

Quick Guide to the Capacity Market and T-1 2019/2020 Auction Results

01 February 2019



1. The Single Electricity Market

What is the Single Electricity Market?

The Single Electricity Market (SEM) is the wholesale electricity market for the island of Ireland. It is designed to provide wholesale electricity at the lowest possible cost, ensuring that there is supply to meet demand and to support long-term sustainability. It has been delivering these benefits to consumers since it started on the 1st of November 2007.

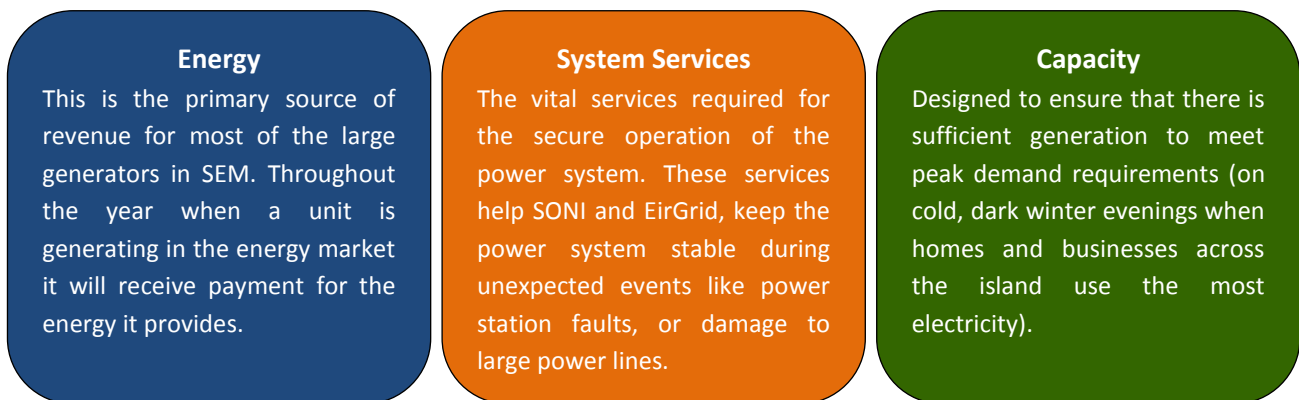
The SEM is designed and regulated by the Single Electricity Market Committee (SEM Committee) which is made up of representatives from regulators in Northern Ireland (the Utility Regulator) and Ireland (the Commission for the Regulation of Utilities) and two independent members. The SEM Committee is the decision making body responsible for the SEM.

SONI and EirGrid operate the Single Electricity Market, under the joint venture – SEMO (Single Electricity Market Operator).

The SEM was recently redesigned in order to increase competition and to bring further downward pressure to wholesale prices on the island. The project to achieve these upgrades was called the I-SEM (Integrated-Single Electricity Market). The new arrangements were implemented on the 1st of October 2018. The new design has integrated the all-island market into Europe and makes best use of the electricity interconnectors between the SEM, GB and EU. This means that consumers here can benefit from low-cost generation from across Europe.

How do generators make money in the market?¹

In the SEM, generators have three main revenue streams:



2. The Capacity Market

Why do we need a capacity market?

Electricity demand varies significantly throughout the year. The lowest level of demand occurs during summer nights and the peak demand occurs during cold winter evenings. The transition to a low carbon power system

¹ For ease of understanding we use the term generator in this plain English guide, but it is important to note that demand side units, storage and interconnectors also participate and provide valuable services in each market

also means that there is an increasing level of renewable energy such as wind and solar. To ensure consumers have the reliability they expect, the electricity system and the Single Electricity Market need to be flexible enough to cater for windy days with low demand and also to have sufficient energy available on low wind days with high demand (and all scenarios in-between).

In order to remain operational a generator will need to make enough revenue in the market to recover its operation and maintenance costs. If it is a new power station or a new generating unit within an existing power station, it will also need to recover any capital costs incurred for planning, construction and commissioning of the unit. The core function of the capacity market is to provide a stable revenue stream to generators to ensure that there is sufficient investment in the generating capacity required to meet peak demand requirements and maintain security of supply on the island.

What is the purpose of the Capacity Auctions?

The regulatory authorities designed the new capacity market to increase competition and ultimately reduce costs for consumers. The goal of the auction is to ensure that consumers don't pay for more capacity than is needed. Under the old market all generators were paid based on their availability. Under the new market only generating units that are successful in the capacity auctions will receive capacity payments.

In a competitive market it is expected that generators will factor in any energy and system services revenues they expect to receive when they are deciding what price to offer into the auction. This means that the most efficient units at providing energy and system services are more likely to offer in at a low price and be successful in the auction. This will lead to a more competitive and efficient generation mix again resulting in downward pressure on wholesale prices and better outcomes for the consumer.

Who can participate and how is it funded?

The capacity market is funded by consumers and businesses through their energy suppliers. There was a similar arrangement in the old capacity market.

