



Commission for Energy Regulation  
An Coimisiún um Rialáil Fuinnimh

# National Preventive Action Plan - Gas - 2016-18 Ireland

## Decision / Information Paper

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*Regulating Water, Energy and Energy Safety in the Public Interest*

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# Executive Summary

## The Security of Gas Supply Regulation

EU Regulation 994/2010/EC (“The Regulation”) mandates that EU Member States are required to implement measures to safeguard gas security of supply. To assess Member State’s ability to supply gas, under predefined Standards (i.e. Infrastructure Standard and Supply Standard), Regulation 994 requires each Member State to prepare a National Risk Assessment. The National Risk Assessment identifies possible risks and hazards to Member States security of gas supply. In addition, Member States are required to prepare a Preventive Action Plan which outlines measures to either remove or mitigate the risks and hazards identified in the Risk Assessment.

## Ireland’s Risk Assessment

**The Infrastructure Standard:** is assessed by performing the N-1 calculation. The N-1 calculation removes the technical capacity of the single largest piece of gas infrastructure on a peak day with a view to determining whether the remaining gas infrastructure can meet 100% of peak day gas demand. To pass, the calculation must equate to 100% or more. Ireland failed the Infrastructure Standard meaning that after losing the single largest gas infrastructure the technical capacity of the remaining infrastructure cannot meet demand. To pass the Infrastructure Standard, Ireland requested the United Kingdom (UK) to adopt a regional approach, which takes the island of Ireland and Great Britain as one region for the assessment. Further details on the regional approach can be found in the UK’s and Ireland’s Joint Preventive Action Plan (CER/16/339)

**The Supply Standard:** is based on protecting supply to protected customers and is either met or not at a national basis. Ireland met the Supply Standard. To protect supply to protected customers (e.g. residential, nursing homes and high security prisons), the following obligations have been placed on Natural Gas Undertakings:

- the gas transmission system operator to build network for a 1-50 winter;
- suppliers to book capacity for protected customers for a 1 in 50 winter, and;
- gas producers and storage operators to comply with instructions of the National Gas Emergency Manager (NGEM) in an emergency, which may include injecting into the system during an emergency.

**Loss of Gas Supply from Great Britain (GB):** during 2016 the energy regulator for Great Britain (Ofgem) sharpened incentives on gas shippers to enhance security of supply in Britain. Shippers in Britain who are short during a gas deficit emergency would be required to compensate firm customers whose load is interrupted. As a

result, GB shippers will have greater financial incentives to ensure continuation of gas supplies in GB. These incentives in GB could have a positive impact for the Irish gas market. However, there could be a negative impact depending on commercial incentives in Ireland, and the behaviour of shippers in response to those incentives.

**Loss of Gas Supply Outside of EU:** An EU Commission analysis in 2009 indicated that a disruption of gas supplies from a country outside the EU does not pose any significant risk to gas supplies to the UK or Ireland. The likely impact on Ireland could be an increase in wholesale gas prices.

**Potential Risks and Hazards:** Ireland's Risk Assessment considered failure modes at entry points and various system components (e.g. above ground installations). External hazards, such as natural and manmade hazards were also considered. The Preventive Action Plan, through preventive measures, aims to eliminate, or reduce the impact of these risks on gas customers in Ireland.

### **Preventive Measures**

Market based measures rely on supply and demand dynamics, in particular given Ireland's connection to the highly liquid National Balancing Point (NBP) in Great Britain. In a gas supply shortage the wholesale market should react, and a rise in wholesale prices should reduce demand. Non-market based measures are to be used when market based measures alone cannot ensure gas supplies to protected customers.

**Market Based Supply Side Measures in Ireland:** Ireland has some limited production capacity in Kinsale that can be drawn on to increase supply. Additionally, Ireland has indigenous production capacity at the Corrib gas field.

Measures such as reverse flow, coordinated dispatching, long term contracts, and short term contracts have no additional benefits to gas security of supply in Ireland. The market signals from the UK's NBP should result in pricing signals resulting in industrial customers opting not to consume gas (i.e. reducing demand).

**Market Based Demand Side Measures in Ireland:** With an average of 45% of gas in Ireland being used for electricity production in Ireland, the electricity generation sector has been considered. Due to operational limitations on the electricity system, it is too risky to have an uncontrolled fuel switch from gas fired generators to secondary fuel (i.e. oil). As such, a controlled fuel switch over a more prolonged period may occur.

**Non-Market Based Supply Side Measures in Ireland:** measures including increased production is provided for in Ireland's National Emergency Plan. Corrib can meet approximately 28% of Ireland's peak day gas demand in 2018/19.

**Market Based Supply Demand Measures in Ireland:** Fuel switching is a non-market based measures that could be used to ensure gas security of supply. The electricity TSO (EirGrid) has indicated that there are electricity network operational limitations e.g. risk of tripping that require a controlled switch over to secondary fuel. EirGrid have indicated that the electricity system would require 30 hours to switch the 11 gas fired plants (11 gas fired plants would be expected to be operating on a peak gas day) to their secondary fuel. This ramping down would require gas consumption equivalent to 60% of the overall peak day gas demand. In addition, daily metered customer's e.g. industrial users could also provide demand side response to a potential emergency.

## Public/ Customer Impact Statement

There are approximately 670,000 natural gas customers in Ireland, who contribute to the operation of the gas network through their gas bills. In the event of a gas shortage, Ireland's Preventive Action Plan endeavours to ensure gas continues to flow to Protected Customers. Protected Customers in Ireland are defined in the table below:

Ireland's Definition of Protected Customer
<p>All NDM sector customers (residential and some small business) and, in addition, priority customers in the DM sector which are of the following categories:</p> <ul style="list-style-type: none"><li>• Hospitals and Nursing Homes including retirement homes;</li><li>• High Security Prisons; and</li><li>• District Heating Schemes and further categories of essential social services as determined by the CER from time to time.</li></ul>

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## Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
<b>CER</b>	Commission for Energy Regulation
<b>DCCA</b>	Department of Communications, Climate Action and Environment
<b>BEIS</b>	Department of Business Energy and Industrial Strategy
<b>DfE</b>	Department for the Economy
<b>DCS</b>	Distribution Control System
<b>EU</b>	European Union
<b>ENTSO-G</b>	European Network of Transmission System Operators for Gas
<b>GB</b>	Great Britain
<b>GCG</b>	Gas Co-ordination Group
<b>GEEP</b>	Gas Electricity Emergency Planning
<b>GNI</b>	Gas Networks Ireland
<b>IC</b>	Interconnector
<b>JPAP</b>	Joint Preventive Action Plan
<b>LNG</b>	Liquefied Natural Gas
<b>NBP</b>	National Balancing Point
<b>NDP</b>	Network Development Plan
<b>NGEM</b>	National Gas Emergency Manger
<b>NGEP</b>	Natural Gas Emergency Plan
<b>NI</b>	Northern Ireland
<b>NGU</b>	Natural Gas Undertaking
<b>NRA</b>	National Regulatory Authority
<b>NTS</b>	National Transmission System
<b>PAP</b>	Preventive Action Plan
<b>PCI</b>	Project of Common Interest
<b>SI</b>	Statutory Instrument
<b>SNP</b>	South North Pipeline
<b>SWSOS</b>	South West Scotland Onshore System
<b>TSO</b>	Transmission System Operator
<b>UK</b>	United Kingdom

## Structure of Paper

The Preventive Action Plan is structured as follows:

- **Section 1:** Introduction.
- **Section 2:** provides an overview of the Irish gas market, which includes information on the structure of Ireland's gas network.
- **Section 3:** provides a high level overview of the results of Ireland's latest National Risk Assessment.
- **Section 4:** examines potential measures to fulfil the infrastructure and supply standards, as required under the Regulation.
- **Section 5:** provides a synopsis of obligations on relevant bodies and NGUs operating within the Irish market.
- **Section 6:** summary.

## Related Documents

- i. Ireland's 2016 National Risk Assessment;
- ii. UK and Ireland 2016 Joint Risk Assessment;
- iii. Consultation on Revision of Regulation (EU) 994/2010;
- iv. Ireland's 2014 National Preventive Action Plan - Gas (CER/14/785);
- v. Ireland's 2014 National Gas Supply Emergency Plan (CER/14/784);

# 1 Introduction

Pursuant to EU Regulation 994/2010 (“the Regulation”), Member States are required to implement measures to safeguard security of gas supply including, *inter-alia*, the development of a Preventive Action Plan. In line with the Regulation, a Preventive Action plan had to be first adopted by each Member State and made public by 3<sup>rd</sup> December 2012. As Ireland’s designated Competent Authority, and in accordance with that requirement, the CER published Ireland’s first National Preventive Action Plan in [CER/12/207](#).

