IWEA Response to

SEM-14-008

Integrated Single Electricity Market

(I-SEM)

High Level Design for Ireland and Northern Ireland from 2016

2nd April 2014

1 CONSULTATION QUESTIONS

1.1 RESPONDENT DETAILS

COMPANY	IWEA
CONTACT DETAILS	**Irish Wind Energy Association** Sycamore House Millennium Park Osberstown Naas Co. Kildare Tel: +353 (0)45 899341 Fax: +353 (0)45 854958 Email: mary@iwea.com
MAIN INTEREST IN CONSULTATION	The Irish Wind Energy Association ("IWEA") is Ireland's leading renewable energy representative body representing more than 200 members involved in wind energy development in Ireland and also in Northern Ireland, through NIRIG (Northern Ireland Renewables Industry Group), set up in collaboration with RenewableUK. IWEA represents members with projects across the spectrum, in operation, under construction and awaiting connection. In Ireland IWEA members are involved in the majority of pre Gate 3 connected projects but also involved in more than 85% of the MW of contracted projects in Gate 1, 2 and Gate 3. Through NIRIG we represent more than 25 company members that have developed over 85% of renewable generation operational in Northern Ireland today and who will contribute a significant majority of renewable energy required to deliver the 2020 targets. The IWEA membership base includes all large, medium and many small developers as well as financial, legal advisory, consultancy, contractors and other service providers involved in the renewables sector in Ireland and Northern Ireland. Our membership covers the full range of wind energy projects which all need to be considered in the new market design, including: • >10MW wind farms in the market & under ROC support • >10MW wind farms in the market & under REFIT support • >10MW wind farms in the market & out of support • Out of market wind farms & under ROC support (optional <10MW) • Out of market wind farms & under REFIT support (optional <10MW) • Out of market wind farms & out of support (optional <10MW)

	• Uncontrollable wind farms & under ROC support (<5MW) • Uncontrollable wind farms & under REFIT support (<5MW) • Uncontrollable wind farms & out of support (<5MW) • Future connections under new CfD support in NI • Future connections under new yet to be defined subsidy scheme in ROI These energy projects are owned and operated by a range of parties from small independent generators, medium and large developers, independent portfolio players and utilities. The resources and capabilities of these parties vary significantly and this needs to be taken into consideration in the market design. **The current SEM allows for this range of capability and company resource, and this is a feature that needs to be maintained in order to promote equity and fairness in the transition to a new market.**

1.2 GENERAL COMMENTS

IWEA welcomes the opportunity to comment on this consultation. We have developed a detailed submission which provides further information in support of our responses to the questions outlined in the consultation paper. We request that due consideration is given to all of the IWEA response provided below.

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2. Executive Summary

IWEA welcomes the publication of the consultation on the Integrated Single Electricity Market (I-SEM) High Level Design for Ireland and Northern Ireland from 2016. We believe that this is the most important consultation for the industry in recent times and will have a significant impact on the future of the electricity system in Ireland. As an industry we are in the process of an energy transition, which is set to continue into the future, to an energy system with increased levels of renewable generation. **It is essential that the market design is fit for purpose for a market which will have 40% of electricity produced from renewables (primarily wind) in 2020, and that the suitability of the market for the trading of electricity from wind energy is given appropriate consideration from day one.** A long-term stable market which encourages investment and appropriately reflects costs is needed. In our response to this consultation IWEA proposes a High Level Design Option and Capacity Payment Design for the electricity market which we believe will work best for the all-island market with increasing levels of renewable penetration.

IWEA has presented a number of key considerations for the SEM Committee with reference to the renewable energy targets, the requirements under the RES Directive, and the need for a market that is accessible, transparent and fair for all generators. We have also presented a summary of our own requirements which are consistent with the SEM Committee's evaluation criteria. These have been used to evaluate each of the options presented in the consultation paper.

IWEA has reviewed the options in the consultation paper in detail to see which may be the most appropriate for the wind industry, and has concluded that none of the energy trading options as presented in the consultation paper are suitable. In this response IWEA puts forward what we believe is the most appropriate option for the energy trading arrangements going forward. This option is based on Option 3 from the consultation paper, with a number of essential changes to ensure it is suitable for a market with high levels of renewable penetration and is referred to as **"Option 3b"**. The details of Option 3b are set out in Section 7. In summary, it comprises:

- Financial Transmission Rights in forwards timeframe.
- No long-term physical contracts in forwards timeframe.
- Exclusive day-ahead market (not mandatory)
- Exclusive within-day market
- Mandatory provision of INCs / DECs into Balancing Market for all generation
- All physical market trades should be based on a gross import or export position, i.e. it should not be possible to trade the net position of a generation and demand portfolio
- Wind generators may choose to trade on a unit basis or portfolio basis (the portfolio being the summation of physical units), but imbalance settlement should be carried out across all windfarms within a participant's own portfolio.

- Considerations to facilitate trading should be an integral part of the design:
    - TSO wind generation forecasts should be published for all market participants
    - The concept of intermediaries in the market should remain
    - Cross-company aggregation functions should be an integral part of the market design across all timeframes, including electricity balancing
    - An aggregator of last resort should be provided
    - There should be transparency of market revenues
    - Below de-minimis trading should at a minimum be kept at its current level and requires further consultation
- Further consideration should be given to imbalance pricing and settlement than that reflected in the consultation paper.
- Balancing pricing and settlement should be carefully managed so that artificial balancing costs (driven by market structure or reflective of, for example, market power) are not charged to Balance Responsible Parties.
- Existing established local market policy related to connection, firm-access and dispatch should be respected
- While it is not an integrated market design requirement, the facility should be retained to maintain TSO countertrading in the event of inefficient market outcomes
- Market participation fees and market collateralisation requirements should be managed to minimise requirements for all parties where possible. This includes, for example, the acceleration of market payment timeframes.
- Structural design features to promote IDM liquidity should be considered.

IWEA believes it is difficult to discuss the detail of the Capacity Remuneration Mechanism (CRM) design without full view of any restrictions (or lack thereof) on bidding behaviour from participants, or indeed consensus on what the CRM objectives are. The CRM objectives should be first established under the proposed decision paper.

Notwithstanding the need for defined objectives for the CRM and further information in relation to restrictions on bidding behaviours, IWEA is putting forward an initial preferred position:

- For a long-term price based mechanism.
- That wind generation should receive capacity payments for its capacity credit contribution to system security.
- The design of the CRM should be such that impacts on IC flows are minimised and imports on the IC are not rewarded at times of high wind, resulting in wind curtailment.

3. Introduction

The Irish Wind Energy Association ("IWEA") is Ireland's leading renewable energy representative body representing more than 200 members involved in wind energy development in Ireland and also in Northern Ireland, through NIRIG (Northern Ireland Renewables Industry Group), set up in collaboration with RenewableUK.

IWEA represents members with projects across the spectrum, in operation, under construction and awaiting connection. In Ireland IWEA members are involved in the majority of pre Gate 3 connected projects but also involved in more than 85% of the MW of contracted projects in Gate 1, 2 and Gate 3.

Through NIRIG we represent more than 25 company members that have developed over 85% of renewable generation operational in Northern Ireland today and who will contribute a significant majority of renewable energy required to deliver the 2020 targets.

The IWEA membership base includes all large, medium and many small developers as well as financial, legal advisory, consultancy, contractors and other service providers involved in the renewables sector in Ireland and Northern Ireland.

Our membership covers the full range of wind energy projects which all need to be considered in the new market design, including:

- >10MW wind farms in the market & under ROC support
- >10MW wind farms in the market & under REFIT support
- >10MW wind farms in the market & out of support
- Out of market wind farms & under ROC support (optional <10MW)
- Out of market wind farms & under REFIT support (optional <10MW)
- Out of market wind farms & out of support (optional <10MW)
- Uncontrollable wind farms & under ROC support (<5MW)
- Uncontrollable wind farms & under REFIT support (<5MW)
- Uncontrollable wind farms & out of support (<5MW)
- Future connections under new CfD support in NI
- Future connections under new yet to be defined subsidy scheme in ROI

These energy projects are owned and operated by a range of parties from small independent generators, medium and large developers, independent portfolio players and utilities. The resources and capabilities of these parties vary significantly and this needs to be taken into consideration in the market design. **The current SEM allows for this range of capability and company resource, and this is a feature that needs to be maintained in order to promote equity and fairness in the transition to a new market.**

4. Key Considerations for the SEM Committee

Regulatory Impact Assessment

IWEA believes it is essential that a Regulatory Impact Assessment is carried out for each of the options under consideration and any option brought forward to a proposed decision. We note that there are tight timelines for this consultation process and that this may limit the time available for carrying out assessments, however it is essential that due process is observed and that the consultation and design processes are robust. In that regard IWEA believes it is essential that an appropriate impact assessment of all options is carried out before a proposed decision is arrived at.

In particular, **a cost benefit analysis (CBA) needs to be carried out**. It has been indicated that a CBA of the preferred solution will be carried out with regard to a reference case yet to be determined. It is imperative that the Terms of Reference for the CBA are consulted on in terms of the metrics to be assessed and the reference case to be used. IWEA is concerned that if a CBA being carried out on only one option is not sufficiently strong and positive, it may not be appropriate for this option to be progressed further and a similar analysis may need to be carried out for the next preferred option. This could result in significant delays to the timelines envisaged, and open the process up to challenge.

Some of the aspects that should be included in the CBA include the following:

- Cost of market implementation and future adaptation
- Cost of participation in the market
- Cost of electricity to all-island consumers
- Benefits from improved market efficiencies
- Benefits from improved liquidity in the forward and spot market timeframes
- Benefits resulting from improved interconnection and trading
- Benefits from reaching renewable energy targets
- Impact on the PSO

This list is not exhaustive and **IWEA believes that there should be consultation on the terms of reference for the CBA**. Consideration should be given to the long term impacts as well as the short term for all the various players in the market. While there may be significant short terms costs associated with the implementation of a new market, the longer term benefits may significantly outweigh these costs.

In the quantitative impact assessment which was presented in the consultation paper, it is essential that appropriate weighting is given to those criteria which are legally binding:

- **Environmental:** while a market cannot be designed specifically around renewable generation, the selected wholesale market design should promote renewable energy sources and facilitate government targets for renewables.
- **The Internal Electricity Market:** the market design should efficiently implement the EU Target Model and ensure efficient cross border trade.

Renewable Targets

Ireland's need to support renewable energy stems from its EU commitments, namely EU Directive 2009/28/EC on the Promotion of Renewable Energy Sources which came into force in April 2009 and which establishes a binding target of 20% of overall EU energy consumption coming from renewable sources by 2020 as well as a binding 10% minimum target for energy from renewable resources in the share of transportation fuels. Ireland's target under the Directive is for renewable resources to account for 16% of total energy consumption by 2020. Failure to meet these targets will result in significant EU sanctions. In line with these commitments, DCENR have put in place a target for electricity from renewable energy sources (RES-E) of 40% by 2020. The European Commission has also recently unveiled its proposal for a further renewable energy target to be binding towards 2030, and so the longer term perspective on the need for Irish renewable energy is now even clearer.

The new market design needs to ensure that the market design is suitable for increasing levels of renewable generation in line with government policy and the EU binding renewable targets.

