



Overview

The Summer Outlook 2023 sets out Gas Networks Ireland's analysis and views of the adequacy of the gas network for the summer period (April to September 2023). It is designed to inform the energy industry on the anticipated status of the gas system over the period.

Key messages

Energy security concerns were triggered across Europe due to the invasion of Ukraine by Russia in February 2022. Since then, the EU has taken considerable steps to increase its Liquefied Natural Gas (LNG) supply capability and storage utilisation in order to reduce its reliance on Russian gas supplies. Based on the assessment of the supply sources to Ireland, it is not currently envisaged that there will be a disruption to Gas Network Ireland's gas supply during the summer months. This is due to continued indigenous supply from the Corrib gas field and interconnection with the network in Great Britain (GB). This is supported by the statement that National Gas Transmission (formerly National Grid) expect that there will be sufficient supply to meet GB demand this summer, and that gas demand will largely be met by supplies from UK indigenous production and from Norway (noting the offshore works by Gassco, impacting flows from Norway), with LNG making up the balance.

Gas Networks Ireland observed an increase in gas demand (8.2%) in the summer of 2022 against the equivalent period in 2021. This growth is driven by an increase (18%) in gas consumption for power generation for the same comparative period. This is despite decreases in demand of -14.5% and -6.7% in Residential and Industrial and Commercial (I&C) sectors respectively.

In the summer period 2022, indigenous gas supplies made up 26% of Republic of Ireland (ROI) gas demand (Corrib 26%, Biomethane ~0.06%) with the remaining 74% being met from imports from Great Britain (GB) through the Moffat Entry Point.

Gas-fired power generation continues to play a key role in complimenting the intermittent nature of wind generation. In the summer period 2022, there were days where gas accounted for up to 89% of electricity generation on the Single Electricity Market (SEM).

Based on the forecast indigenous supply scenario, daily summer demand in 2023 is forecast to exceed the indigenous supply capacity, with the majority of gas demand to be met by imports from the Moffat Entry Point.

Moffat is set to continue as the dominant supply source. Corrib is anticipated to operate at its forecasted capacity during the summer period and is the dominant indigenous gas source. The share of renewable gas in the network is set to grow over the coming years.

Upstream planned maintenance is scheduled to take place at the Corrib Entry Point from 17th of July to 15th of August 2023. During this period, all customer gas demand will be met by imports from GB through Moffat.

Gas Networks Ireland monitors transmission system imbalances as a result of shipper balancing activities on a daily basis. Ongoing increased liquidity on the Marex Spectron Trading Platform allows Gas Networks Ireland to trade out system wide imbalances in an efficient manner. It is essential, as we continue to witness significant price volatility in the market, that shippers are made aware of the negative impact of not maintaining individual balanced positions, i.e. high balancing costs for Gas Networks Ireland that inevitably are paid for by the shippers.

Ongoing supply/demand measures in response to the invasion of Ukraine by Russia

In response to the invasion of Ukraine by Russia in February 2022, a number of measures were introduced in order to address the risk of gas supply shortages in Europe during winter 2022/23 and beyond. The EU published its Save Gas for Safe Winter proposal which included a European Gas Demand Reduction Plan to reduce gas use in Europe by 15% between 1st August 2022 and 31st March 2023 compared to the five-year average). The region reached and exceeded this target, with overall EU27 gas demand down by 18.6% (equivalent to a reduction of 56 bcm) compared to the previous five years. The European Commission has proposed to extend the voluntary gas demand cuts of 15% for winter 2023/24. While not strictly bound by this target, Ireland endeavours to meet this target on a voluntary basis. Winter 2022/23 ROI gas demand trended -2.7% vs. the 5-year average:

