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Ref: TEL/CJD/16/146

22nd September 2016

RE: Response to Capacity Remuneration Mechanism Locational Issues Consultation Paper (SEM-16-052)

Dear Karen, Thomas,

Tynagh Energy Limited (TEL) welcomes the opportunity to respond to this Capacity Remuneration Mechanism Locational Issues Consultation Paper (SEM-16-052) (the Consultation Paper). Unless otherwise stated, each reference in this paper to "(paragraph #)" is to the relevant numbered paragraph in the Consultation Paper.

This response paper has been separated into two sections: Section A sets out TEL's views generally on the Consultation Paper and its content (as well as setting out a workable solution to the system constraint issue), while Section B contains TEL's responses to the specific questions raised in the Consultation Paper.

Echoing the terminology used in the Consultation Paper, in this response paper we shall use the terms:

- "Constrained Winner" to mean a participant in an auction for Reliability Options (ROs) whose bid in that auction is greater than the market-clearing price, but who is awarded an RO by reason of the operation of a mechanism directed at ensuring the survival of its plant for locational and constraint reasons; and

- "Successful In-Merit Bidder" to mean a participant in an RO auction whose plant is not favoured by the locational/constraint mechanism, whose bid in the RO auction is less than the market-clearing price and who is therefore awarded an RO for this reason alone.

Section A

At the outset, while (as noted above) TEL does welcome this opportunity to respond, this must be tempered by a level of disappointment and concern at the scope and timing of the Consultation Paper.

In terms of scope, TEL considers that the locational CRM model that is clearly favoured by the Consultation Paper (being "Option C with no compensation") will inevitably introduce significant distortions into the energy markets. We explain this effect in greater detail below. Against this background, we are concerned that the Regulatory Authorities have arbitrarily confined their

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consideration of the issue to the CRM workstream rather than engaging in a more holistic analysis.

This is compounded by the accelerated response timeline for the Consultation Paper (4 weeks only) relative to the significance of the design issues raised, and the impression that the Consultation Paper has been introduced, in some haste, to the end of the workstream programme in disregard for the other locational signals that were referred to in CRM1.

For these reasons, we believe that valid questions may be asked as to whether the Consultation Paper, and the process that produced it, meet the standards of conduct that both statute and natural justice require of the Regulatory Authorities. With particular relevance to the Commission for Energy Regulation, these include:

- the obligation, pursuant to section 9BC(2)(b) of the Electricity Regulation Act 1999, to ensure that TEL is able to finance its electricity generation activities;

- the prohibition, pursuant to section 9BC(6)(a) of the Electricity Regulation Act 1999, against discriminating unfairly between TEL and the other electricity generators affected by the Consultation Paper;

- the general obligation to engage in a public consultation process that is imposed pursuant to section 9(1)(b) of the Electricity Regulation Act 1999 – in order to satisfy this obligation, we contend that any consultation needs to be properly scoped and accompanied by a response deadline that corresponds with the significance of the issue at hand; and

- the State aid rules (including for the reasons that we set out below in our discussion of the EU Guidelines on State aid for environmental protection and energy 2014-2020.

