

**Power NI Energy Limited
Power Procurement Business (PPB)**

**I-SEM
High Level Design for Ireland and
Northern Ireland from 2016**

**Draft Decision Paper and
Initial Impact Assessment**

SEM-14-045 & SEM-14-046

Response by Power NI Energy (PPB)

25 July 2014.



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Executive Summary

Power NI Energy – Power Procurement Business (PPB) welcomes the opportunity to comment on the draft decisions proposed for the High Level Design of the I-SEM.

PPB supports the need for the I-SEM and the requirement for significant changes to be made to the existing market arrangements to comply with Network Codes and also to reflect the new generation mix on the island.

However PPB believes that the overall market design is unnecessarily complicated for a small market with unique features (e.g. ambitions for high levels of renewable generation, a dominant semi-state generator, etc.). This will create risks and costs for investors and may act as a material barrier to entry especially for smaller generators who may not have the resources (financial and human) to engage in the new market. This is also important for the wider spectrum of stakeholders assessing the I-SEM, for example, institutions providing financing or commodity hedging products. The recent trend for investment banks to withdraw from energy markets due to the increasing regulatory complexity and diminishing financial returns must temper the complexity of the I-SEM design.

PPB is also disappointed by the apparent lack of rigour in the assessment process that seems to seek to justify the proposed Energy market and CRM options. This is supported by NERA's independent assessment where they describe the decisions as "unsound".

PPB is concerned that nearly all of the proposed decisions increase the market power in the market that will require even greater regulatory intervention and oversight, none of which is considered to be part of the HLD. The interplay with DS3 adds further complexity and needs to be considered as part of the HLD assessment and decisions.

The Energy Market Arrangements

The design of the energy market is overly influenced by concentration on the DAM to the detriment of consideration of the overall efficiency and outcomes for customers of the composite markets, operating from the forward timeframe through to real-time.

The DAM is designed to be the primary market yet it relies on the Euphemia algorithm that is unproven. We welcome the announcement at the stakeholder forum on 17 June 2014 that testing is to be conducted. However, this testing needs to be inclusive, involving not just SEMO but also market participants.

Even if testing determines that it can manage the variety of bid structures and bids that are required without the imposition of limits, scheduling risk cannot be removed. This will increase the market power of dominant generators who

enjoy an asymmetry of information and a portfolio across which to spread the risks. We believe this additional risk will reduce liquidity in the forward market and increase costs for customers.

PPB continues to believe that making provision for physical forward bilateral contracts would help reduce the risk for smaller participants that would aid competition and forward market liquidity without reducing liquidity in the DAM where participation could still be mandated.

The consultation seeks views on the degree of non-mandatory participation in the DAM. We are concerned that where there is a mismatch between generation and supply because, for example, wind generators were able to opt out from participation, there is a real risk of incoherent pricing. If participation is not mandated for all generators then there needs to be some mechanism for demand to opt out such that balance is maintained and prices are not artificially distorted since any price volatility would have significant consequences for the forward market and damage the general credibility of the market.

The Euphemia scheduling risk in the DAM increases the need for a fully functional IDM yet the centralised platforms that the SEMC proposes the I-SEM rely upon are delayed and may not be functional by 2016. This highlights the need for contingency arrangements for the IDM.

The balancing market proposals are not well defined and it is unclear how marginal pricing will be determined given actions could be taken by the TSOs at any stage following the closure of the DAM. PPB also considers that simple INCs and DECs may not be sufficient where balancing market volumes are high or for the non-energy balancing actions. The relationship between balancing actions taken by the TSO and a participant's intraday trading is also unclear and it would be useful to understand how conflicts in this area are to be addressed. The interaction with DS3 has also not been fully considered and it is vital that DS3 is an integral part of the I-SEM considerations. For example the ramping products of 1, 3 and 8 hour durations will have a material impact on balancing markets.

The Capacity Remuneration Mechanism

PPB agrees that a CRM is essential for a market with the features of the I-SEM. However, we consider the proposal for Reliability Options to be ill-advised and that a CRM that is the same as or similar to the current SEM capacity mechanism remains the most appropriate form of CRM for the conditions that prevail in the Irish market.

There is not the distinction between price and quantity based CRMs that the SEMC draw upon in their assessment of the options, which appears to influence the proposed decision. The SEMC also underplay the market power issues that would affect any auction process such as is proposed.

The proposal for the ROs to be purely financial with consideration of penalties to be conducted during the detailed design highlights that the proposal is not fully developed or understood and therefore a robust assessment of the relative merits of ROs is impossible. ROs are relatively novel arrangements and the two markets in which they exist have very different contexts to the I-SEM. The evidence from experience and academic assessment is that financial ROs do not solve the missing money problem and the RO in ISO-NE is being modified to address this problem.

