

Summer Outlook 2022



Overview

The Summer Outlook 2022 sets out Gas Networks Ireland's analysis and views of the adequacy of the gas network for the summer ahead (April to September 2022). It is designed to inform the energy industry on the anticipated status of the gas system over the period, to help the industry in preparing for the summer months.

Key messages

Energy security concerns have been triggered across Europe due to the invasion of Ukraine by Russia in February 2022. This has increased the volatility in the price of wholesale gas, which has been rising rapidly since the middle of 2021 resulting in historical highs across Europe in Q1 2022.

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 Great Britain's (GB) network at Moffat in Scotland, of which only a small portion of its gas supply originates from Russia. As Ireland receives the majority of its gas supply from GB, it is anticipated that restrictions on the importation of Russian gas to the EU will not significantly impact on gas supply to Ireland. This is supported by the statement that 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. Furthermore, as of the 1st April 2022, the United Kingdom's storage facilities were 79% full, a historical record high for the season.

However, given the interconnected nature of gas markets throughout Europe, there is the potential for continued high wholesale gas prices for the summer period.

Gas Networks Ireland has continuous communication channels in place with all our connected system operators, including a daily call between ENTSOG¹ control rooms. This communication channel provides Gas Networks Ireland with a daily update on the European gas supply position, including gas transiting through Ukraine from Russia. There is also regular communication between the NGEM (National Gas Emergency Manager – ROI), the NEC (Network Emergency Coordinator – GB) and the NINEC (Northern Ireland Network Emergency Coordinator – NI) with respect to the gas supply situation.

Following the lifting of Covid-19-related restrictions in February 2022, it is not envisaged that there will be any residual negative impact on gas supply or demand in Ireland during summer 2022. Furthermore, there has been no resulting negative impact on the operation of the gas network since the introduction of the first Covid-19-related restrictions in March 2020. The gas network has continued to maintain security of supply to houses, businesses and power generation customers without interruption during this period.

Gas Networks Ireland has observed a reduction in gas demand (-7.3%) in the summer of 2021 against the equivalent period in 2020. This reduction is driven by the decrease (-13.4%) in gas consumption for power generation for the same comparative period which is directly related to the sustained outages at multiple large gas-fired generators during summer 2021. The overall reduction in gas demand is despite increases in demand of 2.7% and 16.1% in the I/C and Residential sectors respectively.

In the summer period 2021, 28% of Republic of Ireland (ROI) gas demand was met by indigenous gas supplies (Corrib ~28%, biomethane ~0.01%) with the remaining 72% being met from GB imports 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 2021, there were days where gas accounted for up to 69% of electricity generation on the Single Electricity Market (SEM).

Moffat is set to continue as the dominant supply source. Corrib is anticipated to operate at its forecasted capacity during the summer period. Gas Network Ireland's vision is to replace natural gas with renewable gases, such as biomethane and hydrogen, and further enhance Ireland's energy security.

Upstream planned maintenance is scheduled to take place at the Corrib Entry Point for 7 days in July 2022.

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. As a result of the Russia/Ukraine conflict, and resulting significant price volatility, it remains imperative that balancing actions are kept to a minimum and Gas Networks Ireland continues to encourage shippers to maintain balanced positions.

¹ European Network of Transmission System Operators for Gas

Assessment of the impact of Ukraine invasion on gas supply

The invasion of Ukraine by Russia has triggered energy security concerns in Europe. In March 2022 the European Commission published the REPowerEU plan², which is a package of measures in direct response to the conflict that aims to make Europe independent from Russian fossil fuels well before 2030. It also includes an additional legislative proposal which outlines a minimum 80% gas storage level obligation for next winter to ensure security of energy supply, rising to 90% for the following years.

As part of their summer outlook, ENTSOG have assessed the dependence of the EU on the Russian supply for the summer ahead. This assessment includes the evolution of gas supply alongside gas exports, storage injection and the ability of the gas infrastructure to meet demand.

