



gaslink
Gas System Operator

Winter Outlook



Key Messages

- Gas supplies from Great Britain (GB) via the Moffat Entry Point will continue to meet over 94% of the Republic of Ireland's (ROI) annual gas demand with the balance met from indigenous production and storage. The reinforcement of the 50 km single section of transmission pipeline in South West Scotland remains a priority.
- The outlook for ROI indicates sufficient gas supplies and network capacity to meet the anticipated demands over the winter period, subject to acceptable flow profiles & pressures at the Moffat Entry Point.
- The latest gas demand forecast for the forthcoming winter is as per the Network Development Plan published in September 2014.
- The South West Scotland Onshore System (SWSOS) is likely to be within 99% of its capacity limit in the event of severe weather causing peak gas demands in winter 2014/15.
- Inch production and storage gas supplies are assumed to be fully available during the forthcoming winter.
- There will be limited system flexibility to accommodate within-day shipper re-nominations at the Moffat Entry Point should severe weather conditions occur. This limitation will be further compounded if electricity imports are lower than anticipated.

2014/15

Overview

This winter outlook report sets out Gaslink's analysis and views of the adequacy of the gas network for the coming winter. The ROI's gas supply position is dependent on both the supply of gas and on the system's ability to transport the gas to the end user.

In 2013/14, GB imports through the Moffat Entry Point met 94% of annual ROI gas demands¹ and 86% of peak day gas demands. The balance of gas supply was met by supplies through the Inch Entry Point.

It is anticipated that PSE Kinsale Energy Limited's gas storage and production facility will continue normal operation throughout the winter period.

The Corrib gas field is expected to commence commercial operations in mid 2015.

The majority of ROI gas demands will continue to be met by GB imports through the Moffat Entry Point in 2014/15 with the balance supplied through the Inch and Bellanaboy Entry Points. The latest gas demand forecast predicts Moffat flows will approach capacity limits in the event of 1-in-50 (severe) winter peak conditions occurring, and consequently, there will be limited system flexibility to accommodate within-day shipper re-nominations at Moffat.

Winter Period 2013/14

The 2013/14 winter period was significantly milder than the previous year, resulting in lower gas demand across all sectors. Reductions in I/C and residential gas demands were driven by milder weather conditions. Further reductions in the power generation sector gas demand were driven by the continuing dominant position for coal fired generation on the Single Electricity Market, increased electrical imports, and further growth in wind powered generation.

The 2013/14 system peak day throughput of 23.2 mscmd occurred on 25th November 2013. This figure includes flows for ROI, Northern Ireland (NI) and Isle of Man (IOM) of 17.1 mscmd, 5.7 mscmd and 0.4 mscmd respectively.

Based on a Degree Day (DD) comparison, the 2013/14 winter temperature was approximately 16% warmer than the previous year, 2012/13. The coldest day in winter 2013/14 occurred in mid February with an average temperature of 1.5°C; the equivalent day in 2012/13 occurred in late January with an average temperature of -1.5°C.

Wind capacity factors for 2013/14 were 1% higher than those for 2012/13. Combining this with increased installed wind generation capacity, total wind powered generation was significantly higher in 2013/14. Wind powered generation reached a maximum output of 1,769 MW on 17th December 2013 while wind powered generation during the 2013/14 peak gas demand day varied between a minimum of 11 MW and a maximum of 65 MW.



Great Britain National Grid Outlook

National Grid UK report that there is a positive gas security of supply position in the UK for 2014/15, with gas supplies, storage and network capacity well in excess of maximum expected demand. The UK gas demand for winter 2014/15 is expected to be similar to last year, including

a comparable forecast of power station demand. Forward energy prices for winter 2014/15 are anticipated to strongly favour coal over gas for power generation. Exports through Moffat are predicted to be similar to last year. The gas supply forecasts are similar to those for winter 2013/14. A

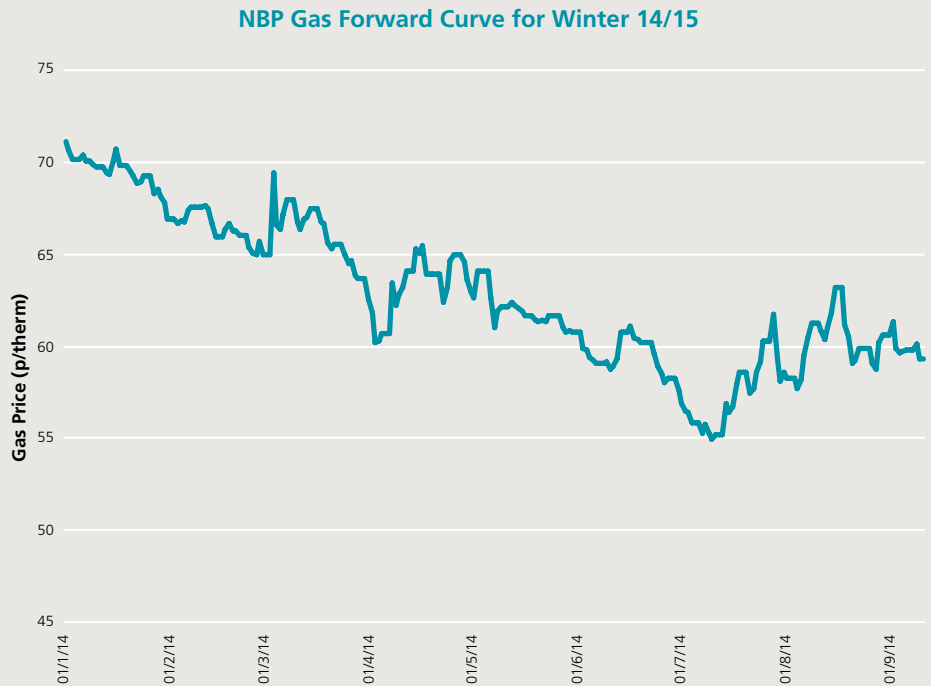
significant range of supply options are reported available to meet peak demands. UK indigenous gas production will account for less than half of the total gas demand, with imports, LNG and storage supplying the balance. UK storage is expected to be full by the start of the winter.

