



## Key Messages

- Gas supplies from Great Britain (GB) via the Moffat Entry Point will continue to meet over 93% of the Republic of Ireland's annual gas demand with the balance met from indigenous production and storage.
- The latest gas demand forecast for the forthcoming winter anticipates higher Moffat flows than those published in the NDS 2011/12, primarily due to the increased generation demand on the island following reduced electricity import capacity of the Moyle IC.
- The current gas demand forecasts assumes the East West Interconnector (EWIC) will be fully available during winter 2012/13. It should be noted, if the EWIC is unavailable, gas demand is anticipated to increase and flows at Moffat may approach the capacity limits of the Moffat Entry Point.
- 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.
- 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 at the Moffat Entry Point.

## 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 2011/12, GB imports through the Moffat Entry Point met 96.9% of annual ROI gas demands and 85.8% 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 not expected to commence full commercial operations until early 2015.

The majority of ROI gas demands will continue to be met by GB imports through the Moffat Entry Point in 2012/13 with the balance supplied through the Inch Entry Point. 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.

## Winter Period 2011/12

The winter 2011/12 period was significantly milder than the two previous years resulting in lower gas demands following higher average temperatures and increased wind powered generation.

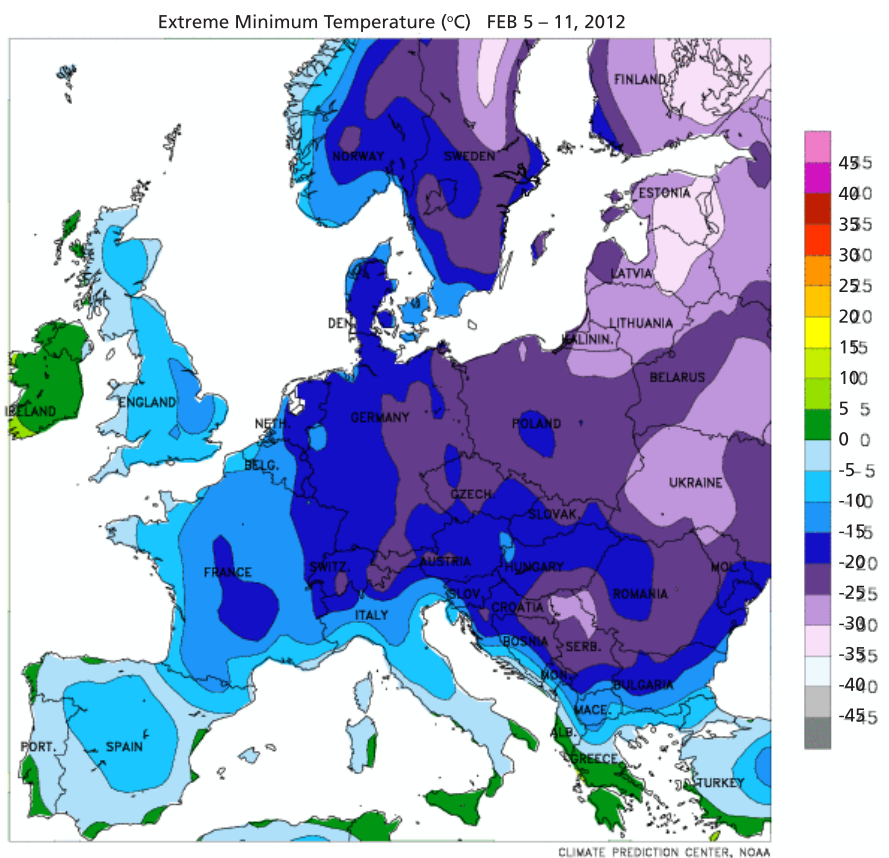
The 2011/12 Bord Gais system peak day throughput of 25.9mscmd occurred on 15th December 2011. This figure includes for flows to ROI, Northern Ireland (NI) and Isle of Man (IOM) of 19.3mscmd, 6.2mscmd and 0.4mscmd respectively.

The 2011/12 annual temperature was approximately 5% warmer than the 20 year average and was almost 18% warmer than 2010/11.

Wind speeds for 2011/12 were almost 9% higher than the 20 year average. Wind powered generation reached a maximum output of 1,474 MW on 26th November 2011 while wind powered generation during the 2011/12 peak day gas demand varied from 930MW at 6am to 118MW by 6pm.

The severe cold weather spell which occurred across Europe in February failed to reach Ireland. The extent of the severe cold temperatures experienced across Europe is evident from Figure 1.

