does not address how the contribution of revenue streams, including energy, will change over time or how a mechanism to provide for and resolve this change will be devised so that the market remains sustainable and delivers affordable prices.
• Are there other aspects of the European Internal Electricity Market that should form part of the process of the High Level Design of energy trading arrangements in the I-SEM?	• EAI acknowledges that compliance with the EU Target Model requirements is a fundamental objective of the redesign process • EAI also notes the reconsideration of the energy only model underway by both industry and policy-makers at EU level at present given the outcomes it is producing • Some recognition of this must inform the redesign project • EAI also notes the new focus on Retail market design by policy-makers and industry at EU level (and its interaction with the wholesale market (and DSO services)). The redesign project should also be cognisant of developments in this sphere.

2.5 SUMMARY OF THE OPTIONS FOR ENERGY TRADING ARRANGEMENTS (SECTION 5)

Question	Answer
• What evidence can you provide for the assessment of the HLD options with respect to security of supply, efficiency, and adaptability?	The following considerations are relevant in relation to the assessment of each option and the weighting of the objectives; • A detailed CBA referenced against an alternative scenario (minimal change to the existing SEM) is necessary to evaluate whether the efficiency objective has been achieved. • The market must achieve a level of security of supply for the all-island market that can be delivered by the domestic market with recourse only to imports from abroad which can be relied upon. • There is tension between the twin objectives of a stable and adaptive market. The objective of stability has been undermined by a change to the market which has been imposed by external circumstances. It has proved to be a fatal flaw of SEM that it has not been deemed sufficiently adaptive to these changed circumstances. In light of this precedent and the uncertainty around the future of the energy only market it is crucial that ISEM solution is open to future adaptation without incurring major market disruption and costs. In addition: • Evidence from Europe indicates that long-term security of supply is not delivered by any of the trading arrangements ergo the CRM. • There is an increasing trend indicating that short-term availability may also become an issue as existing plant are no longer being adequately remunerated and will be forced to close / be decommissioned / be moth-balled. • A critical measure of efficiency is the efficiency of Inter-connector (IC) trading and is related to effective coupling with neighbouring markets – a function of the similarity/compatibility of the respective market designs. • Adaptability – the future I-SEM design must be able to cater for potential future evolution in the Target Model.

2.6 ADAPTED DECENTRALISED MARKET (SECTION 6)

Question	Answer
• Are there any changes you would suggest to make the Adapted Decentralised Market more effective for the I-SEM (for instance, a different choice for one or more of the topics or a different topic altogether)?	
• Do you agree with the qualitative assessment of the Adapted Decentralised Market against the HLD criteria? If not, what changes to the assessment would you suggest (including the relative strengths and weaknesses of an option)?	
• How does the Adapted Decentralised Market measure against the SEM Committee's primary duty to protect the long and short term interests of consumers on the island of Ireland?	

2.7 MANDATORY EX-POST POOL FOR NET VOLUMES (SECTION 7)

Question	Answer
• Are there any changes you would suggest to make the Mandatory Ex-post Pool for Net Volumes more effective for the I-SEM (for instance, a different choice for one or more of the topics or a different topic altogether)?	• Option 2 appears to be a unique design worldwide and a risk attaches due to its untested nature • Bolting an ex-post pool onto physical bilateral forward markets would be extremely difficult to implement from a technical perspective. Two algorithms and two sets of bidding structures makes the systems costs intensive for the MO and participants • There is in effect competition between these two markets for primacy. The split market undermines price discovery • If the European market is the most attractive this will reduce liquidity in the pool which additionally is also likely to have lower volumes being traded due to net portfolio trading and which will negate the benefit of retaining the pool. If the ex-post pool is the more attractive market this could reduce the quality of the price in the day ahead market (DAM) and result in inefficient flows on the interconnectors • Concern over its stability/adaptability from a future market design changes perspective • Mandating liquidity across all timeframes and in particular the DAM and ex-post pool is also problematic as the bidding in the DAM under this option is on a portfolio basis. This would enable a market participant to offer their high merit generation into the European markets and offer their low merit generation into the ex-post pool thereby satisfying regulatory limits imposed while still significantly reducing liquidity in the ex-post pool • EAI considers that Option 2 is not a viable design.
• Do you agree with the qualitative assessment of Mandatory Ex-post Pool for Net Volumes against the HLD criteria? If not, what changes to the assessment would you suggest (including the relative strengths and weaknesses of an option)?	
• How does the Mandatory Ex-post Pool for Net Volumes measure against the SEM	

	Committee's primary duty to protect the long and short term interests of consumers on the island of Ireland?	

