



Single Electricity Market

(SEM)

Capacity Market Code Workshop 31

Decision Paper

CMC_14_23: Locational Capacity Constraint Violation Criteria

SEM-23-079

02 October 2023

EXECUTIVE SUMMARY

The purpose of this decision paper is to set out the decision(s) relating to a proposed modification to the Capacity Market Code (CMC). This was discussed at Workshop 31, held on 18 May 2023.

The decision(s) within this paper follow on from the associated consultation ([SEM-23-044](#)) which closed on 21 July 2023.

This paper considers the proposed modifications presented at Workshop 31 relating to:

- **CMC_14_23: Locational Capacity Constraint Violation Criteria**
This proposed modification seeks to provide further detail to the Capacity Market Code following design of the algorithm used to give effect to modification CMC_08_22 approved in SEM-22-066 on 30 September 2022.

Eleven responses were received to the Capacity Market Code Workshop 31 Modification Consultation Paper (SEM-23-044). One was marked as partially confidential.

Summary of Key Decisions

Following consideration of the proposals and the responses received to the consultation, the SEM Committee have decided:

Modification	Decision	Implementation Date
CMC_14_23: Locational Capacity Constraint Violation Criteria	Make a Modification	3 October 2023

Contents

EXECUTIVE SUMMARY	2
1. Overview	4
1.1. Background.....	4
1.2. Responses received to Consultation	5
2. CMC_14_23 – Locational Capacity Constraint Violation Criteria	7
2.1. Consultation Summary as presented by System Operators.....	7
2.2. Responses.....	7
2.3. SEM Committee Decision	10
3. Next Steps	11

Appendix A Legal Text

1. OVERVIEW

1.1. BACKGROUND

1.1.1. The SEM CRM detailed design and auction process has been developed through a series of consultation and decision papers, all of which are available on the SEM Committee's (SEMC) website. These decisions were translated into legal drafting of the market rules via an extensive consultative process leading to the publication of the Trading and Settlement Code (TSC) and the Capacity Market Code (CMC). Updated versions of the CMC and the TSC are published on the SEMO website.

Process for modification of the CMC

1.1.2. Section B.12 of the CMC outlines the process used to modify the code. It sets out the processes for proposing, consideration, consultation and implementation or rejection of modifications to the CMC.

1.1.3. The purpose of the modifications process is to allow for modifications to the CMC to be proposed, considered and, if appropriate, implemented with a view to better facilitating code objectives as set out in Section A.1.2 of the CMC. (B.12.1.2).

1.1.4. Modifications to the CMC can be proposed and submitted by any person, (B.12.4.1), at any time. Unless the modification is urgent modifications are subsequently discussed at a Working Group held on a bi-monthly basis. Each workshop represents an opportunity for a modification proposer to present their proposal(s) and for this to be discussed by the workshop attendees.

1.1.5. For discussion at a Working Group, Modification Proposals must be submitted to the System Operators at least 10 working days before a workshop meeting is due to take place. If a proposal is received less than 10 working days before a workshop and is not marked as urgent it is deferred for discussion to the next Working Group.

1.1.6. Following each workshop, and as per section B.12.5.6 of the CMC, the RAs are required to publish a timetable for the consideration, consultation and decision relating to the modification(s) proposed during a workshop.

1.1.7. If a proposal is received and deemed contrary to the Capacity Market Code Objectives or does not further any of those objectives, the Regulatory Authorities (RAs) will reject the proposal on the grounds of being spurious, as set out in section B.12.6 of the CMC.

1.1.8. If a proposed modification is deemed urgent by the RAs, CMC Section B.12.9.5 will become active and the RAs will determine the procedure and timetable to be followed in the assessment of the Modification Proposal. The CMC states that the procedure and timetable may vary from the normal processes set out in the code, allowing for the modification to be fast-tracked.