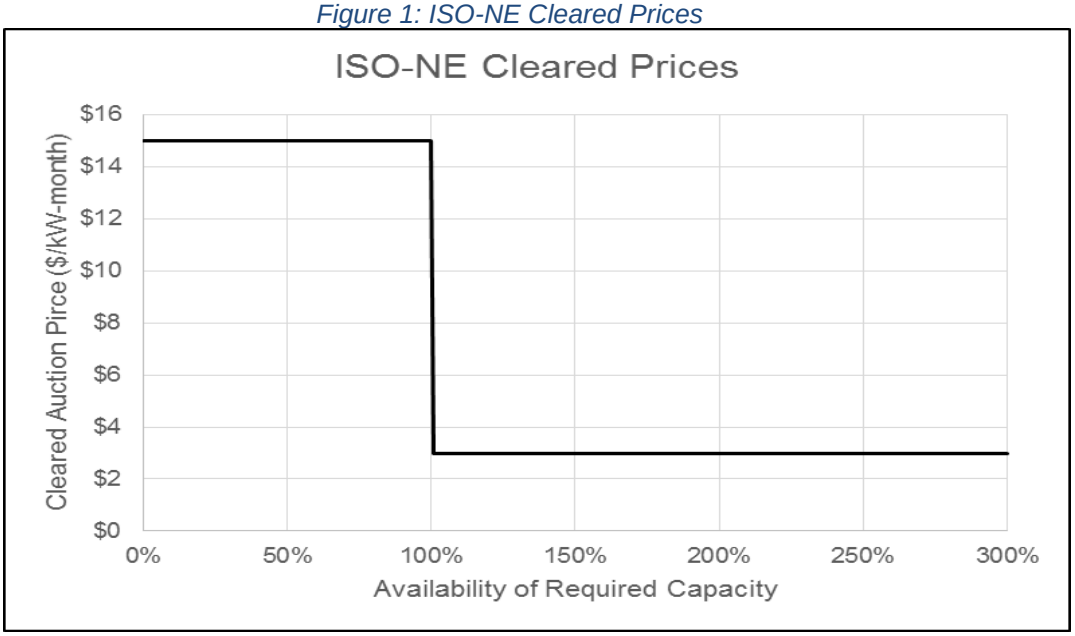
We now turn to set out our views on the substantive issues raised by the Consultation Paper.

1. Market Distortion (Energy & CRM)

The Consultation Paper does not consider the distortive impact that a locally constrained CRM could have on the Day-Ahead and Intra-Day Markets. The Consultation Paper does acknowledge, in passing, that some bidders (unconstrained) may place bids that are less than their true fixed costs (paragraph 3.3.8) and that some bidders (constrained) may be tempted to bid in above their fixed costs (paragraphs 5.2.4 and 5.2.5). However, no attempt is made to quantitatively assess the potential impact, on the Day-Ahead and Intra-Day Markets, of the acceptance of out-of-merit bids in CRM.

When an unconstrained capacity market was introduced into the New England Market (ISO-NE) there was a polar impact on prices. In the auctions where there was excess capacity the price cleared at the price floor ($3/MWh) and when there was insufficient capacity the price cleared at the price cap. This is shown in Figure 1.

Figure 1: ISO-NE Cleared Prices



The reason participants will bid below their fixed costs is due both to the binary nature of the mechanism, and the excess capacity on the system. The knowledge that a plant would receive nothing at all if unsuccessful would drive plants to bid into the auction at a level lower than their fixed costs in the belief that they would be able to gain Infra Marginal Rent in the energy markets to contribute to their fixed costs. This reinforces paragraph 3.3.8.

In the capacity market under the favoured option, it appears likely that the Constrained Winners, who will (it is proposed) be "paid as bid" will receive a minimum of €8/MWh (the price cap)[1], while those who are successful in the general auction (i.e. the Successful In-Merit Bidders) may only receive €3/MWh[2]. The effect of this difference will be felt in the energy markets, as those who have already recovered their fixed costs will have a comparative advantage. The Successful In-Merit Bidders will have to attempt to recover their fixed costs through the periods that they are on in the energy markets.

Effectively, any Successful In-Merit Bidder would have to bid into the energy markets at a €5/MWh premium relative to the Constrained Winners – not due to any fundamental efficiency of the Constrained Winner, but due to the economic effect of its having been awarded an RO at an inflated price.

Table 1 illustrates the price stack and merit order using a top price methodology for a number of the larger plant in the system (taken from August 31st):

[1] The price cap will be based on a BNE. The calculation for the BNE, and possible clearing prices for the successful in-merit bidders are described in detail in Appendix A and B.

[2] See Appendix A.

