

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

I-SEM Detailed Design

Capacity Remuneration Mechanism

Locational Issues

**Response by Power NI Energy
(PPB)**

22 September 2016.



Introduction

PPB welcomes the opportunity to respond to the RAs consultation on the Locational Issues affecting the detailed design of the Capacity Remuneration Mechanism.

General Comments

The CRM is a critical element of the I-SEM that is essential to ensuring the long term stability and security of supply in a small island market. Reliability Options (ROs) are relatively complex instruments that incorporate both a hedge against high spot market prices and scope to recover money that is missing more generally from the energy market. Their operation is further complicated in the context of a small system that is targeting high levels of intermittent generation.

Viridian has sought an independent assessment of the proposals set out in the consultation paper from NERA Economic Consulting¹ which we draw upon in this response and which should be considered as part of this response (and which is separately attached).

Key concerns, highlighted in the NERA Memo, are that the options proposed in the consultation paper are under-defined making it difficult to assess and properly comment on the proposals. The problems of auction designs that adopt simplified models of the underlying locational constraints leaves residual risk that the successful capacity remains insufficient and incapable of providing a full solution to the locational constraints, necessitating further intervention.

We are also concerned that the evaluation of the options set out in the consultation paper is not rigorous, is inconsistently applied and the appraisal criteria are selectively applied.

With respect to the pricing rules, any rule that distorts the true underlying capacity value will result in inefficient outcomes that will affect future investment in the market, risking raising the costs for consumers in the longer term. Similarly, constraining capacity off, and particularly doing so without compensation, is likely to be result in unintended outcomes including sending spurious exit signals to capacity and increasing regulatory risks that may make the I-SEM uninvestable creating future security of supply problems.

¹ NERA Memo dated 22 September 2016 with Subject "Review of Capacity Remuneration Mechanism Local Issues Paper"

Responses to the Specific Questions

Chapter 2. Outline of Issue and Proposed Solution

Q2.1: Do you agree with the assessment of the potential for exit and lack of new entry during the transition period set out in this section, and do you think that the potential for exit creates a security of supply issue given locational constraints?

The design of the CRM creates a strong exit signal and if that occurs, we consider that it may result in significant system operational issues for the TSOs and a severe security of supply shock for customers. Both have relied upon and benefited from surplus capacity over recent years and it is evident that the actual security of supply target has been higher than the 8 hours LOLE that is being proposed to secure capacity under the I-SEM CRM. If the surplus of c2.6TW of capacity were to close such that an 8 hour LOLE standard was delivered for customers and provided the capacity for the TSOs to operate the system, we consider there would be considerable public outcry and that is before any locational and constraint issues are even contemplated.

Adding in locational constraints which effectively creates smaller zones substantially exacerbates this problem and magnifies the small system issues when those zones represent a small sub-set of the overall I-SEM capacity requirement and in which the capacity of a single generating unit could represent a very significant proportion of the capacity required in a constrained area. This will have an even greater impact on local security of supply even though overall market scarcity may not be evident.

We have highlighted this issue many times in our previous responses on the design of the I-SEM CRM and the issues need to be addressed in a transparent manner

Q2.2: Do you agree that locational constraints should be incorporated in the CRM? Please elaborate your rationale in your response.

Locational constraints must be fully incorporated, recognising that constraints exist and that capacity in different locations provides different value for customers in those locations where, by its absence, there would otherwise be security of supply issues for customers. Such differential consequences for demand in different locations would have wider implications for economic investment reaching far beyond the wholesale energy market.

There will inevitably be choices to make between investment in the electricity network and investment in generation or other services and unless those costs are transparent, inefficient outcomes will result.

A concern with many of the options proposed is that they seek to address the issues through simplified approaches but such simplification may still not provide the required capacity to best address the locational constraints or may result in inefficient selections. This may mean that further intervention is required to overcome such deficiencies arising from such “simplification” that would create another level of inefficiency and reduction in transparency. Hence the solution to the location constraints must fully address all the complex issues that exist rather than seeking to address it with layered simplified approaches that will introduce additional inefficiency.