There is a requirement to update the action plan every two years and this was last done in 2014 – see [CER/14/785](#). As such, it is now time to update the Preventive Action Plan again. In fulfilment of this requirement, the CER has prepared this document, which is the Preventive Action Plan for 2016 – 2018.

Essentially, the primary tenet of the Preventive Action Plan is risk management, as the Regulation requires that Member States develop preventive measures, to reduce the risk to gas supplies, and in particular to safeguard supplies to protected customers. Consequently, the preventive measures identified within this Preventive Action Plan for 2016 to 2018, are in response to the risks identified within Ireland’s latest Risk Assessment document. The latest Risk Assessment was submitted to the European Commission in September 2016.

The Preventive Action Plan for 2016 – 2018 has been prepared in accordance with Article 4 and 5 of the Regulation. Article 4 relates to the establishment of an action plan, while Article 5 sets out the required content of the plan. In compliance with Article 5, the Preventive Action Plan 2016 – 2018 includes:

- the results of Ireland’s national Risk Assessment,
- the measures, volumes, capacities and the timing needed to fulfil the infrastructure and supply standards,
- the obligations on Natural Gas Undertakings (NGUs) and other relevant bodies,
- other preventive measures to address the risks identified in order to maintain gas supply (where possible) to all customers,
- the mechanisms to be used for cooperation with other Member States for preparing and implementing joint Preventive Action Plans,
- information on existing and future interconnections, and;
- information on Public Service Obligations (PSOs) regarding security of gas supply.



Additionally, in terms of preparing Ireland's Preventive Action Plan, cognisance was given to the Regulation's requirements that the Preventative Action Plan take account of 10-year network development plan for Europe, as developed by the European Network of Transmission System Operators for Gas (ENTSOG), and the emphasis attached to the utilisation of market based security of gas supply measures. The Competent Authority in the UK and industry were consulted with in preparing Ireland's Preventative Action Plan for 2016 – 2018.

## 2 Irish Gas Market: An Overview

This section provides an overview of Ireland's gas infrastructure and the level of gas demand in Ireland.

### 2.1 Overview of Ireland's Current Gas Network

Gas supply in Ireland is delivered via a network of approximately 13,772 km of pipelines. The integrated supply network is sub-divided into 2,433 km of high pressure sub-sea and cross-country transmission pipe, and approximately 11,339 km of lower pressure distribution pipe (see Figure 1 for an overview of the system). Ireland's onshore gas system consists of a ring-main system between Dublin, Galway and Limerick, with cross-country pipelines running from the ring-main system to Cork, Limerick, Waterford, Dundalk and numerous regional towns.

Figure 1: Overview of Ireland's Gas Network



Source: [ENTSOG](#)

### 2.1.1 Entry Points

In terms of obtaining gas supplies, the Irish gas system conveys gas from three entry points:

- Moffat (Western Scotland);
- Inch (Southern Ireland), and;
- Bellanaboy (Western Ireland).

#### 2.1.1.1 *Moffat*

The Moffat entry point connects the Irish natural gas system to the National Transmission System for gas (NTS) in Great Britain (GB). The NTS in GB is operated and owned by National Grid Gas (NGG). The Moffat entry point allows for the importation of GB gas to Ireland, through an onshore transmission network in Scotland (referred to as the South West Scotland Onshore System) and two sub-sea Interconnectors. From the connection with the NTS at Moffat, the Scotland based onshore system consists of:

- a compressor station at Beattock, which is connected to Brighthouse Bay by two pipelines from Beattock to Cluden;
- 80km of pipeline including a 50km single pipeline from Cluden to Brighthouse Bay, (construction on twinning of the 50km of pipeline is on-going and is scheduled to be complete in 2017), and;
- a compressor station at Brighthouse Bay, which compresses the imported gas into the two sub-sea Interconnectors.

From Brighthouse Bay there are two pipelines connecting Ireland to the South West Scotland Onshore System. These interconnectors are referred to as Interconnector 1 (IC1) & Interconnector 2 (IC2). IC1 and IC2 are connected to the onshore Irish system north of Dublin at Loughshinny and Gormanston, respectively.

#### 2.1.1.2 *Inch*

The Inch entry point connects the Kinsale and Seven Heads gas fields, as well as the Kinsale storage facility, to the onshore network. There is also a compressor station at Midleton, Co. Cork that compresses the gas from Inch to facilitate transmission throughout the system.

### 2.1.1.3 Bellanaboy

The Bellanaboy entry point connects the Corrib gas field to the onshore network. The Bellanaboy entry point is connected to the onshore ring main via the Mayo-Galway pipeline. This facilitates the flow of gas from the Corrib gas field into GNI's system.

### 2.1.2 Gas Connections to Other Jurisdictions

With reference to gas connections to the UK, the Irish gas system connects to the UK gas system at three points. There is one physical connection from GB at Moffat and two connections to Northern Ireland at Twynholm and Gormanston both of which flow from the Irish gas system to the Northern Ireland gas system.

- **Moffat:** Moffat is Ireland's primary gas connection point, and is an Interconnection Point which connects the NTS in GB and GNI's transmission system in Ireland. This connection point between GB and Ireland is unidirectional, as gas can only flow physically from GB to the three markets downstream (i.e. Ireland, Northern Ireland, and the Isle of Man). There is also a facility to virtually reverse flow gas from Ireland to GB at this point.
- **Twynholm:** Gas is delivered from Moffat to the Northern Ireland gas system at Twynholm. The gas is then delivered to Northern Ireland customers via the Scotland to Northern Ireland Pipeline (SNIP). The SNIP is owned and operated by Premier Transmission Limited, which is a subsidiary of Mutual Energy Limited.
- **Gormanston:** The South North Pipeline (SNP) is a gas transmission pipeline (which forms part of Northern Ireland's transmission system) that spans both the Irish and Northern Irish jurisdictions. It facilitates the delivery of GB gas to Northern Ireland (NI). Gas from GB can flow from IC2 into the SNP through the Gormanston Interconnection Point. The SNP does not physically facilitate gas flows from the Irish onshore network to NI (and vice versa). The SNP is commercially operational, and includes a virtual reverse flow facility where gas can be virtually reversed flowed from NI through the Irish subsea system to Moffat.<sup>1</sup>

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<sup>1</sup> A Virtual Reverse Flow service can be implemented at an interconnection point where gas nominated to flow backwards is less than that nominated to flow in the opposite direction. In this case, the TSO can offer capacity as a 'counter flow' or "backhaul" on a 'virtual' basis in the other direction. The gas is not actually moving in the opposite direction, but the gas flow requested in the counter flow direction is subtracted from the gas flowing in the forward direction. This is referred to as "netting". Counter flow transport can be offered up to the maximum of the physical forward flow. VRF products are offered on an interruptible basis, as a TSO cannot guarantee the shipment of the counter flow gas under all circumstances.

### 2.1.3 Physical Reverse Flow at Interconnection Points

Article 6(5) of the Regulation stipulates that Transmission System Operators (TSOs) shall enable permanent bi-directional physical capacity on all interconnections points between Member States by the latest 3<sup>rd</sup> December 2013 except:

- in the case of connections to production facilities, to LNG facilities and to distribution facilities, and;
- where an exemption has been granted in accordance with Article 7.

In terms of enabling physical reverse flow at Moffat, the CER notified BEIS and the EU Commission in 2012 of the request for an exemption for the need of physical reverse flow under Article 7 of the Regulation. The rationale for this decision was based on findings by Gaslink (the former TSO on the Irish side of the flange) and NGG (the TSO on the GB side of the flange), which suggested that:

- in the short term the majority of gas demand for Ireland would be met via gas from Corrib, but that it was expected that in the medium term there would be a return to dependency on the Moffat Entry Point for the majority of gas supplies.
- market demand assessments (undertaken between August – September 2011) did not indicate a need for enabling physical reverse flow at Moffat by 03 December 2013.
- there would be no additional security of supply benefit for the Member States of the UK or Ireland from enabling bi-directional capacity at the Moffat Interconnection Point, by 03 December 2013.