Such a novel approach is not warranted for the I-SEM and adds to already complex arrangements. There are other significant design features that the SEMC indicate should be considered during the detailed design stage but which has a significant implications for the overall efficiency of the market. In addition to penalty arrangements, the source of the reference price is a material consideration, as is the impact on the forward market liquidity and retail tariffs

Other considerations

The TSOs are also proposing to introduce new and radically different Grid Codes from the existing Codes as their preferred approach for adopting the Network Codes this is a further area of complexity for market participants who will need to design new operating procedures. Market participants will also need to consider changes to industry documents, such as: connection agreements; licences; and power purchase agreements, in order to comply with the new Grid Codes. At the same time the gas Network Codes also need to be adopted.

It is also disappointing that participation costs have not been given proper consideration. The settlement terms for the DAM would appear to advance payment and hence will have a material impact on cashflow for suppliers, while ROs could result in significant collateral requirements from generators. The estimates of market participant set-up costs in the IIA are also unrealistic.

The DDP highlights there remain many fundamental issues to be considered and strategic decisions to be made during the detailed design yet based on the last project plan published by the SEMC in February 2013, the detailed design was to be completed by February 2015. Given the slippage in the conclusion of the HLD and that the HLD is pushing more matters into the detailed design phase, it is unrealistic to believe the detailed design can still be completed by February 2015. A revised project plan is urgently needed to enable market participants to plan their resources and to enable any necessary procurement exercises to be completed.

1. Introduction

Power NI Energy – Power Procurement Business (“PPB”) welcomes the opportunity to respond to the Draft Decision Paper (DDP) and the Initial Impact Assessment paper (IIA) on the High Level Design (HLD) for the Integrated Single Electricity Market (I-SEM) for Ireland and Northern Ireland.

In PPB’s consideration of the matters raised in the papers, PPB has, with regulatory consent, drawn upon external consultancy advice from NERA and Baringa to help the business assess the proposals and to draw on evidence and experience from worldwide markets. NERA’s report was commissioned by Viridian to provide a critique of the DDP and IIA while the Baringa report was commissioned on a multi-client basis by AES, BGE, Tynagh and Viridian Group to consider Scheduling Risk under the proposed I-SEM High Level Design. We draw on and make reference to those reports in this submission.

2. General Comments

PPB raised concerns in its response to the previous consultation paper that there are dangers of overtly focusing too much on market coupling and that it is important that the reform works in the overall interests of consumers and market participants in Ireland. PPB highlighted concerns about the narrowness of the assessment and noted that the primary objective should be to ensure the overall local electricity market operates effectively, including efficient coupling, but providing a sustainable wholesale market framework that provides reasonable returns to investors and market participants and delivers competitive prices and a secure and reliable supply of electricity for consumers.

Our concerns have not been allayed by the draft decisions and the impact assessment which appears to be dominated by concentration on the Day Ahead Market (DAM) with limited consideration of the overall market outcomes that should deliver least cost solutions (including cross-border flows) in real time.

We welcome the recognition of the need for forward market liquidity and market power mitigation measures but are disappointed that the SEMC proposes that these aspects are largely to be addressed during the detailed design phase with little consideration taken with regard to their impact on the feasibility of the Energy Market and CRM HLD proposals.

We remain concerned that there is no consideration that the total remuneration of generators from energy, capacity and ancillary service revenue streams is reasonable, and at the very limited consideration of participation costs (where the Initial Impact Assessment assumption of €15k for system costs is totally unrealistic), and the working capital and credit cover collateral required.

3. The Energy Trading Arrangements

PPB continues to be highly concerned that the proposal to rely on the European Day Ahead Market, with largely mandated participation, is a very risky strategy. We highlighted these concerns in our response to the consultation paper and this was supported by evidence from the Baringa report¹ that we included along with our response in April.

We note the comments provided in the DDP and in Annex B thereto, that set out the SEMC's views that the Euphemia algorithm will be capable of providing a feasible schedule which will form the starting point for dispatch. However, this relies on generators sculpting and refining bids to effectively produce a feasible schedule that could be interpreted as self-commitment. For example, in paragraph 6.4.32, it is stated that "generators will 'learn' how to bid" to achieve an outcome, while in Annex B paragraph 1.5.10, it indicates that "The generator then creates a Profiled Block Order to reflect the desired production pattern of the unit". PPB has significant concerns that this will not overcome scheduling risks that will have knock-on implications for forward market liquidity, customer prices and increased market power. These are discussed in greater detail below.