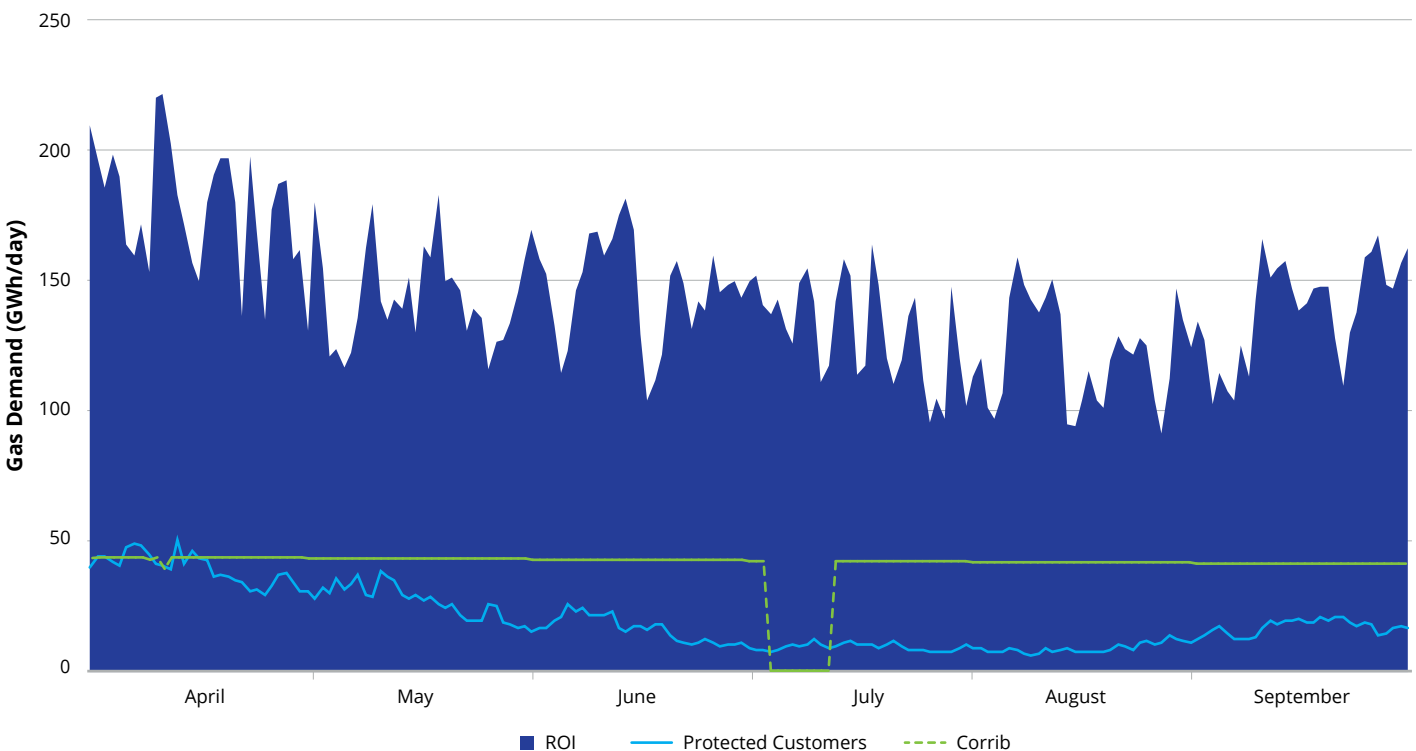
Similar to most other European countries (excluding Latvia, Estonia and Finland), Ireland does not rely on Russian gas to satisfy demand³. However, most European countries do rely on Russian gas to reach the 80-90% storage level target on 1st October. The EU is dependent on Russian gas to supply a minimum of 20% of it's storage target for winter. On 1 April 2022, the EU average storage level (26%) was in the range of the previous season. Some countries, including the United Kingdom at 79% full on 1st April 2022, have reached the highest storage levels observed in history for the time of year. On the other hand, some European countries (Austria, Czech Republic, Germany, Poland, Slovakia) are withdrawing a part of their gas stored to satisfy the need of demand at the beginning of summer (April and May).

To minimise the share of Russian gas in the supply mix, the EU can increase LNG imports up to 80 bcm over the summer season. However, such import volumes are significantly higher than the average 50 bcm observed in the past years, and even higher than the 70 bcm observed in the last winter seasons. Furthermore, should more LNG supply be available on the global market, infrastructure limitations prevent additional LNG imports.