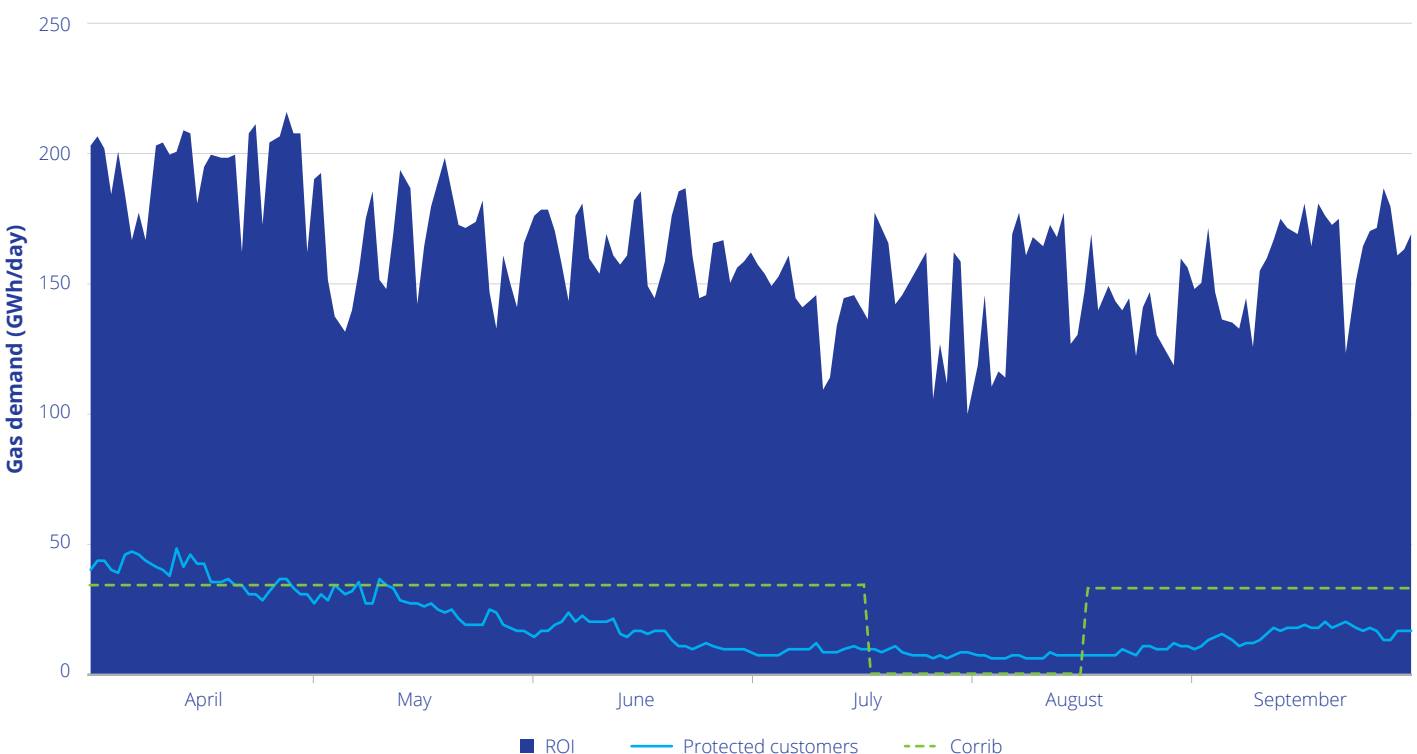
- Power generation represents over 50% of gas demand in Ireland, and so the trend is heavily influenced by gas demand in this sector, which in turn is largely dependent on wind output, generator and electrical interconnection availability, and electricity system demand at any point in time. At the end of Winter 2022/23, gas demand for power generation trended +7.5% vs. the 5-year average.
- Final end use gas demand incorporates all sectors of gas demand excluding power generation, i.e. I&C and NDM which, at the end of Winter 2022/23, trended -12.9% vs. the 5-year average. Drivers of this reduction include a milder winter and decreases in consumption both at a commercial and residential level in response to high prices.

The EU Gas Storage Regulation sets out targets for European natural gas storage sites to help mitigate the effect of any supply challenges with volumes to reach 90% of capacity by 1st November 2023. The EU gas stock level exited the heating season at the start of April with storage remaining 56% full, well above the five-year average of 34%, and are at 77% at the time of publication which will enable the 90% target by the end of the summer season 2023 to be achieved. The ENTSOG Summer Supply Outlook assessment outlines this is achievable, even in the event of minimised Russian gas imports and a full Russian pipeline supply disruption, based on existing gas infrastructure, including new LNG and interconnector projects commissioned last year, and cooperation between the countries.