Process and Timeline for this Modification

- 1.1.9. On the 4 May 2023, the TSOs submitted the Modification Proposal CMC_14_23 under the terms of B.12.4 of the CMC. This was marked as Standard.
- 1.1.10. The RAs reviewed the Modification Proposal and determined that it was not spurious.
- 1.1.11. The RAs determined the procedure to apply to the Modification Proposal. An overview of the timetable is as follows:
- i. The System Operators convened Workshop 31 on 18 May 2023 where the Modification Proposal was considered.
 - ii. The System Operators, as set out in B.12.7.1 (j) of the CMC, were to prepare a report of the discussions which took place at the workshop, provide the report to the RAs and publish it on the Modifications website promptly after the workshop.
 - iii. The RAs would then consult on the Modification Proposal with a response time of no less than 20 Working Days (as defined in the CMC) from the date of publication of the Consultation.
 - iv. As per B.12.11 the RAs would make their decision(s) as soon as reasonably practicable following conclusion of the consultation and would publish a report in respect of these. The purpose of the decision paper is to set out the decision(s) relating to the Modification Proposals discussed during Workshop 31 to:
 - a) Make a Modification;
 - b) Not make a Modification; or
 - c) Undertake further consideration in relation to the matters raised in the Modification Proposals.
- 1.1.12. This decision paper provides a summary of the consultation proposals and sets out the SEM Committee's decision(s).

1.2. RESPONSES RECEIVED TO CONSULTATION

- 1.2.1. This paper includes a summary of the responses made to Capacity Market Code Modifications Consultation Paper [SEM-23-044](#) which was published on the 16 June 2023.
- 1.2.2. A total of eleven responses were received to consultation SEM-23-044 with one being marked as partially confidential. The respondents are listed below.
- Bord Gáis Energy (BGE)
 - Bord na Móna (BnM)

- DRAI
- EirGrid / SONI (System Operators (SOs))
- Electricity Association of Ireland (EAI)
- Energia
- EPUKI
- ESB GT
- Gas Networks Ireland (GNI)
- Mutual Energy
- SSE

2. CMC_14_23 – LOCATIONAL CAPACITY CONSTRAINT VIOLATION CRITERIA

2.1. CONSULTATION SUMMARY AS PRESENTED BY SYSTEM OPERATORS

- 2.1.1. This modification seeks to provide further detail to the CMC following design of the algorithm used to give effect to modification CMC_08_22.
- 2.1.2. CMC_08_22 was proposed in order to address scenarios where more capacity could be cleared in a part of the power system than can feasibly be accommodated in the timeframes involved in the delivery of capacity. It introduced Locational Capacity Constraint Maximum Quantities into the capacity auctions.
- 2.1.3. This proposal updates the definition of Locational Capacity Constraint Information to provide price quantity values that would be used by the Capacity Auction software to violate a Locational Capacity Constraint where no feasible solution exists in accordance with F.8.2.3.
- 2.1.4. F.8.2.3 is also updated to ensure that the CMC explicitly states the manner in which these constraint violations should proceed.
- 2.1.5. If the proposal is not implemented, the TSOs believe that the implementation of CMC_08_22 could give rise to results where the capacity auction results are not clearly defined under the CMC.

2.2. RESPONSES

- 2.2.1. The majority of responses to CMC_14_23 opposed the proposal.
- 2.2.2. ESB GT recognised the need for the modification due to the possible situation that may prevent the auction from solving. They supported the proposal although also requested further clarity on the methodology for determining price-quantity pairs introduced by the modification and that the TSOs publish information on whether any of the notional price-quantity pairs had been utilised when solving the auction and in which LCCA.
- 2.2.3. In their response, EAI stated that their members strongly and unanimously opposed CMC_14_23 and urged the RAs to reject it. They noted that the proposal would allow for the minimum LCC requirement to be breached and if this were to occur, this could further exacerbate the security of supply position and significantly increase the risk of loss of load in Ireland.
- 2.2.4. EAI raised concerns that the modification would allow the SOs to set the price quantity pairs for violation of the LCC requirements and that this would be outside of a published and agreed methodology and not subject to consultation. This, they argued, would give the SOs too much discretion in determining the outcome of capacity auctions and would not only be contrary to the RAs' requirement to hold SOs accountable but contrary to the CMC's requirement to provide transparency.