Table 2: Current Top Price for SEM Plants

Plant	Avg Top Price	Merit Order
Synergen	€17.49	1
Whitegate	€27.80	2
Great Island	€28.28	3
Aghada 2	€28.33	4
Tynagh	€30.74	5
Moneypoint 1,2,3	€31.61	6
Ballylumford 1 and 2	€32.08	7
Huntstown 2	€32.18	8
Coolkeeragh[3]	€34.74	9
Huntstown 1	€35.06	10
Shellybanks A and B	€35.96	11
Kilroot 1,2	€37.16	12

If we assume that those plant who expect to be Constrained Winners, and who know that they will be paid as bid, decide to bid in the price cap of €8/MWh and all Successful In-Merit Bidders receive a price of €3, then the Successful In-Merit Bidders will have to bid the difference into their energy bids. Table 2 shows the impact the Constrained Winners could have on I-SEM merit order:

Table 3: CRM effect on I-SEM Energy Market Merit Order

Plant	Avg Top Price with Adders	Merit Order	Adjustment to Merit Order Position
Synergen	€17.49	1	-
Ballylumford 1 and 2	€32.07	2	+5
Huntstown 2	€32.18	3	+5
Whitegate	€32.80	4	-2
Great Island	€33.28	5	-2
Aghada 2	€33.33	6	-2
Coolkeeragh	€34.74	7	+2
Huntstown 1	€35.06	8	+2
Tynagh	€35.74	9	-4
Shellybanks A and B	€35.96	10	+1
Moneypoint 1,2,3	€36.61	11	-5
Kilroot 1,2	€37.16	12	-

[3] Coolkeeragh were on an outage on August 31st and had previously submitted a standing bid, which due to a drop in gas costs put them bottom of the stack. We have adjusted their price based on their usual difference from the other plants.

It is clear from this example that any of the proposed CRM auction designs that:

- remunerates Constrained Winners for ROs on a "pay as bid" basis;
- remunerates Successful In-Merit Bidders for ROs by paying the capacity auction clearing price; and
- thereby introduce significant differences between the capacity prices received by the two categories of RO holders,

is likely to have a significant effect on the out-turn of the energy markets. This is likely to see the Constrained Winners earn significant additional profits through the positive changes in their energy market merit order.

Considering the I-SEM will be part of the European price coupling mechanism, the energy market distortions due to the differing tranches of capacity payments from the CRM will not just affect the I-SEM, but the whole price coupled region.

Ultimately, the energy market implications from accepting out-of-merit bids at higher than auction cleared prices is in direct conflict with the European Commission's "Generation Adequacy in the internal electricity market – guidance on public interventions" paper that states "*capacity mechanisms should not adversely affect the operation of market coupling, including intra-day and balancing markets*"[4].

2. Distorted Exit and Entry Signals

The Consultation Paper appears to be drafted on the basis that the failure by a particular plant to win an RO is equivalent, in I-SEM, to the issuance of an exit signal to that plant. This seems reasonable. However, it needs to be borne in mind that a wider category of outcome under I-SEM – namely, the failure of a plant to recover its fixed costs – will also amount to the issuance of an exit signal. TEL is concerned that the energy market distortions described above will result in the issuance of exit signals in a manner that is far wider than the "controlled exit" that is contemplated by the market design.

If, as is supposed in paragraph 3.3.8, bidders for ROs bid below their LRMC and the RO auction price tends to €0/MWh (see paragraph 5.2.3), then some Successful In-Merit Bidders will have under-recovered their fixed costs from the CRM. They will still need to recover these costs from the energy market. But in the energy market, we then have the spectre of Constrained Winners dampening the required rise in energy prices due to the merit order effect discussed above. This will limit the extent to which a Successful In-Merit Bidder, who happens to have under-recovered its fixed costs in the CRM, can contribute to its fixed costs through infra-marginal rent in the energy markets.

Even a Successful In-Merit Bidder that, on an objective basis, may be regarded as "highly efficient", might not be able to recover its fixed costs in the capacity market or in the energy market and may be forced to close. The rate of closure will then be greater than the controlled exit that might be considered a reasonable pillar of market design.

[4] Brussels, 5.11.2013, SWD(2013) 438 final. See text box on page 32, entitled "Avoiding distortion of competition and trade".

Furthermore, in the medium term the North South Interconnector will be built. This will reduce the security of supply issues in the North, and will reduce the constraints applying to Northern plants. The problem with giving support to these Northern plants now, in the form of a preferential capacity payments, is that incorrect exit signals will be created, potentially meaning relatively more efficient plant in the South will exit the market. This in turn will lead to higher prices in the energy markets. The Consultation Paper makes this important point in paragraph 3.2.35 but, surprisingly, does not then develop it.

