



Supply Point Capacity

The Gas Networks Ireland Network is comprised of high pressure steel transmission pipes and low pressure plastic distribution pipes. The transmission pipes link Ireland's major urban areas and also connect Ireland to the UK. Electricity Generating Power Stations and some large Industrial customers are also directly connected to the transmission network. The distribution pipes supply gas within cities and towns.



Network Tariff Breakdown

The Gas Networks Ireland Tariffs consist of capacity (fixed element) and commodity (variable element) charges that apply for the use of the transmission and distribution gas systems.

The capacity charge is the fixed element of the tariff and is based on the maximum volume of gas (in kWh) that is expected to be taken in any given day of the gas year at a customer's gas point i.e. Supply Point Capacity for the distribution network. The commodity charge is the variable element of the tariff and relates to the amount of gas (in kWh) transported through the gas network to the customer's gas point (as measured by the monthly consumption off-taken at the customer's gas point).

There are capacity and commodity charges related to the use of both the transmission and distribution systems. These charges are broken down differently between the fixed element (capacity charge) and the variable element (commodity charge), depending on the system being used. For example, transmission charges are broken into 90% fixed and 10% variable elements, while the distribution charges are broken into 80% fixed and 20% variable elements.

The tariff calculations are agreed with the Commission for Regulation of Utilities (CRU) on an annual basis and are based on the allowable revenue and forecast demands. Allowable revenue

is calculated to reward the Gas Networks Ireland investment in the gas systems and also to recover allowable operating costs.

The capacity and commodity tariffs are payable in respect of each system which a shipper wishes to use to deliver gas to the customer's gas point.

Annual Quantity and Supply Point Capacity

Annual Quantity (AQ) is the estimated amount of gas in kilowatt-hours (kWh) that a gas point will use in a gas year. It is set annually for each gas point. The AQ determines the Distribution and Transmission Tariffs and Billing Charges which apply to each meter point.

Supply Point Capacity (SPC) is the capacity in kilowatt-hours (kWh) at a supply point that is deemed to be reserved for the peak day. A "1-in-50" peak day is used, which is based on weather conditions so severe that statistically they are only likely to occur once every 50 years. All supply points on the distribution network have a site specific Supply Point Capacity.

The calculation of AQ and SPC is carried out for each gas point before the end of the gas year (30 September), to provide Shippers with an advice of the new values of AQ and SPC for the subsequent gas year. The AQ and SPC will be used for calculating transportation charges.



Large Daily Metered and Daily Metered Supply Points

New Connections:

Customers requiring a Large Network Connection Agreement will be required to commit to capacity purchases for a sufficient term to ensure recovery of the connection costs over and above the standard and supplemental economic test contribution. The volume and duration of the capacity bookings required will be identified by Gas Networks Ireland on the basis of the load profile requirements identified by the customer in their formal connection application. The requirement to commit to these capacity purchases will form part of the connection agreement.

For Large Daily Metered (LDM) and Daily Metered (DM) customers with an Industrial & Commercial Network Connection Agreement, a minimum level of capacity will be set in the capacity register for the term required to pay back the outstanding connection costs. The minimum level of capacity will be based on the projected load profile provided by the customer and used in the connection appraisal.

In summary, where a Large Network Connection Agreement is in place a level of capacity is set as part of the agreement, which will set a floor SPC for the period as outlined in the agreement. For sites with no Large Network Connection Agreement a minimum level of capacity will set the floor level for the SPC calculation for the period required to pay back the outstanding cost of connection.

Large Daily Metered and Daily Metered Annual Review

Annual Quantity Calculation:

The Annual Quantity (AQ) for Large Daily Metered (LDM) and Daily Metered (DM) supply points will be the sum of the meter reads as adjusted by the Transporter during the review period, (01 May to 30 April). Where twelve months consumption information does not exist the AQ will be equal to the figure agreed between the Transporter and the Shipper as part of the new connection process.

Supply Point Capacity Setting:

For Large Daily Metered (LDM), and Daily Metered (DM) connections the Supply Point Capacity (SPC) calculation, in general, is based on the Peak Daily Read, (PDR), where the PDR is the highest daily read over a review period which runs from the 01 May to 30 April. If the site has a minimum SPC, the SPC is set as the higher of the minimum SPC or the PDR.

For Distribution connected sites, if consumption commenced during the review period, SPC will be set to the figure agreed during the connection process.