- 2.2.5. Cautioning that the RAs must ensure that the first priority of capacity auctions is to secure sufficient capacity for system adequacy and that they must not allow the CRM to be used to try to resolve other shortcoming in the transmission system or as a means for the SOs to modify connection policy, EAI stated that that CMC_14_23 should be rejected on the basis of the risk it posed to system adequacy. To approve the modification would be unwise.
- 2.2.6. SSE supported the EAI response that the modification should be rejected. They believed it was a proposal to further seek to solve a transmission issue via the capacity market.
- 2.2.7. SSE pointed out that the design of the capacity market was established with a protected minimum LCC requirement and there should not be any consideration that the minimum requirement be relaxed. They stated that it was not a generator's commercial or operational risk whether capacity was at sufficient levels in a constrained area.
- 2.2.8. DRAI considered it essential that any price quantity pairs for the violation of the LCC Required Quantity and the LCC Maximum Quantity be published within the Final Auction information Pack. They also believed it inappropriate for a Capacity Auction to deliberately not procure the LCC Required Quantity if about to do so (providing sufficient Awarded Capacity had qualified within a LCCA).
- 2.2.9. In terms of the price quantity pairs, DRAI believed that those for the violation of the LCC Required Quantity should be orders of magnitude greater than the price quantity pairs for the violation of the LCC Maximum Quantity as this would ensure that the auction algorithm massively favours over-procuring Awarded Capacity rather than under-procuring Awarded Capacity within a given LCCA.
- 2.2.10. DRAI reiterated their view that the introduction of the LCC Maximum Quantity was not an appropriate solution for the SOs' Grid Connection problem as the inability of the power system to accommodate new generation only affected New Capacity seeking to connect to the power system for the first time. However, the introduction of the LCC Maximum Quantity may result in some Existing Capacity not getting procured in favour of New Capacity which has not yet connected to the power system.
- 2.2.11. In their response, Energia opposed the modification proposal in the strongest possible terms and urged SEMC to reject it. In the context of Ireland's security of supply position, they argued it would be reckless for the RAs to allow for the possibility that in every future capacity auction, the minimum LCC could be breached. While the risks involved in breaching the maximum LCC were negligible, they remarked that it should never be the case that a minimum LCC is violated instead of a maximum.
- 2.2.12. Energia drew attention to the fact that there would be no requirement on the SOs to consult with relevant stakeholders to justify their proposed price quantity pairs or to comply with a prescribed and publicly available methodology. If the SOs were given too much discretion in determining key parameters regarding minimum and maximum LCCs, there was a risk that transmission system issues could be prioritised over security of supply.

- 2.2.13. Energia also thought that if the SEM Committee believed that the CRM algebra did need to be updated, it should be updated with text stating that whenever the minimum and maximum cannot be complied with simultaneously, the maximum should always be violated as this would safeguard the far more important minimum LCC as a hard limit.
- 2.2.14. BnM strongly believed that the proposal was entirely inappropriate and not aligned with the CMC's Objectives. For example, the introduction of a mechanism designed, in certain circumstances, to result in an auction solution with a MW volume less than the Minimum Constraint MW volume for a LCC Area flew against the premise that the Minimum Constraint MW volume was set in order to provide security of supply.
- 2.2.15. Noting the absence of an impact assessment in that no account was taken of the fact that cost of VOLL lost load far exceeds the cost of having some additional capacity on the system, BnM did not think the proposal was in the consumers' interest. Neither did they believe that it was it aligned to the recommendations of the EY capacity market report.
- 2.2.16. BnM encouraged care to be exercised to ensure that the introduction of LCC Maximum Quantities are only applied for system overload and technical reasons.
- 2.2.17. EirGrid/SONI, who proposed the modification, stated that without the mechanism, there was a risk that there is no defined solution to an auction. The mechanism was intended to assign penalty costs to violations which minimise the quantity of MW limit which is relaxed. If the cost assigned to maximum and minimum violations are the same then the small MW relaxation would be the result. They noted that the approval process by the RAs could ensure that the appropriate priority is given to the contracts – e.g., to prioritise minim over maxima.
- 2.2.18. Rejecting the proposed modification, BGE thought that the SOs must accommodate the outcome of the most cost-effective plants clearing rather than basing solutions on geographical location that could exclude candidate units that are in merit by price.
- 2.2.19. BGE disagreed with the approach taken in CMC_14_23 whereby priority was placed on cost minimisation to the detriment of security of supply within a constraint area. In their view, the modification proposal now created a very plausible scenario where the minimum required LCC quantities may not be met. They believed that in the event of an infeasible solution that needed to violate a LCC criteria in order for it to be solved, security of supply should be the priority with the LCC Required Quantity being the inviolable and the LCC Max Quantity being violated instead.
- 2.2.20. BGE also considered there to be insufficient clarity on the methodology detailing how LCC quantities are set and considered the LCC Max Quantity to be a response to the shortcomings in the SOs' efforts to adequately address the constraints on the grid.
- 2.2.21. EPUKI was also strongly opposed to the modification and urged the SEM Committee to reject the modification immediately. They argued that the proposal not only further enabled the TSOs to distort and manipulate the Capacity Auction in a way which would have significant negative consequences in the long-term but also enabled the TSOs to 'pick and choose' the locations and volumes of capacity. An over-constrained CRM was far-removed from the original design approved as part of the EU State Aid Decision.