Scheduling Risks and their consequences

As we highlighted in our previous consultation response, PPB has major concern with the capability of Euphemia to produce an economic and feasible schedule and nothing in the DPP has alleviated our concerns. While various bid structures are accommodated by Euphemia, it is acknowledged by the SEMC that the bid forms will need a form of reverse engineering to produce an outcome that is desired. In isolation, this might provide a solution providing there are no limits imposed on the number or form of profiles or complex bids. However the evidence presented in the latest Baringa paper² commissioned jointly by AES, BGE, Tynagh and Viridian Group indicates that many power exchanges place limitations on the number and size of block orders and other complex bidding formats. Any such limitation will inevitably increase scheduling risk for a generator.

In addition, such bid re-engineering is not being conducted in isolation and it is likely all other generators will be similarly seeking to re-engineer their bids which will again means there is a high risk the outcome will not be as you had expected or planned. Hence there is ongoing uncertainty over competitor actions that will further increase scheduling risk.

This feature also increases the market power of dominant generators since there will be information asymmetry as the generators with large portfolios will

¹ Baringa paper titled "Promoting forward liquidity and mitigating market power under the I-SEM"

² Baringa paper titled "Scheduling risk under the proposed I-SEM High Level Design"

have knowledge of the bidding strategies for a larger proportion of the generation in the market. In addition, a portfolio also mitigates the scheduling risk as there are likely to be offsetting position that a portfolio generator can use to mitigate exposure created by forward contracts, and a large portfolio can more easily be traded out intraday.

As a consequence of the proposal that the DAM is the exclusive route to physical contracts, scheduling risks therefore remain a major concern. While proving the capability of Euphemia to function without any limits on bid forms may alleviate some of the concerns, scheduling risk and enhanced market power will continue to be an issue and ultimately customers will bear the cost of the additional risk.

The Forward Market

As has been generally acknowledged, the forward market is the primary determinant of most customer prices and therefore its importance should be primary. PPB welcomes the SEMC acknowledgement of the issue of forward market liquidity but is concerned that the most concrete decision proposed in the DDP is that only financial trading will be accommodated in the forward timeframe. We had proposed in our previous response that physical contracts would help mitigate scheduling risk and increase forward market liquidity while creating no impediment to liquidity in the later market timeframes.

PPB continues to hold this view and considers the proposals for a financial only forward market tied to exclusive participation in the DAM (with largely mandated participation for dispatchable generators) will make it more difficult to develop a liquid forward market which will either result in lower forward volumes and hence risk of greater price volatility, or higher prices for forward contracts to offset the additional risks. Both of these are detrimental to customers.

The Day Ahead Market

As previously noted, PPB has major concerns over the proposals for exclusive participation in the DAM that fully depends on the capability of Euphemia to provide a feasible schedule. We have previously identified our concerns over scheduling risks and noted that scheduling risk will remain as a consequence of all generators reverse engineering bids to produce their desired schedule. There is a danger of this being an opaque form of self-scheduling and we consider it would be more transparent to just facilitate physical forward contracts that would be a much simpler market structure. This would not in any way diminish the liquidity in the DAM and indeed if this were a concern, participants could still be mandated to participate in the DAM to trade up or down from their opening physical position.

The proposals rely on the SEMC's view that Euphemia can accommodate various bid formats that will enable complex commercial and technical bids to be replicated. However, it is acknowledged that this thesis has not yet been rigorously tested. Given the whole HLD relies on this, it is difficult to see how the SEMC can make a final decision until Euphemia has been fully road-tested to ensure it can produce coherent results for the units operating in the I-SEM with no constraining of the number, or form, of bids. Such testing must be rigorous and should include the involvement of market participants to ensure all reasonable scenarios are tested and that the market has transparent access to the testing and results. This testing must be completed prior to making any final decision on the HLD given the absolute reliance on Euphemia.

The proposed decision indicates participation in the DAM is not mandatory. This change appears to be in response to the difficulties faced by intermittent generation to commit to firm quantities at the day ahead stage when their output remains uncertain. However, PPB considers there is a high risk of price discontinuities occurring between the various markets if there is a mismatch between participation of supply and demand. If demand participation is mandatory but generation is optional, there is a risk that suppliers could be exposed to volatile price spikes in the DAM just because forecasting uncertainties mean only a subset of generation participates in the DAM. In addition, this will initially schedule inefficient cross-border flows that will need to be re-traded in the IDM and balancing timeframes if efficient production is to happen in real time. Such price distortions may be acceptable to suppliers if they were fully hedged in the forward markets but as we have already identified above, liquidity is a problem in that market and the further uncertainties over levels of participation can only further increase scheduling risk for traditional generators which will tend to further reduce liquidity in the forward timeframe.