National Gas Transmission expect that there will be sufficient supply to meet GB demand this summer, and that gas demand will largely be met by supplies from UK indigenous production and from Norway (noting the offshore works by Gassco, due to be completed by the 15th July, impacting flows from Norway), with the balance coming from LNG. During the summer of 2022, record levels of gas flows from GB into Europe were observed as a transit for gas going to Europe. This trend is anticipated to continue in summer 2023, but to a lesser extent based on European post-winter storage levels and new LNG projects reducing the EU's dependency on GB exports. This is starting to materialise with UK exports into Europe significantly down compared to summer 2022. From April to the 21st June 2023, the UK have exported 4.7 bcm of gas to Europe compared to 5.6 bcm at the same time in 2022.

Figure 1 below illustrates the natural gas supply capability at Corrib to cover the forecast demand from protected customers, aside from a period during mid-July 2023 to mid-August where upstream maintenance works are scheduled at Corrib. During this time, there is no anticipated effect on gas customers, whose demand will be met by imports from GB via Moffat.

Figure 1: Forecast ROI protected customer demand, total ROI gas demand and Corrib supply



Summer period 2022 supply

Figure 2 shows actual gas supply sources during the summer 2022 period. It shows that 26% of total ROI demand was met by indigenous supply sources with the Moffat Entry Point supplying the remaining 74%.

Figure 2: Summer 2022 actual gas supply¹

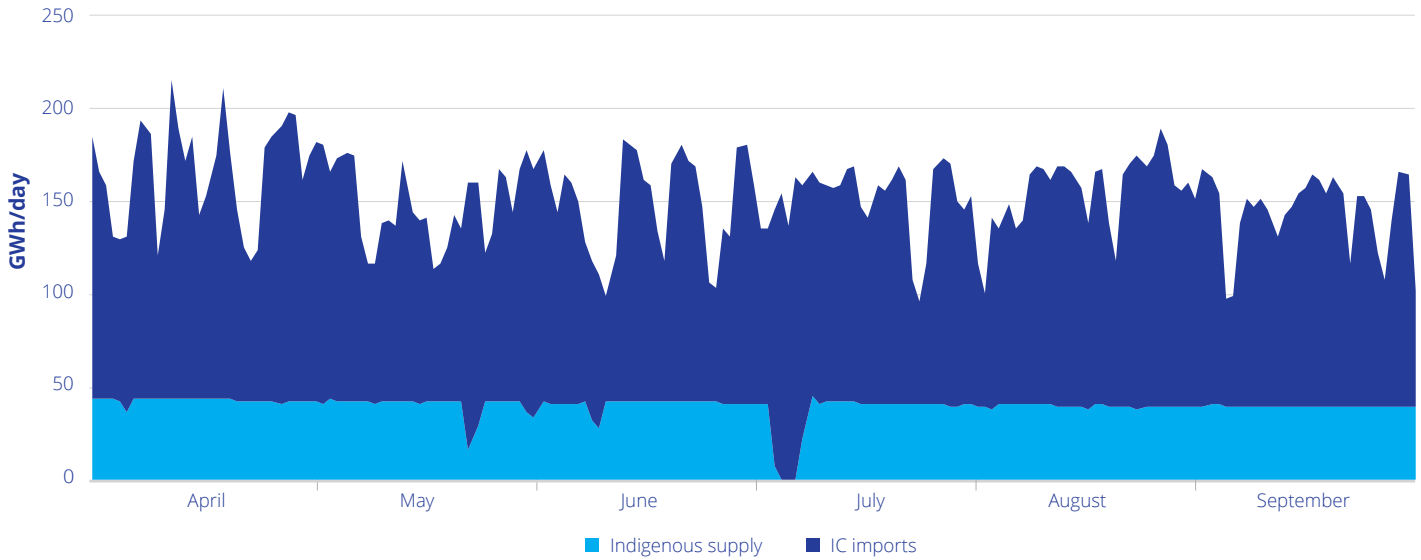
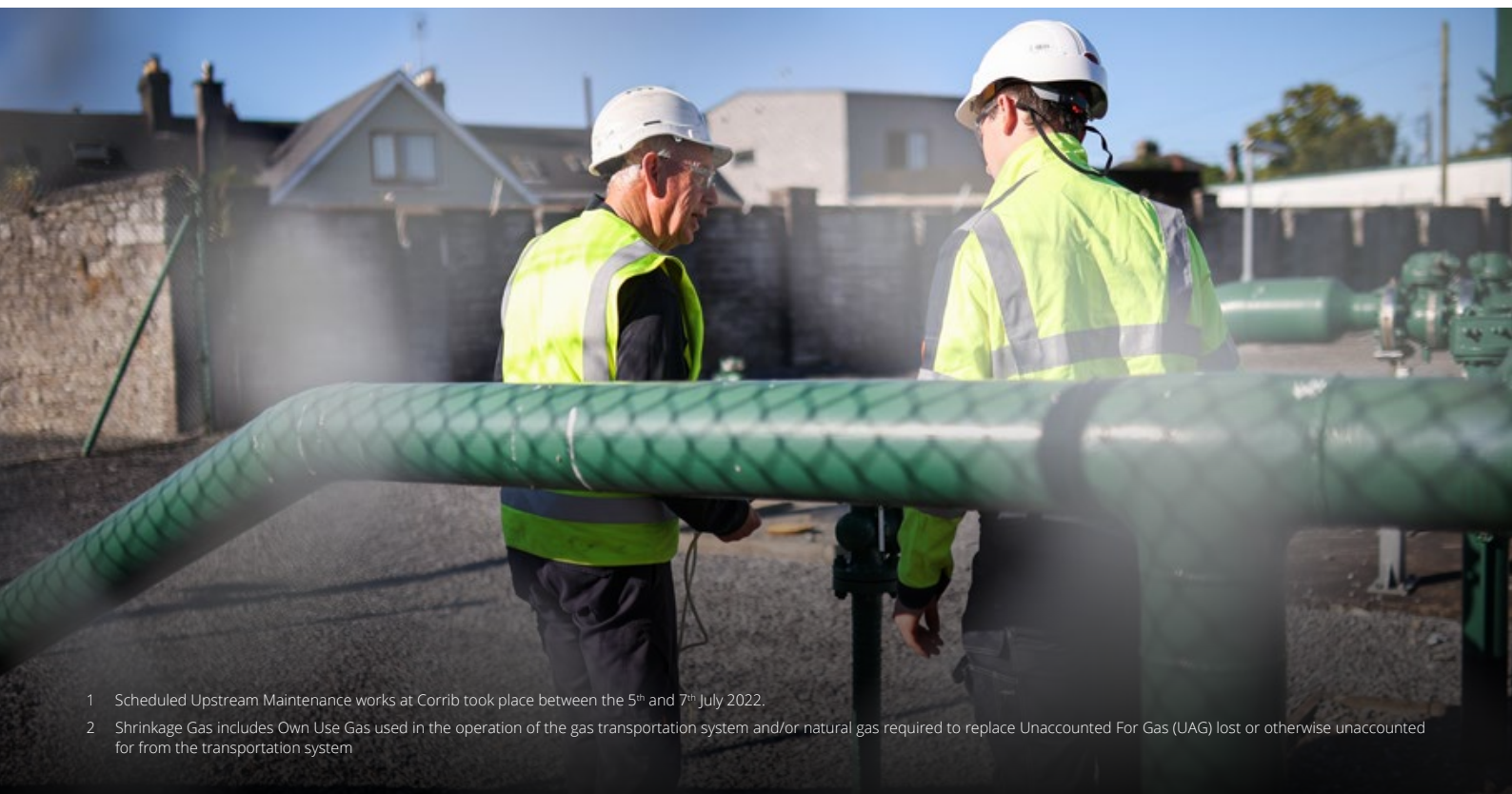