- 2.2.22. EPUKI thought security of supply should be the absolute priority with Minimum LCCAs taking precedence over Maximum LCCAs. They considered the proposed magnitude of this shift in control and outcomes of the Capacity Auction to be very substantial and one which may warrant an impact assessment and further consideration of State Aid compliance.
- 2.2.23. EPUKI argued that attempting to address adequacy issues in ROI (which have arisen due to the closure of legacy conventional plant, rapidly expanding demand and underinvestment in transmission infrastructure), through the further constraining of the Capacity Market would result in long-term problems which would need to be addressed at a later date.

2.3. SEM COMMITTEE DECISION

- 2.3.1. The SEM Committee welcomes the feedback provided by participants both as part of the Workshop and through the consultation process.
- 2.3.2. The SEM Committee shares many of the concerns voiced by industry around the possibility of violating the LCC Required Quantity given the current challenges around security of supply. However, the Committee is also mindful of the comments from the SOs that should this modification proposal not be implemented in some form, there is a risk that the auction algorithm may not solve under certain circumstances.
- 2.3.3. The Committee believes that the additional flexibility offered to the auction algorithm by this Modification Proposal and its potential to lower the risk of an auction remaining unsolved, has some merit. It also notes that the proposal should not occur unless the software cannot find a solution and therefore, the risk of violations occurring, may be small.
- 2.3.4. However, significant concerns remain in relation to the potential violation of the Required Quantity as not only could this result in the possible under-procurement of capacity but the wider signals sent across industry are questionable. As per A.1.2.1(g) of the CMC, a key objective of the Code remains the promotion of the short-term and long-term interests of consumers of electricity with respect to security of supply of electricity across the Island of Ireland. The SEM Committee maintains and stresses the importance of system adequacy and security of supply.
- 2.3.5. The SEM Committee also notes the responses from several parties in relation to transparency around the setting of price-quantity pairs and the argument that this modification proposal is attempting to deal with what may, essentially, be transmission issues. The Committee acknowledges these comments but reminds industry that the Modification Proposal is seeking to find a pragmatic solution to and mitigation against a potential risk to forthcoming capacity auctions.
- 2.3.6. The SEM Committee proposes to approve CMC_14_23 subject to the following amendments. Given the level of concern around any potential violation of the LCC Required Quantity, the Committee requires that the values of the price-quantity pairs for calculating the price quantity pairs be approved by the SEM Committee as part of the process of approving the Final Auction Information Pack. In proposing the values of the price-quantity pairs for SEM Committee

approval, the TSOs should evaluate the cost of violating the LCC Maximum Quantity and, in particular, the LCC Required Quantity.

- 2.3.7. The Committee notes that in proposing the price-quantity pairs for SEM Committee approval, the TSO should consider the relative cost in terms of the value of incremental lost load of procuring below the minimum MW versus the cost to the consumer of procuring extra capacity which cannot be utilised at the same time as other capacity in the same LCC.
- 2.3.8. Appropriate consideration of the trade-off between under-procurement and over-procurement is likely to lead to a significantly higher price for being under the minimum MW than for being over the maximum MW. In extremis, if the price for being under the minimum is much higher than being over the maximum, this could effectively lead to the criteria always choosing to relax the LCC Maximum Quantity rather than the LCC Required Quantity, where it is impossible to meet both constraints whilst respecting inflexible bids.
- 2.3.9. Depending on the price-quantity pairs set for each infringement rule, the cost minimisation of violations without under-procuring, can be viable.
- 2.3.10. It should be noted that this Decision by the SEM Committee does not set a precedent for future auctions and price-quantity pairs may vary from auction to auction depending on the security of supply circumstances.

3. NEXT STEPS

- 3.1.1. The SEM Committee will make proposed modification CMC_14_23 using the draft legal text accompanying this Decision Paper.
- 3.1.2. All SEM Committee decisions are published on the SEM Committee website: www.semcommittee.com