RES-E Directive obligations

The principles of priority dispatch and access are set out in Directive 2009/28/EC of 23 April 2009 (the "Directive", as transposed in Ireland by S.I. No. 147 of 2011). The RES-E Directive outlines a number of obligations on the member state to enable the integration of renewable energy and to minimise curtailment. Article 16.2 states:

a) *Member States shall ensure that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of electricity produced from renewable energy sources;*

b) *Member States shall also provide for either priority access or guaranteed access to the grid-system of electricity produced from renewable energy sources;*

c) *Member States shall ensure that when dispatching electricity generating installations, transmission system operators shall give priority to generating installations using renewable energy sources in so far as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria. Member States shall ensure that appropriate grid and market-related operational measures are taken in order to minimise the curtailment of electricity produced from renewable energy sources. If significant measures are taken to curtail the renewable energy sources in order to guarantee the security of the national*

electricity system and security of energy supply, Members States shall ensure that the responsible system operators report to the competent regulatory authority on those measures and indicate which corrective measures they intend to take in order to prevent inappropriate curtailments.

The new market design being developed needs to take these requirements of the RES-E Directive in its entirety into consideration and ensure that the market works in such a way that absolute priority dispatch is maintained as per the SEMC's Next Steps decision paper and curtailment is minimised.

Curtailment Mitigation

In the years up to 2020 there are a number key initiatives that are all underway which are required and indeed expected to deliver significant results in curtailment mitigation. These initiatives include:

- Increasing the SNSP limit to 75%
- Decreasing levels of must-run generation
- Effective and efficient operation of interconnectors to ensure export at times of high wind
- Grid upgrades as required
- New System Services

Post 2020 there are a number of key areas also which will also contribute positively to curtailment mitigation. These include:

- Further interconnection
- Storage
- Demand side management including electric transport and heating

While some progress is being made with these initiatives, it is essential that the new market design will support the requirements listed above in relation to curtailment mitigation but also allow further development in these areas, in particular through improving the efficiency of interconnectors, flexibility in demand participation (in particular closer to real time) and promoting flexible generation. The market must reflect and reward participants who provide services to facilitate renewables in line with the responsibility as set out in the RES-E Directive. It should be noted that curtailment mitigation is an ongoing requirement of the Directive on the Member State irrespective of market design, however through appropriate market design, efficiencies could be gained in curtailment mitigation tools.

Compensation for Curtailment

In our response to the SEM Committee Proposed Decision Paper on the Treatment of Curtailment in Tie-Break Situations (SEM-12-090) IWEA strongly opposed the proposal to reduce and remove the levels of compensation to wind generators for curtailment. We believe that the subsequent decision to remove compensation for curtailment is both retrospective and discriminatory. Compensating for curtailment

provides an economic signal for the implementation of the mitigation measures required as per the RES-E Directive. If the cost of curtailment can be centrally collected the appropriate market products to incentivise the mitigation measures will be easier to implement. Removing this signal will remove the incentive to address the wider issue of mitigation and the optimization of the investment in renewable generation.

The wind industry has been very supportive of the DS3 programme to date through representation on the Advisory Council and the Joint Grid Code Review Panel, attendance at public fora and regular meetings with the system operators. IWEA has recognised the work being carried by EirGrid in this regard and is keen to see the programme progress. While we recognise that it is difficult to incentivise delivery of the DS3 programme, penalizing wind generation is not the solution. Consideration should be given to methods for incentivisation of the delivery of curtailment mitigation measures, including the DS3 programme.

The DS3 programme to increase the instantaneous SNSP limit from 50% to 75% has already been delayed. The risk to delay currently only rests with wind generators who are not in a position to manage the risks. Therefore IWEA is still of the view that **the removal of compensation for curtailment is <u>not</u> appropriate**.

REFIT and RO/CfD FiTs Timelines

IWEA would like to stress the **importance of the timelines for the market decision making and implementation**. Ireland has a mandatory target for 16% of our energy to come from renewables in 2020. As part of this target 40% of electricity generation is to come from renewables in 2020. Two of the main tools for implementing this policy are the REFIT support scheme in Ireland and the ROC scheme in Northern Ireland. The current REFIT support scheme closes in 2017, with generators required to be generating at this stage. In order to reach this timeframe projects will be seeking financial close in early 2016. The current Renewables Obligation support mechanism in Northern Ireland is also due to close in 2017 with the new support mechanism CfD FiTs due to be implemented during 2016. It is essential that there is certainty in relation to the market framework well in advance of these deadlines so that project promoters, investors and financial institutions can understand the market in which they will be participating. It is important to note also that all decisions in relation to the trading options of generators, and their interaction with the REFIT and ROC schemes, need to be tied down in advance of these deadlines also. If there is uncertainty remaining beyond this point it will quickly begin to stifle investment and bring the development of the industry to a standstill. **It is essential that there is no market uncertainty in 2016 as this will mean projects are unable to reach financial close ahead of the REFIT and RO deadlines, and the EU binding renewable energy targets will be missed.** This is likely to have severe repercussions for Ireland as a member state through infringement proceedings.

Support Schemes

It is essential that the market design is compatible with support schemes, both existing and incoming. With the introduction of CfDs in Northern Ireland in 2016/17, it is essential that there is a reference price that these wind farms can easily achieve. An achievable reference price for all generation companies would also be highly desirable for the REFIT support scheme, to minimise impact on R-Factor reconciliations and overall impact on the PSO consumer.

Ideally these reference prices should be at a timeframe where there is suitable liquidity and the price can be easily achieved. A reference price should be stable and representative of a liquid and efficient market. Generators need to be able to have equitable access to the market to achieve the reference price.

In order to ensure that REFIT payments are appropriate there is a need for market transparency of revenues. Generators under the REFIT scheme need to be able to show their market revenues in a clear and transparent manner. One of the benefits of the existing SEM is the level of transparency. IWEA believes that in order to achieve this it would be necessary that all energy is traded through the market arrangements and not through bilateral trades outside the market, or through net bidding.

Market Power Mitigation and Market Transparency

Market transparency is also an important consideration of market power mitigation. **It is imperative that there are mechanisms in place which provide for transparency of behaviour and outcomes in the market to ensure fairness for all market participants**. IWEA supports a series of mitigation measures, preferably with a set of structural incentives rather than direct regulation, to manage the market power within SEM, and allow the market to react defensively to market power arriving through interconnector trades.

There should be transparency in relation to the revenues earned by generators in the market. This is important to prevent market power being created in the Power Purchase Agreement space. Contracting generators can ensure they are getting a fair price for their generation and are being treated similarly to other generators contracted in the market.

Overall, the area of market power is a significant concern in the new market design due to the mix of market participants, from large utilities to small independent generators. Any market design needs to take market power into consideration.

Continuation of the Concept of Intermediary, and Intermediary of Last Resort

The option of an Intermediary acting on behalf of appropriate market participants should remain. This will ensure that existing relationships between industry parties can transition into the new market, with the Intermediary continuing to represent them in the market. Furthermore, new market participants should be able to avail of this structure. For the avoidance of doubt, the obligation on the Intermediary to further trade power (as appropriate per the Option chosen by the SEM Committee) will remain in place.

This ensures that smaller generators do not have to forecast and trade in the different market timeframes.

Furthermore, currently in the SEM there is difficulty in obtaining PPAs for smaller projects (e.g. wind less than 1MW in size); the transition in I-SEM could result in this difficulty extended to even larger projects which currently enjoy PPAs. It is therefore vital that a reasonably costed and supported centralised "Intermediary of Last Resort" is made available as part of the market design, to avoid the potential of stranding existing generation assets.

De-Minimis Generation

Some of IWEA members strongly believe that the De-Minimis level should be reviewed to ensure that smaller generators do not have to participate directly in the market and can form a PPA with a supplier such that their generation is netted off demand. Given that IWEA represents a significant number of smaller members, who are impacted by the De-Minimis level, this issue is important to us.
The de minimis level of 10MW should be retained at a minimum however in the context of the importance of this issue IWEA proposes that the RA's consult on the raising of the current level of the De-Minimis in the context of the extent of changes proposed under I-SEM.

Market Participation

The introduction of the new market design will bring a number of challenges including the potential implementation challenges for market participants and the ongoing costs of participation.

It is essential that there is sufficient detail tied down ahead of time for trading systems to be developed, introduced, tested and trialled. Market participants and service providers will need clarity around the requirements to be able to ensure the appropriate systems are introduced for interaction with the market. Continuation of the "Type 2" web-facing market interface should remain.

Furthermore, if through arbitrary market design choice there are costs, collateralisation, or procedures which introduce utility-level barriers to entry, e.g. if the correctly serious matter of market participation is considered synonymous with "expensive" and "difficult", then these full costs will become reflected in Power Purchase Agreement pricing for all independent generators seeking to contract with a utility. Such allocation of revenues would be inappropriate.

Transition arrangements

There will always be some uncertainty with the introduction of new market designs with some initial issues likely to arise and possible unintended consequences. New dispatch methodologies and understanding pricing outcomes – particularly the imbalance price – are particularly relevant here. Transition arrangements at the start of the market are entirely appropriate. Examples of transition arrangements could include a softer break-in of imbalance pricing or settlement arrangements by greater averaging of energy balancing actions to determine imbalance prices and market maker

obligations for all parties into particular markets. A “big bang” approach to market start, particularly off the back of such a short market trial, poses initial risks.

Market Trialling

The timetable for the implementation of the new market only allows for 3 months market trial before market go-live. This timeline is very short especially considering the scale of the changes likely to be made to the market, coming to terms with the new commercial outcomes from trading, and the need for new trading systems and processes for participants. There is a risk that if there are delays to the project timeline that the market testing period will suffer. Coordination with European participants during the market trial phase should also be considered.

Wind Forecasting Capabilities

One area of particular concern to the wind industry is the assumptions being made around wind forecasting capabilities. Any requirement to forecast wind would be a significant change from the existing socialised balancing regime. There are three main aspects to consider in relation to this:

1) Different market participants have different capabilities in terms of resources and ability to participate in the market. Complex or demanding trading arrangements will make it very difficult for smaller participants to participate directly in the market. This is especially the case for wind generators who would need to be able to update their forecasts and update their trades based on internally created forecasts. Smaller independent generators do not have the human or financial resources to set up a trading desk - the scale of their operation does not permit such overhead. There would need to be arrangements in place to ensure that small generators do not have to trade directly in the different market timeframes, or that well-supported central trading solutions are available.
2) Even with the best resources in place, there will always be a degree of error associated with wind forecasting. Wind forecasting becomes more accurate closer to real time. Therefore IWEA believes that forcing wind generators to participate in timeframes when reasonable forecast accuracy is not available is not appropriate.
3) Forecasting error (and any associated balancing cost) is greatly reduced when the wind generation across the island is considered as a whole rather than as individual generators, and any new market design should attempt to capture that feature of the wind fleet.

One of the criteria put forward by the SEM Committee is that of **equity and fairness to participants**. IWEA believes it is not equitable or fair to place significant burden and risk on one class of generator.

Imbalance Pricing Mechanism

More consideration should be given to the imbalance pricing mechanism in the proposed market designs. With large amount of renewable generation in the market it is important that this is designed in

such a way that suits the generation mix which is expected throughout the lifetime of the market. It is not appropriate that wind generation should be severely penalised for imbalance based on the nature of the resource when it is expected to be the main source of electricity generation in 2020. Therefore the balancing mechanism should take into account the variable nature of the wind resource and be designed in such a way as to ensure this price is as smooth as possible.