Table 1 shows the summer 2022 breakdown by entry point. It can be seen that of the total ROI supply (including shrinkage²) of 27,918 GWh, Moffat imports supplied the majority of gas with 20,621 GWh (74%), followed by Corrib which supplied 7,279 GWh (26%), and with biomethane contributing 17.4 GWh (0.06%), which is more than a fivefold increase on summer 2021 volumes.

Table 1: Summer 2022 actual gas supply by entry point

Moffat	Corrib	Biomethane	Total ROI supply
20,621 GWh	7,279 GWh	17.4 GWh	27,918 GWh



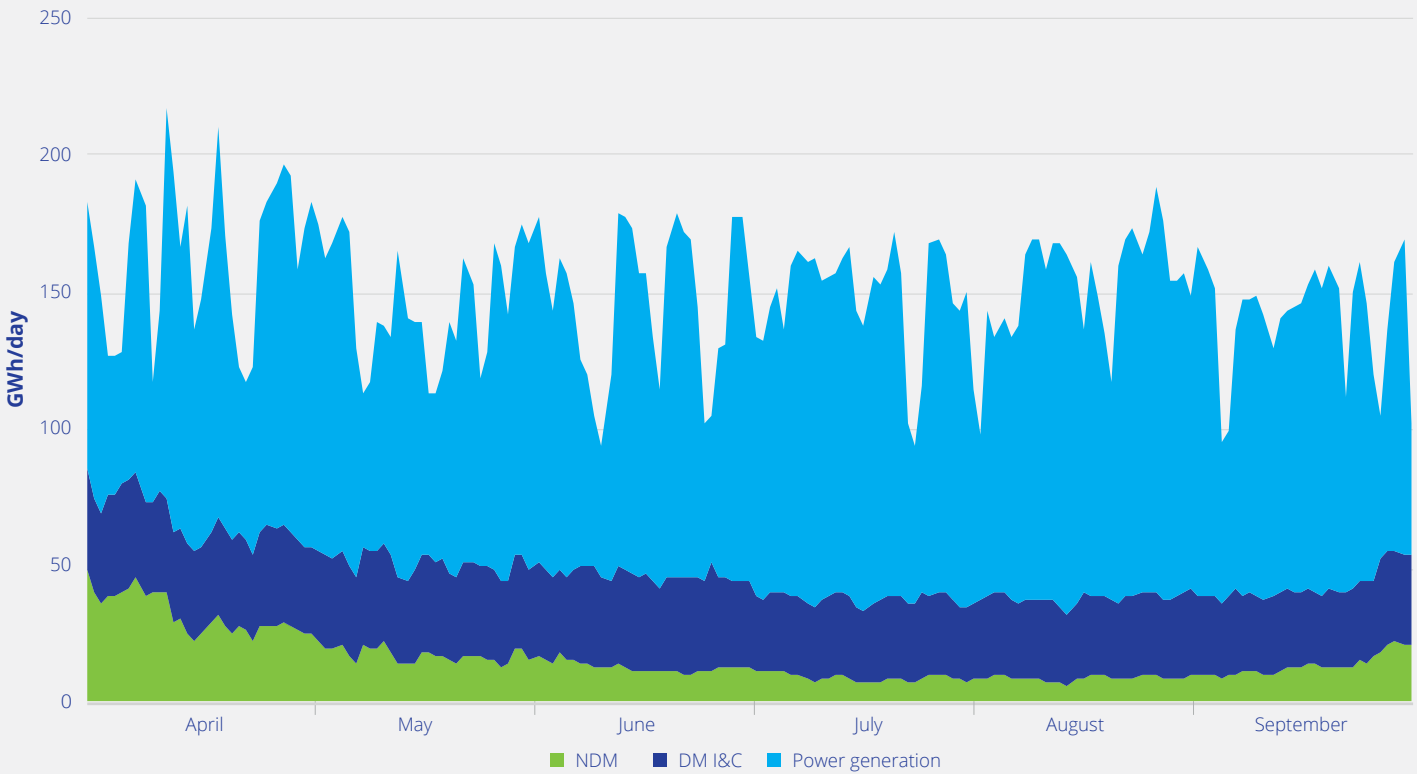
¹ Scheduled Upstream Maintenance works at Corrib took place between the 5th and 7th July 2022.

² Shrinkage Gas includes Own Use Gas used in the operation of the gas transportation system and/or natural gas required to replace Unaccounted For Gas (UAG) lost or otherwise unaccounted for from the transportation system

Summer period 2022 demand

Figure 3 shows actual gas demand for the 2022 summer period. Total gas demand over the period was 8.2% higher than the 2021 summer period.

Figure 3: Summer 2022 actual gas demand



Daily Metered (DM) I&C sector gas demand for the summer 2022 period was -5.7% lower than the 2021 period. Non-Daily Metered (NDM) demand was -12.9% lower compared with the summer 2021 period; with weather correction taken into account the NDM sector demand was -6.8% lower. Table 2 shows the summer 2022 gas demand by sector.

Table 2: Summer 2022 actual gas demand by sector

Power Generation	Total DM I&C	NDM	Total ROI Demand
18,747 GWh	5,775 GWh	2,904 GWh	27,425 GWh

The reduction in I&C and NDM demand in the summer of 2022 compared with 2021 is due to the high energy prices as a consequence of the energy crisis and pressure from broader economic inflation.