2.8 MANDATORY CENTRALISED MARKET (SECTION 8)

Question	Answer
• Are there any changes you would suggest to make the Mandatory Centralised Market more effective for the I-SEM (for instance, a different choice for one or more of the topics or a different topic altogether)?	
• Do you agree with the qualitative assessment of Mandatory Centralised Market against the HLD criteria? If not, what changes to the assessment would you suggest (including the relative strengths and weaknesses of an option)?	
• How does the Mandatory Centralised Market measure against the SEM Committee's primary duty to protect the long and short term interests of consumers on the island of Ireland?	

2.9 GROSS POOL – NET SETTLEMENT MARKET (SECTION 9)

Question	Answer
• Are there any changes you would suggest to make the Gross Pool – Net Settlement Market more effective for the all I-SEM (for instance, a different choice for one or more of the topics or a different topic altogether)?	• Option 4 may not deliver efficient cross border trading activities . The RAs would have to confirm with the EU Commission that the types of CfDs proposed are acceptable under Target Model • Concern exists over its stability/adaptability from the perspective of future changes in market design • This Option splits the market and so undermines price discovery • Two algorithms and two sets of bidding structures implies it will be systems intensive for MO and participants. The ex-post pool is mandatory and uses the complex three part bids currently employed in the SEM. Participation in the European market is through financial trading using Euphemia compliant bids. • It may not produce sufficient incentives for some generators particularly those uncertain of being in the ex-post schedule (e.g. intermittent or marginal generators) to actively engage in ex-ante timeframes • Financial derivatives (unbacked by physical position) could push an NFC- to an NFC+ or negate MIFID II exemptions under Financial derivatives regulations • The financial trading does not alter the volumes in the ex-post pool of the participants that execute these trades. This will create some volume risk for generators if not scheduled because the SMP from the ex-post pool exceeds the strike price of the CfD. The CfD is therefore of no benefit to the generator and could in fact be a liability. This is part of the problem that currently exists in the SEM has resulted in a lack of liquidity in the forward market. • It is potentially inefficient if intra-day and ex-post gate closure are not aligned, this is particularly the case during periods of GB gas market volatility. (Similar issues potentially exist with the ex-post pool in Option 2) • It could also result in inefficient scheduling as the inefficient interconnector flows from the European markets are an input into the ex-post pool and not a result of the process. There is the potential for adverse flows on the interconnector i.e. energy imports into the SEM where the price in the SEM is lower than in BETTA. • It is inequitable concerning the opportunities it provides for trading in day-ahead and intra-day timeframes, favouring those participants with more certainty in their ex-post pool schedules. • Suppliers on the other hand do not have this risk. If a supplier has entered a CfD they know that they will have a

	corresponding volume in the ex-post pool. The CfD will effectively hedge their exposure to volatile prices. This option will result in a preference for imports into the SEM over the interconnectors at both day-ahead and intraday. This would be inefficient and would restrict the ability of the SEM in meeting renewable targets. • EAI considers that Option 4 presents a challenge in achieving compliance with the target model
• Do you agree with the qualitative assessment of Gross Pool – Net Settlement Market against the HLD criteria? If not, what changes to the assessment would you suggest (including the relative strengths and weaknesses of an option)?	
• How does the Gross Pool – Net Settlement Market measure against the SEM Committee's primary duty to protect the long and short term interests of consumers on the island of Ireland?	

2.10 CAPACITY REMUNERATION MECHANISMS (CHAPTER 10)

Question	Answer
• What are the rationales for and against the continuation of some form of CRM as part of the revised trading arrangements for the I- SEM?	Please refer to the Report prepared by Frontier Economics supporting the continuation of a CRM that accompanies this submission. • As outlined, the basic assumption of the energy only model is no longer valid (increasing SMP with increasing demand). Effectively valuing capacity at zero once constructed undermines the motivation for investment. Price volatility (and consequential "boom and bust" investment cycles) is not acceptable politically • There are no reasonable arguments that support the removal of a CRM. High level comments: • EAI sees advantages in adopting Option 2A . • Option 3 would require further appropriate design to suit the all-island market conditions and be tailored to accommodate wind • The CRM must be designed for the all-island context which is a small concentrated market that already has a (long-term price based) capacity mechanism (which rewards wind). • State Aid proposed requirements, should they be deemed to apply, are sufficiently flexible that most CRM designs for the particular characteristics of the SEM should be capable of being argued as permissible interventions. The clear lesson from the State Aid guidelines is that the economics of the all-island electricity market is important to the design of any capacity payment and need to be considered in combination with any legal constraints. • Theoretical solutions for perfect markets should not be 'tested' on the Irish market • The 'decentralised reliability option" has not been adopted elsewhere and the assessment of this approach does not appear to be balanced.
• Are these the most important topics for describing the high level design of any future CRM for the I-SEM?	• The objective of the CRM must be explicitly defined (this is not clearly addressed) • Consideration of the interaction of CRMs with other system elements is also an important topic – in particular Network developments and IC (viz the current NI SOS issue) • CRM design is critically dependent on the treatment of RES generation: a. If RES is subject to normal bidding obligations the CRM is required essentially to address long term security b. If RES is treated as at present then both long-term security and short-term flexibility must both be addressed.

