

# **Capacity Market:** The Quick Guide to Understanding Qualification

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## Regulatory Authority Contact Details

Participants wishing to apply for RA approval for an Exception Application, Opt-Out Notification, or to communicate with the RAs during the Exception Application process should do so using the two email addresses provided below:

Email Correspondence: [CRMsubmissions@uregni.gov.uk](mailto:CRMsubmissions@uregni.gov.uk)  
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## 1. Purpose of this Document

The purpose of this document is to provide details relating to the Capacity Auction parameters and values contained within the Auction Information Packs. This document also aims to provide a better understanding of what is included within both the Auction qualification process and qualification documentation.

## 2. Auction Information Packs

Initial and Final Auction Information Packs will be released for each Capacity Auction as set out in the Capacity Auction Timetable, which will broadly follow the indicative timeframe detailed within the Capacity Market Code (CMC). The Code also specifies the information which is to be contained within each pack as well as the source of the parameters/values i.e. System Operator (SO) or Regulatory Authorities (RAs).

## 3. Understanding the Qualification Parameters

### 3.1. What is a De-Rating Curve & Why are De-Rating Factors Required?

All Candidate Units seeking qualification for capacity within a Capacity Auction will be subject to a De-Rating Factor. During the Qualification Process, the appropriate De-Rating Factor is to be applied to the Initial Capacity of a Candidate Unit. For an existing Candidate Unit, the Initial Capacity is normally the Registered Capacity of that unit, but it may be modified to reflect factors such as the levels of transmission access available to the unit. For New Capacity, an expectation of the eventual Initial Capacity is used.

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De-Rating accounts for outages – both planned and unplanned – as well as limitations on operation, like that wind unit output is dependent on wind. If there is sufficient de-rated capacity across all units in the SEM then some of those units can be unavailable with enough remaining capacity beyond the de-rated capacity for the other units to securely serve SEM demand.

The De-Rating Factors vary by Technology Class as well as the size of the Candidate Unit (or in the case of Aggregated Generator Units (AGUs), the Technology Class and size of the Generators that contribute to it). These values are set by the Regulatory Authorities based on analysis conducted by the System Operators.

The De-Rating Factors to be used during the Qualification process are published within the Initial Auction Information Pack (IAIP). The IAIP confirms the value which is to be used for each Technology Class.

Each Capacity Provider is required to submit their calculated Gross De-Rated Capacity and Net De-Rated Capacity seeking qualification in respect of Existing Capacity and New Capacity via the Capacity Qualification Data Form for each Capacity Auction. The full calculation is presented within Section E of the CMC however the following simplified versions illustrate the core



concepts (though not all of the detail has been included) used to ascertain the Gross De-Rated Capacity and Net De-Rated Capacity seeking qualification for Existing Capacity, the following calculation is to take place:

For a Candidate Unit

**Gross De-Rated Capacity (Existing) = Initial Capacity × De-Rating Factor**

Here the De-Rating Factor reflects the Technology Class and Initial Capacity of the Candidate Unit.

For a Capacity Market Unit

*Gross De-Rated Capacity (Existing) is the total of the Gross De-Rated Capacity (Existing) values for the Candidate Units comprising it.*

**Net De-Rated Capacity (Existing) = Gross De-Rated Capacity – already Awarded Capacity (within previous Capacity Auction)**

A similar calculation is used for New Capacity with the exception that the Gross De-Rated Capacity (Total) is determined based on the combination of the Initial Capacity for both Existing and New Capacity. The Gross De-Rated Capacity (Existing) is then subtracted from this to give Gross De-Rated Capacity (New) for each Candidate Unit. For the Capacity Market Unit, the Awarded Capacity for New Capacity is subtracted to give the Net De-Rated Capacity (New).

For further information, please refer to CMC Section C and Section E.8.

### 3.2. What is the “Final Capacity Requirement”?

The amount of generation required within the all-island Capacity Market is governed by the Capacity Requirement. The Capacity Requirement is determined by the Regulatory Authorities, with System Operator support, based on a method that has been consulted upon by the SEM

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Committee. The Capacity Requirement determination is a complex simulation process that considers a range of demand and generation scenarios, and sets a requirement which trades-off the risk between over-procuring and under-procuring capacity. Details of the methodology are available on the SEM Committee website.

The Final Capacity Requirement is published within the IAIP and confirms the MW volume required within that individual Capacity Auction. It is used for setting the Initial and Final Demand Curves.

For further information, please refer to CMC Section C.1.

### 3.3. Demand Curves Explained

The Demand Curve is used in the Auction to define the benefit to the market provided by a given amount of Awarded Capacity. The Auction trades off the benefit of this Awarded Capacity with the cost of the Awarded Capacity in determining an outcome. It is important to note that the Demand Curve does not set prices in the Auction – all prices are set based on offer prices.