In the power generation sector, gas demand was 18% higher than the 2021 summer period and accounted for 56% of the total power generation fuel mix compared to 49% in summer 2021. During summer 2022, wind generation supplied 27% of Ireland's electricity demand compared to 23% for the same period in 2021. ROI was a net importer of electricity across the summer 2022 period, with imports accounting for 2% of demand. Coal accounted for 8% of the fuel mix in summer 2022 compared to 12% for the same period in 2021.

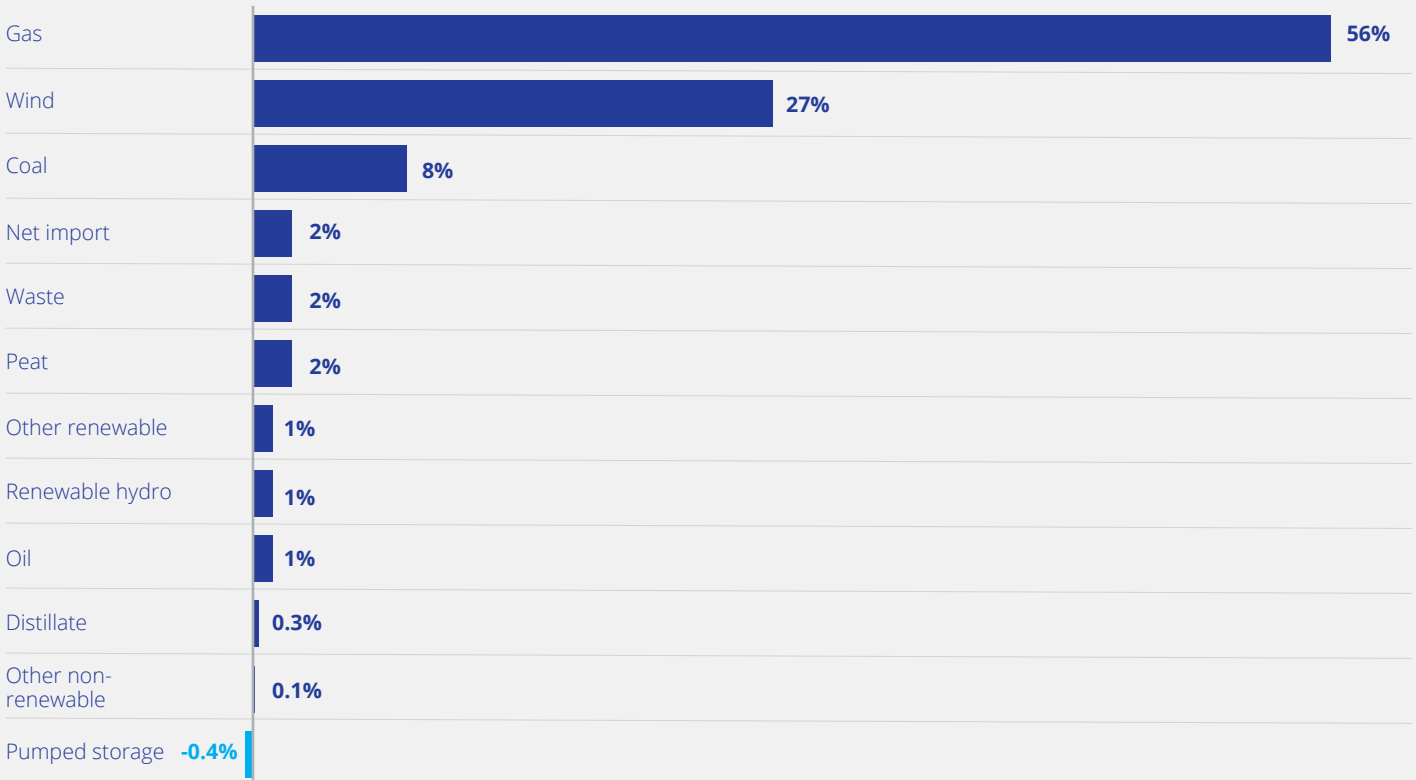
Key drivers of the increase in gas demand for power generation include increased electricity demand throughout the summer 2022 period coupled with the high availability of the gas fleet displacing other thermal generation (oil and coal) following substantial outages in summer 2021. Power generation was the most variable of the gas demand sectors across the 2022 summer period, continuing historical trends. Low wind generation typically results in an increase in gas-fired generation and vice versa. The flexibility of gas-fired generation complements both the intermittent nature of wind generation and the intra-day changes in the electricity demand profile. The partnership between flexible gas-fired power generation and intermittent renewable generation will be a key factor in enabling Ireland's renewable integration ambition into the future, as set out in the Climate Action Plan and the National Energy and Climate Plan.