If the European DAM is to remain as the exclusive route to access physical positions, and if there is not to be mandated participation for all supply and demand then to the extent generation can opt-out of the market there would need to be equivalent scope for demand not to participate such that pricing is balanced and that relative consistency of prices can occur across the market timeframes.

The Intraday Market

The Intraday Market (IDM) will be a critical market to enable participants to trade and refine their position prior to balancing. Depending on final decisions on the DAM and Balancing Markets, this market may need to be liquid to enable repositioning, in particular as intermittent generation levels firm up, such that efficient outcomes are possible and the balancing market does not end up acting as a residual pool.

While this market is critical, it is concerning that the market again relies wholly on the European platforms that are as yet largely undefined and which may not be functional by 2017. It would therefore seem pragmatic to accept there will be a requirement for transitional market arrangements pending the implementation of a robust EU market.

The DDP suggests that as the EU trading platforms trade hourly products, there may be merit in contracts of less than 1 hour. However it is unclear how such products could be traded and it would add further complexity to the market.

A final concern with the proposals for the IDM is that they make no reference to the increase in market power that would be conferred on portfolio generators. Exclusive, unit based bidding is deemed to aid transparency but it also has the effect of increasing the benefits of trading a large portfolio since such portfolios may be able to effectively trade bilaterally through the platform using a range of bidding strategies to refine their position and will again be able to benefit from information asymmetry.

The Balancing Market

Volumes traded in the Balancing Market (BM) will depend on the decisions relating to participation obligations in the DAM and on the liquidity in the IDM. As a consequence it is difficult to ascertain the potential volumes trading in the BM and hence the number of balancing actions that will need to be tagged and flagged. If there were significant volumes of intermittent generation with priority dispatch trading through the BM then there may be more than simple increments and decrements in output and hence simple INCs and DECAs may not result in efficient pricing or efficient outcomes for customers.

There is also uncertainty over the definition of the marginal price that will set the price in the Balancing Market. The DDP indicates that the marginal price will be based on "*the last unit used to move generation and load from their nominated position ...*". However, it isn't clear if this is based on the highest cost action taken or the last chronological action taken by the TSOs which are likely to result in very different prices.

The rules for the transparent tagging and flagging process will be vitally important to ensure the integrity of the BM and to ensure participants can understand their exposure in the BM.

It is also unclear if generators will have restrictions imposed to stop intraday trades superimposing energy balancing actions the TSOs may take between the closure of the DAM and closure of the IDM. This will need to be clarified to understand the risks of participating in the IDM when there are mandated obligations to participate in the BM and to understand if this could have any distortionary impact on the IDM and pricing and liquidity therein.

The DDP also indicates that non-energy balancing actions will use the same INCs and DECs as are used for energy balancing but will be paid on the basis of bid prices. Based on the reserve requirements and the level of network constraints, it is difficult to envisage a situation that will not involve starting and stopping generating units to ensure the safe and reliable operation of the system. However, if such costs are to be internalised into the INCs and DECs then generators will seek to ensure they are not operating at a loss and as they will have limited information on potential running levels and duration, the natural response would be to ensure cost recovery in all scenarios. However, while this will protect generators, there is a high risk of an inefficient outcome for customers.

The interaction with DS3 is also an important consideration and should be considered as part of the HLD. The ramping products being considered, by the TSO, will have a material impact on balancing arrangements and therefore these markets must not be considered in isolation.

It is essential that the HLD addresses how non-energy balancing will be managed such that the HLD of the overall market is coherent.

Market Power in the Energy Trading Arrangements

The DDP identifies a major concern with Option 1 as the lack of transparency with the market, the scope for abuse of market power and the ongoing need for regulatory intervention. Option 3 is not similarly challenged yet the proposed overall design inherently increases the market power of large portfolio generators across all of the market timeframes, as identified in the previous sections. For example, scheduling risk is much lower for a participant with a portfolio of generation and this in turn provides an advantage for their participation in the forward market. Similarly, a portfolio has increased opportunity to rebalance their portfolio in the IDM even though participation is through a central trading platform. The proposed arrangements create significant information asymmetry and the net effect is that additional market power mitigation measures will be required to offset the additional benefits conferred to portfolio generators by the proposed design of the energy markets.