3. State Aid Guidelines Issue

TEL would like to emphasise that any proposal to award ROs to Constrained Winners on an out-of-merit, "paid as bid" basis is in direct conflict with the European Commission's State Aid Guidelines[5].

While it is asserted in the Consultation Paper (at paragraph 1.3.3) that these Guidelines are "[fundamental] to the SEM Committee's consideration of the [locational CRM] proposals", and issues with compliance are referred to – in passing – in the body of the Consultation Paper, TEL does not consider that the Consultation Paper fully captures the extent of this conflict. It is also worth noting that in its discussion of State aid for reasons of generation adequacy, the Guidelines make no explicit mention of locational issues.

The main areas of conflict are the proportionality and avoidance of undue negative effects on competition and trade.

In terms of Proportionality (3.9.5) of State aid, the guidelines state

- *(229) A competitive bidding process on the basis of clear, transparent and non-discriminatory criteria, effectively targeting the defined object, will be considered as leading to reasonable rates of return under normal circumstances.*
    - The proposal to provide locally constrained generators with the knowledge that they will be awarded ROs irrelevant of their auction position, and will be paid as bid, is an uncompetitive bidding process, is discriminatory to other participants and will not lead to a reasonable rate of return for the consumer.
- *(230) The measure should have built-in mechanisms to ensure that windfall profits cannot arise.*
    - As shown in the examples above, locally constrained units will now have the ability to receive super normal profits through a combination of the CRM and energy markets.
- *(231) The measure should be constructed so as to ensure that the price paid for availability automatically tends to zero when the level of capacity supplied is expected to be adequate to meet the level of capacity demanded.*
    - "Pay as bid" for out-of-merit units will prevent the price paid for availability to tend to zero. Even though the auction price might tend to zero, the price paid to Constrained Winners (and borne ultimately by consumers) will not tend to zero.

[5] Guidelines on State aid for environmental protection and energy 2014-2020 (2014/C 200/01)

For avoidance of undue negative effects on competition and trade (3.9.6), the guidelines state that the measure should:

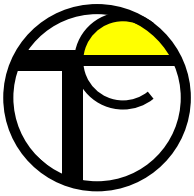
- *233 (b) not undermine market coupling, including balancing markets.*
    - The examples above highlight the significant potential impacts on the prices in the energy markets (Day-Ahead, Intra-day and Balancing Markets) as a result of a locational CRM. This decision will not only impact on the I-SEM energy markets but will also affect other European energy markets through the Pan European Day-Ahead market coupling (EUPHEMIA).
- *233 (c) not undermine investment decisions on generation which preceded the measure or decisions by operators regarding the balancing or ancillary services market.*
    - The decision to provide locally constrained units with a bidding advantage over other participants in CRM auctions will impact significantly on participants that had developed plans to upgrade their plants to provide the necessary DS3 system services. TEL has presented proposals, to the TSO, for upgrading the plant to provide DS3 system services. As shown above, if a two tiered clearing price is implemented in CRM, a number of more efficient plants could be faced with distorted exit signals which will undermine investment decisions for providing DS3 system services, distort the pricing in the DS3 auctions (once these eventually commence) and generally impair the operation of the DS3 programme.
- *233 (d) not unduly strengthen market dominance.*
    - As shown above, generators outside of the constraints may be forced to close because of unintended exit signals from perverse RO allocation results and distorted energy market prices. If any of the high merit unconstrained plant were to close, the market dominance of ESB would be unduly strengthened as a result of the locational CRM.
- *233 (e) give preference to low-carbon generators in case of equivalent technical and economic parameters.*
    - The acceptance of out-of-merit bids will reduce the total capacity requirement that remains to be satisfied from the CRM auctions. Subsequently, the locally constrained mechanism will push lower-carbon producing generators (more efficient gas plant, biomass plant and wind generators etc) further down the merit order in favour of inefficient high carbon incumbent technologies.

4. Potential Solution

The problem that has to be solved has two aspects to it:

- the need to adequately reward the availability of generating capacity in a manner that complies with State aid guidelines and does not distort the energy market (we will refer to this as the “Capacity Issue”); and

- system constraints issues that require the continued viability of certain constrained-on plant (we will refer to this as the “System Constraints Issue”).