¹Power Generation, I/C and Residential sectors

Russia/Ukraine Dispute

During 2014, there was significant focus on the potential impact of a supply interruption to European gas imports from Russia via Ukraine, due to the escalation of tensions between both countries. In response to this, Gaslink, in conjunction with DCENR and CER, have carried out a stress test to assess how ROI gas supplies would be impacted by any such disruption. The test showed that disruption to ROI gas supply would not be likely. As the majority of Irish supplies are GB imports, the test was based on input from National Grid UK, whose stress tests have shown that there is sufficient capability in the GB gas market to cope with any disruption.

The following graph illustrates the UK National Balancing Point (NBP) Winter 2014/15 forward price curve since the start of 2014, which is a strong indication of market sentiment regarding the positive supply position in Great Britain, despite the Ukrainian-Russian situation.



Forecasted 1-in-50² Year Peak Day Demands for Winter 2014/15

Table 1 presents the 1-in-50 (severe) year peak day system demand forecast for 2014/15 as per the Network Development Plan 2014. This forecast assumes that the Moyle Electrical Interconnector will continue to be on partial outage. This forecast indicates that Moffat supply flows could be within 99% of its technical capacity limit. On such a peak day, flows through the Moffat Entry Point are expected to be high, hence system flexibility will be low and pressures may approach 56 barg at Twynholm.

It is to be noted that an extreme weather event late in the winter period in conjunction with possible low withdrawal rates from storage, due to low quantities of stored gas from higher withdrawals earlier in the season, could expose the Moffat Entry Point to flows in excess of its technical capacity.

Table 1: 1 in 50 Year Peak Day Flows for NDP 2014

	Winter 2014/15 (mscmd)
ROI Demand	24.5
Total Demand*	33.9
Inch Supply	3.2
Moffat Supply	30.7
Total Supply	33.9

* Total demand includes for NI and IOM gas demand as per NDP 2014.

² Gas demand under weather conditions, statistically likely to occur once every 50 years.



Operational Challenges for Winter 2014/15

The latest gas demand forecast predicts Moffat flows will approach capacity limits in the event of 1-in-50 winter peak conditions occurring, and consequently, there will be limited system flexibility to accommodate within-day shipper re-nominations at Moffat.

The flow profile at the Moffat Entry Point will need to be flattened and predictable; therefore, shippers at the Moffat Entry Point are advised to:

- Ensure D-1 nominations/re-nominations are as accurate as possible;
- Provide re-nominations in a timely and accurate manner in compliance with contractual arrangements; and
- Operate in accordance with the flow nomination information they have provided to the TSO.

In addition to the occurrence of 1-in-50 winter peak day demands, there are a number of other factors which could impact on the capacity and/or system flexibility at the Moffat Entry Point:

- Lower pressures available from the GB National Transmission System (GB NTS) at Moffat would imply lower station capacity and/or station discharge pressure;
 - The current technical capacity of the Moffat Entry Point is based on an Anticipated Normal Offtake Pressure (ANOP) of 47 barg.
 - Within day pressure volatility at Moffat on the GB NTS also impacts on compressor station operations.
- Gas with a lower Gross Calorific Value (GCV) at Moffat means higher volumes are required to meet downstream energy requirements.
 - Current technical capacity (31 mscmd) is based on a GCV of 39.8 MJ/scm³. Though the GCV at Moffat typically ranged between 39.0 MJ/scm and 40.0 MJ/scm during winter 2013/14, there were instances of the GCV approaching 38.6 MJ/scm.
- Bord Gáis Networks are currently progressing a project for the implementation of a short term network planning tool in mid 2015. This tool will be deployed in transmission grid operations to inform operational decision making. It will play a pivotal role in ensuring the transmission network continues to be operated in the most optimal manner with regard to efficiency, economy, safety and security of supply. Hydraulic modelling software will interface with existing Bord Gáis Networks operational information management systems to run real-time online transient network models and predictive/what-if scenario network models.
- A new combined-cycle gas turbine (CCGT) at Great Island is expected to become commercially operational during April 2015. An operational date of October 2014 was assumed in the Network Development Plan 2014. As the new CCGT was expected to displace lower merit gas-fired power generation from the running order, the revised operational date has no impact on the gas demand forecast for winter 2014/15.

Security of Supply Interconnector Linepack

Subsea Interconnector pressures will be maintained to ensure minimum operational requirements and sufficient linepack to meet an amount of ROI non-power generation gas demand, in the event of a supply disruption.

At times of peak demand, such a stock position (high linepack in subsea ICs) may need to be reduced in order to free up transportation capacity, thereby ensuring end of day volumes are met.

Commercial Arrangements

A Local Operating Procedure (LOP) was implemented with Premier Transmission Ltd (PTL) in July 2014. This LOP clarifies the necessary quality assurance checks associated with profiling arrangements at the Twynholm Exit Point in South West Scotland.

Gaslink continues to reiterate the importance of accurate and timely re-nominations in enabling Gaslink to operate the gas network in an effective and efficient manner.

³ Validated by actual GCV observations at the Moffat Entry Point.