Q2.3: Feedback in relation to the specific Grid Code requirements are sought in respect of the following:

- ***The extent to which the Grid Code requirements can be relied upon to manage exit of plant which does not obtain a Reliability Option;***
- ***Whether it is appropriate to provide assurances that generators which do not obtain a Reliability Option in the transitional auctions (which happen on a T-1 basis) be released from their obligations to give 3 years notice in accordance with the Grid Code; and***
- ***Whether the Grid Code requirement should be extended from 3 years notice, to say 3 years 6 months to align with T-4 auction timings.***

We believe it is totally inappropriate to divorce the commercial arrangements from the Grid Code. If the CRM result is that a generator is not successful in securing a contract and hence is deemed not required then that generator should be fully entitled to exit. The expectation is that the generator will not have sufficient revenues to cover its costs and therefore it is not clear how such a generator could be forced to operate at a loss. This incongruity was

highlighted to the SEM Committee at the first Senior Stakeholder meeting and the response was that both would be aligned. It is therefore bizarre, and unhelpful from a regulatory risk perspective, that there is any contemplation that a generating unit that is not awarded a CRM contract could still be somehow obligated to make the capacity available without a contract and operating at a loss. Such obligations, even if legal (which we doubt) would further increase costs for consumers as the risk would result in higher cost of new entry.

The Grid Code must therefore be modified to remove any requirement for notice since the I-SEM will determine the need through the CRM mechanism. If that gives rise to unwarranted closure, the solution is not to rely on a Grid Code requirement but to correct the faults in the CRM that provided the incorrect signal in the first place.

Q2.4: Do you agree with the key principles proposed for any locational capacity framework within the CRM?

In relation to the principle that “*locational constraints would only be used to represent local capacity deliverability constraints*”, we believe this will oversimplify the consideration and will result in the need for either further out-of-market arrangements to resolve the residual issues, or lead to inefficient outcomes. It will likely be difficult to separate capacity and ancillary service issues and doing so in an arbitrary manner is unlikely to be transparent.

It would therefore be more appropriate to consider requirements based on the full set of constraints rather than using a subset and leaving residual matters and/or inefficiencies to be overcome through a separate process.

In relation to the principle that “*a locational need would only be included where the need is clear and large*”, this has the same problem as identified above in that it leaves residual issues that must still be addressed through some other side arrangement and risks resulting in inefficient outcomes.

Paragraph 2.4.6 of the consultation paper recognises these deficiencies. However reliance on ad hoc holistic assessment by the SEMC following a silo approach cannot result in the most efficient outcome for customers. Transparency is critical and the more that actual constraints are mapped to heuristic rules or combinatorial criteria on some simplified basis, the greater the risk of unanticipated and inefficient outcomes that will require further “work arounds” to facilitate feasible operation of the system and security of supply for customers.

Q2.5: Do stakeholders agree that clear and large existing capacity delivery constraints should be reflected within the CRM auction, for example limiting this to the North-South constraint and the Dublin area constraint?

As we have already highlighted in responses to earlier questions, any dilution or simplification of the requirements will result in inefficient outcomes or in outcomes that require further refinement to deliver what is required. In all options, the TSOs must conduct such analysis at some stage to confirm that the outputs result in workable arrangements or whether further refinement is needed. Hence simplifying the process is likely to be a false benefit and could in fact create wider problems that will need subsequent resolution.

There is an immutable linkage between System Services and Locational Capacity requirements and seeking to resolve them in isolation will not ensure correct or efficient results.

Q2.6: Do stakeholders agree with the high level proposed solution for dealing with locational capacity issues?

Clearly there are locational capacity issues in the I-SEM and this needs to be addressed otherwise security of supply will be compromised for consumers. An out-of-merit solution may work but the critical issues relate to the process by which that capacity is identified, whether contracting with that capacity affects the revenues of the capacity that would have been successful in the market in the absence of the constraints, and whether or not that capacity is substituted/displaced by the out-of-merit capacity.

We do not believe a simplified approach will be successful and will result in a secondary set of arrangements being required to address the failings of the simplified approach. The pricing for the “constrained-on” capacity will clearly need to provide a reasonable return since otherwise the capacity will not be available. Similarly, the pricing for the unconstrained capacity must not be diluted since otherwise that will result in incorrect and inefficient market signals and regulatory risks that will be detrimental to the longer term efficiency of the market, investment decisions and ultimately security of supply for consumers.

Q2.7: If you do not agree with or have further view any of the proposals or assessment set out in this section, please outline why and where relevant suggest alternatives.