The consultation paper demonstrated the widely different methods of market price formation considered appropriate and compliant with the EU Target Model balancing network code (Option 1&3, Option 2, Option 4). It is clear that the SEM Committee believe that there is great flexibility in this matter. This flexibility should be explored.

Consideration should also be given to the concept of having a different "cash-out" price relative to the price formation. Under the old market design in Ireland pre-SEM, there was a 2 tier balancing mechanism. This involved one price for small imbalances with another larger price for larger deviations. Renewable generation imbalances were all priced at the first tier price. Such a structure appropriately reflects the cost of individual windfarms imbalances on the market, when compared to the impact of variability of windfarms on the system as a whole.

IWEA believes that there should be further consultation on the imbalance pricing mechanism in the next stage of the consultation process to ensure that the mechanism is suitable for a market with high levels of renewable generation.

Impacts on PSO Levy

We note the large degree of wind generation which will remain under REFIT support in Ireland. Removal of capacity payments for wind, or unduly onerous imbalance costs placed on wind will mean a direct increase in the PSO Levy for Irish electricity consumers. We would like to draw the SEM Committee's attention to this trade-off, in their impact assessment of design choices for the new I-SEM design.

5. Tight Scope of the Consultation Paper

The four market integration options presented describe the coupling of the Single Electricity Market (SEM) with the European Target Model, called the "the I-SEM Options". IWEA noted that the paper is silent on any consequential impacts on local market policy that may arise.

The local policies are of critical importance to the industry, and it remains unclear whether a choice of a particular I-SEM option necessarily alters established principles and practices around:

- Tie-break rules under priority dispatch;
- Firm access providing financial compensation if moved from a traded position, and associated connection policy;
- Bidding Code of Practice;
- Low administrative barriers to market participation (collateralisation requirements, IT requirements and costs, market participation fees);
- Treatment of locational signals (also related to upcoming decisions on bidding zones);
- Publication of market data; and
- Market power mitigation.

It is also unclear whether the existing policy framework around the existing CRM transitions to the I-SEM without change, or whether the introduction of new EU Guidance fundamentally recasts the purpose of the existing CRM.

This IWEA response is therefore presented on the basis that existing underlying policy is not changing, unless technically, procedurally, or legally impossible for it to continue. Should substantial changes to local policy arise, it may undermine progress on the project and the choice of I-SEM Option. IWEA urges that in the Proposed Decision that **the preferred I-SEM Option impact on local market policy is fully set out within the Regulatory Impact Assessment.**

Central Dispatch & Price Taking Generation

IWEA wishes to make comment on the tangential discussion within the consultation paper around Central Dispatch and Price Taker concepts. Two of the I-SEM Options (Option 1 and Option 3) would struggle to explain how they are materially different to BETTA dispatch arrangements. Option 2 contains some elements of Central Dispatch in the Balancing Arrangements. Option 4 seems to fit best with a fully Central Dispatch paradigm.

We welcome the following statement in the consultation paper: *"In our discussions so far with the TSO, they have indicated that they would be able to operate the system safely and securely under any of the proposed energy trading arrangements (including for example, market participants being able to re-nominate a physical position up to one hour before real-time)."*

The only note of caution that IWEA will flag is that it is difficult to see if the hard-won statements regarding Central Dispatch within the Balancing Code are still relevant under some of the I-SEM Options. For the avoidance of doubt, IWEA supports the concept of the TSO being the final judge of the dispatch (and as necessary) commitment signals sent to generation stations. If Option 1 through to Option 3 are still considered to be "central dispatch" due to this distinction of the TSO being the final judge of dispatch, it is highly relevant for the wind industry to understand what Central Dispatch provisions and carve-outs might be activated under the Balancing Code. These carve outs influence the availability of flexible generation approaching real-time, an item of keen relevance in the minimisation of curtailment for the industry.

We also note the intermittent references to Price Taker within the document. We recommend that this terminology is parked for future discussion on Option 1 and Option 3 (i.e. any option without a complex price setting balancing mechanism), and instead that the consequences (if any) of having Priority Dispatch are fully set out in rules for:

- Participation requirements under any timeframe (mandatory/not mandatory);
- Form of participation, e.g. requirement to offer at a particular price.

Priority Dispatch

We welcome the continued recognition of Priority Dispatch within the SEM-14-008. We will draw the SEM Committee's attention to the discrepancy between the "Executive Summarised" Decision in SEM-11-062 (which is quoted in SEM-14-008) and the actual Decision contained within the body of the consultation document on page 31.

SEM-14-008 qualifies the absolute interpretation of Priority Dispatch with "*economic factors are taken into account only in exceptional situations*". The appropriate decision quotation comes from Page 15 of SEM-11-062, and reads:

"The SEM Committee has decided to adhere to an 'absolute' interpretation of priority dispatch whereby economic factors are only taken account of in exceptional situations ***and where this can be done in a manner that does not threaten the delivery of renewables targets."*** (Our emphasis added)

This omitted text highlighted above is an appropriate limitation of consideration of "*economic factors*", in otherwise non-defined "*exceptional situations*".

IWEA welcomes the examples provided by the SEM Committee for the wind farm trading under the four options and certainly welcome the demonstration that wind with priority dispatch can participate in the trading arrangements similarly to other forms of generation. We suggest that there has not been sufficient information provided as to how exactly priority dispatch is expected to work in Option 1 and Option 3; in the worked examples it has been assumed for simplicity that while wind may submit a downwards balancing bid, it is not called. Consequentially, the impact of this choice of whether to offer a balancing bid on priority dispatch and tie-break is uncertain.

It is essential that priority dispatch is maintained in the new market arrangements, and it should not negatively impact the ability of a participant to trade or to manage balancing risk.

6. IWEA Evaluation Criteria

IWEA now wishes to collate a set of summary requirements consistent with the SEM Committee's evaluation criteria for the appropriate participation of wind in an EU Target Model compliant design.

After considerable and extensive analysis of the proposals presented IWEA has identified a preferred option – an adjustment to Option 3 – which is considered to best meet these summary requirements, and consequentially the SEM Committee's own criteria. **We call this Option 3b**.

IWEA has developed a preferred Option 3b, which based around some of the principles of Option 3 (exclusive market) but seeks greater flexibility in certain aspects of its design (the nature of driving liquidity across the various timeframes). Our own summarised requirements speak to the regulatory assessment criteria of Security of Supply, Stability, Efficiency, Practicality/Cost, Equity, Competition, Environmental, Adaptive and Compliance with the EU Target Model. It is a given assumption that meeting these regulatory criteria will result in a market that delivers for consumers and producers.

- **There should be no undue barriers to market entry for market participants (Competition + Equity + Practicality/Cost).**
    - Market structures which implicitly insist on utility-level resourcing and capability (e.g. 24-7 forecasting and trading) in which to compete will drive out the existing independent smaller players. While a smaller developer can enter into a long-term PPA with a utility, without an independent path-to-market for smaller organisations a high implicit cost to market structure will result in those PPAs being priced at that high market entry cost, and not at the much lower marginal cost of the utility providing that service. If such high implicit market entry costs can be avoided, there is no rationale under the criteria of competition and equity to keep them in place. Concepts of below de minimis trading and allowance for aggregator functions are highly important within this context.
    - A small generation developer should have access to a path to market that does not rely on complex trading strategies or reliance on utility counterparties to a PPA. This could be managed through the provision of an aggregator of last resort and publication of relevant wind forecasts for the trading parties. This will provide alternative options for smaller developers rather than just leaving wind generation volumes to settle untraded in balancing market.
- **The market should deliver a published reference price that is achievable by wind generation (Environmental)**
    - While strong reference prices in a market have wide-ranging utility and benefit, our focus here is mainly around sufficient liquidity being available to a windfarm to achieve – on a unit basis – that reference price for the purposes of settlement of subsidies. This will be achieved through not only liquidity, but also liquidity within timeframes where there is sufficient forecast accuracy. As the available reference prices are the balancing price and the day-ahead price, or a variation of these, this requirement should be read

as a desire for a functioning market in all time-frames, particularly with intraday liquidity and a balancing market with out-turn prices reasonably reflective of the day-ahead price (assuming reasonable trading efforts from the market as a whole, if not every individual player). Reference prices should come from a liquid, transparent, cost-reflective market and this is best achieved by properly functioning markets across all timeframes.

- **Price discovery should lead to effective flows on the Interconnectors (Competition + Efficiency + Environmental)**
    - Price discovery requires a liquid market. While we have no control over the liquidity in the neighbouring European markets, efficient price discovery within the SEM is important. Implicit within our analysis is that when large amounts of wind participates in market trading (be it day ahead, or intraday) it will have a cost of production that will drive Interconnector export (and hence minimise curtailment). To do this, wind must have incentives and opportunity to participate before the balancing gate closure. These incentives include the opportunity to minimise the impact of curtailment by influencing interconnector flows for the wider market, as well as managing the risk associated with imbalance pricing for the individual trader. Incentive and opportunity is driven by effective liquid markets being available in which to trade.
- **Imbalance pricing arrangements should not impose costs that don't actually exist on individual windfarms (Efficiency + Equity)**
    - While the consultation paper does not delve into great detail regarding the imbalance pricing arrangements themselves, we wish to establish the fact that imbalance costs faced by an individual windfarm (which may have higher forecast error) are greater than the imbalance costs to the entire system arising from the total contribution of wind (which will have a lower forecast error). Any imbalance pricing mechanism or settlement should aim for the principle that only imbalance costs actually caused by a participant on system operation should be borne by that market participant. To that end, there should be market power mechanisms in place to ensure that a participant cannot impose extortionate prices on other participants for imbalance services. Further discussion is required in this area across all options.
- **A capacity remuneration mechanism (CRM) is required for security of supply (Security of Supply)**
    - The theory of energy-only markets promoting generation investment may have some merit when the action of market entry itself does not remove the market signal. The SEM, as a smaller market, where a single generator CCGT investment decision can lead to delivery of nearly 10% of market energy, suffers from this issue more than other deeper highly interconnected European markets. Added to this the high level of wind generation impacting market energy prices (in terms of overall reduced and variable prices), there should be an immediate case that a capacity payment mechanism is an

integral ongoing part of a market design for SEM, and cannot be considered as a temporary adjunct to an energy-only market to solve a temporary market failure.

- Demand cannot react to ex-post balancing market prices. Demand participation to mitigate the need for otherwise unnecessary high-cost balancing actions is therefore not possible. The presence of a CRM puts downward pressure (or potentially justifies market price caps depending on the CRM's form) in the balancing arrangements, reducing the inappropriate impact of short-term energy balancing actions. Until the potential cost of balancing actions can be signalled to consumers in advance of them occurring (as required by the EU Target Model), a CRM is an entirely appropriate market mechanism to correct for the inability of demand to otherwise reduce if those high energy prices were known in advance.

- **Under any of the options necessary regulation of market power will be required for energy trading behaviour both from within SEM and from across interconnection.**

  - The ability of larger players to withdraw capacity (commercially, physically) under any timeframe, or be immune to the market prices imposed by their actions on other parties, needs to be addressed. Please see the Section below which discusses market power (and the highly related concept of market liquidity).