It is concerning that while market power is recognised as being an ongoing issue, the SEMC are suggesting that it can be dealt with during the detailed design phase. It is clear from the above that the proposed design is boosting the market power of large generator portfolios yet this does not appear to be used to inform the decision making on the HLD. We consider the consequences for market power should be an inherent part of the decision making processes.

We had described in our previous consultation response how we considered forward physical bilateral contracts would provide mitigation of market power

and the supporting Baringa paper³ identified measures that could be adopted to promote market liquidity and transparency. We still believe that providing additional risk management opportunities through physical forward contracts would result in a more efficient overall market with lower prices for consumers.

4. The Capacity Remuneration Mechanism

PPB welcomes the SEMC's determination that a CRM is required in the I-SEM, based on the acknowledgement that an energy-only market may be prone to market failures that make it difficult for such a market to value reliability of supply, which may be acute for a small island system with high levels of variable output renewable generation.

We are disappointed however, that the proposed decision on the form of CRM being Reliability Options (RO) is a form that was opposed by virtually all market participants and that the decision is therefore unsupported by the industry.

It is also worth noting that there was general support for the continuation of a price-based mechanism, similar to the current mechanism (although in reality the current scheme is not a simple price based scheme but is a hybrid scheme as neither price nor quantity is fixed but rather the pot of money is fixed). PPB still believes this is the most appropriate form of CRM for the unique conditions that exist in the Irish market.

The RO mechanism is also an overly complex arrangement that is not operating in any EU country and a form of RO is only currently operating in two markets, but where neither of those is as small as the Irish market and neither are purely financial. A CRM based on ROs is therefore a high risk approach which we do not believe is warranted or appropriate to address the unique issues that drive the need for a CRM in the I-SEM in the first place.

It is also disappointing that the SEMC has made a decision to base the CRM on ROs when many issues are yet to be considered and are noted to be decided at the detailed design stage. Many of those matters need to be considered as part of the HLD to ensure the various CRMs can be objectively compared such that the most appropriate form of CRM is selected.

Further detail is provided on our key concerns in the following sections.

Quantity Based vs Price Based mechanisms

NERA's assessment of the DDP and IIA⁴ highlights apparent confusion in the SEMCs understanding and categorisation of price and quantity based mechanisms that seems to distort the objective assessment of the different CRM models. It seems clear that very few CRMs are pure price or quantity

³ Baringa paper titled "Promoting forward market liquidity and mitigating market power under the I-SEM"

⁴ NERA paper titled "I-SEM Draft Decision SEM-14-045: A Review"

based mechanisms and that most end up as a hybrid arrangement that has regulatory input to the process on more than just either setting the price or the quantity.

The ROs proposed by the SEMC claim to be a simple market based approach to value capacity but the experience in New England is that such an approach does lead to boom and bust cycles and ISO-NE are now proposing their CRM to include penalties for non-delivery and to move to introduce a sloping demand curve that will essentially result in a hybrid arrangement.

The SEMC also largely ignores that market power would increase under quantity based CRMs. The market concentration of generation in Ireland with a large generator with a portfolio of mixed technology generation would inevitably distort any auction process and the RAs will not be able to merely set the quantity and walk away. They will need to define and monitor arrangements to ensure market power cannot be exercised which will in itself impact on the market and increase regulatory risk for investors operating in, or new investors considering entry to, the market.

The Missing Money problem

The SEMC recognises there is a missing money problem but then proceed to propose ROs that are financially based and which, without further substantive refinement, will not solve the missing money problem. We had highlighted in our previous April 2014 response (based on the supporting NERA paper⁵) that on the limited description of ROs in that consultation paper, we did not believe the missing money issues would be addressed and there would be a volatile pricing of the options.

The most recent NERA paper, that reviews the DPP, highlights that the academic papers quoted in the DPP as part of the consideration that supported the SEMC's selection of ROs as their preferred form of CRM do not actually support the SEMC's decision. Vasquez et al explicitly assume that additional obligations are needed to ensure capacity is firm with penalties for non-delivery while Cramton and Stoff's most recent 2013 paper explicitly states that there needs to be a link to physical capacity. NERA also highlight the most recent academic paper by Batlle, Mastropietro, Rodilla and Perez-Arraig⁶ which indicates ROs need to be backed up by certification and penalties for non-delivery of capacity.

The SEMC notes that penalties for non-delivery will be considered as part of the detailed design but it is clear that without them the missing money problem will not be solved. This inevitably means there will also be significant regulatory input into the design and setting of penalty arrangements that will not be

⁵ NERA paper titled "The Capacity Remuneration Mechanism in the SEM"

⁶ Paper from 2014 titled "The System Adequacy Problem: Lessons learned from the American Continent"

“market based” and hence this further undermines the SEMC position that the proposed RO is a market-based CRM requiring limited regulatory input.