A potential solution is to split these two issues up and to resolve each one on a self-contained basis. TEL proposes the following package of solutions:

- Capacity Issue: operate an unconstrained capacity market under which ROs are allocated solely by auction result (and might therefore be expected to be awarded to the most efficient plant). In the event of excessive capacity on a market-wide basis, the RO price would be expected to tend towards zero. This will be more likely to meet State aid requirements.

- System Constraints Issue: offer a "Strategic Reserve" contract (being, we acknowledge, a new form of contract that would need to be designed) to each plant that is identified as being required for system security reasons, but which has not been successful in the RO auction. The contract will be for audited fixed costs plus a normal profit. These plant will be required to bid into the Energy Markets at a price of long run fixed costs minus the clearing price in the CRM Auction. There would also be a claw back of 95% on any additional profit that the plant would make through the energy markets. The plants will then earn sufficient revenue that they will meet their fixed costs, but will not effectively be double paid.

This type of contract is already being offered by National Grid in GB (though granted currently for durations of 3-6 months).

Some features of the proposed solution are:

1) It solves the Capacity Issue
2) It solves the System Constraints Issue
3) This will not cause a distortion of the energy market as the less efficient plant will be required to bid in their LRMC less the capacity clearing price. Subsequently they should stay in the same merit order position as they would with an unconstrained auction. This assumes that all other participants will seek to recover their fixed costs in the energy market.
4) There will be no perverse incentive. The constraint affected efficient plants would have an incentive to win in the auction, and earn greater profit in the energy markets rather than have a limited regulated profit through the strategic reserve.
5) The CRM cost to the consumer as modelled in Appendix B is likely to be reduced.
6) Most significantly the auction will be far more likely to clear a European State aid test.

Table 3 highlights a comparison of the proposal with "Option C and no compensation"(which appears to be the option preferred by the Regulatory Authorities), using the criteria that have been considered in the consultation:

Table 4: Comparison of Option C and Proposed Solution

Criterion	Option C With No Compensation (favoured in Consultation Paper)	"Preferred Plants" bid in LRMC
Internal Electricity Market	This could distort cross border markets as some highly inefficient plants may become competitive in the market. This is in direct violation of State aid.	No distortion in the cross border market, GB plants can compete in CRM and if successful, would receive the same payment as all other participants.
Security of Supply	This system does not guarantee Long Term Generation Adequacy as it has the potential to lead to a very low RO price, leading to successful bidders not being able to meet their fixed costs and subsequently leaving the system	Similar to Option B, there may be more than the minimum of plants in the market.
Competition	Reduces competition through guaranteed selection. Poor entry signals. Lack of transparency as it may not be clear why a bid has been accepted. Uncompetitive bidding process Is very likely to distort the Energy Markets, both I-SEM and cross border	Promotes competition through an unconstrained competitive auction Clear entry and exit signals Transparent winner determination Will not distort the energy markets
Equity	Is inequitable as more efficient plant are likely to lose out on both the Energy and Capacity markets.	Provides fairness to all participants, and will not distort the energy market
Environmental	This does not promote renewable generation, due to the reduction in capacity requirement for non-system constrained units.	Provides an equitable CRM auction for renewable generation
Adaptive	Has to be continually updated to take account of the changing temporary system constraints	This option is more likely to give a predictable capacity market, with price responding to relative scarcity.
Stability	The system is not stable as the risk of system constraint changes will not give investors' confidence in the market.	No exposure to constraints in the capacity market, therefore price is only subject to generation adequacy.
Efficiency	As explained in Appendix B this does not result in the most economical solution to these twin problems. There is unlikely to be a significant difference in cost, as the energy cost is likely to be significantly higher if the RO winners were forced to bid in their Fixed costs.	This may provide the cheapest solution to the capacity issue and the cheapest solution to the System Constraint issue. While the RO price may be higher, the cost of energy is likely to be lower. Furthermore, this method is more likely to show the true cost of constraints, and incentivise a speedy fix.
Practicality/ Cost	Option C requires a heuristic mechanism to be developed, this will require a greater solving time that the proposed solution.	The simple constrained auction will be the simpler and quicker to solve than any of the options proposed in the consultation.