Notwithstanding the above, over the longer term, with increased infrastructure and supply developments on the island of Ireland, combined with declining indigenous GB gas production, there could potentially be market based and security of supply reasons for implementing physical reverse flow at Moffat. Ireland's 2014 national risk assessment did not express a need to enable bi-directional capacity at the Moffat interconnection point. At the same time, it noted that developments regarding the potential for physical reverse flow would be continued to be monitored by the competent authorities. It highlighted that the exemption would be considered again in 2016; when the next national risk assessment would be conducted. In line with this, the UK and Irish Competent Authorities continued to monitor the Regulation requirement for bi-directional capacity at cross-border gas interconnections through the review of the Risk Assessments. Consequently, there is an assessment underway into the need for bi-directional capacity over the South-North Pipeline. The Competent Authorities will consider any request for further exemption

from the bi-directional flow requirement on the SNP based on the results of this assessment.

In addition, the CER granted Gas Networks Ireland an exemption from Physical Reverse Flow (Bi-Directional Capacity) at Moffat in 2012. This exemption was extended in 2014 and is currently in force.

DECC (now BEIS) also published Guidelines on bi-directional gas flows for TSO's operating in the UK.<sup>2</sup> In relation to bi-directional flow, Section 3.7 of the guidelines document states that "*all decisions will be made in conjunction with other affected Member States and in consultation with affected regulators*". This indicates that any decision regarding enabling bi-directional flow on cross-border interconnections will be taken jointly by the Member States. Such an approach is consistent with the requirements of Article 7(4) of the Regulation, which states that "*the authorities concerned shall endeavour to ensure that mutually dependent decisions which concern the same interconnection of interconnected pipelines do not contradict each other*".

As part of the risk assessment biennial reviews, developments regarding the potential for physical reverse flow will be continued to be monitored by the Competent Authorities.

## 2.2 Gas Demand

In 2014, natural gas accounted for 28% of Ireland's Total Primary Energy Requirement (TPER),<sup>3</sup> with approximately 45% of natural gas used for electricity generation.<sup>4</sup> Following energy transformations, natural gas accounted for approximately 15% of Ireland's Total Final Energy Consumption (TFEC) in 2014.<sup>5</sup>

With reference to historical annual gas consumption, Ireland has experienced a decrease in gas consumption since its peak in 2009/10. The decline in annual gas consumption can be attributed to a myriad of factors, including increased wind generation, relatively

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<sup>2</sup> [Bi-directional gas flow over interconnectors](#)

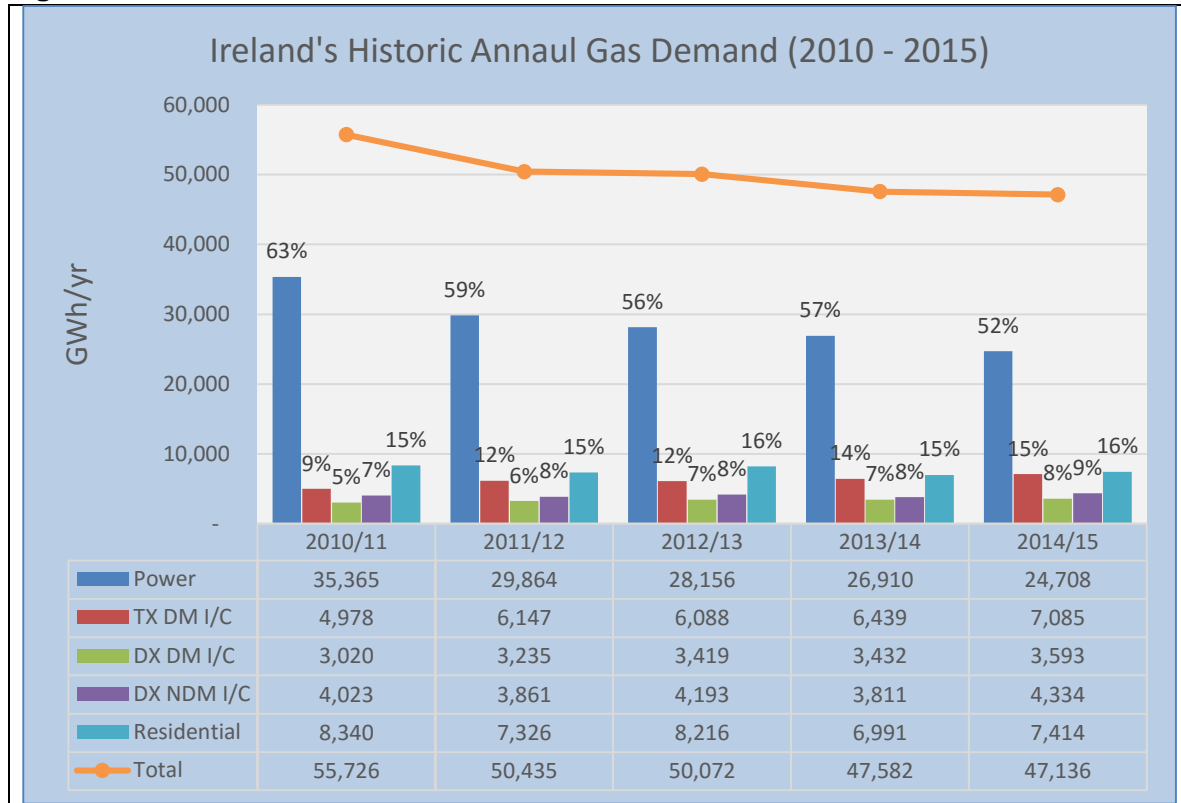
<sup>3</sup> TPER is the total requirement for all uses of energy, including energy used to transform one energy form to another, and energy used the final consumer. Oil accounts for Ireland's largest source of energy, and accounted for approximately 47.1% of Ireland's TPER in 2014. [View SEAI's Energy in Ireland Key Statistics 2015](#) for further information.

<sup>4</sup> Appendix three provides a list of all gas powered electricity generation stations in Ireland, and appendix four provides a breakdown of the All-Island electricity fuel mix for 2015, and the share of gas used for electricity generation.

<sup>5</sup> TFEC is the energy used by the final consuming sectors of industry, transport, residential, agriculture and services. It excludes the energy sector, such as electricity generation and oil refinery.

cheap coal prices and energy efficiency initiatives. Figure 2 provides a breakdown of Ireland's historical total annual gas consumption by customer segment.

**Figure 2: Ireland's Historic Annual Gas Demand.**<sup>6</sup>



Ireland's historic peak day gas demand is recorded in two ways: coincident peak day and non-coincident peak day. The coincident peak day is the actual recorded peak day consumption. In contrast, the non-coincident peak day considers the peak day consumption for each individual sector (i.e. power sector, residential sector and I/C sector); which would generally not occur on the same day. By adding together all of these peak consumption values, for the different sectors, it presents a worst case scenario for a maximum system peak. For the purposes of the National Risk Assessment and the Preventive Action Plan, the non-coincident peak ('peak') demand is used. (i.e. the worst case scenario).