Market Power in the CRM

As identified earlier (and in our previous response), we believe the impact of ROs in enhancing the market power of dominant generators is a key concern. Quantity based CRM generally require an auction process and predatory pricing is a major concern in a market with a dominant semi-state generator that may have different objectives. These auctions will require extensive RA oversight and bidding rules for dominant portfolio generators.

Matters that should not be left to the detailed design phase

There are a number of the matters that need to be considered as part of the HLD before an objective assessment of the relative merits of ROs can be properly considered. Some of these are listed in the HLD as detailed design matters and some are not referenced.

Reference price

The reference price is a fundamental consideration as the risk of using any particular market timeframe as the source of the reference price will have implications on the risks for market participants. As there is no single IDM price, the choices would appear to be the DAM or BM prices but the suitability of either depends on the robustness of those prices and the ability of participants to access those prices. For example if the majority of a generator’s volume is determined in the DAM then use of the BM price as the reference price for the CfD and settlement thereof would create a significant exposure for the generator and would intensify the scrutiny on the formulation of the BM price.

A similar problem may also exist where generators are not participating in the DAM but where the reference price is the DAM price. An RO referenced to the DAM also increases the Scheduling risk referenced earlier since bids that could be rejected by Euphemia to ensure it produces a result, could result in unwarranted high DAM prices that trigger payments under the RO when the generator has been excluded from the schedule and there is no risk to security of supply.

Referencing ROs to the DAM also highlights the counter-intuitive nature of the proposals since security of supply issues occur in real-time whereas at the DAM stage, the risk may only be theoretical (or due to non-participation in that market. These are all complex issues that go to the heart of the viability of ROs and hence must be an inherent consideration in the assessment of the HLD.

Penalty Arrangements

We have already noted that in the absence of penalty arrangements, the missing money problem is not resolved and hence this aspect of the design must be considered as part of the HLD.

Impact on the Forward Market

A further issue that requires consideration relates to the impact of the RO on the forward market. The RO will add complexity to normal within CfDs and may also have a different impact on cross-border CfDs. Such complexity would be magnified were there to be ROs with different strike prices. In addition, there is a high risk that forward liquidity would be reduced if the reference price for forward market CfDs was different to the RO reference price.

This again illustrates that such matters need to be holistically assessed as part of the HLD decision making process but has not been in the draft decision.

Impact on Retail Tariffs

There is no consideration of the implication of ROs on retail tariffs. Suppliers would clearly need to fund the Option Fees for ROs that are concluded with generators. Normally option fees are payable upfront which would result in a considerable cashflow and working capital impact for Suppliers. Similarly it isn't clear how Suppliers would treat both this cost and any subsequent payments should the options be invoked as a result of high prices. If these risks are all to be borne by Suppliers then this creates a variable revenue stream with uncertainty over the timing over payments and difficulties in the timing of return to customers (if at all). Alternatively if the central contracting body is responsible for providing a buffer for Suppliers, then they could have significant under/over recoveries that will need to be managed. Regardless of which approach is taken, there are likely to be significant working capital and collateral costs that need to be considered.

ROs are inherently complex with a significant risk that they could become bewilderingly complex for customers which could stifle completion in the retail markets.

5. DS3 and wider Network Codes

The SEM Committee issued a consultation paper, dated 9 July 2014, in relation to DS3 System Services. PPB is concerned that the Multiple Bid Auction procurement mechanism that is being proposed by the SEMC will add further considerable complexity to the overall I-SEM arrangements and introduce additional uncertainty for market participants. Under the proposed system services there will be at least 14 products some of which will have material interactions with the energy (such as the ramping products) and capacity markets. The interaction of the DS3 contracts with the energy market will also make price forecasting in the forwards markets more complicated and may make it more difficult for buyers and sellers to reach price convergence.

Our initial consideration is that the DS3 proposals are suited to a near perfect market. However with the many constraints in the I-SEM and with the considerable market power issues, it is difficult to understand how the proposed arrangements will work effectively. Whilst the IPA report which accompanies the SEM Committee Paper discusses market power on an all island basis, it does not consider the ability for a participant to exert market power in a smaller geographical or electrical area. For example, voltage support for Belfast can currently only be provided by generating units operated by AES. There are similar issues for reserve and inertia in Northern Ireland.

The adoption of all the Network Codes (market, operational and technical) is happening during the implementation of I-SEM. The TSOs have proposed introducing new Grid Codes with significantly different architecture to the existing codes. This will add further complexity and risks to the operation of the system and the market during the implementation phase.