2.11 STRATEGIC RESERVE (CHAPTER 10.7)

Question	Answer
• Are there any changes you would suggest to make the design of a Strategic Reserve mechanism more effective for the I-SEM (for instance a different choice for one or more of the topic?)	High level comments: • A high risk exists that this will not deliver revenue adequacy for market participants • A Strategic Reserve is effectively an intensive ancillary service rather than a CRM – it provides an opportunity for generators to exit the residual energy market. • Capacity that is held as strategic reserve is kept separate from the energy market. All other generation capacity would still be reliant on the energy only market to recover their capacity costs (where this has proven insufficient in the context of high levels of low marginal cost, variable renewables • This would not address the significant increase risk identified in the Frontier Economics report. • EAI considers that a Strategic Reserve is inappropriate for a small, relatively isolated system with exceptional levels of variable generation (It depends on energy market signals to be the primary driver of investment).
• Do you agree with the initial assessment of the strengths and weaknesses of a Strategic Reserve Mechanism? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an option relative to the others)?	
• Would a Strategic Reserve Mechanism work or fit more effectively with a particular option for the energy trading arrangements. If so, which one and why?	

2.12 LONG-TERM PRICE-BASED CRM (CHAPTER 10.9)

Question	Answer
• Are there any changes you would suggest to make the design of a Long-term price-based CRM effective for the I-SEM (for instance a different choice for one or more of the topic?)	• A Long term Price-based CRM would represent the minimum change from the current arrangements Securing state approval is achievable because it is the most appropriate way of addressing Market failure in Ireland • This Option presents challenges in relation to cross-border participation but could address market coupling requirements by not paying capacity for interconnector flows. • Definition of capacity margin becomes important as the mechanism must be responsive to this value to ensure an appropriate exit signal exists.
• Do you agree with the initial assessment of the strengths and weaknesses of a Long-term price-based CRM? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an option relative to the others)?	• IC capacity must be subject to the same penalty regime as "domestic" capacity for non-delivery.
• Would a Long-term price-based CRM work or fit more effectively with a particular option for the energy trading arrangements. If so, which one and why?	

2.13 SHORT-TERM PRICE-BASED CRM (CHAPTER 10.10)

Question	Answer
• Are there any changes you would suggest to make the design of a Short-term price-based CRM effective for the I-SEM (for instance a different choice for one or more of the topic)?	High level comments: • Provides little benefit over an energy-only market. • Historically, the day-ahead LOLP mechanism in the England & Wales Pool provided an elegant solution to capacity pricing in theory, but in practice did not deliver a reliable signal for short term operational planning or long term investment, and was open to manipulation.
• Do you agree with the initial assessment of the strengths and weaknesses of a Short-term price-based CRM? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an option relative to the others)?	
• Would a Short-term price-based CRM work or fit more effectively with a particular option for the energy trading arrangements. If so, which one and why?	

2.14 QUANTITY-BASED CAPACITY AUCTION (CHAPTER 10.11)

Question	Answer
• Are there any changes you would suggest to make the design of a Quantity-based Capacity Auction CRM effective for the I-SEM (for instance a different choice for one or more of the topic)?	High level comments: • Depending on contract arrangements and the opportunity to deviate from reliability standard the value of the CRM could fluctuate greatly from year to year (similar to the saw tooth price profile) due to the effect of Unit size relative to the size of market • Less predictable capacity price may impact consumers as Suppliers would have difficulty hedging their positions • Liquidity risk for secondary trading given small market size and vertical integration • Penalty regime may increase non-delivery risks (relative to current CRM or energy-only) • Practical challenges of defining cross-border delivery • Would align with GB approach and is more likely to achieve State Aid clearance •
• Do you agree with the initial assessment of the strengths and weaknesses of a Quantity-based Capacity Auction CRM? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an option relative to the others)?	
• Would a Quantity-based Capacity Auction CRM work or fit more effectively with a particular option for the energy trading arrangements. If so, which one and why?	