- **Existing established local market policy related to connection, firm-access and dispatch should be respected (Stability + Environmental)**

  IWEA appreciates that certain existing local market policies (such as the Bidding Code of Practice and Market Power Mitigation) will necessarily require a root-and-branch review. The consultation paper, however, has also stayed silent on other important policies (other than a reaffirmation by the SEM Committee of Priority Dispatch which we, of course, continue to support). These important local market policies include the detail of priority hierarchy and tie-break, the shallow connection policy and the associated meaning of firm access and the resulting appropriateness of locational signals in the market. These established policies must be upheld and respected in the chosen design and this must be established with a high degree of certainty with the choice of the high-level design. Potential further reviews, impact assessments, etc., that may turn up surprises on such fundamental items at a later stage will derail the timelines for the EU Target Model. Not completing such fundamental reviews within the Regulatory Impact Assessment in parallel with the high-level design decision in itself would be incredibly disruptive to successful completion of the credit process for windfarm investment. IWEA believes that these existing local market policies can be maintained under our preferred option immediately below.

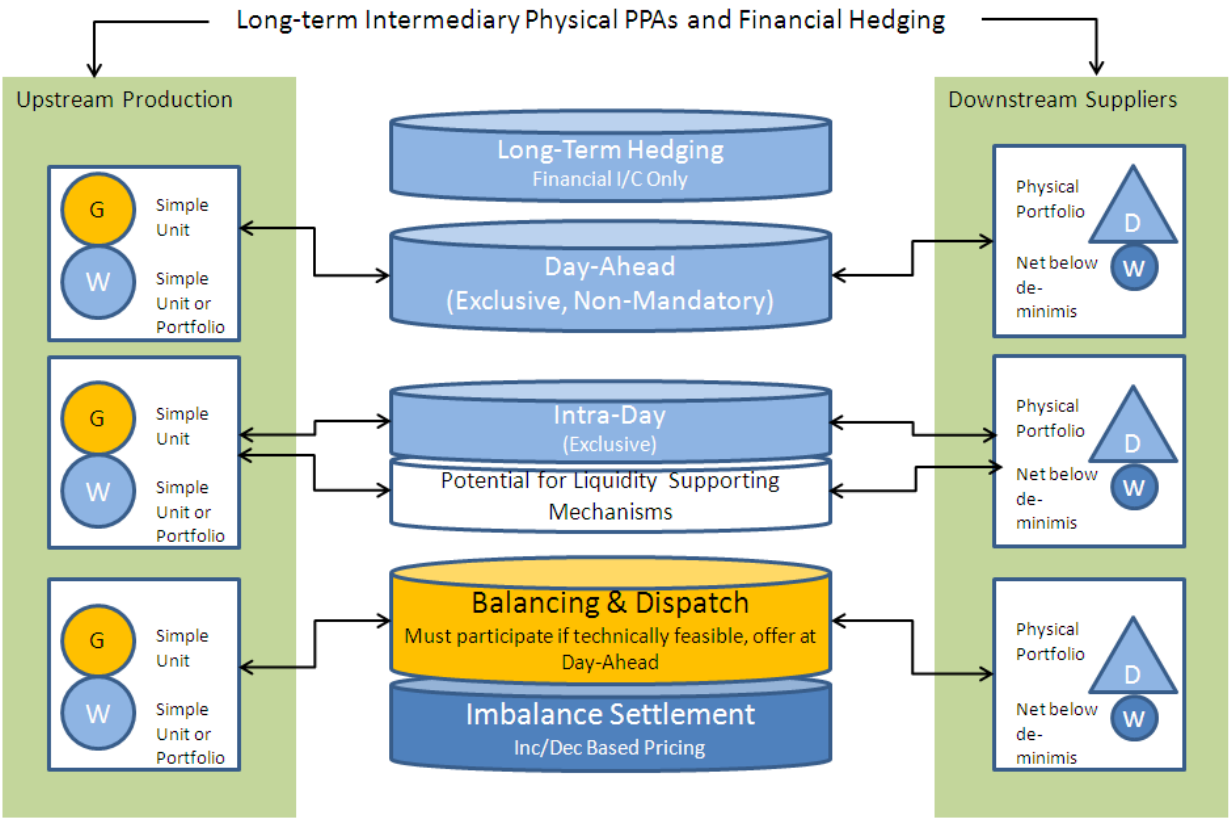
7. IWEA Preferred HLD Market Option

IWEA Position

IWEA proposes the following "Option 3b" for the SEM Committee consideration. It is an adjustment of Option 3. The principle behind this design is that the market requires participation of physically generated and consumed energy within publicly traded markets that influence interconnector flows and it is also important that flexible generation be incentivised. As the matching of physical power is of critical importance to renewable energy (as it is the delivery of physical power, and not market traded positions which meets renewable targets), there is a strong emphasis on requiring physical trading. Please note for avoidance of any doubt IWEA does **not** support Option 3 as presented in the consultation paper.

7.1 Detail of Consulted-on Aspects of the Energy Options

The following diagram and following on text present the IWEA preferred "Option 3b". Those elements that are different Option 3 in the consultation paper are identified using **bold font**. The CRM is discussed separately in a later section below.



- Financial Transmission Rights in forwards timeframe.
    - This is to leave Interconnectors free for physical export as required. It also promotes liquidity of physically traded power in other market timeframes. This also prevents market power on interconnectors with participants holding capacity.
- No long-term physical contracts in forwards timeframe.
    - This prevents generation and demand "disappearing" from price formation in the market by notifying physical positions to the TSO in advance of the day-ahead market. For the avoidance of doubt, the right to physically contract a generator to a supplier (or other counterparty) should not be prohibited in the drafting of this prohibition; the supplier (Intermediary in the current design terminology) would then have to participate with the generator in the market arrangements to follow.
- **Wind generators may choose to trade on a unit basis or portfolio basis** (the portfolio being the summation of physical units), **and imbalance settlement should be carried out across all windfarms within a participant's own portfolio.**
    - This allows the required flexibility (for reporting purposes under subsidy) for different classes of windfarm, e.g. REFIT, CfD FiT, while at the same time ensuring that artificial imbalance costs (depending on balancing pricing arrangements) or forecasting overhead are not imposed in the balancing market for managers of larger portfolios of owned and contracted wind-farms. We believe this flexibility should be restricted to wind generation (in contrast to conventional generation which should remain traded on a unit level), given its highly correlated nature, its shared control signals from the TSO, and that wind's impact to the overall system is best captured at a macro-level, rather than on an individual level.
- **Exclusive day-ahead market (not mandatory)**
    - This design feature is read as a prohibition of trading physical power in the day-ahead timeframe except within the interconnector coupled European PCR market via the Euphemia algorithm. This is to promote liquidity and price formation in a public market. **Note that we <u>do not agree</u> that day-ahead participation should be mandatory.** Our rationale for this position is discussed further below in the subsection on market liquidity / market power more generally.
- Exclusive within-day market
    - As for the day-ahead market, physical power must be traded within the interconnector-coupled Shared Order Book Function (SOBF) intraday market, for the same reasons as given above.
- Mandatory provision of INCs / DECs into Balancing Market for all generation

- The SEM is likely to continue to have a high reserve requirement relative to other markets and more flexible generation will be needed. Constraint dispatch and scheduling is likely before IDM gate closure. To that end, the TSO should have access to appropriate prices for such early actions. All generators (and not just those who are technically capable to deliver INC/DECs to the balancing market one-hour out) should be required to submit INCs/DECs and this should be priced accordingly. For the avoidance of doubt there will be one INC/DEC provided for each portfolio of wind traded in the market.

- All physical market trades should be based on a gross import or export position
    - This is a prohibition on the netting of consumption and generation in a single traded unit. Again, this is to promote market liquidity and price formation.

- **We believe that further consideration should be given to imbalance pricing and settlement than that reflected in the consultation paper**
    - We believe there is greater flexibility allowed under the Electricity Balancing Network Code than all activated balancing energy being paid at the marginal price of the last activated MWh, and all imbalance volumes being charged at that same marginal price. We discuss this further below in Section 7.2.

Note while IWEA is focussing on the importance of exclusive trading of "physically backed off" trades in this Option 3b, it is important to note that we are not suggesting precluding physical trading by entities without physical assets. For example, the participation of a trading company without physical generation or supply increases liquidity in the market timeframes and could help price discovery (and therefore efficient interconnector flows).

7.2 Detail of Required Additions to Energy Option, Not Consulted On

The eight bullet points above in section 7.1 refer to what we understand to be the primary points of consultation within the paper. Nevertheless, to get the overall market to work, several concepts need to be further developed. IWEA has taken initial positions on these areas provided below, subject to the SEM Committee's proposed decision and preferred option being aligned with our proposal above.

- TSO wind generation forecasts should be published for all market participants.
    - The TSO has access to state of the art forecasts for wind generation both on system wide and on a unit basis. These should be published regularly to the market in line with their own internal processes, with at least one forecast becoming available at a prudent time in advance of the day-ahead gate closure timeframe. These forecasts are to be published for information only, with the market participants' use of same in the DAM or IDM at their own risk. These forecasts will support a more level playing field for all market participants, irrespective of size. Consideration should be given to the automatic submission of this volume data (with participant defined pricing and potential

user-configurable scaling to reflect outages) into the DAM, obviating the need for multiplication of this function across the market for those who wish to utilise these forecasts.

- The concept of an intermediary should remain
    - It should still be possible under the new market design for a party to act on behalf of a generator in the market. This is important for smaller generators who do not have the resources to actively trade in the market themselves.
    - There should be transparency in relation to the revenues earned by the intermediary on behalf of the generator so that the generator can ensure they are getting a fair price for their generation and are being treated similarly to other generators being represented by the intermediary.
- Cross-company aggregation functions for wind should be an integral part of the market design across all timeframes, including electricity balancing
    - The ability of independent generators to trade together as a single entity shares imbalance risk across those participants. This is again important from a market access point of view.
- An aggregator of last resort (potentially TSO/SEMO) should be provided
    - This is a more detailed requirement around the cross-company aggregation function. This market-based aggregation function should be executable by the TSO/SEMO. It would have a number of elements that would be structurally beneficial for de-risking aggregation structures for independent generators' investors, including:
        - allowing for individual settlement to the participant generation companies directly from the market, avoiding the issue of a centralised third party receiving funds on behalf of all members of the aggregated portfolio, with the added requirement of managing and distributing cash to all parties.
        - by being operated by TSO/SEMO it would establish a low level of "aggregator counterparty risk" for smaller participants, not having to work through business continuity risks, etc., when discussing the structure with lenders.
- Below de-minimis trading should **at a minimum** be kept at its current level and requires further consultation
    - The De-Minimis level of 10MW should be retained at a minimum however in the context of the importance of this issue IWEA proposes that the RA's consult on the raising of the current level of the De-Minimis in the context of the extent of changes proposed under I-SEM.
- Balancing pricing and settlement, in particular, should be carefully managed so that artificial balancing costs (driven by market structure or reflective of, for example, market power) are not charged to Balance Responsible Parties.