6. NERA's Third Party Assessment of the Draft Decision

Viridian Group asked NERA to provide an independent assessment and critique of the robustness of the proposed High Level Design decisions and the accompanying Initial Impact Assessment. We attach NERA's report in full but the main conclusions NERA draw are summarised as:

- The quality of the argumentation is poor and the appraisal criteria adopted by the SEMC are defined in vague terms, interpreted subjectively and applied selectively;
- The decisions focus too much on trading (i.e. in particular market coupling in the DAM) rather than on the overall efficiency of the market at the point of delivery and as will be manifested in outcomes for generators, suppliers and ultimately customers;

Appraisal of Options for Energy Trading

- The appraisal of the Energy Trading Options is incomplete, subjective and prejudiced and as a result the conclusions reached must be considered unsound;
- There are risks Euphemia will not produce an efficient schedule and with uncertainties over the intraday and balancing markets, the outcome may be inefficient overall;
- The SEMC has not addressed the problem of volume/scheduling risk;
- The options are not considered on level playing field in relation to forward market liquidity;

Appraisal of CRMs

- The appraisal create a false dichotomy between "price based" and "quantity based" schemes as most arrangements include a trade-off between price and quantity through the inclusion of a demand curve;
- Reliability Options are repeatedly described as "market based" and mark down other schemes for requiring regulatory intervention but it overlooks that experience and theory that ROs need to be linked to the provision of physical capacity which requires regulatory intervention;
- The SEMC defers decisions on penalty arrangements to the detailed design phase but it is not possible to compare CRMs without taking such requirements into account;
- The appraisal of CRMs is incomplete, because the SEMC left out significant details of the proposed design of reliability options, and selective because it overlooks possible adverse effects of the proposed scheme;

- The overall appraisal was biased by the use of criteria that varied from case to case, preventing like-for-like evaluation;

Consideration of Market Power Mitigation

- Consideration of the measures to mitigate market power is selective;
- Market power remains a problem and so any completely specified option would include alternatives to the BCOP, such as an increase in directed contracts;
- In relation to CRMs, there are conflicting views in the DDP and the IIA where the DDP refers to ROs as “market based” with the process for awarding contracts transparent auctions with little need for regulatory intervention, whereas the IIA notes the conduct of auctions will require major regulatory intervention to mitigate market power. These conflicting approaches betray a fundamental confusion about the implications of ROs for competition;

Consequences for Consumers

- Inefficiency and Scheduling risk in the DAM will raise costs and prices of electricity, even if an efficient pattern of generation is restored through intraday and balancing market trading;
- Incompletely specified CRMs will leave customers exposed to the risk of under-investment in capacity;

NERA’s conclusions

- Many problems in the quality of the appraisal used to justify the SEMC’s choice of Option 3 and Reliability Options;
- Areas of the appraisal were subjective, selective and biased, with the effect that the discussions are prejudicial and do not provide a proper basis for selecting an electricity market design putting the decision at risk of legal challenge; and
- Conclude the SEMC’s decisions are unsound and that market participants cannot have confidence that the SEMC has reached the right decisions on the HLD for the I-SEM.

7. Conclusions

PPB is disappointed by the apparent lack of rigour in the assessment process that seems to seek to justify the proposed Energy market and CRM options. This is supported by NERA's independent assessment where they describe the decisions as "unsound".

PPB has concerns that the overall market design is more complicated than is warranted in a small market with unique features including ambitions for a high penetration of renewable generation and with a semi-state participant that has dominant positions in the market. These features impose greater constraints on the market design as the consequences of market failings are magnified in a small market. It is also important to consider the wider stakeholder audience including the financiers, commodity hedging counter-parties, who are used to the market arrangements prevailing in the UK and wider EU markets and who are less inclined to transact in markets with market arrangements that are "different".

PPB is also concerned that nearly all of the proposed decisions increase the market power of dominant generators in the market that will require even greater regulatory intervention and oversight, none of which is considered to be part of the HLD. We continue to believe this must be an inherent consideration.

It is also worth noting that the recent DS3 consultation also proposes an auction process for services and this interplay adds further complexity and needs to be considered as part of the HLD assessment and decisions.

The Energy Market Arrangements

In terms of the energy market, there is a predominant focus on the DAM without fully understanding whether the overall market, operating from the forward timeframe through to real-time, will deliver an efficient outcome for customers, and provide mechanisms for participants to manage risks on a competitive basis. The reliance on Euphemia is unproven and we welcome the announcement at the stakeholder forum on 17 June 2014 that testing is to be conducted. This testing needs to be inclusive, involving not just SEMO but also market participants. However, even if testing determines that it can manage the assessment of bid structures and bids without the imposition of limits, scheduling risk cannot be removed and actually increases the market power of dominant generators who enjoy an asymmetry of information and a portfolio across which to spread the risks.