2.15 QUANTITY-BASED CAPACITY OBLIGATION (CHAPTER 10.12)

Question	Answer
• Are there any changes you would suggest to make the design of a Quantity-based Capacity Obligation CRM effective for the I-SEM (for instance a different choice for one or more of the topic)?	High level comments: • Given the relatively small size of the Irish market, we do not consider that CRM designs which rely on liquid trading of capacity instruments between market participants can be effective without significant regulatory intervention. • Value of CRM could fluctuate greatly from year to year (similar to the saw tooth price profile) due to the effect of Unit size relative to the size of market • Relies on liquid trading with capacity providers - liquidity risk for secondary trading given small market size and vertical integration • Unpredictable capacity price would impact consumers as Suppliers would have difficulty hedging their positions raising questions as to its compatibility with dynamic retail market • Questionable Credit cover requirements could be onerous • High RES penetration has resulted in significantly higher installed capacity than peak demand. Capacity obligations present a benefit for vertically integrated market participants who can secure certificates from within their generation portfolio and significantly reduce the capacity revenue available to non-portfolio players
• Do you agree with the initial assessment of the strengths and weaknesses of a Quantity-based Capacity Obligation CRM? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an option relative to the others)?	
• Would a Quantity-based Capacity Obligation CRM work or fit more effectively with a particular option	

	for the energy trading arrangements. If so, which one and why?	

2.16 CENTRALISED RELIABILITY OPTIONS (CHAPTER 10.14)

Question	Answer
• Are there any changes you would suggest to make the design of a Centralised Reliability Option CRM effective for the I-SEM (for instance a different choice for one or more of the topic)?	High level comments: • This option introduces potential naked exposure to high pay-outs. Both centralised and decentralised reliability options result in generators entering one-way a CfD. It is presumed that where the SMP is in excess of the strike price the generator will be generating and therefore will have revenue from which to pay the difference payment. It is not clear under any of the energy options that this will in fact be the case. If the generator is scheduled as a result of a non-energy balancing action the revenue the generator receives will be paid as bid. The generator will therefore not have received the revenue from which to pay the difference payment and the reliability option will be a liability. • Physical backing will be required for this to deliver security of supply, reducing any simplicity and efficiency benefits of this option
• Do you agree with the initial assessment of the strengths and weaknesses of a Centralised Reliability Option? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an option relative to the others)?	
• Would a Centralised Reliability Option work or fit more effectively with a particular option for the energy trading arrangements. If so, which one and why?	

2.17 DECENTRALISED RELIABILITY OPTIONS (CHAPTER 10.15)

Question	Answer
• Are there any changes you would suggest to make the design of a Decentralised Reliability Option CRM effective for the I-SEM (for instance a different choice for one or more of the topic)?	High level comments: • Given the relatively small size of the Irish market, we do not consider that CRM designs which rely on liquid trading of capacity instruments between market participants can be effective. • There is insufficient detail to assess viability particularly the decentralised option as we know of no example that exist for this globally, Consequently, the implementation risk is higher than in other options • To avoid "naked exposure" to CfD payments, generators need to be confident of being scheduled whenever energy prices exceed the strike price. Both centralised and decentralised reliability options result in generators entering one-way a CfD. It is presumed that where the SMP is in excess of the strike price the generator will be generating and therefore will have revenue from which to pay the difference payment. It is not clear under any of the energy options that this will in fact be the case. If the generator is scheduled as a result of a non-energy balancing action the revenue the generator receives will be paid as bid. The generator will therefore not have received the revenue from which to pay the difference payment and the reliability option will be a liability. • Relies on liquid trading with capacity providers. • May not have a common price across suppliers. • Proposed design unclear how obligations enforced if suppliers can choose different strike prices, potentially "free riding" on reliability procured by competitors • Physical backing will be required for this to deliver security of supply, reducing any simplicity and efficiency benefits of this option
• Do you agree with the initial assessment of the strengths and weaknesses of a Decentralised Reliability Option? If not, what changes to the assessment would you suggest (including the strengths and weaknesses of an	

option relative to the others)?	
• Would a Decentralised Reliability Option work or fit more effectively with a particular option for the energy trading arrangements. If so, which one and why?	