Over the summer 2022 period, on high wind-days, up to 89% of Ireland's electricity demand was met by wind generation. On low wind days, this figure was as low as 22%.

Summer period 2022 demand continued

Figure 4 shows the power generation Fuel Mix for ROI for summer 2022. Gas contributed to approximately 56% of ROI's power generation fuel mix, demonstrating its important role in electricity generation.

Figure 4: Summer 2022 power generation fuel mix



Summer period 2023 forecast supply position

Corrib and renewable gas are the remaining indigenous gas sources, with Corrib being the dominant indigenous gas source. The share of renewable gas in the network is set to grow over the coming years.

The maximum forecasted supply³ from Corrib during this period is 34.4 GWh/day. During the summer period, Corrib gas supplies are anticipated to decline to approximately 33% of initial peak production levels (103.9 GWh/d). Based on this supply scenario, daily summer demand is forecast to exceed the indigenous supply capacity, with the balance of gas demand to be met by imports from the Moffat Entry Point⁴.

Summer period 2023 forecast demand

Gas demand for summer 2023 is forecast to be higher (8.1%) than in 2022. This forecast directly depends on assumptions around fuel prices and planned and forced generator outages.

Gas prices hit historical highs across Europe in the summer of 2022. From September 2022, gas prices began to fall dramatically but remain significantly above the levels seen in 2020 and the front half of 2021. As price differentials narrow, combined with the impact of other thermal generators on outage, namely the oil-fired generators at Tarbert, gas generation is forecast to increase by 6.6%.

The peak day for the gas demand for power is typically expected to occur during the summer months when low wind conditions increase the requirement for gas-fired generation to meet electricity demand. However, given the new record electricity system peak demand in December 2022 coinciding with a period of low wind, the peak day for power gas demand for the gas year 2022/23 may have already occurred in December 2022.

NDM sector gas demand is seasonally lower in the summer months due to being largely weather-driven. Demand in this sector is expected to increase by 8.7% in summer 2023 compared to 2022, returning to levels of demand typically associated with average weather conditions and cooking and water heating requirements.

³ The supply scenario represents maximum daily supply capacities at indigenous sources. Actual supply profiles on a given day may differ from the maximum daily scenario.

⁴ The Moffat Entry Point has a current technical capacity of 387 GWh/day and supplies gas to ROI, Northern Ireland, and Isle of Man.

Gas system operability

Gas Networks Ireland monitors transmission system imbalances as a result of shipper balancing activities on a daily basis. Ongoing increased liquidity on the Marex Spectron Trading Platform allows Gas Networks Ireland to trade out system wide imbalances in an efficient manner. It is essential, as we continue to witness significant price volatility in the market, that shippers are made aware of the negative impact of not maintaining individual balanced positions, i.e. high balancing costs for Gas Networks Ireland that inevitably are paid for by the shippers.

The ongoing gas market price volatility evident since the beginning of the Russian invasion of Ukraine, and the associated 3.5% of the System Average Price that is levied as a penalty against the Shippers for imbalances, continue to serve as an appropriate incentive to Shippers to appropriately balance their portfolios.

Planned summer maintenance activities

Upstream of the Gas Networks Ireland transmission system, the following scheduled maintenance works are currently anticipated, as advised by gas producers/connected system operators:

Table 3: Scheduled Summer maintenance upstream of entry points

Entry point	Scheduled upstream maintenance	Period	Duration (Days)
Corrib	Planned maintenance	17 th July – 15 th August 2023	30

Gas Networks Ireland has no other planned maintenance work on the transmission system that would affect gas supply to our customers during the summer period.

Data freeze

In order to complete the detailed analysis required to produce this document, the input data was defined in May 2023, based on the most up to date information available at the time.

Disclaimer

Gas Networks Ireland has followed accepted industry practice in the collection and analysis of data available. However, prior to taking business decisions, interested parties are advised to seek separate and independent opinion in relation to the matters covered by this Summer Outlook and should not rely solely upon data and information contained therein. Information in this document does not purport to contain all the information that a perspective investor or participant in the Republic of Ireland's gas market may need.

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