With respect to the risks of reliance on Euphemia, it may be prudent to consider an alternative algorithm in parallel such that there is a fallback should it prove to be unreliable and/or inefficient (or alternatively seek modifications to Euphemia).

This scheduling risk when allied with the DAM being exclusive and the restriction on the forward market to financial contracts actually reduces the scope for fair competition and increases the market power of dominant generators. PPB has suggested in its previous response that physical forward bilateral contracts would help reduce the risk for smaller participants that would aid competition and forward market liquidity without necessarily reducing liquidity in the DAM. We are disappointed such a mechanism is not proposed in the draft decision and believe the SEMC must reconsider this for its final decision. There is no commercial reason why providing for physical forward contracts would dilute the liquidity in the DAM but if that were a concern, mandated participation in the DAM would address it.

In relation to the question of the degree of non-mandatory participation in the DAM, there is a real risk of incoherent pricing where there to be a mismatch between generation and supply because, for example, wind generators were able to opt out from participation. Any resulting price volatility would have significant consequences for the forward market and damage the general credibility of the market.

The Euphemia scheduling risk in the DAM increases the need for a fully functional IDM yet the centralised platforms that the SEMC proposes the I-SEM rely upon are delayed and may not be functional by 2016. This highlights the need for contingency arrangements for the IDM.

The balancing market proposals are not well defined and it is unclear how marginal pricing will be determined given actions could be taken by the TSOs at any stage following the closure of the DAM. The volumes participating in the BM could vary significantly depending, for example, on the participation obligations in the DAM, and pricing in the BM could vary significantly depending on how “the last unit used to move generation and load from their nominated position” is interpreted. PPB also considers that simple INCs and DECs may not be sufficient where balancing market volumes are high or for the non-energy balancing actions. The relationship between balancing actions taken by the TSO and a participant’s intraday trading is also unclear and it would be useful to understand how conflicts in this area are to be addressed.

The Capacity Remuneration Mechanism

PPB agrees that a CRM is essential for a market with the features of the I-SEM. However, we consider the proposal for Reliability Options to be ill-advised and that a CRM that is the same as, or similar to, the current SEM capacity mechanism remains the most appropriate form of CRM for the conditions that prevail in the Irish market.

There is not the distinction between price and quantity based CRMs that the SEMC draw upon in their assessment of the options, which appears to

influence the proposed decision. The SEMC also underplay the market power issues that would affect any auction process such as is proposed.

The proposal for the ROs to be purely financial with consideration of penalties to be conducted during the detailed design clearly indicates that they are not fully understood and therefore a robust assessment of the relative merits of ROs is impossible. ROs are relatively novel arrangements with only two markets employing them worldwide, both of which have very different contexts than the I-SEM. The evidence from experience and academic assessment is that financial ROs do not solve the missing money problem and the RO in ISO-NE is being modified to address this problem.

Such a novel approach is not warranted for the I-SEM and adds to already complex arrangements. There are other significant design features that the SEMC indicate should be considered during the detailed design stage but which has a significant implications for the overall efficiency of the market. In addition to penalty arrangements, the source of the reference price is a material consideration as is the impact on the forward market liquidity and retail tariffs

Other considerations

The TSOs are also proposing to introduce new and radically different Grid Codes from the existing Codes as their preferred approach for adopting the Network Codes this is a further area of complexity for market participants who will need to design new operating procedures. Market participants will also need to consider changes to industry documents, such as: connection agreements; licences; and power purchase agreements, in order to comply with the new Grid Codes. At the same time the gas Network Codes also need to be adopted.

It is also disappointing that participation costs have not been given proper consideration. The settlement terms for the DAM would appear to advance payment and hence will have a material impact on cashflow for suppliers, while ROs could result in significant collateral requirements from generators. The estimates of market participant set-up costs in the IIA are also unrealistic.

The DDP highlights there remain many fundamental issues to be considered and strategic decisions to be made during the detailed design yet based on the last project plan published by the SEMC in February 2013, the detailed design was to be completed by February 2015. Given the slippage in the conclusion of the HLD and that the HLD is pushing more matters into the detailed design phase, it is unrealistic to believe the detailed design can still be completed by February 2015. A revised project plan is urgently needed to enable market participants to plan their resources and to enable any necessary procurement exercises to be completed.