- In the first instance, IWEA does not support dual imbalance pricing that would introduce more penal imbalance costs for intermittent wind generation. The decision of a wind developer to trade two windfarms as part of a portfolio or as separate units has no bearing on out-turn physical system running costs. In a market with 40% renewable energy, it would be punitive and restrictive to put dual imbalance pricing in place.
- We also note the flexibility allowed within Article 60 of the Electricity Balancing Network Codes on the pricing of imbalance energy, and the apparent flexibility in whether Article 60 pricing applies to the difference between Dispatch and Delivery, or Market Trade and Delivery. (The flexibility lies in the optionality in the definition of "Position", which can mean either scheduled trades *or* scheduled dispatch). IWEA believes that the flexibility in the Balancing Code should be used to ensure that balancing prices are not overly penal and/or unpredictable – particularly for smaller players – adding significantly to the risk of trading wind in the market and allowing parties to exercise market power.
- Consideration could be given to imbalance pricing mechanisms which result in less volatile prices for wind generation. This is something that should be consulted on further in the next stage of the consultation.
- Integral to the acceptability of imbalance pricing for wind is IDM liquidity and gate closures closer to real-time. We have further comments on the promotion of liquidity in the IDM below. Liquidity near short gate closures allows wind generation the possibility – subject to TSO having the appropriate facilities to manage secure flexible dispatch – to accurately reflect its predicted output at the same timeframe as conventional generation. Imbalance costs at that point arrive equally from wind variability and conventional generator inflexibility. IWEA would therefore not support any permanent extension of the local market balancing gate closure under Article 31 of the Balancing Network Code (should such clause be activated under the Central Dispatch provisions), which unduly places any portion of imbalance costs at wind generations' door.
- The SEM contains many transmission constraint groups, related to North-South Interconnection, the requirement to maintain certain generators synchronised for voltage control and inertia, and the need to maintain operating reserves for unexpected loss of in-feed. It is important that these are correctly "tagged" as non-balancing energy actions and not including in ongoing price formation.

- Existing established local market policy related to connection, firm-access and dispatch should be respected
- While it is not an integrated market design requirement, the facility should be retained to maintain TSO countertrading in the event of inefficient market outcomes
    - IWEA does believe, that with appropriate pricing, interconnector flows should react in a rational manner to high availability of low-marginal price wind generation, and be dominant for export. IWEA seeks assurance from the SEM Committee, however, that TSO countertrading will be available as a potential last resort tool to manage

curtailment, should inefficient or unexpected market outcomes arise or as a result of market changes in the future. TSO countertrading should not undermine the market or be a substitute to efficient market design.

- Market participation fees, IT system requirements and costs, and market collateralisation requirements should be managed to minimise requirements for all parties where possible. This includes, for example, the acceleration of market payment timeframes.

7.3 ***Market Liquidity, Market Power and Mandatory Day-Ahead***

Outside of our non-consultation requirements, the largest deviation of IWEA's preferred Option 3b from the original Option 3 is the removal of the mandatory participation in the DAM. We believe that mandatory participation has the following effects:

- It forces wind generation to take its position earlier than might be accurate and therefore, setting interconnector flows and the starting dispatch position of marginal conventional generation on that basis. It is uncertain why an initial position for the entire SEM is required by 11am for 12 to 36 hours out. This is not just a wind forecast / imbalance risk issue – the risk is also carried by marginal conventional generation. Furthermore, the risk is artificially tapered to being lower at the start of the trading day (11pm), increasing with time to the end of the trading day. We believe this mandate fails the basic tests of efficiency and equity.
- Without price regulation, the mandate becomes meaningless. Generators could game their participation in the DAM by raising prices, if they had the view that there was better value in the IDM. The mandate therefore could drive inefficient bidding behaviours to circumnavigate the mandate.
- The mandate also may be irrelevant (market power considerations of gaming notwithstanding). The issue across European markets is a lack of IDM liquidity. Demand's desire to secure firm pricing day-ahead, the desire for a strong reference price in the market, the fact that the DAM is the only other cleared price other than the balancing market, will naturally drive participation of all players – including wind insofar as possible and prudent – towards DAM participation. IDM liquidity is the issue across Europe. It therefore seems odd to mandate DAM participation, reinforcing the problem of an illiquid IDM, notwithstanding the appropriate design decision of the exclusive IDM.
- At a European-level, the wind industry has lobbied for the importance of shorter gate closure to allow more trading up to 1-hour out as better wind forecast become available. It also seems counterintuitive that in a market with planned 40% renewables, much of it wind, to require participation in a timeframe 12-36 hours out.

With the removal of the mandatory day-ahead, it reduces the opportunity of neighbouring European Market traders to potentially exercise market power intraday. Conversely, the removal of mandatory day-ahead allows participants in SEM with market power to withdraw capacity from the day-ahead. A balance therefore needs to be struck. IWEA supports a series of mitigation measures, preferably with a

set of structural incentives rather than direct regulation, to manage the market power within SEM, and allow the market to react defensively to the potential for trades from neighbouring markets causing large short term swings on interconnector flows. This is not a trivial task, and is likely to require a series of actions, not least stronger integration of cooperation between the equivalent of the Market Monitoring Unit with European counterparts. For the avoidance of doubt, IWEA does not believe that mandatory day ahead is the appropriate panacea for all liquidity and market power concerns (from SEM and neighbouring European Markets) and therefore a more nuanced approach is required.

IWEA would prefer that more consideration is brought to bear on the balance between DAM and IDM liquidity in Option 3b (or indeed any Option). We recommend further consultation on market power, market liquidity, and the incentives and mandates which might apply under each timeframe. None of the options should be implemented as they are presented and all will require adaptations to meet stakeholder requirements while also meeting compliance requirements, such as:

- Incentives to participate in the day-ahead market, including mandating CfDs against the DAM price for players to ensure certain liquidity;
- Potential for Intraday Auctions, linked to BETTA;
- Potential for rules ensuring consistency of offer between DAM, IDM and INC/DEC in balancing market, i.e. clearing an order in the DAM/IDM at a low price, and subsequently raising INC prices to create higher prices in balancing market;
- Balancing pricing rules that reduce marginal market power actions, as for example set out above, and consideration of the full flexibility within the Network Codes for the SEM to design a wind-appropriate balancing price;
- Potential cap on the level of DAM participation, perhaps set by algebraic expectation of wind forecast error;
- Potential floor on the level of DAM participation;
- As stated above, we do not anticipate our Option 3b precludes the participation of traders with no physical assets participating in the market. We believe that such trading allows for price discovery, allowing interconnector flows DAM and IDM to more accurately reflect the physical position of the market as implied in the balancing market pricing; and
- Consideration of differences in internal market rules between SEM and neighbouring European markets, e.g. mandatory participation in DAM, on the ability of all generators – in particular those conventional generators on the margin impacted by interconnector flow – to operate in a stable environment.

*7.4 **Summary of Option 3b***

The details of Option 3b are set out above. In summary, it comprises:

- Financial Transmission Rights in forwards timeframe.

- No long-term physical contracts in forwards timeframe.
- Exclusive day-ahead market (not mandatory)
- Exclusive within-day market
- Mandatory provision of INCs / DECs into Balancing Market for all generation
- All physical market trades should be based on a gross import or export position, i.e. it should not be possible to trade the net position of a generation and demand portfolio
- Wind generators may choose to trade on a unit basis or portfolio basis (the portfolio being the summation of physical units), but imbalance settlement should be carried out across all windfarms within a participant's own portfolio.
- Considerations to facilitate trading should be an integral part of the design:
    - TSO wind generation forecasts should be published for all market participants
    - The concept of intermediaries in the market should remain
    - Cross-company aggregation functions should be an integral part of the market design across all timeframes, including electricity balancing
    - An aggregator of last resort should be provided
    - There should be transparency of market revenues
    - Below de-minimis trading should at a minimum be kept at its current level and requires further consultation
- Further consideration should be given to imbalance pricing and settlement than that reflected in the consultation paper.
- Balancing pricing and settlement should be carefully managed so that artificial balancing costs (driven by market structure or reflective of, for example, market power) are not charged to Balance Responsible Parties.
- Existing established local market policy related to connection, firm-access and dispatch should be respected
- While it is not an integrated market design requirement, the facility should be retained to maintain TSO countertrading in the event of inefficient market outcomes
- Market participation fees and market collateralisation requirements should be managed to minimise requirements for all parties where possible. This includes, for example, the acceleration of market payment timeframes.
- Structural design features to promote IDM liquidity should be considered.

8. Capacity Remuneration Mechanism

IWEA is firmly of the view that a CRM is required, and preferably should be long-term price-based with wind generation earning its capacity credit at the market rate for reasons of equitable treatment with other generation.

The strategic reserve option appears to be a corrective action arising after an energy and capacity market failure, rather than an integral part of a market design. It may have its place as required, but it does not fulfil the role of promoting wider investment stability into the market, and actually undermines entry or exit incentives in the energy market. As such, it is considered should be considered a last resort, next to a more regularised common market for capacity. IWEA believes the emphasis should be on developing a functioning energy and capacity market first, before resorting to the strategic reserve concept.

The reliability option presents no clear benefit over the more traditionally structured options. Without that clear incremental benefit, the reliability-based CRM risk is considered to be its newness. While newness is not a weakness per se, it does add:

- Timeline risk in its implementation; and
- Financing risk, in that its structure would not be as familiar to credit committees and investors.

This leaves the two pricing options and the two volume based options for further consideration to resolve the wider issues with the energy market. It is difficult, however, to discuss the detail of the capacity payment design without full view of any restrictions (or lack thereof) on bidding behaviour from participants, or indeed consensus on what the CRM objectives are. The CRM objectives should be first established under the proposed decision paper (we have provided feedback on this topic above), and then discuss the finer detail of the CRM.

Outside of the issues with energy markets more generally, we note that there are two more pressing issues in relation to targeting new generation investment:

- Incentives for Northern Irish generation; and
- Any identified short-comings (if any) in the developing DS3 remuneration design and the energy market combined to promote the creation of energy flexibility.

In terms of IWEA's stance on the treatment of wind under the CRM, IWEA believes that a design principle of the CRM should be that wind generation receives fair payment for its capacity credit contribution to system security. Any other outcome would be discriminatory and would not comply with the new state aid guidelines as currently drafted. State Aid support for capacity mechanisms should be:

- technologically neutral and fit into the decarbonisation agenda; and

- transparent and provide for non-discriminatory allocation of costs[1];

Furthermore, the design of the CRM should not promote interconnector imports relative to how neighbouring markets CRM's promote interconnector exports. While IWEA is cognisant of the desirability of cross-border participation in capacity markets where technically and economically feasible, the design of the CRM should be such that impacts on IC flows are minimised and imports on the IC are not rewarded at times of high wind, resulting in wind curtailment.

Consideration needs to be given to the impact of the change in CRM on the PSO. Any changes to the payments received by wind generators will have a follow impact on the REFIT calculations and hence the PSO. This should be taken into account in any impact analysis.

Notwithstanding the comments above in relation to the need for defined objectives for the CRM and further information in relation to restrictions on bidding behaviours, IWEA notes that the SEM Committee intends to move to a proposed decision on the CRM in June, and is therefore putting forward an initial preferred position:

- For a long-term price based mechanism.
- That wind generation should receive capacity payments for its capacity credit contribution to system security.
- The design of the CRM should be such that impacts on IC flows are minimised and imports on the IC are not rewarded at times of high wind, resulting in wind curtailment.

However we would reiterate that further information should be provided in relation to the objectives of the CRM and any limitations that may apply before any decision is reached.

[1] Page 100 of the consultation paper.