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. There is the potential for higher flows from GB into Europe this summer given that European storage stocks are currently low and due to some uncertainty over supplies into Europe. National Grid are anticipating that their National Transmission System may act as a transit for gas going to Europe.⁴

Protected customers⁵ on the Gas Network Ireland's network will be insulated from the impact on natural gas supply due to the Ukraine invasion owing to indigenous gas supply from Corrib being forecast to meet protected customer demand. Figure 1 below illustrates that Corrib would supply enough natural gas to cover the forecast demand from protected customers, aside from a period of 7 days in July 2022 where upstream maintenance works are scheduled at Corrib. During this time, protected customers will be supplied by imported gas via Moffat.

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



2 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52022DC0108>

3 https://www.entsog.eu/sites/default/files/2022-04/SO0035-22_Summer_Supply_Outlook_2022_BOA_Rev8.1_220427%20for%20publication.pdf

4 <https://www.nationalgrid.com/gas-transmission/document/139366/download>

5 Ireland's protected customers are defined as all non-daily metered sector customers, and in addition, priority customers in the daily metered sector, which include hospitals, nursing homes, retirement homes, high security prisons and district heating systems.

Summer period 2021 supply

Figure 2 shows actual gas supply sources during the summer 2021 period. It shows that 28% of total ROI demand was met by indigenous supply sources during the 2021 summer period with the Moffat Entry Point supplying the remaining 72%. As a result of planned maintenance works upstream of the Corrib Entry point, there was no supply from Corrib for 22 days during the month of July 2021 during which time all ROI gas demand was met by GB imports via Moffat.

Figure 2: Summer 2021 actual gas supply

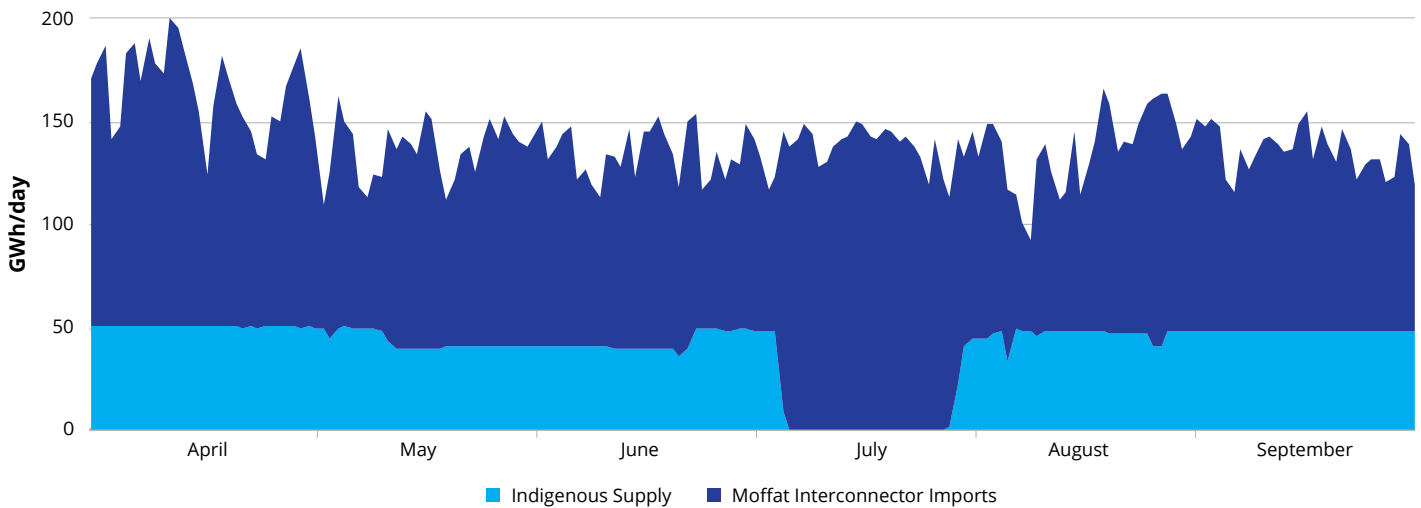


Table 1 shows the summer 2021 breakdown by entry point. It can be seen that of the total ROI supply (including shrinkage⁶) of 25,898 GWh, Moffat imports supplied the majority of gas with 18,635 GWh (72%), followed by Corrib which supplied 7,260 GWh (28%), and with biomethane contributing 3 GWh (~0.01%).