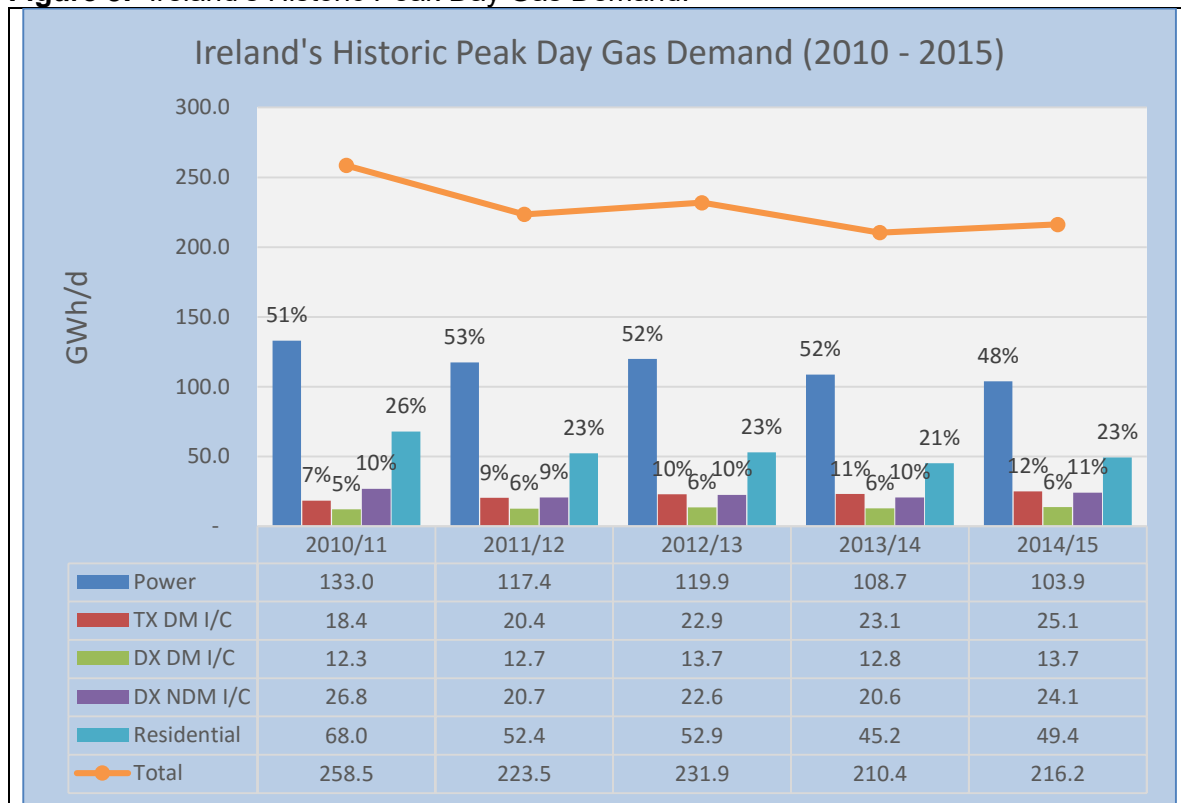
In general, Ireland's peak day gas demand has declined relative to its all-time peak of 258.5 GWh/d in 2010/11 (see Figure 3). The decline in peak day gas demand can be attributed to 1-50 weather events in 2010/11, which resulted in Ireland experiencing record peak day gas demands. Additionally, an increase in wind generation has impacted

<sup>6</sup> Source: Gas Networks Ireland 2016 Network Development Plan (pg86).

on the quantity of gas used for power generation. This impact is expected to become more significant as Ireland works to meet its target of 40% renewables by 2020.

It should be noted that the Irish daily metered Industrial and Commercial sectors are not weather corrected, as their daily demands are driven by other factors such as, relative fuel-prices and economic growth. In contrast to the Industrial and Commercial sector, the residential sector is particularly weather sensitive, as the gas is primarily used for space heating purposes.

**Figure 3: Ireland's Historic Peak Day Gas Demand.<sup>7</sup>**



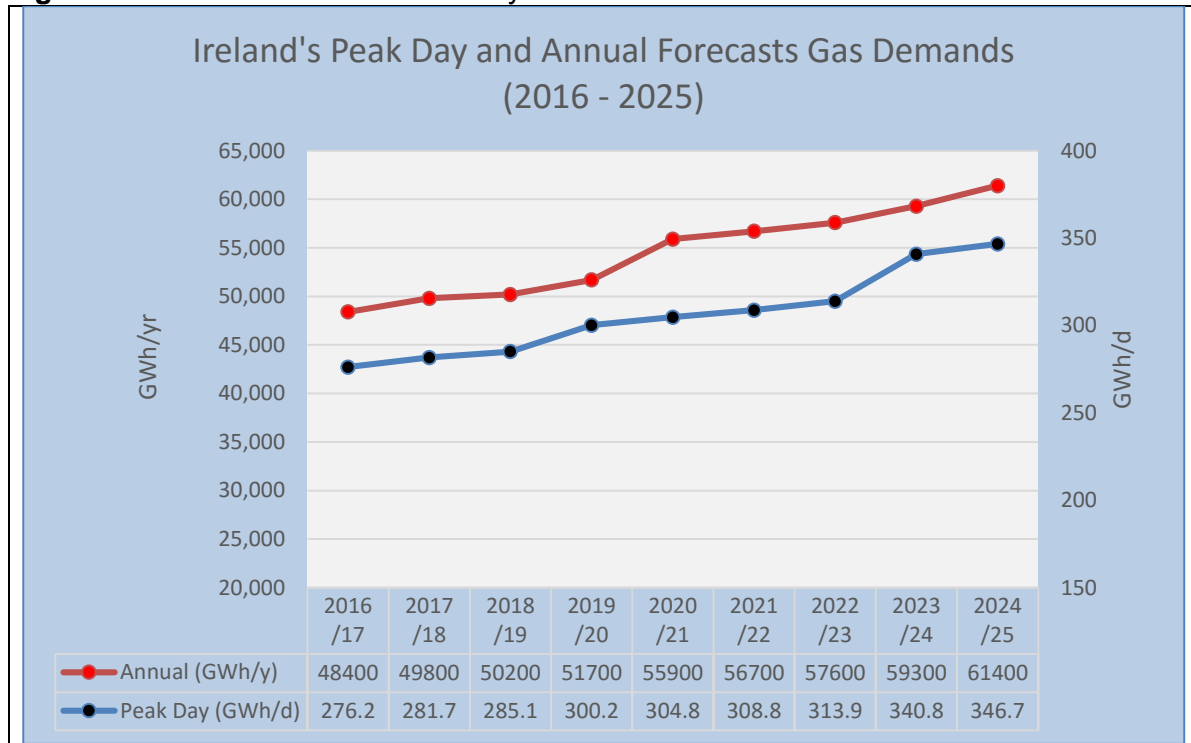
With reference to forecast gas demands, GNI's 2016 Ten Year Network Development Plan noted that, in its median scenario<sup>8</sup>, annual gas demands were forecasted to increase by 28% over the ten year period (2016 to 2025); with peak day gas demands increasing by 24%. Figure 4 illustrates forecasted growth rates in annual and peak day gas demand up to 2024/25.

<sup>7</sup> Source: Gas Networks Ireland 2016 Network Development Plan (pg86).

<sup>8</sup>GNI's 2016 NDP is based on three demand growth scenarios – low, median and high.



**Figure 4: Ireland's Annual & Peak Day Forecast Gas Demands.**



### 2.3 Gas Supply

In 2014/15, the Moffat entry point supplied approximately 94% of Ireland’s annual gas demand and 84% of peak day demand, with the Inch entry point satisfying the remaining annual and peak day gas demand. However, the supply dynamic is now changing with Corrib supplies on stream.

The Corrib gas field commenced production on the 31 of December 2015. In its first full year of commercial production (2016/17), the Corrib gas field is expected to meet up to 55% of annual Gas Networks Ireland system demands, with the Inch and Moffat Entry Points providing the remaining 5% and 40% respectively.

On the 2015/16 peak day, 61% of Gas Networks Ireland system gas demands were met through the Moffat Entry Point, with Corrib (initially operating at a reduced capacity in the commissioning phase) meeting 30% of system demands. The remaining 9% was supplied through the Inch Entry Point.

By 2024/25, Corrib gas supplies are expected to decline to approximately 50% of initial peak production levels. The anticipated reduction in Corrib and Inch gas supplies will re-establish the Moffat Entry Point as the dominant supply point. By the end of the 2025 Moffat will account for approximately 76% of annual Gas Networks Ireland system demands.

### 2.3.1 The Changing Dynamics of the System

The CER notes the dynamics of the gas system in Ireland are changing. In the short to medium term Corrib will replace Moffat as the primary source of gas supply to Ireland. This will result in lower gas flows at the Moffat entry point. In addition, the announcement from Kinsale Energy Limited (KEL) that it is to commence blowdown of southwest Kinsale cushion gas will change the operation of the Midleton compressor station. The CER acknowledges the challenges these changes bring to the operation of the gas system and will continue to work with Gas Networks Ireland in monitoring developments on the Irish gas system. In this context the CER would note the recent changes to the gas balancing rules, to further incentivise shippers to meet their balancing obligations.