Our responses to the other questions in this Chapter 2 have already set out our views and objections to the proposals and assessment in this section. The key issue is that all constraints need to be considered and we consider that it is better to address those issues holistically rather than seeking to address them in a simplified manner and then having to undertake a follow-up process to validate and verify whether the initial outcomes are feasible. This can only result in inefficiencies that will be detrimental to investments and consumers.

Chapter 3. Auction Design Framework

Q3.1: Which option do you prefer for the Auction Design Framework and why?

It is difficult to fully appraise the options because they are not fully described and hence we have to make some assumptions in relation to how some of them would work in practice. This is particularly the case with options C and D. Similarly, under Option E, it is not clear whether the “must-not-exit” capacity identified is additional to, or displaces, capacity successful in the unconstrained run.

We also note that the assessment of the options either ignores or does not contemplate that the TSOs would need to re-assess the outcomes from each of Options A to D to ensure that the outcome is feasible and actually solves or does not create new constraints. This feature is noted as an advantage of option E in paragraph 3.2.25 but if it is not also done for Options A to D then the capacity may still not be appropriately located and security of supply for customers could be inadvertently and randomly compromised. Such an outcome would not be sustainable and a follow-up process would be needed to validate that the outcome is viable and has not created new unmanageable constraints.

Considering each of the options:

Option A distorts pricing and will impair efficient investment.

Option B is generally viable, but for the requirement for a further validation of the results to ensure that they are viable.

Option C requires complex mapping of the constraints into heuristics but any simplification could result in unanticipated and volatile outcomes. If the full complexity is to be mapped then it is difficult to see what benefit would be gained over just employing Options B or E.

Option D has the same issues as Option C in that any simplification will distort the outcomes, the constraints would need to be fully identified to map onto the combinatorial rules, and in any event the results would need to be revalidated upon conclusion of the process.

Option E provides the fine tuned appraisal that all the other options need to bolt on to ensure the viability of the selected capacity meeting the locational requirements.

Our view is that the process described as Option E will be needed under all the options since otherwise the capacity selected may not correctly address the locational issues with a consequential risk to security of supply. Options C and D therefore add an additional level of complexity that adds no real value as further validation along the lines of option E will be required anyway. Options B and E largely conclude the same analysis although the timing is different. The main area where there may be differences relates to whether the identification of “must-not-exit” capacity displaces other capacity or is contracted in addition to the unconstrained capacity (as under option B).

We believe the most sustainable approach is Option E with the proviso that the “must-not-exit” capacity is additional capacity and does not displace any capacity. Further, the scope of the contracts for “must-not-exit” capacity should also be considered. One option would be to just offer an RO contract based on the each unit’s bid price. However it may be worth considering whether a different form of contract would be a better solution, for example dropping the CfD element. There may also be benefits for customers in agreeing longer term contracts where the constraint is known to bind for a number of years. Such a longer term arrangement may enable more efficient maintenance programs to be incorporated (rather than rolling single year arrangements that may have a higher cost if rolled over for 3 years) which could reduce costs for consumers.

We note the concerns in relation to consumer costs but any expropriation of capacity revenues from capacity that would otherwise have secured a

contract would have major implications for investment and will increase costs for consumers in the longer term. It also increases the focus on the network investment and should ensure overall costs for consumers across both generation capacity and network investments are optimised.

3.2: *Should the capacity price be set equal to: a) the highest-priced bid accepted in the unconstrained merit order; or b) the highest-priced bid which is both: accepted in the unconstrained merit order; and selected as a winning bid after lumpiness and locational considerations have been resolved?*

The capacity price should not be polluted by constraints and therefore should be based on the highest prices bid accepted in the unconstrained merit order. To do otherwise would distort pricing and will either result in ongoing depressed prices that will impact on future investment and hence on security of supply or will incentivise bidders to inflate their bid prices that may result in inefficient outcomes.

Q3.3: *Should a bidder that would have been accepted in an unconstrained auction but which is not awarded an RO receive a “constrained-off” payment in the CRM? If yes, how should the “constrained-off” payment be determined, and why?*

The question assumes that constrained-on bidders displace other bids that were successful in the unconstrained auction. However such an approach discriminates against such bidders for reasons that may be transitory and outside the control of the provider. As a consequence any payment that is less than the clearing price will be an opportunity cost to the bidder and could result in inefficient exit. As noted above we believe the best approach is for constrained-on capacity to be additional capacity.