**Figure 1: Severe Weather Across Europe in February 2012<sup>1</sup>**



<sup>1</sup> NOAA / National Weather Service – National centers for Environmental Prediction – Climate Prediction Centre, Europe: Extreme Minimum Temperature (°C) Feb 5–11 2012, [www.nws.noaa.gov](http://www.nws.noaa.gov) > Monitoring & Data > Global Climate Data > Global Regional Climate Maps > Europe, Accessed 14/11/2012



## Great Britain National Grid Outlook

National Grid UK advise that all demands could be met for the coming winter despite anticipating a marginally lower supply forecast for 2012/13 with uncertainty regarding LNG supplies and a decline in the UK continental shelf supply combined with increased storage deliverability. Forward energy prices for winter 2012/13 are anticipated to strongly favour coal over gas for power generation. The UK outlook identifies an increased risk of colder than average weather for November to December 2012. Exports through Moffat are predicted to be similar to last year although there is a potential to meet much higher exports should the need arise. The key operational challenges for winter 2012/13 include an increasingly unpredictable supply and demand environment and changing supply sources.

## Forecasted 1-in-50<sup>2</sup> Year Peak Day Demands for Winter 2012/13

Table 1 presents the 2012/13 1 in 50 year peak day system demand forecast as per the data analysed for the Joint Gas Capacity Statement 2012. This forecast assumed both the Moyle Interconnector and the EWIC would be operating at full capacity. However a fault on the Moyle Interconnector which occurred on 23rd June 2012 has reduced its capacity to 250MW for the 2012/13 peak day. The 2012/13 peak day gas demand forecast was therefore reassessed to account for this outage by examining 3 scenarios. Scenario 1 assumes both the EWIC and Moyle Interconnectors are on full outage. Scenario 2 assumes the EWIC is on outage while Moyle is 50% available. Scenario 3 assumes EWIC is fully available and Moyle is 50% available.

The results of the analysis presented in Table 1 indicate the impact of an outage of the electrical interconnectors on peak day flows through the Moffat Entry Point. It should be noted that the Moffat Entry Point peak day flows exceed the technical entry capacity at Moffat on days when both the electrical interconnectors are on full outage. Note on 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.

**Table 1:** 1 in 50 Year Peak Day Flows for Winter 2012/13

	JGCS 2012 (mscmd)	Scenario 1 Zero Imports (mscmd)	Scenario 2 EWIC Outage (mscmd)	Scenario 3 EWIC Operating (mscmd)
% Availability of Electrical Interconnectors	Moyle = 100% E-W = 100%	Moyle = 0% E-W = 0%	Moyle = 50% E-W = 0%	Moyle = 50% E-W = 100%
ROI Demand	24.0	26.1	25.4	24.3
NI Demand	8.1	8.1	8.1	8.1
IOM Demand	0.5	0.5	0.5	0.5
Total Demand	32.6	34.7	34.0	32.9
Inch Supply	3.2	3.2	3.2	3.2
Moffat Supply	29.4	31.6 <sup>1</sup>	30.8	29.7
Total Supply	32.6	34.7	34.0	32.9

<sup>1</sup> Required flows exceed the technical capacity of the Moffat Entry Point of 31mscmd/d

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



## Operational challenges for Winter 2012/13

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 renominations 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 (NTS) at Moffat – implies 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. Though Moffat NTS pressures were typically in the mid 50 barg range during winter 2011/12, there were instances of pressures approaching 47 barg.  
  
Within day pressure volatility at Moffat on the GB NTS also impacts on compressor station operations. The frequency and magnitude of such volatility has increased in recent years, as a result of a change in demand/supply patterns in the GB NTS.
- 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/scm<sup>3</sup>. Though the GCV at Moffat typically ranged between 39.5 MJ/scm and 40.0 MJ/scm during winter 2011/12, there were instances of the GCV approaching 39.0 MJ/scm.

## Security of Supply - Interconnector Linepack

Subsea Interconnector pressures will be maintained to ensure minimum operational requirements and sufficient linepack to meet approximately two days 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

Gaslink is currently reviewing the existing commercial arrangements regarding Renominations at the Moffat Entry Point:

- Engaging with industry to stress the importance of accurate and timely renominations.
- Conducting analysis of recent renomination patterns in parallel with a review of the Code of Operations renomination procedures.

<sup>3</sup> Validated by actual GCV observations at the Moffat Entry Point.