Table 1: Summer 2021 actual gas supply by entry point

Moffat	Corrib	Biomethane	Total ROI Supply
18,635 GWh	7,260 GWh	3 GWh	25,898 GWh

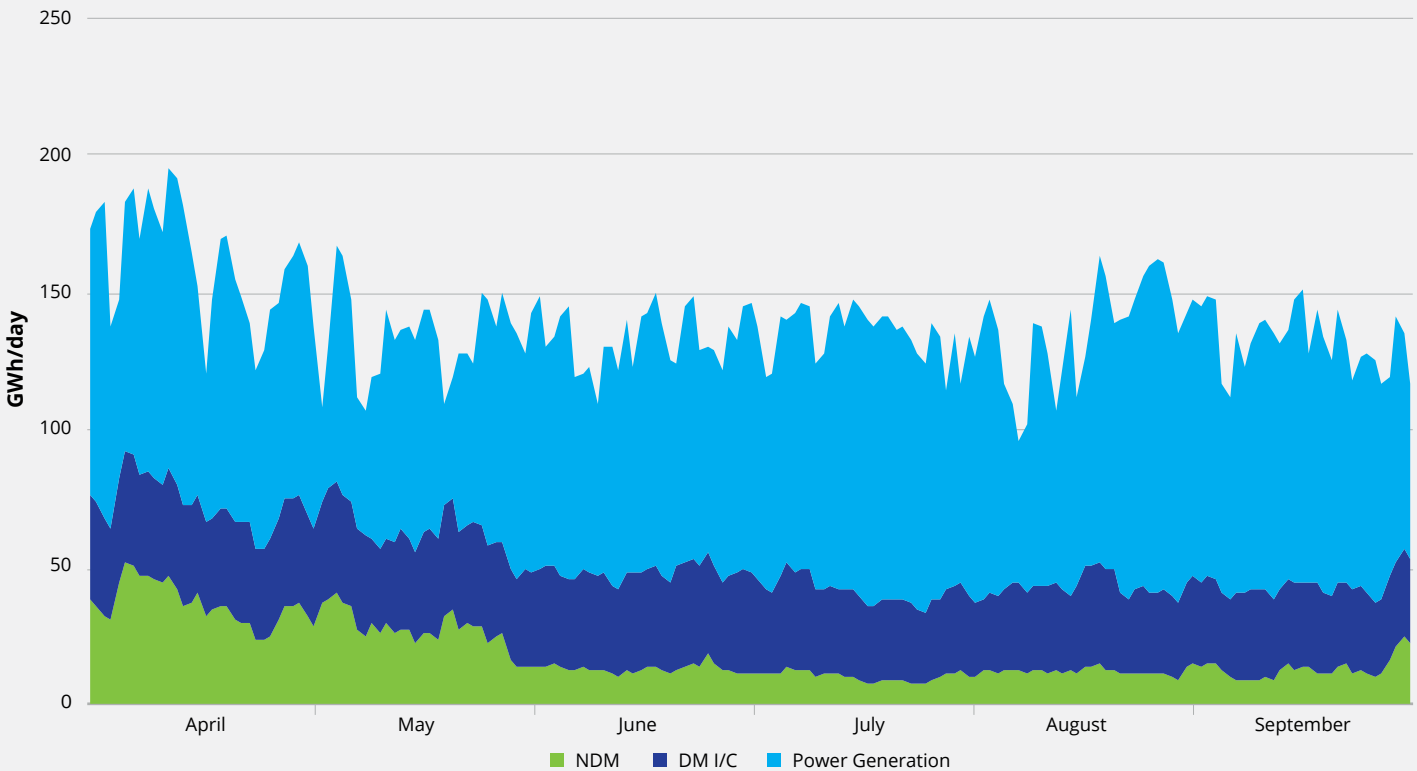


⁶ Shrinkage includes Own Use Gas used by the Transmission System Operator for the operation of the gas network and any gas that is required to replace Unaccounted For Gas lost or otherwise unaccounted for from the network.