If constrained-off bidders were not awarded an RO then as noted above, zero compensation would be expected to result in closure which may be an arbitrary signal that is inefficient but driven by short term locational constraints and which could result in higher long term costs for consumers. The option that determines compensation based on “lost profit” is severely flawed since a capacity market is not the same as an energy market in that the bid price is not an avoidable cost and hence by default the capacity will most likely be paid less than its bid price and hence would not be recovering the missing money it requires to remain viable. Option 3 that pays the bid price but

requires no RO will result in unknown consequences and because customers have no RO protection, it may be more expensive for customers than paying the clearing price and awarding an RO – i.e. not constraining-off capacity and having constrained-on capacity as additional capacity.

The consultation paper raises a concern that compensation may face state aid difficulties. However it is also likely that there would be State Aid challenges where capacity is constrained off and loses a capacity contract and payments it would otherwise have received but for a contract being given to out of merit capacity for reasons that may be short term and/or opaque. Hence State Aid issues need to be addressed no matter what solution is adopted to address locational requirements.

Q3.4: How should local capacity deliverability constraints be defined?

The consultation paper indicates in paragraph 3.5.2 that “*the CRM could produce reasonable results and be effective if restraint is exercised in setting locational needs*”. However, it is not obvious how restraint can be exercised given any locational need is what it is and any attempt to understate or ignore the need will inevitably result in an inefficient and ineffective outcome. The consultation paper also seeks to apply dispatch constraints to capacity requirements which is not rational or appropriate.

In terms of the options presented, Option 1 seems to adopt capacity zones which conflicts with the proposal that the CRM is a single zone. In addition the zonal MW requirements are unlikely to be a fixed number of MW but should be stated as greater than or equal to X MW and Y MW, with the final total being equal to Z – i.e. $R1 \geq X$ MW, $R2 \geq Y$ MW and $Z = (R1 + R2)$ MW. However this is really what is defined as Option 3 – i.e. Nested.

Option 2 will not work since the number of units in an area may well be irrelevant if the aggregate capacity of the units is inadequate. It works for dispatch because the unit sizes are known. But if the target was for two units in a constrained zone and the assumption was that this would be two CCGTs with aggregate capacity of >700MW, success by two 10 MW units would not solve the capacity constraint.

Option 3 is likely to be the most reasonable approach since the requirement is likely to be for a minimum number of MW in each location with a fixed overall total. This would be better represented as : $R1 \geq X$ MW, $R2 \geq Y$ MW, and with $Z = (R1 + R2)$ MW.

Chapter 4. Longer Term considerations

Q4.1: Should the inclusion of locational capacity delivery constraints in the CRM occur in T-1 auctions, T-4 auctions, or both?

It is likely that the constraints would need to be considered in both timeframes to achieve the lowest cost outcome. If locational constraints are expected to bind or have a high probability thereof, then it would be more sensible for all parties to address this as early as possible. The options available in the T-1 timeframe will depend heavily on the capacity that is held back for that auction. In addition, shorter notice of a must-not-exit requirement for generating capacity is likely to cost more since the unit would likely have been on a maintenance program targeting closure (not having secured an RO in the T-4 auction for year T) and hence may need to carry out life extension works to enable continued operation. Similarly if the proposal was to constrain capacity off, it would be particularly problematic if that capacity has secured a contract in the T-4 auction but which was then being rescinded in the T-1 timeframe since that would mean the award of an RO contract could be worthless. It would similarly be unclear which of the already contracted capacity would be selected for constraining off in the T-1 timeframe given this already contracted capacity would not be participating in the auction.

This supports our earlier stated views that “must-not-exit” capacity should be additional rather than substitutive, which avoids this problem of rescinding contracts entered into 3 years earlier. However, the issue of higher costs where locational issues are only considered in the T-1 timeframe remains and longer notice times would be a better outcome for all parties where there is a reasonable expectation that a locational constraint will exist in year T.

Q4.2: What circumstances or criteria should be considered in relation to the T-4 auctions being conducted without explicit consideration of locational capacity delivery constraints?

