



**Single Electricity Market
(SEM)**

Capacity Market Code Urgent Working Group 25

Appendix C – CMC_08_22

Approved Modification Text Drafting

SEM-22-066

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C.2.1 **Concepts**

C.2.1.1 The System Operators may determine one or more Locational Capacity Constraints in accordance with this section C.2 for the purposes of a Capacity Year with a view to ensuring that a minimum and maximum capacity is cleared in the Capacity Auctions for that Capacity Year in one or more specific areas of the SEM for the purposes of system security.

C.2.2 **Form of Locational Capacity Constraints**

C.2.2.1 There is no requirement that any given area of the SEM must necessarily be subject to a Locational Capacity Constraint.

C.2.2.2 If they determine a Locational Capacity Constraint, the System Operators shall also determine the following features of the Locational Capacity Constraint:

- (a) a name of ~~the~~ Locational Capacity Constraint;
- (b) the area to which the Locational Capacity Constraint applies, defined by reference to nodes on the Transmission System (and Distribution System, as applicable) (called the “Locational Capacity Constraint Area”);
- (c) a minimum and a maximum de-rated capacity quantity that is required to satisfy the Locational Capacity Constraint, where the maximum de-rated capacity quantity shall be not less than the minimum de-rated capacity quantity; ~~and~~
- (d) the nesting level of the Locational Capacity Constraint determined in accordance with paragraph C.2.2.3 and, in the case of a Level 2 Locational Capacity Constraint, the Level 1 Locational Capacity Constraint that the Level 2 Locational Capacity Constraint falls within; ~~and~~
- (e) the aggregate maximum de-rated capacities for a set of Level 2 Locational Capacity Constraints that comprise all the nodes of a Level 1 Locational Capacity Constraint shall not be less than the minimum de-rated capacity quantity for that Level 1 Locational Capacity Constraint.

F.4 **DETERMINATION OF LOCATIONAL CAPACITY CONSTRAINTS FOR A CAPACITY AUCTION**

F.4.1.1 For each Locational Capacity Constraint, the System Operators shall, when requested to do so by the Regulatory Authorities and as required under this section F.4.1 determine the following for a Capacity Year:

- (a) the Locational Capacity Constraint Required Quantity, being:
 - (i) the minimum de-rated capacity quantity that is required to satisfy the Locational Capacity Constraint determined under paragraph C.2.2.2(c); less
 - (ii) the de-rated value of capacity that is not existing Awarded Capacity for the relevant Capacity Year but which the System Operators forecast to be operational during the relevant Capacity Year and will not participate in the Capacity Auction;
- (b) the total quantity of Gross De-Rated Capacity (Total) in respect of Capacity Market Units that are Qualified as contributing to satisfying the Locational Capacity Constraint;
- (c) the absolute value of the amount (if any) by which the total quantity determined under –sub-paragraph (b) falls short of the Locational Capacity Constraint Required Quantity for the Locational Capacity Constraint;
- (d) the total quantity of Gross De-Rated Capacity (Existing) in respect of Capacity Market Units that are Qualified as contributing to satisfying the Locational Capacity Constraint; ~~and~~
- (e) the absolute value of the amount (if any) by which the total quantity determined under sub-paragraph (d) falls short of the Locational Capacity Constraint Required Quantity for the Locational Capacity Constraint;:-
- (f) the Awarded Capacity for the Capacity Year in respect of Capacity Market Units that contribute to satisfying the Locational Capacity Constraint; ~~and~~-
- (g) the Locational Capacity Constraint Maximum Quantity, being:
 - (i) the maximum de-rated capacity quantity that can be cleared under the Locational Capacity Constraint determined under paragraph C.2.2.2(c); less
 - (ii) the de-rated value of capacity that is not existing Awarded Capacity for the relevant Capacity Year but which the System Operators forecast to be operational during the relevant Capacity Year and will not participate in the Capacity Auction;

For the avoidance of doubt, the minimum de-rated quantity determined in C.2.2.2(c) does not take account of the Awarded Capacity for the Capacity Year in respect of Capacity Market Units that contribute to satisfying the Locational Capacity Constraint.

F.4.1.8C The Regulatory Authorities may by written notice to the System Operators adjust the Locational Capacity Constraint Maximum Quantity for all or specified Locational Capacity Constraints in one or more Capacity Auctions to zero and shall in the notice give reasons.