The Demand Curve parameters will be set for each Capacity Auction, as they take into account specific factors such as the latest estimate for the Capacity Requirement for the Capacity Year in question, and any Awarded Capacity in respect of that Capacity Year in previous Auctions. The Demand Curve will also take into account any capacity which is not going to close, but has exercised its discretion not to bid into the Auction but is still expected to make a capacity contribution.

For further information, please refer to CMC Section F.3.

### 3.4. What are “Locational Capacity Constraints”?

The all-island transmission system includes a number of transmission and security constraints which mean that the ability to securely transfer power from one part of the system to the other may be limited. To ensure that sufficient capacity is procured in the Capacity Auction in these areas, the System Operators may determine, and the Regulatory Authorities may approve, Locational Capacity Constraints. These constraints specify a minimum amount of de-rated capacity which must be procured in specific regions. Capacity Market Units that can supply a Locational Capacity Constraint will be identified within the Qualification Process.

The Capacity Auction schedules capacity based on the benefit defined by the Demand Curve in the first instance. Capacity awarded this way will receive an Auction Clearing Price. In addition, Locational Capacity Constraints are imposed to ensure that sufficient capacity is procured in certain regions due to the system constraint limitations. Any additional capacity awarded to satisfy these limits will be paid based on offered price.

For further information, please refer to CMC Sections C.2 and F.4.

### 3.5. The Awarded Capacity

Awarded Capacity describes de-rated capacity that has been offered into and successfully secured within a Capacity Auction or which is secured via Secondary Trade. The Awarded Capacity referred to in the Auction Information Pack relates only to Awarded Capacity from previous Capacity Auctions for the relevant Capacity Year. Secondary Traded capacity will normally be for only a short period of time so is not relevant in this context.

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The reason for reporting Awarded Capacity already secured for a Capacity Year is that:

- In setting the Demand Curve for the Capacity Auction, the Awarded Capacity must be deducted from the Capacity Requirement;
- In the Capacity Auction, the Awarded Capacity that contributes to Locational Capacity Constraints will be deducted from the quantity required to be procured;
- Already Awarded Capacity for Capacity Market Units cannot be offered into the Auction again.

For further information, please refer to CMC Sections E.8.3, F.3, F.4, and Sections I and J.

### 3.6. What is the Auction Price Cap?

The Auction Price Cap is the maximum price allowed in a Capacity Auction.

Not all capacity can be offered into an Auction at the Auction Price Cap. This cap is only applicable to New Capacity, Existing Capacity that is a Demand Side Unit, and, where the Autoproducer Demand Reduction Volume for the relevant Autoproducer Site is not zero, the Offer Price Cap for capacity offered beyond the Autoproducer Offer Price Cap Breakpoint, is the Auction Price Cap.

For further information, please refer to CMC Section E.8.7.

### 3.7. What is the Existing Capacity Price Cap?

The Existing Capacity Price Cap is set at a level not exceeding the Auction Price Cap and will typically be set to significantly lower level.

The Existing Capacity Price Cap applies to the qualified capacity of existing Generators and Interconnectors, except for Existing Capacity for which:

- The Auction Price Cap applies, as outlined above.
- The participant has applied to the RAs for, and the RAs have approved, an Exception Application for a Unit Specific Price Cap for all or part of the capacity of an existing Candidate Unit. This allows a price cap to be set which is greater than the Existing Capacity Price Cap but no more than the Auction Price Cap to address situations where certain costs may not be recovered at the Existing Capacity Price Cap.

For further information, please refer to CMC Sections E.5 and E.8.7.

### 3.8. New Capacity Investment Rate Threshold Explained

Capacity is qualified as having a Maximum Capacity Duration of an integer number of years between 1 year and 10 years. By default, all capacity successfully secured within a Capacity

**“Participants with New Capacity may apply to the RAs for, and the RAs may approve, an Exception Application for a Maximum Capacity Duration of up to 10 years.”**

Auction has a Maximum Capacity Duration of 1 year. Participants with New Capacity may apply to the RAs for, and the RAs may approve, an Exception Application for a Maximum Capacity Duration of up to 10 years. The New Capacity Investment Rate Threshold is the amount that a new investor must invest per kW of capacity for the RAs to approve a Maximum Capacity Duration of more than 1 year. In an Exception Application to the

RAs, the participant must satisfy the RAs that the New Capacity Investment Rate Threshold will be exceeded.