As we note in response to the previous question, ignoring locational issues in the T-4 auctions means all the constraints would need to be addressed in the T-1 auction. However, the indication was that the T-1 auction may be for only 5-10% of the required capacity (perhaps less if demand was lower than originally expected). Hence the T-1 auction could be for capacity equivalent to 1 large unit. If there are multiple locational constraints to resolve then this would lead to a number of short notice contracts for plants that were on a closure maintenance regime.

This creates additional risks and costs and as we note above it would be untenable to terminate contracts with capacity that was secured in the T-4 auction to make way for capacity that must-not-exit. It would therefore seem proportionate that the quantum of locational issues that should be addressed in the T-4 timeframe should be commensurate with the proportion of the required capacity for year T that is secured in the T-4 auction.

Q4.3: Are there any further considerations that should be taken account of regarding the longer term management of locational capacity delivery constraints? If so please detail your rationale for these.

Please see our responses to the previous two question which highlight the issues around the additional cost of securing life extensions for capacity that was being maintained towards closure. The other key issue is that it would be impossible to terminate previously awarded contracts for year T and hence and capacity secured to resolve a locational constraint would need to be additional capacity, not displacing other capacity.

It is also unclear from paragraph 4.3.7 whether the contemplation of zones relates only to capacity or whether that also extends to the energy market. Our understanding is the CACM obligation to review bidding zones relates to the energy market only.

Chapter 5. Local Security of Supply and Market Power

Q5.1: Do you believe that the suite of market power controls set out in CRM Decision 3 are sufficient to address any additional market power issues raised by local security of supply considerations? If not, what additional measure would you propose, and why?

Firstly, we disagree with paragraph 5.2.3 which states that prices should “*tend to zero where the over-supply is large*”. This could not be the case with an RO that has both a missing money component and a CfD component that will represent an annuitised value of the future settlement payments that the RO obligates the holder to pay when market prices exceed the CfD Strike price.

It is not clear from the options set out in paragraph 5.2.5 whether these only apply to “constrained-on” units or to all capacity that is needed for local security purposes. If the latter then the proposal to cap bids at the “Individual Net Going Forward Cost” for capacity that is in merit effectively means such capacity is not able to capture the margin between this price and the CRM clearing price, which would be discriminatory. Such an approach may be feasible for units that are not accepted from the unconstrained merit order and hence that are being constrained on at their “Individual Net Going Forward Cost” (which would be higher than the CRM clearing price). However, it is not possible to comment on the appropriateness since that will depend on how the “Individual Net Going Forward Cost” is determined, but which has not as yet been discussed.

We do not see any merit in the second option that seeks to deduct specific ancillary service payments. The first issue is whether the unit has obtained a DS3 contract and this issue of choreographing DS3 and CRM auctions has been highlighted previously. Further, a large number of the ancillary service payments are driven by dispatch which will be difficult to predict and they are also subject to various scalars that can vary significantly should the unit not deliver (which would be an increased risk where the plant is working to a closure maintenance regime). Hence there is large scope for error and capacity being required to operate at a loss.

The purpose of the third option is unclear. If the Net Going Forward Cost exceeds the Price-Taker Offer Cap, then the CRM decisions require approval of any higher Net Going Forward Cost. If it is lower, then it is not clear what any assessment of its Net Going Forward Cost is trying to achieve or what the figure will be used for once it is determined.

In relation to new plants, one of the issues (as noted in paragraph 5.3.4 and which we highlighted in our response to the CRM 3 consultation) is that the term of contract is not taken into account in the auction assessment. Further, the “barriers to entry” risks identified should also include regulatory risks, which include price caps that could apply to bids or from being constrained off without compensation. The discussion on the “market” being less competitive could be interpreted as highlighting the flaws in a CRM design based on ROs.

We note the “new plant” scenarios and expect others exist. The proposition in paragraph 5.3.8 to conduct some form of alternative transmission investment assessment is not explained and it is not clear how such an approach would intertwine with the CRM auction process. Such an undefined and unquantified approach will also add further regulatory risk and increase the barrier to entry.

The final concern, which again is a major issue we highlighted in our responses to earlier CRM consultations, relates to predatory pricing. None of the CRM 3 proposals address this and it could be an even greater issue where local market power exists. This requires market power mitigation measures to address such scope for predation.