9. Next Steps

IWEA believes that certain areas need clarification within the proposed decision, and certain areas require further consultation:

- Proposed Decision Paper requires:
    - Full impact analysis of existing options and consulted on preferred option, in particular against the established local SEM policies of tie-break, firm access, shallow connection policy and locational signals.
    - Decision to maintain the CRM or not. IWEA is in favour of maintaining a market-wide CRM, and suggests that the form of the CRM requires a full consultation in its own right.
    - A commitment to proceed with a single imbalance price mechanism, with a commitment to further consultation.
    - A "reasonable endeavours" consultation schedule for the detailed design period. The industry will be entering into an intense process of market design, with requirements on resources from all parties. Coordination with the industry will be required.
    - A commitment to improved collation of documentation online. The I-SEM is currently being managed and housed intermixed with BAU electricity and gas SEM Committee business.
    - Formation of fully inclusive working groups with industry as required.
- Consultation on the choice of CRM design. This is related to many other parallel issues, such as the choice of the I-SEM Option, any form of bidding regulation and interaction with DS3. It will not be an efficient consultation process to determine the final CRM principle of design at this early stage. The timing of this CRM consultation needs careful consideration.
- Consultation on balancing pricing, including price formation and payment to/from Balancing Responsible Parties and payments to Balancing Service Providers.
- Consultation on market liquidity in the context of the highly related issue of market power both domestically and from neighbouring markets (see our comments above). There are also interactions with the CRM design here.
- Consultation on market entry principles, covering such aspects as the de-minimis level, the participation fee, market interfaces and market collateralisation requirements, aggregation functions, and centralised provision of forecast data and functionality to support smaller participants trade appropriately without undue overhead or cost.

10. Response to Consultation Questions, including Evaluation of All Options

This section sets out IWEA's response to the consultation questions. It also evaluates the three presented options, although rather than presenting changes to all four options, it instead evaluates Option 3b as IWEA's preferred all-in design.

1. **Which option for energy trading arrangements would be your preferred choice for the I-SEM market, and why?**

IWEA prefers any option that promotes the trading of all physical power in a public market that influences efficient interconnector flows. Curtailment levels, driven by the success of the DS3 programme and efficient interconnector exports, are of critical interest to the continued development of the wind industry in Ireland.

To this end, Option 1 and Option 2 are ruled out. The potential for large portions of wind generation to go explicitly "missing" from cross-border price formation is not appropriate to a high-renewable market's need.

Option 4 does require mandatory participation in a physical market, but in the ex-post balancing market and not the day ahead or intra-day markets. This market has a much weaker influence on cross-border flows – only imperfectly through activated balancing energy – and it is questionable whether this would be consistent with the spirit and intent of the Target Model, and is more likely to present issues with future adaptation. Furthermore, the financial hedging CfDs which establish SEM interconnector flows do not provide a firm position of the individual participant entering into those CfDs and are therefore a less attractive proposition to the firm physical and financial trades offered by the other Options.

Option 3 offers the possibility of exclusive DAM and IDM markets for the trade of physical power that deliver firm positions for both the trader and the interconnector flows. In this market, accessible liquidity is maximised while participants see the full value of their own trading options. Option 3's DAM, however, is both exclusive and mandatory, requiring all participants (in the absence of any wider market trading support) to develop trading systems. Furthermore, the lack of detail around the imbalance pricing and the requirement for a liquid IDM to manage that pricing (while mandating DAM participation for all participants, thus focussing liquidity there), weakens this option.

Overall, therefore, **IWEA does not support any of the options as presented.** After extensive analysis and consideration IWEA have presented in this paper an alternative **Option 3b**, which with hopefully a modest level of change and clarification, addresses the concerns raised regarding Option 3 above. We have presented a new option based on some of the principles of Option 3 rather than a development of Option 4 which we believe is unlikely to give rise to efficient interconnector flows. While the SEM Committee notes that:

"In general, the use of a pool to determine the ex-post price has been seen as positive for intermittent generation sources such as wind. This is because the price formation in the pool (based on out-turn availability) shields the wind generation from the impact of it being less predictable closer to real time (and effectively socialising the energy balancing costs across all market participants)."

a large degree of uncertainty remains regarding exactly how more favourable those out-turn prices under Option 4 will turn out to be (should short-run marginal cost reflective bidding no longer be mandated) relative to an appropriately supported, liquid, and flexible exclusive market with appropriate balancing pricing, such as that presented under Option 3b.

2. Is there a requirement for a CRM in the revised HLD, and why?

The theory of energy-only markets promoting generation investment may have some merit when the action of market entry itself does not remove the market signal. The SEM, as a smaller market, where a single generator CCGT investment decision can lead to delivery of nearly 10% of market energy, suffers from this issue more than other deeper highly interconnected European markets. Added to this the high level of wind generation impacting market energy prices (in terms of overall reduced and variable prices), there should be an immediate case that a capacity payment mechanism is an integral ongoing part of a market design for Ireland, and cannot be considered as a temporary adjunct to an energy-only market to solve a temporary market failure. A CRM can also bring benefits to consumers through more predictable energy prices and reduced exposure to high peaking prices.

Furthermore, the presence of a CRM also puts downward pressure (or potentially justifies market price caps depending on the CRM's form) in the balancing arrangements, reducing the inappropriate impact of short-term energy balancing actions (which cannot be presented as a signal to demand as they are calculated ex post) reflecting the long-run cost of entire generation investment. Until the potential cost of balancing actions can be signalled to consumers in advance of them occurring, a CRM is an entirely appropriate market mechanism to correct for demand being represented in the market with artificially high inelasticity, i.e. demand would reduce, should those high energy prices be known.

3. 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?

A market-wide CRM is required, and preferably should be price-based or volume-based with wind generation earning its capacity credit at the market rate for reasons of equitable treatment with other generation.

It is difficult to discuss the detail of the capacity payment design without full view of any restrictions (or lack thereof) on bidding behaviour from participants. Nevertheless, IWEA suggests that given the timeframe for delivery of the market, more untested options such as the reliability option should be excluded from consideration as it – as presented – gives no radical improvements over the other options, with the added risk of greater design, development and implementation times. The strategic reserve option can be distortionary, potentially squeezing out efficient and flexible new and existing

investments required to ensure resource adequacy and the achievement of environmental targets. It appears to be a corrective action arising after an energy and capacity market failure, rather than an integral part of a market design. IWEA believes the emphasis should be on developing a functioning energy and capacity market first, before resorting to the less desirable strategic reserve concept.

Notwithstanding the need for defined objectives for the CRM and further information in relation to restrictions on bidding behaviours, IWEA is putting forward an initial preferred position:

- For a long-term price based mechanism.
- That wind generation should receive capacity payments for its capacity credit contribution to system security.
- The design of the CRM should be such that impacts on IC flows are minimised and imports on the IC are not rewarded at times of high wind, resulting in wind curtailment.

4. 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?

The topics covered are:

- DAM
    - Portfolio vs. unit bidding
    - Mandatory vs. voluntary
    - Bid format
- IDM
    - Portfolio vs. unit bidding
    - Exclusive vs. Non-exclusive
    - Bid format
- Dispatch
    - Starting point of dispatch
    - Bids to the TSO for balancing and dispatch
    - Timing of bid submission
- Imbalance settlement
- Long-term trading
    - Internal
    - Cross-border

These are a reasonable set of topics to consider in the integration of the electricity market, relating primarily to the interaction of market trades with the European Markets. We do believe, however, within the context of a "HLD for the revised energy trading arrangements for the single electricity market on the island of Ireland", the list above lacks discussion of:

- Firm access, constraints and its impact on Shallow Connection Policy

- Treatment of losses, UoS and other harmonised all-island locational signals
- Market power mitigation measures, including interaction of internal market design with neighbouring market trading

While the first two items may be assumed (subject to a consistency review) to intend to stay unchanged, it is expected that items such as the BCOP will be subject to extensive review. Such reviews have highly material impact on the choice of market coupling when our neighbouring markets might not have such restrictions. The overall high level design must contain more detailed statements of intent in relation to market power, and confirmation that the overall market design is not inconsistent with established market policy.

5. 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 all island electricity market?

Yes. Further discussion is required around the interaction and pricing of Frequency Restoration Services and Replacement Reserves with the new market and the degree to which this will impact pricing of existing reserves and the number of these services it is intended to share these services as Standard Products with neighbouring TSOs within a Coordinated Balancing Area.

While this does not impact wind generation directly, it is important for the wind industry to keep focus as well on the incentives for flexible generation in the new market design.

6. What evidence can you provide for the assessment of the HLD options with respect to security of supply, efficiency, and adaptability?

Option 1 and Option 2 allow for individual companies to make decisions outside of the context of wider market information, through a variety of (depending on the option) non-exclusive IDM trading, physical forward contracts, and net portfolio bidding. This allows for information asymmetry combined with organisational internalities not related to the "least cost" of dispatch to influence the starting position of physical dispatch. This lack of transparency and possibly of liquidity makes it difficult to see how market participants have access to appropriate price formation to deliver the most efficient trades.

We believe that Option 4 as described does not promote interconnector flows relative to other options. The incentives for an individual participant to trade with a CfD that does not provide a firm volume in the balancing market are lesser than those for other Options. Furthermore, the SEM Committee also raises the possibility of the CfDs being treated under the European Market Infrastructure Regulation requirements. This introduces further costs, and therefore inefficiencies in the trading process. On the assumption that such barriers to interconnector trading will lead to sub-optimal interconnector flows, and optimal interconnector flows are required for least-cost dispatch, Option 4 has issues in relation to efficiency as well.

In that regard, the exclusive trading arrangements of Option 3 appear – qualitatively – to offer the best possibility for efficient dispatch.

We also flag while there is some overlap with EU Target Model compliance, the unusual arrangements proposed by Option 4 (shared by Option 2 in the balancing market) may limit the degree of Adaptability of these options in relation to change control of the Network Codes at a European level.

7. 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)?

Option 1 and Option 2 are excluded from consideration given the multitude of options available to players to exclude their generation from market trading. Markets only work with full incentives for transparency and price formation. Obligating participation in exclusive markets is a prudent first step to this end. Therefore we believe that the changes required to this option to make it work for wind are too far reaching. We have presented Option 3b as our altered preference.

8. 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)?

The qualitative assessment of Option 1 by the SEM Committee was as follows, with IWEA's subsequent evaluation on the right, with rationale below.

			IWEA
SoS		Can be delivered by this option	
Stability		Depends on regulatory intervention needed to deliver liquid DAM and IDM	
Efficiency		Can be delivered by this option	
Practicality		Not a particular strength or weakness of this option	
Equity		If liquid, DAM and IDM provide some routes to markets, with more cost targeting	
Competition		Depends on effectiveness of competition from greater choice of trading strategies	
Environment		Wind exposed to imbalance prices, which can be managed if liquid IDM	
Adaptive		Governance processes to be determined during detailed design phase	
IEM		Liquidity promoting measures should facilitate efficient DAM flows	

Any market that flags within its market design "market maker obligations" should tend towards a poor evaluation of market Stability (regulatory intervention will change over time), and Competition (a market maker obligation is an indication of market liquidity failure).

Concerns over market liquidity have an immediate bearing on the Competition and Equity of the market. Option 1 and Option 2 both allow for energy to be traded outside of public market places, hence causing the potential for an inequitable environment where larger players can withdraw from the market, or worse contract more favourably between themselves than with others.

As noted above, we are uncertain that efficiency can be delivered as successfully relative to an exclusive market.

We believe that the ability of participants to trade outside of the IDM results in less favourable outcomes in that timeframe than Option 3 or Option 3b.

We agree with the other assessments.

9. 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?

IWEA believes that the performance of above regulatory assessment criteria of Security of Supply, Stability, Efficiency, Practicality/Cost, Equity, Competition, Environmental, Adaptive and compliance with the EU Target Model combined are a good indicator that a market will be delivered in the best interests of consumers.