In addition to the above, while recognising the benefits of new indigenous supplies bring to Ireland (i.e. improving security of supply and reducing Ireland's dependency on energy imports), the CER notes the continued importance of the Moffat entry point to Ireland's energy needs and Ireland's energy security. The expected completion, in 2017/18, of twinning the gas pipeline in South West Scotland Onshore System (SWSOS), should further enhance Ireland's security of supply, and continued integration to the UK and European gas markets.

## 3 Results of Ireland's Risk Assessment

In September 2016, Ireland submitted the results of its latest Risk Assessment to the European Commission, which focused on Ireland's ability to meet:

- the demand for gas in the event of failure of the largest piece of infrastructure;
- the demand of "protected customers".<sup>9</sup>

The objective of this section is to provide a summary of that Risk Assessment in terms of identifying the issues that need to be considered in the Preventive Action Plan.

### 3.1 Infrastructure Standard

The infrastructure standard is detailed in Article 6 of the Regulation. It relates to the ability of an EU Member State to satisfy total gas demand in the event of a disruption of the single largest gas infrastructure, during a day of exceptionally high gas demand occurring with a statistical probability of once in 20 years. An N-1 calculation is conducted to consider whether this demand can be met or not. An N-1 value of 100% or greater indicates that the technical capacity of the remaining gas infrastructure is sufficient to meet the demand. The Infrastructure standard is met where the N-1 value is greater or equal to 100 %.

EU Member States, were required to meet the infrastructure standard prior to the 03 December 2014<sup>10</sup>. Under Article 6(2) and Article 6(3) EU Member States were permitted to meet the infrastructure standard through market based demand side measures or at a regional level with another EU Member State.

Ireland's 2016 National Risk Assessment identified Moffat Entry as the single largest piece of infrastructure. In the event of a major disruption at Moffat, the N-1 calculation indicated that Ireland's remaining infrastructure should be able to deliver enough gas to service 28% of the total daily gas demand in 2018/19.<sup>11</sup>

Ireland's 2016 national risk assessment considered the realistic impact that a controlled fuel switch from gas would have on the electricity network (i.e. from gas to oil in an

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<sup>9</sup> Protected customers means all household customers and small businesses connected to the gas distribution network, and in addition all hospitals, nursing homes, retirement homes and high security prisons

<sup>10</sup> By adopting a regional approach with the UK, Ireland fulfilled this obligation on the 3<sup>rd</sup> December 2014. Ireland will adopt a regional approach again with the UK for to fulfil the N-1 Infrastructure standard.

<sup>11</sup> Total daily gas demand includes the Power Generation, the Industrial & Commercial, and the Residential sectors. The N-1 was calculated with the Corrib gas field in production.

emergency). It found that, with the Corrib gas field in production, the application of market based demand side measures (i.e. fuel switching in a controlled and coordinated manner)<sup>12</sup> increased Ireland’s N-1 from 28% up to 35%. As such, it concluded that demand side measures were insufficient to meet the N-1 Infrastructure Standard. It also noted that market based demand side measures can pose risks to electricity supply under a market driven, uncoordinated change-over to secondary fuel. Table 3.1 outlines the figures used for calculating the N-1 infrastructure standard for Ireland.

The median supply and demand scenarios set out in GNI’s 2016 Network Development Plan have been used for the N-1 formula. The analysis is based on the year 2018/19. The median scenario includes a projection that some production is available at Inch, and prior to 2018, storage operations at Inch will cease.

Table 3.1 N-1 infrastructure standard for Ireland

Article 6 Infrastructure Standard - N-1 Calculations					
N -1 Formula					
N -1 [%] (E Pm + Sm + LNGm - Im) / (D max - Deff)					
Projected Supply and Demand for Calculated Area for 2018/2019					Ramp Down Gas Power Stations
			Facility	mscm/d	mscm/d
E Pm	E	Technical Capacity of Entry Points	Moffat	25.92	25.92
Pm	P	Maximum Technical Production Capability	Inch	0.67	0.67
			Corrib	6.75	6.75
Sm	S	Maximum Technical Storage Deliverability			
LNGm	L	Maximum Technical LNG Facility Capacity			
Im	I	Technical Capacity of largest Gas Infrastructure	Moffat	25.92	25.92
D max		Total Daily Demand of the Calculated Area		26.69	26.69
		During a day of exceptionally High Gas Demand (1 in 20)			
Deff		The Portion of Dmax that can be addressed via Demand side measures			5.25
N-1%	-			28%	35%

In order to facilitate Ireland’s compliance with article 6(3) of the Regulation in 2016, Ireland adopted a regional approach with the UK. This approach had been adopted in

<sup>12</sup> The use of market based demand side measures to meet N-1 criteria is permitted under Article 6(2) of Regulation 994/2010. In the case of Ireland EirGrid would switch gas fired generators to their secondary fuel (i.e. from gas to oil)

previous assessments. On a regional basis the N-1 is 134% and the N-1 Infrastructure Standard is met.

### 3.2 Supply Standard

Under Article 8(1) of the Regulation, the CER, in its role as the Competent Authority, is required to ensure that NGUs, which it identifies, take measures to ensure gas supply to protected customers in the following cases:

- extreme temperatures during a 7-day peak period occurring with a statistical probability of once in 20 years;
- any period of at least 30 days of exceptionally high gas demand, occurring with a statistical probability of once in 20 years; and
- for a period of at least 30 days in case of the disruption of the single largest gas infrastructure, under average winter conditions.

Table 3.2 provides a breakdown of the volumes of gas required by Protected Customers (as defined by the CER) under 1-50 Peak Day and Average Year Peak Day conditions. Due to potential delays in curtailing the demand of non-protected customers during an emergency (other than demand of power stations), the volumes of gas required have been extended to also include the time taken for the ramping down of non-protected customer gas demand.

**Table 3.2: Protected Customer Gas Demands**

	Protected Customer Demand during 1-50 Peak Day (excluding ramp-down)	Protected Customer Demand during 1-50 Peak Day (including ramp-down)	Protected Customer Demand during Average Year Peak Day (excluding ramp-down)	Protected Customer Demand during Average Year Peak Day (including ramp-down)
<b>1 Day Load (mscm/d)</b>	9.32	17.20 <sup>13</sup>	7.30	7.54 <sup>14</sup>

<sup>13</sup> EirGrid (Ireland's Electricity TSO) have advised that it would take at least 5 hours to ramp down a plant and that only 2 plants could be taken down at a time to maintain system stability.

<sup>14</sup> The total volume of gas required to ramp down over the initial 30 hour ramp down period is approximately 7.01 mscm/d. The supply standard looks at meeting protected customer demand over a 30 day period and since ramp down occurs on *day one* only ramp down demand is averaged over 30 days, giving an additional average demand of 0.23 mscm/d over the 30 day review period.

<b>7 Day Load (mscm/d)</b>	65.24	120.40	51.10	52.78
<b>30 Day Load (mscm/d)</b>	279.60	516	219	226.2

Table 3.3 outlines the results of Irelands supply standard calculation,

**Table 3.3: Protected Customers Gas Demands/Volumes<sup>15</sup> & Capacity Required<sup>16</sup>**

<b>Article 8 (Supply) - Regulation 994/2010</b>	<b>Part A (mscmd - 7days)</b>	<b>Part B (mscmd - 30days)</b>	<b>Part C (mscmd - 30days)</b>
Demand/Volume	65	280	219
Supply Capacity Required <sup>1</sup>	65	280	219
Supply Capacity Available	247	1,059	223
Meets Requirement	Yes	Yes	Yes

It should be noted that Ireland can satisfy the first two criteria (i.e. a & b) of the Supply Standard in 2018/19, on the basis of:

- Ireland’s access to GB’s liquid gas market, and;
- the ability of Corrib to meet approximately 26% of peak day gas demand in 2018/19.

Consequently, Ireland has sufficient access to gas commodity to supply protected customers under items (a) and (b).

With reference to item (c) of the Supply Standard, analysis by GNI confirms that Ireland can meet the gas demand of protected customers for a period of 30 days in the event of the disruption of the single largest gas infrastructure on the basis of:

- Protected customers accounting for 33% demand for an average year peak, and;
- the ability of indigenous production to meet 34% demand of the average year peak.

<sup>15</sup> The Irish Gas TSO confirmed the impact, of applying 1-50 instead of the 1-20, on peak demand is not material, and therefore does not impose any additional obligations. Furthermore, the CRU is of the view that the higher 1-50 standard does not have a material negative impact on the GB gas market, given that Irish gas exports from GB account for only approximately 4.6% of GB’s 1-20 peak day gas demand (ref 2016 Joint Risk Assessment between UK & Ireland).