Generators that wish participate in a capacity auction must first qualify to take part. During the qualification process, generators have to show that the units they intend to use meet a set of minimum requirements set out in the market rules. The qualification process helps to provide confidence that generators successful in an auction will deliver on their obligations and contribute to security of supply in Ireland and Northern Ireland.

Generators that are successful in the capacity auction will be paid regularly throughout the year for each megawatt (MW) of capacity they successfully sell to the market in the Auction. In return, these generators must deliver on their capacity market obligations i.e. they should be available to provide energy, especially at times of high demand or system stress. If a generator is unable to do this they risk being exposed to substantial charges.

How is the auction carried out?

The rules governing the auction are set by the SEM Committee. SONI and EirGrid work together to establish the amount of capacity needed on the island. This calculation is done using detailed methodologies that have undergone public consultation and approval by the Regulatory Authorities. The auction is carried out via a secure online system that was specifically designed for the capacity market.

What is de-rating?

The capacity market uses the concept of "de-rated" megawatts. The de-rating process is used because generators and other capacity providers are not perfectly reliable. It accounts for the fact that outages and other technical issues will occur from time to time for all generators and that there will be days with low wind

etc. For this reason, the amount of capacity a generator can offer into the auction is adjusted down (“de-rated”) in order to take account of their expected reliability and benefit to security of supply. Using the de-rating process ensures that the auction delivers the right amount of reliable energy.

What is a locational constraint?

As well as providing capacity on an all-island basis; Northern Ireland, Ireland and the Greater Dublin Region have specific generation requirements and so the auction needed to meet these geographic constraints.

There are constraints (limitations) on the grid which restrict the amount of power that can flow into Northern Ireland from Ireland and *vice-versa*. The absence of the 2nd North South Interconnector is a significant restriction. To ensure a secure supply of electricity, a certain level of capacity is required for Northern Ireland and Ireland. Similarly, there are limitations on the grid that can limit the flow of power into the Dublin region from the rest of Ireland and this means a certain level of capacity is required in Dublin.

Together these limitations increase the quantity of capacity needed to ensure security of supply. This illustrates the importance of investment in transmission infrastructure to remove limitations on the grid.

3. The T-1 2019/2020 Capacity Auction

The following table shows the main results of the annual or “T-1”2019/2020 capacity auction which took place on the 13th of December 2018. The Auction Clearing Price for this auction is 40,646 €/MW per year or 36,890 £/MW per year.

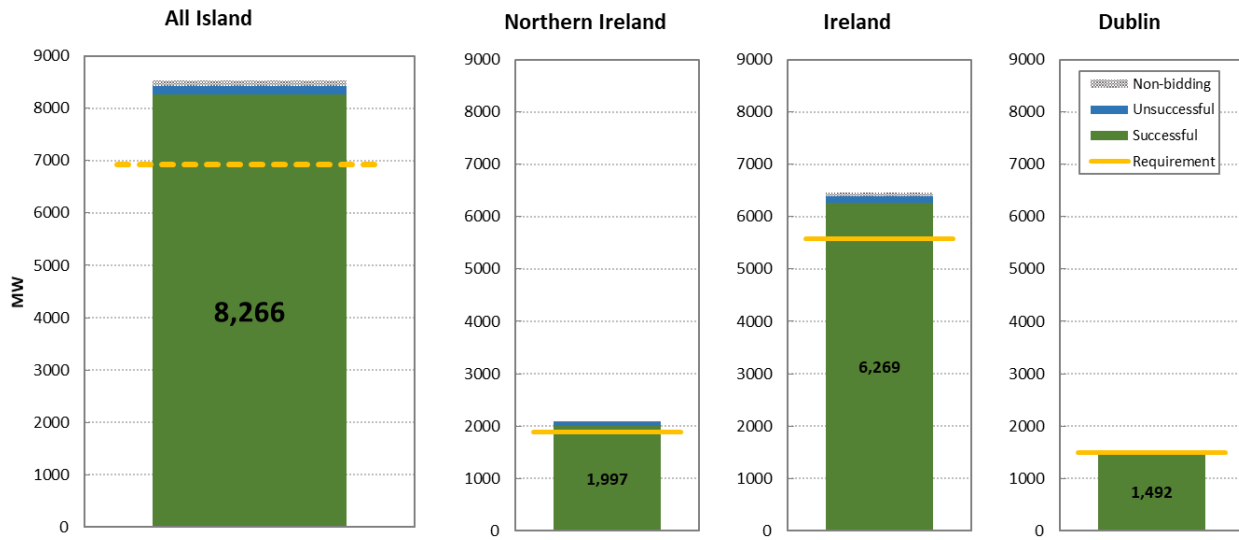
It procured a total of 8,266 megawatts and had a total cost of 345 million euro or 313 million pounds sterling. 95 out of the 100 generators that offered into this auction were successful. These generators will receive regular payments between October 2019 and September 2020. In return, they must deliver on their capacity market obligations.