Summer period 2021 demand

Figure 3 shows actual gas demand for the 2021 summer period. Total gas demand over the period was below (-7.3%) demand from the 2020 summer period.

Figure 3: Summer 2021 actual gas demand



DM I/C sector gas demand for the summer 2021 period was up 1.9% on the 2020 period. NDM demand was also up, by 11.5% on the 2020 period; with weather correction taken into account the NDM sector demand was up by 10.7%. Table 2 shows the summer 2021 gas demand by sector.

Table 2: Summer 2021 actual gas demand by sector

Power Generation	Total DM I/C	NDM	Total ROI Demand
15,892 GWh	6,126 GWh	3,333 GWh	25,352 GWh

The increase in I/C demand in summer 2021 vs. the same period in 2020 can be related to the easing of the restrictions introduced in response to the COVID-19 pandemic.

In the power generation sector, gas demand was -13.4% lower than the 2020 summer period and accounted for 49% of the total fuel mix compared to 62% in summer 2020. During summer 2021, wind generation supplied 23% of Ireland's electricity demand compared to 29% for the same period in 2020. ROI was a net importer of electricity across the summer 2021 period, with imports accounting for 10% of demand, whereas ROI was a net exporter of electricity during summer 2020. Coal accounted for 12% of the fuel mix in summer 2021 compared to just 3% for the same period in 2020.

Key drivers of the reduction in gas demand for power generation include sustained outages throughout the summer 2021 period at a number of large gas-fired CCGT generators coupled with significant increases in gas prices across the summer period.

Power generation was the most variable of the gas demand sectors across the 2021 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 2021 period, on high wind-days, up to 76% of Ireland's electricity demand was met by wind generation. On the low wind days, this figure was as low as 1%.

Summer period 2021 demand continued

Figure 4 shows the power generation Fuel Mix for ROI for summer 2021. Gas contributed to approximately 49% of ROI's power generation fuel requirement, demonstrating its important role in electricity generation.