<sup>16</sup> Supply capacity required is based on the assumption that level of supply required is equivalent to the level of system demand, i.e. the system is in balance.

Additionally, it has been demonstrated through two 1-50 winter events of 2010/11 that gas suppliers are able to meet protected customers' demands.

The Risk Assessment confirmed Ireland's current ability to meet the three criteria under Article 8(1), where Corrib is on stream. For clarity, it should also be noted that Ireland does not currently envisage increasing the supply standard beyond the 30 day period. The obligations that the CER has placed on undertakings in relation to Article 8 of the Regulation to protect supply to protected customers are as follows:

- An obligation on the TSO to build network for a 1-50 winter.
- An obligation on suppliers to book capacity for protected customers for a 1 in 50 winter.<sup>17</sup> In addition, when a protected customer (i.e., the NDM sector) switches supplier their 1 in 50 capacity booking is also transferred with them to the new Supplier and thereby retaining the 1 in 50 capacity booking requirement for such customers. Additionally, suppliers are obliged to nominate gas flows against this capacity. The transporter advises each shipper of how much gas to nominate based on forecasts of their protected customer demand for that day. The shipper is obliged to nominate (i.e. deliver) that quantity of gas. If they do not do so they must pay scheduling and shrinkage charges in addition to the balancing charges.<sup>18</sup>
- Gas Producers and storage operators are obliged to comply with instructions of the National Gas Emergency Manager (NGEM) in an emergency, which may include injecting into the system during an emergency.

### 3.3 Potential Hazards (Internal and External)<sup>19</sup>

Considering the continued importance of the Moffat entry points to Ireland's gas security of supply, Ireland's Risk Assessment investigated internal hazards that apply from the Moffat entry point to on-shore Ireland. In addition, the Risk Assessment considered other failure modes such as loss of entry points and system components (e.g. above ground installations). Ireland's Risk Assessment also considered external hazards (i.e. natural and manmade events), and detailed the relevant preventive measures within the National Risk Assessment.

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<sup>17</sup> The TSO calculates the capacity requirements for the protected customers (on a per shipper basis) and charges the shipper for this capacity. This is required by the Code of Operations. If the shipper does not pay the charges this would be reported to the CER as it would be a breach of the Code of Operations.

<sup>18</sup> The TSO will bill the shipper for scheduling, shrinkage and balancing charges. If the Shipper does not pay the charges, it would be a breach of the Code of Operations and the CER would be informed.

<sup>19</sup> The CER considers the Risk Assessment an appropriate place to list such scenarios, this is because the Risk Assessment is a confidential document. The CER does not consider it appropriate to publish the sensitive information (risk scenarios) in the PAP, and therefore please

### 3.4 Risk of Loss of Supply from GB and Outside of EU

Following its gas Significant Code Review (SCR), Ofgem is implementing provisions to enhance GB's gas security of supply and minimise the probability of a gas supply deficit in GB. The conclusions of the Gas SCR introduced reform to cash-out arrangements and set a process for the development of a Demand Side Response (DSR) mechanism<sup>20</sup>.

Ofgem decided to sharpen the incentive on gas shippers to enhance security of supply in GB by reforming the gas cash-out mechanism in an emergency (i.e. by implementing dynamic cash-out prices).<sup>21</sup> Therefore, GB shippers who are short during a gas deficit emergency would be required to compensate firm customers whose load is interrupted. As a result, GB gas shippers will have greater financial incentives to ensure gas supplies in GB. Ofgem estimates that around 1.2% (0.4mcm/d) of industrial and commercial daily metered gas volumes are currently on interruptible contracts.

Furthermore, to encourage greater demand-side participation from industrial and commercial users, Ofgem placed an obligation on National Grid to develop a centralised demand side response mechanism. Following a Gas Deficit Warning (GDW), the centralised DSR mechanism will allow end gas users to signal their willingness to make additional DSR energy quantities available.

Given Ireland's reliance on the GB market for gas supplies, the gas SCR will also have a positive impact for the Irish gas market. However, there is also the potential for a negative impact depending on commercial incentives in Ireland relative to those in GB, and the behaviour of shippers in response to those incentives.

Ireland's 2016 Risk Assessment also considered the impact of a gas supply interruption to the EU from third countries. In order to assess the impact of such an interruption, it was necessary to identify the sources of gas that enters the GB gas market (given Ireland's dependence on gas supplies from GB). Following an analysis of GB's gas supplies, Ireland's Risk Assessment indicated that a disruption of gas supplies from a country outside the EU does not appear to impose any significant risk to gas supplies to

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<sup>20</sup> DSR is a mechanism used in times of market tightness to balance supply and demand by voluntary shedding of demand

<sup>21</sup> In GB, shippers pay imbalance (cash-out) charges if they do not take the same amount of gas off the system as they put in. If the system is substantially short, the supply of available gas would be insufficient to meet demand and a Gas Deficit Emergency would be declared. Prior to the gas SCR, cash-out-charges were frozen during a gas supply emergency (i.e. Stage 2), which potentially reduces the incentive on gas shippers to bring gas to GB, thereby undermining GB's gas security of supply.



the UK, and by extension gas supplies to Ireland. However, an interruption of gas supplies from a third country can impose indirect effects to Ireland through an increase in national balancing point (NBP) gas prices.

## 4 Preventative Measures

To comply with the infrastructure standard, this section summaries the preventative measures that can be undertaken, in terms of ensuring gas security of supply.

Consequently, this section discusses the following:

- market based measures,
- non-market based measures,
- operational and infrastructure improvements, and;
- regional cooperation.

### 4.1 Market Based Measures

Annex II of the Regulation identified a non-exhaustive list of market based supply side and demand side measures (see Table 4.1) that the relevant Competent Authority shall take into account in order to improve security of gas supplies.

**Table 4.1: Market Based Measures**

Supply Side Measures	Demand Side Measures
Increased production flexibility	Fuel switching
Facilitating the integration of gas from renewable energy sources	Use of interruptible contracts
Commercial gas storage	Voluntary firm load shedding
LNG terminal capacity	Increased efficiency
Diversification of gas supplies	Increased use of renewable energy sources
Reverse flows	
Coordinated dispatching by TSO	
Use of long-term and short term contracts	
Investment in infrastructure	
Contractual arrangements to ensure gas supply	

#### 4.1.1 Market Based Supply Side Measures

With reference to market based supply side measures, Ireland has some limited production capacity in Kinsale that can be drawn on to increase supply. Additionally, Ireland has indigenous production capacity at the Corrib gas field. It is clear from the market operation that suppliers react to market signals (i.e. high NBP prices) by increasing supplies from these indigenous sources. In the cold periods of January and December 2010 a combination of production and storage gas from Kinsale contributed 16% of Ireland total demand. Without this source of gas, the Moffat entry point would have been strained and unable to deliver the gas required to meet the demand.

Additionally both interconnectors from Moffat (IC1 and IC2) were required to be in operation to deliver the quantities of gas required to meet Irish demand.

Given Ireland's geographical location, on the periphery of Europe, measures such as reverse flows and coordinated dispatching are not feasible supply side market based measures. Furthermore, the use of long term and short term contracts do not protect Ireland against low supply in the UK, or major infrastructure risks. However, it should be noted that Ireland's connection to the highly liquid NBP trading hub can result in market based pricing signals to industrial customers at times of supply shortage.

#### 4.1.2 Biomethane

Gas from renewable resources (e.g. biogas) is still in its infancy in Ireland and is used mainly for small scale Combined Heat and Power (CHP). However, it is considered that this could play a role in diversity of gas supplies in the future. In respect of this, the CER recently published a "Bridging Paper". The paper sets out the appropriate next steps prior to the injection of biomethane (which would be of the same specification as Natural Gas) into the natural gas grid.

#### 4.1.3 Market Based Demand Side Measures

With an average of 45% of gas in Ireland being used for power generation in 2014, Ireland has relied on fuel switching as a demand-side measure for managing the gas system and protecting smaller, vulnerable and priority gas customers.