F.4.1.8D If the Regulatory Authorities adjust the Locational Capacity Constraint Maximum Quantity for a Locational Capacity Constraint for a Capacity Auction under paragraph F.4.1.8C, then they will ensure:

- (a) That the Locational Capacity Constraint Maximum Quantity is no less than the total existing Awarded Capacity in respect of Capacity Market Units that contribute to satisfying the Locational Capacity Constraint;
- (b) If the Locational Capacity Constraint is a Level 1 Locational Capacity Constraint that all the Level 2 Locational Capacity Constraints within the Locational Capacity Constraint Area of that Level 1 Locational Capacity Constraint are consistent with that Level 1 Locational Capacity Constraint for that Capacity Auction; and
- (c) for each Level 1 Locational Capacity Constraint, that the sum of the Locational Capacity Constraint Maximum Quantities of all Level 2 Locational Capacity Constraints lying within the Locational Capacity Constraint Area of that Level 1 Locational Capacity Constraint is greater than or equal to the Locational Capacity Constraint Maximum Quantity of that Level 1 Locational Capacity Constraint.

F.8.2 **Inputs for the Capacity Auction**

F.8.2.1 The System Operators shall use the following information when conducting a Capacity Auction:

- (a) the Demand Curve determined by the Regulatory Authorities and provided to the System Operators in accordance with section F.3;
- (b) for each Locational Capacity Constraint applicable to the Capacity Auction:

(i) the ~~level of the constraint~~Net Required Quantity that will apply in the Capacity Auction, being the greater of zero and:

- (A) the Locational Capacity Constraint Required Quantity required to satisfy the Locational Capacity Constraint; less
- (B) the Awarded Capacity for the Capacity Year in respect of Capacity Market Units that contribute to satisfying that Locational Capacity Constraint;

(i2) the Net Maximum Quantity that will apply in the Capacity Auction, being the greater of zero and:

- (A) the Locational Capacity Constraint Maximum Quantity that can be cleared under the Locational Capacity Constraint; less

~~(A)~~(B) the Awarded Capacity for the Capacity Year in respect of Capacity Market units that contribute to satisfying that Locational Capacity Constraint; and

- (ii) the Locational Capacity Constraint Information referred to in paragraphs (a), (c) and (d) of the definition of that term in the Glossary; and
 - (iii) the Capacity Market Units that have Qualified for the Capacity Auction; and
- (c) the Validated Capacity Auction Offers for each Capacity Market Unit Qualified to participate in that Capacity Auction as determined under section F.7 and Chapter L.

F.8.4.4

Subject to paragraphs F.8.4.6, F.8.4.6A and F.8.4.7, the System Operators shall determine the remaining price-quantity pairs contained in Capacity Auction Offers cleared in a Capacity Auction by applying the following rules:

- (a) a price-quantity pair that is Flexible may be cleared to any point between zero MW and the maximum quantity offered in that price-quantity pair;
- (b) a price-quantity pair that is Inflexible may be cleared at either zero MW or the maximum quantity offered in that price-quantity pair;
- (c) a price-quantity pair with a price less than the Offer Price Clearance Ratio of the Auction Clearing Price shall be cleared to its scheduled quantity as determined in accordance with paragraph F.8.3.2;
- (d) price-quantity pairs relating to the same Capacity Market Unit shall be cleared in order of increasing price, with nothing cleared from a price-quantity pair unless all lower priced price-quantity pairs relating to that Capacity Market Unit have fully cleared to their maximum quantity;
- (e) from the set of price-quantity pairs relating to Capacity Market Units that contribute to satisfying the Net Required Quantity determined ~~under paragraph F.8.2.1(b)(i)~~ in respect of a Locational Capacity Constraint:
 - (i) either
 - (A) the cumulative quantity cleared equals or exceeds that quantity; or
 - (B) if sub-paragraph (A) does not apply, all of those price-quantity pairs shall be cleared; and
 - (ii) the cumulative quantity cleared does not exceed the Net Maximum Quantity; and
- (f) Exempt Price-Quantity Pairs are not to be cleared to satisfy a Locational Capacity Constraint or to maximise Net Social Welfare until all applicable price-quantity pairs with an offered capacity duration of one Capacity Year have been cleared.

Locational Capacity Constraint Information

in respect of a Locational Capacity Constraint, means the following information:

- (a) the name;
- (b) the locational Capacity Constraint Required Quantity;
- (c) whether the Locational Capacity Constraint is a Level 1 Locational Capacity Constraint or a Level 2 Locational Capacity Constraint; and
- (d) for a Level 2 Locational Capacity Constraint, the Level 1 Locational Capacity Constraint if falls within;
- ~~(d)~~(e) the Locational Capacity Constraint Maximum Quantity.-

Locational Capacity Constraint Maximum Quantity

in respect of a Locational Capacity Constraint, means the quantity (in MW) determined by the System Operators under paragraph F.4.1.1, as [adjusted under paragraph F.4.1.8C.](#)

Net Required Quantity

means the minimum quantity (in MW) that is required to be cleared in a Capacity Auction in respect of a Locational Capacity Constraint calculated in accordance with F.8.2.1.

Net Maximum Quantity

means the maximum quantity (in MW) that can be cleared in a Capacity Auction in respect of a Locational Capacity Constraint calculated in accordance with F.8.2.1.