Section B

Outline of issue and proposed solution

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

TEL believes if the CRM is delivered in clear, transparent, competitive and non-discriminatory method there will be correct exit signals provided to the market participants. TEL does not agree that the capacity mechanism is the appropriate tool to deal with locational issues.

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

TEL does not agree that locational constraints should be incorporated in the CRM. Please see Section A for TEL's rationale and proposed solution for an unconstrained CRM auction with a LRMC BCOP for the constrained units.

2.6.3 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.*

TEL does not believe that the uncompetitive and discriminatory auction process, as proposed, will produce the correct exit signals in the I-SEM. Therefore, TEL believes that it is unfair to units (and simply a further instance of discrimination), which are in-merit and are rejected from the RO due to a TSO constraint, to be subjected to a Grid Code requirement to provide three years notice. Accordingly, if an in-merit unit has been rejected it should not be subject to the Grid Code requirement notice period.

In all cases, a Grid Code notice period of any length cannot be relied upon in the case of a sudden and distressed market exit due to the insolvency of the licensed generator (which, ultimately, is the potential consequence of an exit signal). Any assertion that such a notice mechanism can be relied upon as a management tool is a clear indication of favouritism towards portfolio generators who will have remaining licensed activities following the exit of any of their plant, as these are the only parties likely to be incentivised to comply with such Grid Code obligations.

2.6.4 Do you agree with the key principles proposed for any locational capacity framework within the CRM?

Please refer to 2.6.2. in this Section B.

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

TEL does not agree with incorporating mechanisms into the CRM to accommodate constraints especially if it could mean the failure of CRM due to EU State aid guidelines. The CRM was designed to be a mechanism to ensure security of supply in the single I-SEM zone, not a complex multiple zone solution.

Locational constraint issues should be solved outside of the capacity mechanism, even if it means having a Strategic Reserve or a system as described in section A where plants would be allowed bid in their LRMC in the Balancing Market to ensure that they achieve their fixed costs.

2.6.6 Do stakeholders agree with the high level proposed solution for dealing with locational capacity issues?

TEL does not agree with the high level proposed solution for dealing with locational capacity issues. The acceptance of out-of-merit bids on a "pay as bid" basis, distorts the CRM auction and the energy markets in both the I-SEM and the PCR. Such a proposal is in direct violation of the EU State aid guidelines that call for a competitive bidding process on the basis of clear, transparent and non-discriminatory criteria while effectively targeting the defined object.

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

Please refer to the potential solution outlined in section A of this response.

Auction Design Framework

3.6.1 Which option do you prefer for the Auction Design Framework and why?

TEL believes that none of the options provide a transparent and non-discriminatory CRM auction which will not distort the energy markets. TEL believes that, apart from Option B, all of the other options are in direct violation of EU state aid guidelines. Please see the proposed solution in Section A that would provide the CRM objectives of security of supply without distorting the energy markets and comply with EU state aid guidelines.

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

As stated above, TEL does not agree with including locational constraints to the CRM auction. The CRM 3 decision has introduced flexible bid structures, a sloped demand curve and a winner determination of evaluating total social welfare. The combination of these

three design features should mitigate the need for acceptance of out-of-merit bids for lumpiness issues. Therefore, TEL does not agree with the acceptance of out-of-merit bids.

3.6.3 Should a bidder that would have been accepted in an unconstrained auction but which is not awarded an RO receive a "constrained-off" payment in the CRM? If yes, how should the "constrained-off" payment be determined, and why?

Please refer to 3.6.2. in this Section B.

3.6.4 How should local capacity deliverability constraints be defined?

TEL does not agree that locational constraints should be incorporated in the CRM. Please see Section A for TEL's rationale and proposed solution for an unconstrained CRM auction with a LRMC BCOP for the constrained units.

Longer Term Considerations

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

TEL believes that there should be no locational capacity delivery constraints in the CRM for any of the auctions.

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

Please refer to 4.4.1. in this Section B.

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

N/A.

Local Security of Supply and Market Power

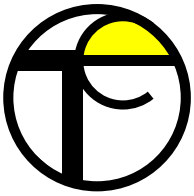
5.1.1 Do you believe that the suite of market power controls set out in CRM Decision 3 are sufficient to address any additional market power issues raised by local security of supply considerations? If not, what additional measure would you propose, and why?