In 2009, the CER issued a Decision Paper – Secondary Fuel Obligations on Licensed Generation Capacity in the Republic of Ireland ([CER/09/001](#)). That paper specified the level of primary and secondary fuel stocks electricity generators are required to maintain. Since 2009, significant developments have taken place within Ireland's electricity and gas markets including increased renewable generation, the commissioning of the East West Interconnector (EWIC), and the first gas flows from the Corrib gas field. Given such developments, coupled with concerns regarding gas security of supply at a European level (due to a potential interruption of Russian gas supplies), the CER published a consultation paper in 2015 as to whether changes to the existing fuel stock obligations on electricity generators were merited – see [CER/15/213](#).

The CER also previously consulted on whether market based demand side measures could be introduced to address a gas shortage. In the interests of safeguarding the power system, EirGrid (Ireland's electricity TSO) was strongly opposed to the introduction of market measures and contended that fuel switching should only be considered as an

emergency response measure as there is an increase in the probability of electricity outages if fuel switching fails. They stressed that any fuel switching needs to be co-ordinated by the gas and electricity system operators. EirGrid has advised that “market-driven, uncoordinated change-over to secondary fuel would represent a significant and unnecessary risk to the supply of electricity to customers”.

Article 14 of Regulation 715 of 2009 requires that transmission system operators provide both firm and interruptible third-party access services. Consequently in 2012, the CER consulted on introducing an interruptible capacity product at entry and exit points. In respect of interruptible at exit, there was no great support for this product, from respondents to the consultation. At the time, it was considered that given that capacity congestion at the exit was unlikely, the price difference between a firm and interruptible product would be negligible, and hence market demand would be negligible. As the CER is currently assessing Gas Networks Ireland’s revenue requirements for the forthcoming Price Control, the currently available range of capacity products will be kept under review as part of this process.

## 4.2 Non-Market Based Measures

Annex III of the Regulation identified non-market based supply side and demand side measures that can be utilised to enhance gas security of supply (see Table 4.2 below).

**Table 4.2:** Non-Market Based Measures.

Supply Side Measures	Demand Side Measures
Use of strategic gas storage	Enforced fuel switching
Enforced use of stocks of alternative fuels	Enforced utilisation of interruptible contracts
Enforced use of electricity generated from sources other than gas	Enforced firm load shedding
Enforced increase of gas production levels	
Enforced storage withdrawal	

Fuel switching represents the most immediate non-market based measures that can be utilised to ensure gas security of supply. Power stations in Ireland comprise 45% of the gas demand and can be instructed by EirGrid to run on a secondary fuel in order to prevent or respond to a gas emergency situation.

Arrangements are currently in place, which ensure that gas generators in Ireland are able to switch from their primary fuel to their secondary fuel while operating continuously and run on their secondary fuel for up to 5 days. The secondary fuel capability includes the following measures:

- Electricity generating plants whose primary fuel is gas are required to be able to run on a secondary fuel,
- Such plants must also ensure that sufficient stocks of secondary fuels are held on site,
- Electricity generating plants whose primary fuel is not gas (such as oil and coal fired plants) are required to hold additional primary fuel in storage, and;
- EirGrid monitor the capability of generators and have commenced a schedule of periodic planned tests.

In order to ramp down in a controlled manner and maintain control, EirGrid stress that only two plants could be ramped down in parallel and these plants would have to be ramped down over the course of five hours. Power demand model analysis by GNI suggests that on a peak day there would be approximately 11 gas plants in merit. When considering the operational limitations of ramping down, as raised by EirGrid, 30 hours would be required to switch these 11 plants to their secondary fuel. According to GNI's calculations, this ramping down would require gas consumption equivalent to 60% of the peak day consumption level for the power generation sector.

Daily metered customers could also provide demand side response to a potential emergency. Other non-market based measures outlined in Table 4.2 including increased production and storage withdrawal are provided for in Ireland's National Emergency Plan. With reference to production, Corrib can meet approximately 28% of Ireland's peak day gas demand in 2018/19.

It should be noted also that the second interconnector from Moffat (IC2) was built for security of supply reasons. It provides 100% back up capacity and is being underwritten by the Irish customer. It has always been assumed that in the event of loss of supply at Moffat the linepack in IC1 and IC2 could supply the Irish demand on a 1 in 50 winter for five days, assuming all power stations could be fuel switched in 5 hours. This does not allow for any supply to Northern Ireland through the SNP, which is connected to IC2. However, the 2016 UK Ireland Joint Risk Assessment considered the impact of Northern Ireland having access to linepack on IC2. The adoption of this regional approach between the UK and Ireland enables Ireland to meet the N-1 Standard, as required by the Regulation, while providing access to linepack on the IC2 to NI.

### 4.3 Infrastructure & Operational Improvements

With reference to the improvement of gas security of supply, the Competent Authorities in the UK and Ireland are considering initiatives such as potential security upgrades at key points within the UK's and Ireland's gas systems. Additionally, the development of Projects of Common Interest has the potential to enhance security of gas supply in the UK and Ireland.<sup>22</sup>

Under Regulation 347/2013 (*Guidelines for trans-European energy infrastructure*), the EU Commission is mandated with drawing up a list of infrastructure projects, referred to as Projects of Common Interest (PCIs), to further the sustainability, resilience and integration of the EU's internal energy market. The PCI list, which is developed on a biennial basis, is derived from submissions from project promoters to the EU Commission.

To date, the CER has inputted into the EU Commission's PCI review process by providing assessments of projects' feasibility, maturity and impact where relevant to Ireland. The projects that were designated with PCI status by the EU Commission, and are of relevance to gas in Ireland include:

1. LNG Terminal located between Tarbert and Ballylongford (Ireland), which is being promoted by Shannon LNG
2. A clustered PCI proposal combining:
  - Underground Gas Storage (UGS) facility at Larne (Northern Ireland), which is being promoted by Islandmagee Storage.
  - Upgrade of the SNIP (Scotland to Northern Ireland) pipeline to accommodate physical reverse flow between Ballylumford and Twynholm, which is being promoted by Premier Transmission Limited.
  - Physical reverse flow at Moffat interconnection point, which is being promoted by GNI.

The process in determining the PCI list for the two-year period 2018-2019 has commenced.

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<sup>22</sup> In October 2013 the European Commission published its first list of EU-wide Projects of Common Interest under Regulation (EU) 347/2013. These projects were assessed on a range of criteria including their impact on diversity of supply, market integration and security of supply. Infrastructure projects with PCI status benefit from faster and more efficient permit granting procedures, improved regulatory treatment and access to financial support under the Connecting Europe Fund.

In order to support security of supply, the CER also requires Ireland's electricity TSO (i.e. EirGrid) to engage in a programme of secondary fuel switchover testing of gas generators and monitoring of their fuel stocks. As a part of this programme, EirGrid submits an annual report to the CER regarding generators compliance with fuel switching arrangements. Additionally, the CER requires that Ireland's gas TSO (i.e. GNI) undertakes annual gas emergency exercises to test the effectiveness of industry response to a gas supply emergency.

#### 4.4 Regional Approach

Regional co-operation is an underlying feature of the Regulation and is required in particular for the establishment of the Risk Assessment, the Preventive Action Plans and Emergency Plans. In addition, co-operation is important for meeting the infrastructure, and in the provisions for EU and regional emergency responses. This is of particular importance as Ireland is dependent on the Great Britain for its gas supply and Northern Ireland in turn is dependent on Ireland's gas import infrastructure to meet 100% of its gas supplies.

As detailed in the national Risk Assessment, Ireland cannot meet the infrastructure standard in the short-term. In the event that an EU Member State cannot fulfil the N-1 infrastructure standard on a national basis, the Regulation permits the adoption of a regional approach in order to meet that Standard. Following a request from the CER (as Ireland's Competent Authority), the Department of Business Energy and Industrial Strategy (BEIS)<sup>23</sup> in the UK agreed to adopt a regional approach between the UK and Ireland. Given that Ireland had requested the regional approach, it was agreed that Ireland would lead the development of the 2016 JRA and JPAP (with BEIS providing input as required). In consultation with BEIS, the CER finalised the 2016 JRA, which was submitted to the EU Commission on the 30 September 2016. The JRA confirmed an N-1 of 134% thereby enabling Ireland to fulfil the N-1 Infrastructure Standard.