During the Capacity Auction bidding process, a participant can specify the number of Capacity Years it wishes to be Awarded Capacity for, where this cannot exceed the Maximum Capacity Duration. Thus if the Maximum Capacity Duration has been approved by the RAs, the participant could indicate on an offer step that it would like Awarded Capacity for 1, 2, 3 and so on up to the

maximum of 10 years. If capacity is successfully awarded then it will be awarded for the number of years specified in the offer step.

For further information, please refer to CMC Sections E.5 and E.8.6.

### 3.9. Annual and Billing Stop-Loss Limit Factors

Settlement of the Capacity Market occurs under the Trading and Settlement Code (TSC).

The market may be subject to periods of high energy prices for which capacity providers will receive the full payment of the high energy price. Under certain conditions the capacity providers must pay money back to the market in the form of a Difference Charge. The Difference Charge applies when a Reference Price exceeds the Strike Price. The Reference Price is a derived price that reflects the price at which the capacity provider traded in the Day Ahead Market (DAM), Intra-Day Market (IDM) and Balancing Market (BM). Different arrangements apply for the time being with respect to difference payments for DSUs and Interconnectors, and interested parties should refer to the Capacity Market Code. A Generator's price received on Awarded Capacity is effectively capped at the Strike Price if generating. If a Generator has Awarded Capacity but does not generate at such times, then it would earn nothing in the energy market but would still have to pay the Difference Charge. The Annual and Billing Stop-Loss Limit Factors cap a capacity provider's exposure to the Difference Charges when not generating (or not available, in the case of an Interconnector).

For further information, please refer to CMC Section D.3 and TSC Part B, Section F.18.

### 3.10. The Annual Capacity Payment Exchange Rate

The IAIP details the indicative exchange rate which will be used for the conversion of the Auction Price Cap and the Existing Capacity Price Cap between Sterling and Euro. The final Annual Capacity Payment Exchange Rate to be used for a Capacity Auction will be confirmed within the Final Auction Information Pack (FAIP). Capacity providers in Northern Ireland will submit offers in Sterling (£), which will subsequently be converted to Euro (€) at the Auction exchange rate for that Auction. All Auction results will be determined in Euro, with the same exchange rate used to convert prices back to Sterling.

For further information, please refer to CMC Sections D.3, F.5 and Section K.

### 3.11. What are Increase and Decrease Tolerances?

Increase (INCTOL) and Decrease (DECTOL) Tolerances refer to the percentage of increase or decrease that may be applicable to a Candidate Units de-rated capacity depending on their Technology Class. The IAIP lists the INCTOL and DECTOL for each Technology Class. If a Candidate Unit has an implied de-rated capacity of Q MW then the participant for that Candidate Unit can seek a Gross De-Rated Capacity at any level between  $Q \times (1 - \text{DECTOL})$  and  $Q \times (1 + \text{INCTOL})$ .

For further information, please refer to CMC Sections D.3, F.5 and E.8.2.

### 3.12. Performance Securities

Providers of New Capacity who have been successful within a Capacity Auction will have to post a Performance Security with the SOs and maintain that Performance Security until the New Capacity is commissioned and becomes Existing Capacity. Performance Security provides credit support in the event that the participant fails to pay a Termination Charge and in that event can be claimed by the System Operators.

For further information, please refer to CMC Sections J.3.

### 3.13. Termination Charges

A Termination Charge is invoiced by the System Operators to a participant if Awarded Capacity held by New Capacity is terminated. Section J.6.1.3 of the CMC describes the conditions under which capacity can be terminated. If a participant fails to pay the Termination Charge then the System Operator can draw down on the posted Performance Security in respect of the terminated capacity. This is to safeguard the market against the consequences of Awarded New Capacity not being delivered.

**“This is to safeguard the market against the consequences of Awarded New Capacity not being delivered.”**

For further information, please refer to CMC Sections J.6 and J.7.

### 3.14. Administered Scarcity Price

The Administered Scarcity Price acts as a floor on energy prices during a critical grid event such as Customer Voltage Reduction, Planned or Emergency Manual Disconnection or Automatic Load Shedding. Events such as these may cause the Imbalance Price within the Balancing Market to rise, which will then increase the Reference Prices of participants selling energy from Awarded Capacity into the Balancing Market. Once the Reference Price exceeds the Strike Price, capacity providers will need to pay Difference Charges to offset the costs of Suppliers purchasing from the Balancing Market. Prices in the Day-Ahead Market and Intraday Market may also rise if there is an expectation of a high Imbalance Price, giving rise to similar effects in those markets.

For further information, please refer to CMC Sections D.3, F.5 and TSC Section E.4.