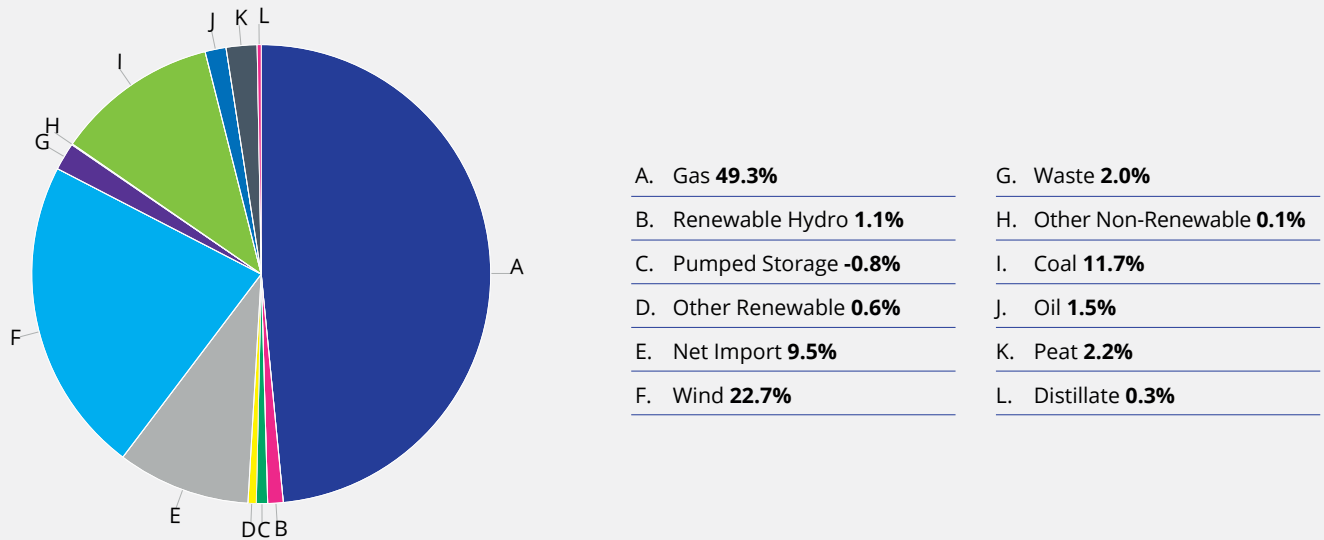


Figure 4: Summer 2021 Power Generation Fuel Mix⁷

Summer period 2022 forecast supply position

Corrib and renewable gas (biomethane) are the remaining indigenous gas sources, with Corrib being the dominant indigenous gas source. Gas Network Ireland's vision is to replace natural gas with renewable gases, such as biomethane and hydrogen, and further enhance Ireland's energy security.

The maximum forecasted supply⁸ from Corrib during this period is 43.7 GWh/day. During the summer period, Corrib gas supplies are anticipated to decline to approximately 39% of initial peak production levels (112 GWh/day). 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 Point⁹.

Protected customers on the Gas Network Ireland's network will be insulated from the impact on natural gas supply due to the Ukraine invasion owing to indigenous gas supply from Corrib being forecast to meet protected customer demand.

Summer period 2022 forecast demand

Gas demand for summer 2022 is forecast to be lower than the same period in 2021. This forecast is directly dependent on assumptions around fuel prices and on planned and forced generator outages.

The outage on the EWIC electricity interconnector for the month of April will likely have the effect of increasing gas demand for power during this period due to gas turbines typically being the marginal plant in the Single Electricity Market (SEM). The Moyle interconnector, connecting NI and Scotland, is planned to be de-rated to 250MW capacity for the first half of the summer period, adding a further limit on electricity imports and exports with GB and likely causing a further increase in gas-fired generation in ROI.

However, with gas prices hitting historical highs across Europe in Q1 2022 (likely to be exacerbated by continued pressure due to the war in Ukraine and the European Commission's response measures), gas-fired generation could fall down the merit order in favour of other generation types. In addition, with Great Island CCGT, which typically provides baseload capacity, forecast to be on outage for the majority of the summer, there is the potential for a decrease in gas demand unless it is replaced by other gas-fired generation within the SEM. The type of replacement generation is dependent on the trajectory of gas, coal and oil prices as previously mentioned.

The peak day for the gas demand for power is typically expected to occur during the summer months where low wind conditions increase the requirement for gas-fired generation to meet electricity demand. However, given the conditions outlined above regarding high gas prices and the outage at Great Island CCGT, the peak day for power gas demand for gas year 2021/22 may have already occurred in winter 21/22.

NDM sector gas demand is seasonally lower in the summer months due to being largely weather-driven and summer 2022 demand in this sector is expected to remain similar to the same period in 2021.

⁷ Note that figures may not add to 100% due to rounding.

⁸ 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.

⁹ 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. As a result of the Russia/Ukraine conflict, and resulting significant price volatility, it remains imperative that balancing actions are kept to a minimum and Gas Networks Ireland continues to encourage shippers to maintain balanced positions.

The increased gas market price volatility to date in 2022, due to fears that Russian gas supplies could be interrupted due to the war in Ukraine, and the associated 3.5% of the System Average Price that is levied as a penalty against the Shippers for imbalances, appears to be serving as an incentive to Shippers to appropriately balance their portfolios.

Planned summer maintenance activities

During summer 2022, Site Acceptance Tests at Beattock Compressor Station, associated with the Station Splitting Project, will take place. Associated outages are scheduled to take place on a number of days early in the summer. These outages will not impact on capacity available to shippers however they may result in an irregular flow profile on the interconnector system over the course of the days in question whilst continuing to meet aggregate system requirements each day.

Two gas turbine service exchanges will take place in May and June, one at Beattock and one at Brighthouse Bay. It is not envisaged that these exchanges will have an impact on the capacity available to Shippers.

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 Points¹⁰

Entry Point	Scheduled upstream maintenance	Period	Duration (Days)
Corrib	Planned Maintenance	4 th – 11 th July 2022	7

Data freeze

In order to complete the detailed analysis required to produce this document, the input data was defined in April 2022, 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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¹⁰ <https://iip.remitor.eu/#/?publisher=47X00000000296P>