If two criteria stand out, however, in relation to short and long-term benefit to consumers it is Efficiency (partially reflected in the efficient cross border trade of IEM) and Competition. We note the lack of transparency with Option 1, which we believe particularly impacts the efficiency and competition within this market.

10. 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 1 and Option 2 are excluded from consideration given the multitude of options available to players to exclude their generation from market trading. Markets only work with full incentives for transparency and price formation. Obligating participation in exclusive markets is a prudent first step to this end. Therefore we believe that the changes required to this option to make it work for wind are too far reaching. We have presented Option 3b as our altered preference.

11. 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)?

The qualitative assessment of Option 2 by the SEM Committee was as follows, with IWEA's subsequent evaluation on the right, with rationale below.

		IWEA
SoS	Can be delivered by this option	
Stability	Difficult to manage balance between pool and European markets	
Efficiency	Can be delivered by this option	
Practicality	Depends on balance of physical trading between pool and European markets	
Equity	Liquidity may be split between pool and European markets	
Competition	Depends on balance of physical trading between pool and European markets	
Environment	Depends on balance of physical trading between pool and European markets	
Adaptive	Not a particular strength or weakness of this option	
IEM	Net pool not fit neatly into either a balancing market, or fully integrated dispatch	

Concerns over market liquidity have an immediate bearing on the Competition and Equity of the market. Option 1 and Option 2 both allow for energy to be traded outside of public market places, hence causing the potential for an inequitable environment where larger players can withdraw from the market, or worse contract more favourably between themselves than with others.

As noted above, we are uncertain that efficiency can be delivered as successfully relative to an exclusive market.

We believe that the ability of participants to trade outside of the IDM results in less favourable outcomes in that timeframe than Option 3 or Option 3b.

We believe that Practicality should be evaluated like all other options, i.e. “Not a particular strength or weakness of this option”.

We also have general concerns over the complexity and stability of a net-pool optimisation function to derive imbalance prices. In a market such as the SEM, with currently a large number of CCGTs with “lumpy” minimum stable generation requirements relative to the size of a net-demand to be settled, we have concerns that an algorithm may be “stressed” and choose a least production cost solution from a set of complex offers that results in high marginal imbalance prices for consumers and for wind generation. Therefore, across both Efficiency (in terms of the wider context of price formation) and Environment (in terms of the imbalance arrangements being uncertain and unique) we suggest that Option 2 fairs poorly under these criteria as well.

We also suggest that the definition of Adaptive should encompass the ability to react to future IEM changes. In that regard the unique cross-over nature of self-dispatch and integrated dispatch and the unusual pricing arrangements lead to a poor scoring in that regard.

12. 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?

Please see response to Question 9, which suggests the summation of all evaluation criteria with emphasis on Efficiency and Competition being the appropriate metric to evaluate benefit to consumers.

13. 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)?

Yes, we believe that our Option 3b makes the Mandatory Centralised Market more appropriate with a market with a high proportion of variable renewables in the energy mix (relative to available interconnection), and a strong tradition of independent generation developers.

The details of Option 3b are set out above in Section 7. In summary, it comprises:

- Financial Transmission Rights in forwards timeframe.
- No long-term physical contracts in forwards timeframe.
- Exclusive day-ahead market (not mandatory)
- Exclusive within-day market
- Mandatory provision of INCs / DECs into Balancing Market for all generation
- All physical market trades should be based on a gross import or export position, i.e. it should not be possible to trade the net position of a generation and demand portfolio
- Wind generators may choose to trade on a unit basis or portfolio basis (the portfolio being the summation of physical units), but imbalance settlement should be carried out across all windfarms within a participant's own portfolio.
- Considerations to facilitate trading should be an integral part of the design:
    - TSO wind generation forecasts should be published for all market participants
    - The concept of intermediaries in the market should remain
    - Cross-company aggregation functions should be an integral part of the market design across all timeframes, including electricity balancing
    - An aggregator of last resort should be provided
    - There should be transparency of market revenues
    - Below de-minimis trading should at a minimum be kept at its current level and requires further consultation
- Further consideration should be given to imbalance pricing and settlement than that reflected in the consultation paper.
- Balancing pricing and settlement should be carefully managed so that artificial balancing costs (driven by market structure or reflective of, for example, market power) are not charged to Balance Responsible Parties.
- Existing established local market policy related to connection, firm-access and dispatch should be respected

- While it is not an integrated market design requirement, the facility should be retained to maintain TSO countertrading in the event of inefficient market outcomes
    - IWEA do believe, that with appropriate pricing, interconnector flows will react in a rational manner to high availability of low-marginal price wind generation, and be dominant for export. IWEA seeks assurance from the regulator, however, that TSO countertrading will be available as a potential tool to manage curtailment, should inefficient or unexpected market outcomes arise.
- Market participation fees and market collateralisation requirements should be managed to minimise requirements for all parties where possible. This includes, for example, the acceleration of market payment timeframes.
- Structural design features to promote IDM liquidity should be considered, including:
    - Potential for Intraday Auctions, linked to BETTA;
    - Potential cap on the level of DAM participation, perhaps set by algebraic expectation of wind forecast error;
    - Participation of traders with no physical assets participating in the market. We believe that such trading allows for price discovery

We have evaluated Option 3b against the SEM Committee's own criteria, and have resulted in the following assessment.

SoS		Can be delivered by this option
Stability		Planned minimum regulatory restriction in DAM, but intervention in tradable volumes in DAM required if failure to deliver IDM liquidity.
Efficiency		We have argued that an exclusive market improves rational decision making, and therefore efficiency should rank more highly than the other options
Practicality		Not a particular strength or weakness of this option
Equity		DAM and IDM provide route to markets, with more targeting of costs
Competition		Could be strong within 'approved' market places, with high transparency
Environment		See summary discussion immediately below
Adaptive		Not a particular strength or weakness of this option
IEM		Compliant with requirements, with DAM/IDM supporting effective flows

We have evaluated "Environment" as high under this option, as a comparator to the other presented options in the consultation paper. We acknowledge that an imbalance market will pose difficulties for wind generation if the market structures, pricing and trading support facilities are not in place to allow all market participants trade on an equitable basis with each other. Consequentially, our proposed Option 3b should not be taken as support for Option 3, should the SEM Committee decide to select an unchanged option from the consultation paper. There are fundamental issues with the proposals for Option 3 (despite its positive features of exclusivity) which do need to be addressed. This evaluation is performed below.

14. 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)?

The qualitative assessment of Option 3 by the SEM Committee was as follows, with IWEA's subsequent evaluation on the right, with rationale below.

			IWEA
SoS		Can be delivered by this option	
Stability		Depends on regulatory intervention needed to enforce ADM and IDM rules	
Efficiency		Can be delivered by this option	
Practicality		Not a particular strength or weakness of this option	
Equity		DAM and IDM provide route to markets, with more targeting of costs	
Competition		Could be strong within 'approved' market places, with high transparency	
Environment		Wind exposed to imbalance prices, which can be managed in liquid IDM	
Adaptive		Not a particular strength or weakness of this option	
IEM		Compliant with requirements, with DAM/IDM supporting effective flows	

We believe the stability of Option 3 – while it has regulatory intervention in the DAM – is more favourable than other options which require a level of regulatory "fine-tuning", i.e. what level of market maker obligation is required. The regulatory intervention in this option is discrete in nature, i.e. mandate participation or not.

We have two primary concerns in relation to Equity. Wind generators are requested to take a traded position in DAM at 11am from 11pm that evening to 11pm the following day. Unlike other generation, windfarms are required to provide firm schedules before forecast accuracy begins to stabilise.

Furthermore, the forecasts are required on a Unit by Unit basis, exacerbating the risk if dual imbalance pricing were to emerge and the overhead in participation for smaller windfarms. If there is demonstrable utility in needing a firm dispatch schedule 12 hours to 36 hours out, this restriction may be appropriate for all generators. The TSOs, however, have been quoted in the paper as saying:

"In our discussions so far with the TSO, they have indicated that they would be able to operate the system safely and securely under any of the proposed energy trading arrangements (including for example, market participants being able to re-nominate a physical position up to one hour before real-time)."

Mandatory participation in the DAM appears to a relatively arbitrary choice that seems non-cognisant of the inefficiencies that may arise from inaccurate DAM signals.

We have several issues in relation to the Environment performance of Option 3. Aside from the unnecessary restriction on timing on trade for wind generators, there appears to be an early leaning towards pure marginal imbalance pricing. Such decisions should not be made without examination of what flexibility in pricing arrangements under the Electricity Balancing Network Code should be available to the SEM. Furthermore, while it may be considered a matter of later market design, the lack of development of centralised information and trading support for wind within the market – particularly in the context of a mandatory DAM – places a large portion of wind developers in a difficult position.

Nevertheless, we believe the changes, commitments, and clarifications around Option 3 are relatively small to improve its assessment relative to the other options.

15. 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?

Please see response to Question 9, which suggests the summation of all evaluation criteria with emphasis on Efficiency and Competition being the appropriate metric to evaluate benefit to consumers.

16. Are there any changes you would suggest to make the Gross Pool – Net Settlement Market more effective for the I-SEM (for instance, a different choice for one or more of the topics or a different topic altogether)?

Option 4 raises particular concerns around the ability to influence interconnector trades appropriately to ensure that wind energy is not being curtailed at times of interconnector import. We believe that the changes required to address this are significant, not limited to requiring below cost bidding for conventional generation. We have presented Option 3b as our altered preference.

17. 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)?

The qualitative assessment of Option 4 by the SEM Committee was as follows, with IWEA's subsequent evaluation on the right, with rationale below.

			IWEA
SoS		Can be delivered by this option	
Stability		Limited change from current arrangements	
Efficiency		Can be delivered by this option	
Practicality		Not a particular strength or weakness of this option	
Equity		Pool provides route to markets, with greater targeting of costs and benefits	
Competition		Strong regulation of market participant behaviour	
Environment		Ex-post pool attractive for wind, but may need additional incentives for flexibility	
Adaptive		Not a particular strength or weakness of this option	
IEM		Compliant with requirements, but more unfamiliar model in European context	

We note that Option 4 is assessed as limited change from current arrangements". IWEA believes that while this may have the least change, it will still involve significant change, and the **representation in the assessment is misleading.**

We believe that Option 4 as described does not promote interconnector flows relative to other options. The incentives for an individual participant to trade with a CfD that does not provide a firm volume in the balancing market are lesser than those for other Options. Furthermore, the SEM Committee also raises the possibility of the CfDs being treated under the European Market Infrastructure Regulation

requirements. This introduces further costs, and therefore inefficiencies in the trading process. On the assumption that such barriers to interconnector trading will lead to sub-optimal interconnector flows, and optimal interconnector flows are required for least-cost dispatch, Option 4 has issues in relation to Efficiency.

We also believe there is an issue with Equity in this market, despite the common pool arrangements. If there is accurate wind-trading in the DAM and IDM in all other Options, it reduces the likelihood of extreme imbalance pricing for all generators, including those who struggle to trade. In effect, larger utilities successfully trading DAM and IDM provide a societal benefit to all wind generators, whether they can trade or not. The marginal generator in the DAM is more likely to be near in price to the generator that is called on to provide balancing energy. The balancing price and DAM price can – all things being equal – equalise.