### 3.15. The Strike Price

The cost of the Capacity Market is funded by Suppliers. In return, Suppliers are hedged against high energy prices. When energy prices exceed the Strike Price, the market pays Suppliers the difference between the energy price and the Strike Price. For example, if the Strike Price is €500/MWh, and the energy price is €600/MWh, the Supplier is charged €600/MWh in the first instance but is credited back €100/MWh by the market. This hedge means that the effective price that Suppliers pay is capped at the Strike Price. The Strike Price is updated monthly based on a formula that considers prices of fuels, unit efficiency and DSU running costs.

For further information, please refer to CMC Sections D.3, F.5 and TSC Section F.16.



### 3.16. Capacity Auction Timetable

The Capacity Auction Timetable published within the Auction Information Pack details key events and deadlines for a specific Capacity Auction. The indicative timeframe for each Auction should reflect the parameters set within the CMC.

Strict adherence to the Auction Timetable is essential; failure to do so may jeopardise ability to partake in the Capacity Auction.

For further information, please refer to CMC Sections D.2, D.3 and F.5.

## 4. The Alternative Registration Process

Registration and qualification is mandatory for a number of unit types under the CMC. Should the SOs fail to receive registration and qualification documents from mandatory units, or if the data is incomplete or inaccurate, the SOs have the ability to register and qualify the provider via The Alternative Qualification Process.

## 5. Regulatory Authority Exception Applications

A Capacity Provider may submit an Exception Application to the RAs for approval for the following:

- **Maximum Capacity Duration:**  
An Exception Application can be made to the RAs to have Awarded Capacity allocated for a Maximum Capacity Duration of more than 1 year due to the cost of construction for New Capacity being higher than the New Capacity Investment Rate Threshold.
- **Unit Specific Price Cap:**  
Providers of Existing Capacity can apply to the RAs for a Unit Specific Price Cap for all or part of the capacity of that Candidate Unit where it is believed that generation costs will not be sufficiently covered under the set Auction Price Cap. The RAs will assess the exception application and where appropriate, set a Unit Specific Price Cap specific to that Candidate Unit for that Capacity Auction.
- **Opt-Out Notification:**  
An Opt-out Notification is to be submitted where a Generator Unit or Interconnector is not to be included in an application for qualification in respect of a Capacity Auction due to closure, planned outage or mothballing. Please see Section E.3 of the CMC for comprehensive details.

Please refer to the Auction Timetable within the IAIP for the Exception Application deadline dates. If a Participant submits an Exception Application, the RAs will confirm the nature and outcome of the application with the SO however we do ask that you confirm if an Exception Application has been submitted via the Capacity Qualification Data Form.

## 6. Qualification Results

The SO will commence validating all registration and qualification data received in line with the Auction Timetable and CMC. The Provisional Qualification Results will be published and applicants

will be given an opportunity to appeal to the System Operators for a review of their provisional results. There is a mechanism for review and dispute of the Provisional Qualification Results before the Final Qualification Results are released. The Final Results are binding on all parties.

## 7. Failure to Qualify

A Capacity Provider for whom qualification is optional and who have not submitted qualification forms and data to the SO will not be incorporated in the Alternative Qualification process and therefore will not be permitted to partake in a Capacity Auction. Qualification is required for each Capacity Auction that takes place within the CM.

## 8. FAQs

A [Frequently Asked Questions - Working Document](#) was published in June 2018. An updated document will be uploaded to the website in advance of each Auction.

## 9. Supporting Documentation

This document should be read in conjunction with the following publications:

- Initial Auction Information Packs (published in advance of each relevant Auction [here](#))
- Final Auction Information Packs (published in advance of each relevant Auction [here](#))
- Capacity Market Registration Guides included in the Registration & Qualification Forms are available [here](#).
- [Capacity Market: A Helicopter Guide to Understanding the Capacity Market](#)
- [Capacity Market: A Helicopter Guide for the Capacity Auction](#)
- [The Capacity Market Code \(CMC\)](#)
- [Agreed Procedures:](#)
  - [CMC Agreed Procedure 1 – Registration](#)
  - [CMC Agreed Procedure 2 – Default and Suspension](#)
  - [CMC Agreed Procedure 3 – Qualification and Auction Process](#)
  - [CMC Agreed Procedure 4 – Communication Channel Qualification](#)
  - [CMC Agreed Procedure 5 – System Operation, Testing, Upgrading and Support](#)
  - [CMC Agreed Procedure 6 – System and Communication Failures](#)

The Capacity Market is governed by the Capacity Market Code (CMC). Please refer to the CMC as well as the Agreed Procedure documents for comprehensive Code items, definitions and procedure details.

The Registration Guides provide a point of reference for completing the Registration and Qualification processes.

The Initial and Final Auction Information Packs are also an essential point of reference as they outline values and parameters set for each individual Capacity Auction.

Approved Capacity Auction Timetables are published in advance of each Capacity Auction and can be viewed on the SEMO website – [here](#).