Non Daily Metered Supply Points

New connections:

For Non Daily Metered (NDM) customers the connection appraisal will be based on the load requirements identified by the customer in their formal connection application. The initial consumption value is the Estimated Annual Consumption (EAC) and this figure is used in the setting of the initial Supply Point Capacity (SPC) calculation. It is these two figures, EAC and SPC, which will determine the level of distribution capacity charges at a gas point so it is imperative that they are understood.

Where EAC = Estimated Annual Consumption

$$SPC = \frac{EAC * \text{Capacity Scaling Factor}}{\text{Load Factor} * 365}$$

The Capacity Scaling Factor and Load Factors are parameters calculated annually by a process approved by the CRU.

The Distribution Tariff uses a tiered structure whereby alternative charges are applied to customers based on their Annual Quantities.

The charging categories are as follows:

(1) ≤ 73 MWh

(2) > 73 MWh - ≤14,653 MWh

(3) > 14,653 MWh - ≤57,500 MWh

(4) > 57,500 MWh

The SPC is then used with the appropriate tariff to calculate the Distribution Capacity Charge.

NDM Annual Review:

The NDM AQ & SPC Setting Process is carried out each year. The AQ and SPC setting at each NDM gas point is calculated over the review period, (01 May to 30 April), for the next Gas Year (01 October). Once there is enough data available then the AQ and SPC can be calculated based on historical consumption.

Annual Supply Point Capacity Setting:

Annual Quantity (AQ) is set to the normalised consumption at a Gas Point over previous 12 months, otherwise where there is not enough consumption history the AQ calculation will be:

$$AQ = (A \times 365) + (B \times AWDD_{\text{Year}})$$

Where:

A = A factor for Gas Point

B = B factor for Gas Point

$$AWDD_{\text{Year}} = \sum \text{Adjusted Weighted Degree Days in a normalised year}$$

Each supply point has two factors A and B which are demand characteristics unique to each supply point. In essence the A factor represents the base load and the B factor represents the temperature sensitivity of the supply point. The A and B factors are recalculated every time an actual meter read is processed for that gas point. The most recent A and B factors will be used to calculate the AQ.



NDM Supply Point Capacity:

The methodology as outlined above for Large Daily Metered (LDM) and Daily Metered (DM) supply points cannot be used for Non Daily Metered (NDM) supply points as daily reads are not available. A methodology has been approved by the CRU to determine the SPC for NDM supply points.

For supply points with an Annual Quantity (AQ) of less than 73,000 kWh, (in general residential customers and small industrial supply points), the Supply Point Capacity (SPC) is calculated using the AQ and two factors which are calculated annually by a process approved by the CRU. The formula is:

$$\text{SPC (AQ < 73,000 kWh)} = \frac{\text{AQ} * \text{Capacity Scaling Factor}}{\text{Average Residential Load Factor} * 365}$$

The Average Residential Load Factor is the ratio of the average daily demand to the peak load. The Capacity Scaling Factor ensures the NDM supply point capacities are consistent with the top down NDM peak load. The top down NDM peak load is the capacity that would be required by the NDM sector if there had been a 1 in 50 peak day demand during the winter of a Gas Year.

The A and B factors are used in the formula for calculating the SPC for supply points with an Annual Quantity $\geq 73,000$ kWh, (Industrial and Commercial supply points and Large Residential supply points):

$$\text{SPC (AQ} \geq 73,000 \text{ kWh)} = (\text{A} + \text{B} * \text{AWDDpeak}) * \text{Capacity Scaling Factor}$$

AWDDpeak is the adjusted weighted degree day on a 1 in 50 peak day

The most recent A and B factors will be used to set the Transporter Determined SPC.

Reference

Supply Point Annual Quantity Calculation Procedure – Version 2.0, 20 February 2020

Distribution LDM, DM and NDM Supply Point Capacity Setting Procedure – Version 2.0, 20 February 2020

FAR Procedures – Forecasting, Allocation, Reconciliation – Version 6.0, 20 February 2020

The three documents above can be found in the link below:

<https://www.gasnetworks.ie/corporate/gas-regulation/service-for-suppliers/capacity-register-and-far/>

Connections Policy Document - Revision 5.0, October 2018

<https://www.gasnetworks.ie/business/renewable-gas/renewable-gas-information/Gas-Networks-Ireland-Connections-Policy-Document-Revision-5.0.pdf>

<https://www.gasnetworks.ie/corporate/gas-regulation/tariffs/>