It is worth noting that the EU Commission looks favourably on this joint approach:

*“Joint Risk Assessment of the United Kingdom and Ireland is another example of successful regional cooperation”<sup>24</sup>.*

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<sup>23</sup> Formerly the Department of Energy and Climate Change (DECC)

<sup>24</sup> Report on the implementation of Regulation (EU) 994/2010 and its contribution to solidarity and preparedness for gas disruptions in the EU - [SWD\(2014\) 325 final](#)

In order to facilitate a regional approach, the UK and Ireland Competent Authorities meet through the UK and Ireland Emergency Group Forum. The forum comprises the three government departments (BEIS, DCCAE and DfE), the three regulators (OFGEM, CER and UREGNI), and the gas and electricity TSOs (GNI, EirGrid, National Grid, National Grid Gas, SONI and PTL). Meetings take place every six months. The group is working towards a regional approach to emergencies. This involves the establishment of protocols to link emergency plans of each jurisdiction. Emergency exercises are carried out by the TSOs on an annual basis and plans are refined on the basis of the learnings from the exercises. The forum is also used to discuss the implementation of the Regulation and the plans and assessments carried out by each jurisdiction in compliance with the Regulation.



## 5 Obligations on Relevant Bodies & NGUs

Article 5 of the Regulation requires that Member States' Preventive Action Plans shall contain the obligations imposed on relevant bodies and NGUs (including the safe operation of the gas system). For the purpose of this Preventive Action Plan, relevant bodies and NGUs are interpreted as follows:

- **Relevant Bodies** refers to the Department of Communications, Climate Action and Environment (DCCAE) and the CER; and
- **NGUs**: refers to a natural or legal person carrying out at least one of the following functions: production, transmission, distribution, shipping, supply, purchase or storage of natural gas, including Liquefied Natural Gas (LNG), which is responsible for the commercial, technical and/or maintenance tasks related to those functions, but shall not include final customers.

### 5.1 Relevant Bodies

#### 5.1.1 DCCAE

The DCCAE has overriding responsibility for energy policy including security of supply of gas, electricity and oil, whose functions include the introduction of legislation and of Public Service Obligations (PSOs). Specifically, under section Section 21 of the Gas (Interim) (Regulation) Act 2002, the Minister for Energy may direct the CER to impose PSOs relating to security of supply.

To date, no such direction has been given to the CER in relation to security of gas supply. However, the DCCAE has imposed public services obligations within Ireland's electricity sector,<sup>25</sup> in order to support the national policy objectives of:

- security of energy supply,
- the use of indigenous fuels, and;
- the use renewable energy sources.

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<sup>25</sup> Section 39 of the Electricity Regulation Act 1999 (as amended) sets out the legal basis for the PSO levy in Ireland. Additionally, Statutory Instrument No. 217 of 2002 made under Section 39 requires that the CER calculates and certifies the costs associated with the PSO and sets the associated levy for the required period.

Currently, as regards electricity produced from gas, the electricity PSO levy support extends to biomass, including: landfill gas; biomass-CHP; biomass-anaerobic digestion and pyrolysis. This is consistent with the potential supply side measures identified in Annex II of the Regulation for increasing gas security of supply.

### 5.1.2 Commission for Energy Regulation

The primary obligations of the CER, as Ireland's designated Competent Authority, in relation to the implementation of the security of supply Regulation include:

- the completion of a Risk Assessment,
- the establishment of a Preventive Action Plan and Emergency Plan<sup>26</sup> in order to mitigate the risks identified in the Risk Assessment,
- monitoring of security of gas supply at national level,
- cooperating with other Competent Authorities to prevent a supply disruption and to limit damages in such an event, and;
- establishing the roles and responsibilities of relevant market participants.

In addition to the security of supply functions, the CER also has explicit safety functions relating to the safe storage, transmission, distribution and utilisation of natural gas.

## 5.2 NGUs

### 5.2.1 Obligations on gas Shippers and gas Suppliers

In 2009, the CER (in conjunction with UREGNI) consulted on:

- whether shippers/suppliers be required to secure supplies for an exceptionally cold winter, and;
- whether shippers/suppliers be required to book capacity for an exceptionally cold day (1 in 50 or 1 in 20 day).

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<sup>26</sup> In accordance with EU Regulation 994/2010, as the designated competent authority for Ireland, the CER is responsible for preparing the "Preventive Action Plan", and the "National Gas Supply Emergency Plan".

In the context of almost all of Ireland's gas being sourced from Moffat and limited storage opportunities available on the island, it was decided not to require shippers to secure gas supply for an exceptionally cold winter. This would put an unfair burden on shippers and potentially result in higher gas sale prices. It was noted also that this would provide no security in the event of infrastructure failure from the Moffat interconnection point.

With reference to booking capacity for the peak day demand, the CER requires peak day capacity be booked at exit for the NDM sector (domestic and small business sectors). This peak day requirement is for a 1-in-50 day, and is contained within Gas Networks Ireland Code of Operations.

### 5.2.2 Obligations on Transmission System Operator (GNI)

GNI, as the TSO, has a key role in the development of emergency arrangements for Ireland. In addition, with the approval or instruction of the NGEM, it is the responsibility of GNI to declare a national gas emergency. Further to its general obligations, GNI is required to operate a secure safe and reliable network and to develop the network to ensure long term gas demand is met. Specifically its licence obligations require it to:

- maintain the operational integrity of the gas transportation system,
- design the Transmission system to meet 1-in-50 peak day demand,
- publish 10 year network development statements on an annual basis,
- Develop and maintain the Natural Gas Emergency Plan<sup>27</sup>, and;
- Provide Transmission and Distribution emergency response.

The CER has designated GNI as the National Gas Emergency Manager (NGEM) to manage the operational response to gas supply interruptions in Ireland. Additionally, the CER has designated GNI as the Crisis Manager, in accordance with the Regulation. With reference to market rules, GNI is also responsible for the Code of Operations, which sets out the market measures to maintain a supply / demand balance on the system. In this role GNI develops new products (e.g. storage) as the market dictates.

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<sup>27</sup> In December 2008, in accordance with [S.I. No. 697/2007 - European Communities \(Security of Natural Gas Supply\) Regulations 2007](#), the CER appointed Gas Networks Ireland (the TSO) as the National Gas Emergency Manager. In accordance with the same Statutory Instrument ([S.I. No. 697/2007](#)) the CER directed the TSO to prepare a "[Natural Gas Emergency Plan](#)". Thereafter, in line with our statutory powers, the CER approved the "[Natural Gas Emergency Plan](#)".

### **5.2.3 Obligations on Gas Producers**

Gas producers are required to comply with the instructions of the NGEM. Specifically, in the case of a shortage of gas supply they may be instructed to increase production.

### **5.2.4 Obligations on Gas Storage Operators**

PSE Kinsale Energy Ltd operates South West Kinsale storage, which is currently the only gas storage facility in Ireland. As a gas storage operator, PSE Kinsale Energy Ltd is obliged under licence conditions to cooperate with the NGEM in the event of an emergency. It should be noted that Kinsale energy limited has indicated that it is to commence blowdown of southwest Kinsale.

### **5.2.5 Exceptions to obligation on NGUs**

Article 8(2) of the Regulation requires that the CER identify in the Preventive Action Plan how any increased supply standard or additional obligation imposed on NGUs may be temporarily reduced in the event of a Union or regional emergency. It is considered that this requirement is not relevant to Ireland, as the CER has not imposed such obligations on NGUs.

### **5.2.6 Safety Obligations on NGUs**

Under the provisions of the Energy (Miscellaneous Provisions) Act 2006 (the '2006 Act'), the CER has the responsibility to regulate the activities of NGUs with respect to onshore gas safety, through the establishment of a natural gas safety regulatory framework (the 'Framework'). In terms of operating the Framework, the CER requires NGUs to demonstrate that they are managing their gas safety risks to a level that is "as low as reasonably practicable" (ALARP), with an appropriate level of regulatory intervention necessary to secure compliance with the Framework and achieve the desired safety outcomes. Specifically, under the Framework document, NGUs are required, to demonstrate that they have suitable arrangements in place for responding in the event of large-scale network gas emergencies.

## 6 Conclusion

Ireland's Preventive Action Plan (2016-18) has been prepared in accordance with the Regulation. Given that the Preventive Action Plan will be required to be updated at least every two years, the CER will continue to monitor market developments, and update the document to ensure consistency with the Regulation.