Option 4 is unique in that accurate DAM and IDM trading only influences the interconnector flows in the ex post market, when coupled with neighbouring markets. If local generation clears with local demand, it has no impact on the imbalance pricing at all under Option 4. Therefore there is reduced benefit seen in Option 4 for the non-trading generator in the balancing price that normally follows as a consequence of the other trading parties' actions. The independent non-trading generator gets left behind. The trading party can set the balancing price with greater and greater volatility with the protection of the CfD, while the non-trading generator must face those prices which are increasingly irrelevant to the rest of the market.

That said, if this option does result in "limited change from current arrangements" and an "ex-post pool attractive for wind", outside of the structural issues there may be limited incentives to drive exports to neighbouring markets during times of high wind. Incentives for flexible generation within the current SEM are already poor; Option 4 under benign imbalance pricing scenarios copper-fastens this current market weakness.

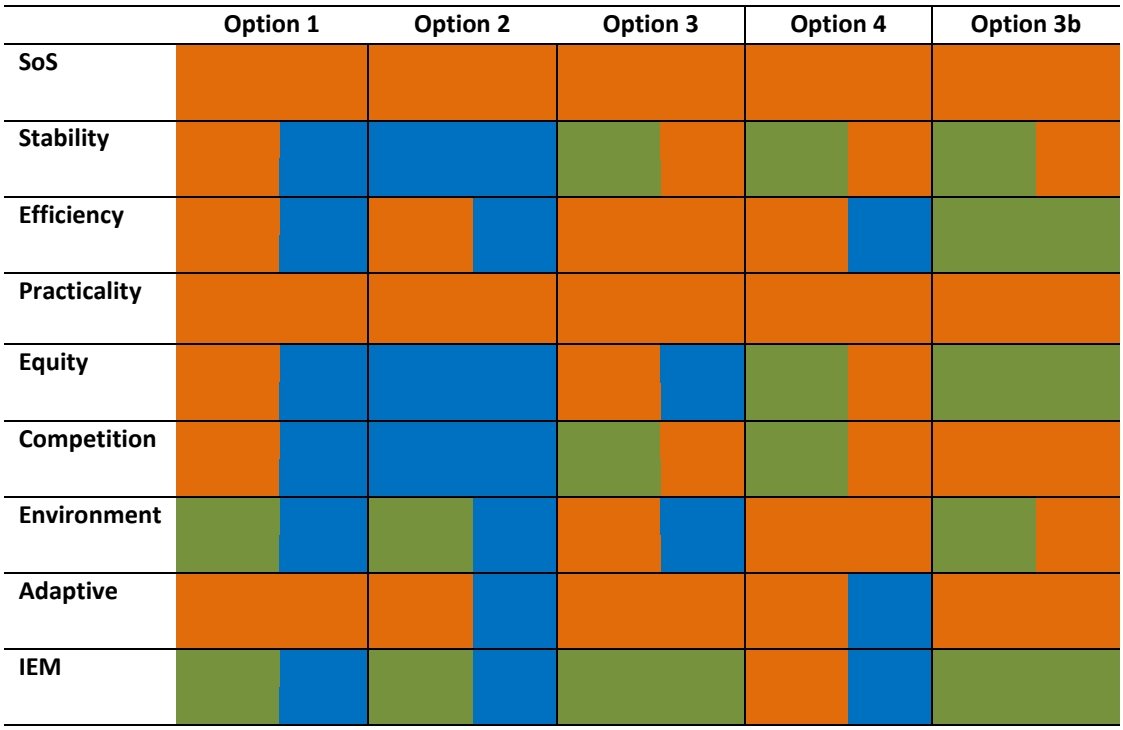
Overall, therefore, Option 4 will either deliver:

- Soft balancing pricing, with no incentive to trade on the interconnectors and therefore continued reliance on TSO countertrading to minimise curtailment; or
- Balancing pricing with a degree of volatility that does drive interconnector trading, with less effective tools than other options and those who cannot trade not sharing in the market benefit from active traders' positions and will not incentivize flexible generation.

18. 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?

Please see response to Question 9, which suggests the summation of all evaluation criteria with emphasis on Efficiency and Competition being the appropriate metric to evaluate benefit to consumers.

The following table summarises IWEA's evaluation of all four options, plus the preferred Option 3b.



19. 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 see the response to Question 2 for the rationale for maintaining a CRM. Overall, this consultation seeks to ascertain the potential necessity for a CRM, its objective, and its most appropriate design. Depending on the regulatory objective for the CRM, different detailed designs emerge.

It is IWEA's position that CRMs are integral part of energy market design, for smaller markets with high levels of renewable penetration such as the SEM in particular, and are required more generally as demand is not as capable of reacting to volatility in balancing energy pricing (pricing both energy and long-term investment costs) due to its typically non-dispatchable nature.

We also believe there are very definite locational issues with security of supply (Northern Ireland) and well identified issues with the characteristics of the installed generation, i.e. inflexibility, which is the subject of the parallel DS3 programme.

We believe that a price-based or volume based CRM is appropriate for the SEM to continue to correct the general and SEM-particular issues with energy only markets. We do note that the CRM design should reward wind generation for its capacity credit at cleared market prices. Overall, the CRM need to be evaluated in light of the targeted need for:

- Incentives for Northern Irish generation; and
- Any identified short-comings (if any) in the developing DS3 remuneration design and the energy market combined to promote the creation of energy flexibility.

20. Are these the most important topics for describing the high level design of any future CRM for the I-SEM?

The topics are reasonable.

21. 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?)

On initial review IWEA does not support the strategic reserve option as it not a market-wide approach and can be distortionary, squeezing out efficient and flexible new and existing investments required to ensure resource adequacy and the achievement of environmental targets. IWEA believes the emphasis should be on developing a functioning energy and capacity market first, before resorting to the strategic reserve concept.

22. 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)?

The description of the CRM and assessment of its strengths and weaknesses is reasonable and considered. Evaluation of this options' performance relative to other options is dependent on the intent of the CRM's function.

23. 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?

No particular option fits better.

24. 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?)

IWEA prefers to stay silent on further detail of CRM Options until there is agreement on the intent of the CRM, only to note that this is one option which should be brought forward for further consideration and that the pricing mechanism should pay wind generation its fair value of capacity credit.

25. 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)?

The description of the CRM and assessment of its strengths and weaknesses is reasonable and considered. Evaluation of this options' performance relative to other options is dependent on the intent of the CRM's function.

26. 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?

No particular option fits better. Price-based CRMs are more generally associated with greater regulation of energy market prices; if in the SEM Committee's view that – for example – Option 4 was a market

design that could bear greater levels of price regulation in the ex post balancing arrangements, then potentially a price-based CRM might fit better under such an option.

27. 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?)

IWEA prefers to stay silent on further detail of CRM Options until there is agreement on the intent of the CRM, only to note that this is one option which should be brought forward for further consideration and that the pricing mechanism should pay wind generation its fair value of capacity credit.

28. 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)?

The description of the CRM and assessment of its strengths and weaknesses is reasonable and considered. Evaluation of this options' performance relative to other options is dependent on the intent of the CRM's function.

29. 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?

No particular option fits better. Price-based CRMs are more generally associated with greater regulation of energy market prices; if in the SEM Committee's view that – for example – Option 4 was a market design that could bear greater levels of price regulation in the ex post balancing arrangements, then potentially a price-based CRM might fit better under such an option.

30. 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?)

IWEA prefers to stay silent on further detail of CRM Options until there is agreement on the intent of the CRM, only to note that this is one option which should be brought forward for further consideration and that the volume mechanism should not have delivery penalties that result in negative payment to wind generation, or payment less than wind's capacity credit contribution to the SEM.

31. 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)?

The description of the CRM and assessment of its strengths and weaknesses is reasonable and considered. Evaluation of this options' performance relative to other options is dependent on the intent of the CRM's function.

32. 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?

No particular option fits better.

33. 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?)

IWEA prefers to stay silent on further detail of CRM Options until there is agreement on the intent of the CRM, only to note that this is one option which should be brought forward for further consideration and that the volume mechanism should not have delivery penalties that result in negative payment to wind generation, or payment less than wind's capacity credit contribution to the SEM.

34. 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)?

The description of the CRM and assessment of its strengths and weaknesses is reasonable and considered. Evaluation of this options' performance relative to other options is dependent on the intent of the CRM's function.

35. 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?

No particular option fits better.

36. 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?)

This is one option which due to its newness should not be brought forward unless there is demonstrable benefit relative to other options, given the risks for implementation and financing acceptability (due to its newness).

37. 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)?

As this option is implemented as effectively a one-way CfD, it automatically assumes wind will contribute negligibly to system security; price is used as a proxy for system stress events. This is inherently unfair towards wind, as the true system stress events that wind resolves are automatically not priced into consideration.

38. 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?

No particular option fits better.

39. 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?)

IWEA prefers to stay silent on further detail of CRM Options until there is agreement on the intent of the CRM, only to note that this is one option which due to its newness should not be brought forward unless there is demonstrable benefit relative to other options, given the risks for implementation and financing acceptability (due to its newness).

40. 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)?

As this option is implemented as effectively a one-way CfD, it automatically assumes wind will contribute negligibly to system security; price is used as a proxy for system stress events. This is inherently unfair towards wind, as the true system stress events that wind resolves are automatically not priced into consideration.

41. 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?

No particular option fits better.

11. Conclusions

IWEA welcomes the opportunity to make a submission to the consultation on the Integrated Single Electricity Market (I-SEM) High Level Design for Ireland and Northern Ireland from 2016. We believe that this is the most important consultation for the industry in recent times and will have a significant impact on the future of the electricity system in Ireland.

It is essential that the market design is fit for purpose for a market which will have 40% of electricity produced from renewables (primarily wind) in 2020, and that the suitability of the market for the trading of electricity from wind energy is given appropriate consideration from day one.

Energy Trading Options

IWEA has put forward a proposed Option 3b which we believe best meets the needs of the energy industry going forward as it is the most likely option to promote interconnector flows while at the same time bringing all market participants into the market and ensuring liquidity. The variations we have proposed ensure that

i. wind generators are not unfairly treated by being required to trade at the day ahead stage when there is reduced forecast accuracy, and

ii. that there is the ability to trade wind generation on a portfolio basis to which reduces the burden of participation and allows for improved forecasting and balancing.

The changes outlined in the consultation are essential to for wind generation, and it should be noted that we would not be in a position to support Option 3 in the absence of these changes.

Capacity Remuneration Mechanism

IWEA believes it is difficult to discuss the detail of the Capacity Remuneration Mechanism (CRM) design without full view of any restrictions (or lack thereof) on bidding behaviour from participants, or indeed consensus on what the CRM objectives are. The CRM objectives should be first established under the proposed decision paper.

Notwithstanding the need for defined objectives for the CRM and further information in relation to restrictions on bidding behaviours, IWEA is putting forward an initial preferred position:

- For a long-term price based mechanism.
- That wind generation should receive capacity payments for its capacity credit contribution to system security.
- The design of the CRM should be such that impacts on IC flows are minimised and imports on the IC are not rewarded at times of high wind, resulting in wind curtailment.

Further consultation

There are a number of areas which we believe require further consultation. These include further consultation on:

- The terms of reference for the cost benefit analysis
- De-Minimis generation levels
- Imbalance pricing settlement

Further information will also be required on how the proposed market design will fit in with existing policies, or what changes may be required under the market redesign.

In conclusion we would like to thank the SEM Committee for the opportunity to engage on this issue as this consultation is of particular importance to the wind industry. We believe “Option 3b” as set out can be supported by the SEM Committee and the industry. Given the importance of this project IWEA would like to request a meeting with the SEM Committee to discuss our response in more detail.