TEL believes the introduction of out-of-merit bid acceptance on a "pay as bid" basis for constrained units introduces significant market power issues that have not been addressed in the CRM decisions. If such a mechanism is to be implemented in the CRM auction, the capacity constraints units must have bidding code of principles to define their Net Going Forward Costs.

Should you have any queries, please do not hesitate to contact me.

Yours sincerely,

Cormac Daly
Risk and Regulatory Manager



Appendix A

The €8/MWh is determined from the current "Fixed Cost of a Best New Entrant Peaking Plant, Capacity Requirement and Annual Capacity Payment Sum for Trading Year 2017" Decision Paper (SEM-16-044). This is consistent with the statement made in the CRM 3 consultation that "*The use of Net CONE based upon a reference BNE cost is well established as a methodology for setting the Annual Capacity Sum in the SEM. Generally, the SEM Committee has adopted the principle of not changing methodologies that do not need to be changed when moving from the SEM to the I-SEM*".

The Decision Paper determines the BNE Peaker Cost to be €71.45/kW/year. Assuming a number of 8760 hours in the year and an average availability of 95%, the potential auction price cap could be €71.45 / 8760 x 1000 = €8.16/MW.

It must be noted that the CRM 3 Decision Paper did not answer the question about a multiple of the Net CONE for the auction price. Point 3.3.10 states *"The SEM Committee notes the responses that favoured an Auction Price Cap based on a multiple of the Net CONE, and their preference for the multiple to be set in the range of 1.5 to 2 times Net CONE. The SEM Committee will make a final decision on the level of the Auction Price Cap for the transitional auctions as part of the forthcoming CRM parameters consultation*". Hence, it is possible that the auction price cap and potential price a constrained winner could receive is €16.32/MWh i.e. two times the €8.16/MWh. For the purposes of the examples used in this response, we have rounded down to €8/MWh.

Appendix B in the CRM 3 Consultation Paper (SEM-16-010) highlighted the *"2015 T-4 auction in GB cleared at a price of £18/kW p.a., i.e. at only 37% of net CONE, with an extra 954 MW, 63% of the 1.5 GW maximum, extra volume in excess of target bought".* Using the assumptions that the I-SEM CRM could clear at a similar percentage and that the Net CONE is €8/MWh, it was determined that a reasonable estimate for a cleared auction price in CRM was €3/MWh.

Appendix B

This Appendix highlights the high level costs of the capacity auction and the cost of the proposed solution across six scenarios.

For this example the following assumptions will be applied:

- Option C has 3,700 MW behind the locational constraints (2,000 MW in Northern Ireland and five constrained plants in Dublin (1,700 MW).
- A conservative capacity requirement of 2,000 MW for Northern Ireland was determined using the methodology from the capacity requirement consultation.
    - High TER Peak Demand = 1,816 MW.
    - 30% of Small-Scale Non-market adjustment = 80 MW.
    - Reserve Requirement = 404 MW.
    - High Market Demand + Reserve = 2,140 MW.
    - Installed Capacity required to provide the de-rated capacity requirement = 2,314 MW (2,140 MW / 0.925).
- For the TEL proposed solution it was assumed that 1,700 MW (Huntstown 2, Coolkeeragh, Ballylumford C and Dublin Bay) would decide to compete in the unconstrained auction.
- The RO requirement for installed capacity is 8,000 MW.
- The available Installed Capacity is 10,800 MW.
- A uniform derating of 92.5%.

For Option C, an unconstrained auction clearing price of either €1/MWh or €3/MWh was applied. A Price Taker Cap range of €8/MWh, €12/MWh and €16/MWh was applied as the multiplier is to be consulted upon in the CRM parameters consultation. The Price Taker Cap of €8/MWh would be the most conservative value for determining the energy market distortion. If the Price Taker Cap was €16/MWh and the constrained auction cleared was €1/MWh, the energy market distortion would be extreme as the constrained on plants would all be the high merit plants. In each of the scenarios the TEL proposed solution is at the very least competitive and potential easier to implement.