	Results in €	Results in £
Auction Clearing Price:	40,646 €/MW per year	36,890 £/MW per year
Total Cleared Quantity:	8,266 MW	8,266 MW
Total Cost:	345 Million €	313 Million £
Average Price per MW:	41,719 €/MW per year	37,864 £/MW per year

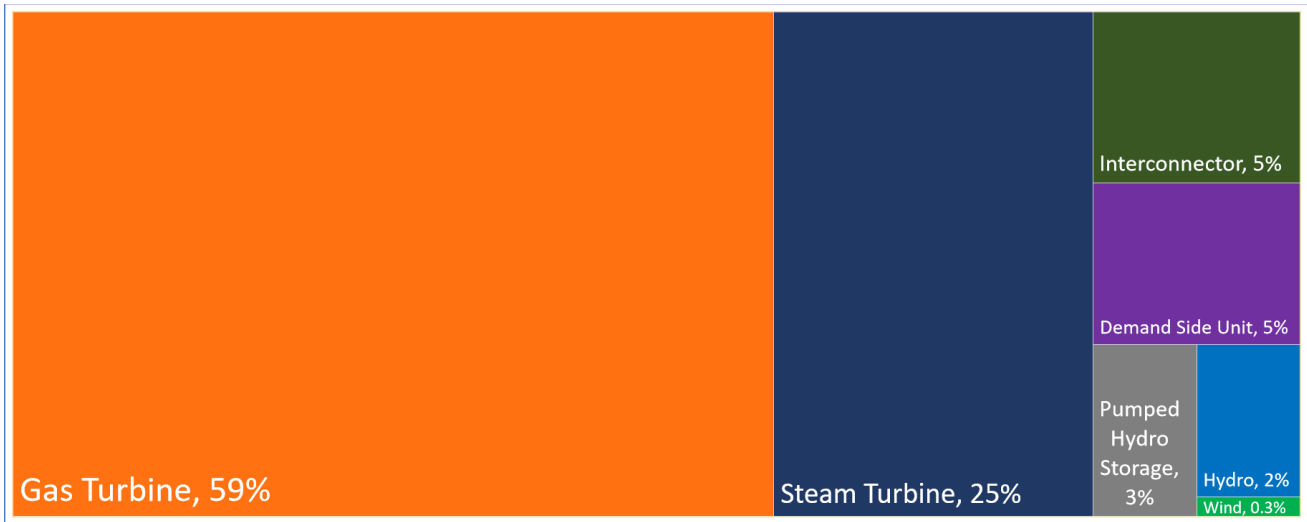
The charts below show the quantity of de-rated capacity successful in the auction. It gives the all-island total and the totals in each locational constraint area. It also shows the quantity that was unsuccessful and the quantity of qualified capacity that did not offer into the auction.

The yellow horizontal lines indicate the minimum requirements in each area. All requirements set in the auction were met. A total of 132 megawatts of new capacity was successful (30 megawatts in Northern Ireland and 102 megawatts in Ireland). This mostly comprised of new Demand Side Unit capacity. A Demand Side Unit (DSU) is a demand site (such as a manufacturer, data centre or other large energy user) that can be instructed by EirGrid or SONI to reduce electricity demand. It can do this by using a combination of on-site generation and/or plant shutdown.

Auction Requirements and Successful/Unsuccessful Quantities



The following chart gives a graphical representation of the quantity of successful de-rated capacity for each technology type as a percentage of the total successful.



Why did some generating units receive more than the Auction Clearing Price?

All successful capacity providers that offered in at less than or equal to the auction clearing price will receive the clearing price. In order to meet the specific locational needs (outlined above) some generators who offered into the auction with prices equal or greater to the auction clearing price will receive what they offered.

The cleared price of all units is provided in the Final Capacity Auction Results document ([FCAR1920T-1](#)).

How do the results compare to the T-1 2018/2019 Capacity Auction?

The T-1 2018/2019 Capacity Auction, held on the 15th of December 2017 had a clearing price of 41,800 €/MW per year or 38,105 £/MW per year. It procured 7,774 MW and had a total cost of 333 million euro or 303 million pounds sterling. There is a 3% increase in total cost compared to the first auction. However, this

T-1 2019/2020 auction procured 6% additional generation to account for increasing demand and other factors. This auction's clearing price is also lower, which means that the average cost per megawatt has reduced.

There is good stability between these first two auctions and there is a very significant reduction in total costs compared to the 550 million euro which was the average cost of the old capacity market.

It is important to note that the results of each capacity auction will depend on the supply and demand within that auction. For this reason, it is to be expected that from year-to-year there will be some fluctuation in clearing prices and total costs.

4. Further Information

The Final T-1 2019/2020 Capacity Auction Results document ([FCAR1920T-1](#)) and associated published data files provide a full breakdown of the detailed results in line with the publication requirements set out in the Capacity Market rules.

What is the schedule for the next Capacity Auctions?

Capacity Auctions will be held four years before the delivery Capacity Year, which is where we get 'T-4'. In addition, we will see further T-1 auctions for incremental capacity. The first T-4 auction is for the 2022/2023 Capacity Year and is scheduled to take place on the 28th of March 2019. Two additional transitional auctions will also take place later this year, the T-1 auction for delivery in 2020/2021 and the T-2 auction for delivery in 2021/2022.

Capacity Market Contact Details

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