<u>Scenario 1</u>

CONE = €8/MWh, Multiplier = 1, Price Taker Cap = €8/MWh, Constrained Auction Clearing Price = €3/MWh, Unconstrained Auction Clearing price = €3/MWh, Audited Fixed Costs = €8/MWh.

Option C with No Compensation	TEL Proposed solution
Constrained: 3,700 MW x 92.5% x €8/MWh Unconstrained: 4,300 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €39,312/h	Constrained: 2,000 MW x 92.5% x €8/MWh Unconstrained: 8,000 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €37,000/h

Scenario 2

CONE = €8/MWh, Multiplier = 1, Price Taker Cap = €8/MWh, Constrained Auction Clearing Price = €1/MWh, Unconstrained Auction Clearing price = €3/MWh, Audited Fixed Costs = €8/MWh.

Option C with No Compensation	TEL Proposed solution
Constrained: 3,700 MW x 92.5% x €8/MWh Unconstrained: 4,300 MW x 92.5% x €1/MWh Total CRM Payment: (Constrained + Unconstrained) €31,357/h	Constrained: 2,000 MW x 92.5% x €8/MWh Unconstrained: 8,000 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €37,000/h

Scenario 3

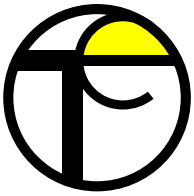
CONE = €8/MWh, Multiplier = 1.5, Price Taker Cap = €12/MWh, Constrained Auction Clearing Price = €3/MWh, Unconstrained Auction Clearing price = €3/MWh, Audited Fixed Costs = €8/MWh.

Option C with No Compensation	TEL Proposed solution
Constrained: 3,700 MW x 92.5% x €12/MWh Unconstrained: 4,300 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €53,002/h	Constrained: 2,000 MW x 92.5% x €8/MWh Unconstrained: 8,000 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €37,000/h

Scenario 4

CONE = €8/MWh, Multiplier = 1.5, Price Taker Cap = €12/MWh, Constrained Auction Clearing Price = €1/MWh, Unconstrained Auction Clearing price = €3/MWh, Audited Fixed Costs = €8/MWh.

Option C with No Compensation	TEL Proposed solution
Constrained: 3,700 MW x 92.5% x €12/MWh Unconstrained: 4,300 MW x 92.5% x €1/MWh Total CRM Payment: (Constrained + Unconstrained) €45,047/h	Constrained: 2,000 MW x 92.5% x €8/MWh Unconstrained: 8,000 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €37,000/h



Scenario 5

CONE = €8/MWh, Multiplier = 2, Price Taker Cap = €16/MWh, Constrained Auction Clearing Price = €3/MWh, Unconstrained Auction Clearing price = €3/MWh, Audited Fixed Costs = €8/MWh.

Option C with No Compensation	TEL Proposed solution
Constrained: 3,700 MW x 92.5% x €16/MWh Unconstrained: 4,300 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €66,692/h	Constrained: 2,000 MW x 92.5% x €8/MWh Unconstrained: 8,000 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €37,000/h

Scenario 6

CONE = €8/MWh, Multiplier = 2, Price Taker Cap = €16/MWh, Constrained Auction Clearing Price = €1/MWh, Unconstrained Auction Clearing price = €3/MWh, Audited Fixed Costs = €8/MWh.

Option C with No Compensation	TEL Proposed solution
Constrained: 3,700 MW x 92.5% x €16/MWh Unconstrained: 4,300 MW x 92.5% x €1/MWh Total CRM Payment: (Constrained + Unconstrained) €58,737/h	Constrained: 2,000 MW x 92.5% x €8/MWh Unconstrained: 8,000 MW x 92.5% x €3/MWh Total CRM Payment: (Constrained + Unconstrained) €37,000/h

In five of these six scenarios, the TEL proposed solution is cheaper, and depending on the auction price cap and the level that is paid as bid, possibly more than €100 million a year cheaper.

In the market distortion point we have used a constrained auction clearing price of €3/MWH, and a Price Taker Cap of €8/MWh. We used these to be conservative and use the smallest reasonable difference between the revenue received by the Constrained Winners and Successful In-Merit Bidders.