

Title: European Security of Supply Regulation Lead department or agency: DECC Other departments or agencies:	Impact Assessment (IA)
	IA No: 0031
	Date: 02/12/2010
	Stage: Final
	Source of intervention: EU
	Type of measure: Other
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Summary: Intervention and Options

What is the problem under consideration? Why is government intervention necessary?

The EU Gas Security of Supply Regulation comes into force on 2nd December 2010, repealing Directive 2004/67/EC. The regulation will improve downstream gas infrastructure, planning and coordination between Member States in order to enhance the resilience of the European gas market. The regulation is directly applicable in UK law.

What are the policy objectives and the intended effects?

The regulation aims to enhance security of supply by i) ensuring Member States provide gas to protected customers, ii) ensuring a minimum standard of infrastructure resilience, iii) ensuring Member States make adequate preparations for a gas supply emergency, iv) improving coordination between Member States and v) ensuring the internal market for gas functions for as long as possible.

What policy options have been considered? Please justify preferred option (further details in Evidence Base)

Option 1: To not implement the regulation and to continue with the status quo.

This notional option is used as the baseline counterfactual and all the impacts in option 2 are relative to this scenario.

Option 2: Implement the regulation.

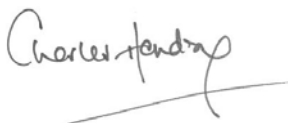
In this (the preferred) option the regulation enters into force on 2 December 2010 and is directly applicable in UK law. In implementing the Regulation, the Government aims to meet the requirements in full while not 'gold plating'.

Option 2 is the preferred option, as the regulation is directly applicable in UK law and non-implementation would expose the UK to infraction proceedings by the European Commission.

When will the policy be reviewed to establish its impact and the extent to which the policy objectives have been achieved?	It will be reviewed
Are there arrangements in place that will allow a systematic collection of monitoring information for future policy review?	No

SELECT SIGNATORY Sign-off For final proposal stage Impact Assessments:

I have read the Impact Assessment and I am satisfied that (a) it represents a fair and reasonable view of the expected costs, benefits and impact of the policy, and (b) the benefits justify the costs.



Signed by the responsible Minister:

Date: **29/11/2010**

Summary: Analysis and Evidence

Policy Option 1

Description:

Implementation of Regulation

Price Base Year 2010	PV Base Year 2010	Time Period Years 20	Net Benefit (Present Value (PV)) (£m)		
			Low: -0.74	High: -1.13	Best Estimate: -1.03

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			

Description and scale of key monetised costs by 'main affected groups'

Estimated administrative costs fall on DECC, Ofgem and National Grid. These relate to transitional costs, on-going costs and any costs related to an assessment or exemption application from the requirement for bi-directional flow.

Monetised administrative costs to business (i.e. National Grid) provided by National Grid are estimated to be £486k (discounted over 20 years).

Other key non-monetised costs by 'main affected groups'

If bidirectional flows were required on an interconnector then there would be capital costs involved, although an assessment would be required to ascertain to what extent, if any, the UK would need to contribute to these costs. The UK is presently compliant with the 'N-1' infrastructure standard, but it cannot be ruled out that at some time in the future further infrastructure would be needed in order to meet this requirement.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	Optional	Optional	Optional
High	Optional	Optional	Optional
Best Estimate			

Description and scale of key monetised benefits by 'main affected groups'

Maximum of 5 lines

Other key non-monetised benefits by 'main affected groups'

The key benefits will be felt in terms of improved security of supply. Since households (and some other users) are already more shielded from both the price and supply impacts of any gas shortage already, the key beneficiaries will be businesses, particularly those businesses consuming large volumes of gas.

A side effect of the measures may be increased competition (and potentially lower UK gas prices) in the European gas market as a result of greater interconnection.

Key assumptions/sensitivities/risks

Discount rate (%)

3.5

Whilst on balance we would expect European and UK security of supply to be enhanced, there is a risk that in some circumstances the regulation may enhance European security of supply at the cost of UK's security of supply. For example, if increased interconnection between Member States lead to greater demands for gas from the UK as a result of a shortfall in supply in Eastern Europe.

Some cost data has been provided by National Grid and Ofgem; DECC is not in a position to quality assure this data.

Impact on admin burden (AB) (£m):		Impact on policy cost savings (£m):		In scope
New AB:	AB savings:	Net: 0.486	Policy cost savings:	No

Enforcement, Implementation and Wider Impacts

What is the geographic coverage of the policy/option?	United Kingdom				
From what date will the policy be implemented?	02/12/2010				
Which organisation(s) will enforce the policy?	DECC / OFGEM				
What is the annual change in enforcement cost (£m)?					
Does enforcement comply with Hampton principles?	Yes/No				
Does implementation go beyond minimum EU requirements?	No				
What is the CO ₂ equivalent change in greenhouse gas emissions? (Million tonnes CO ₂ equivalent)	Traded: 0		Non-traded: 0		
Does the proposal have an impact on competition?	Yes				
What proportion (%) of Total PV costs/benefits is directly attributable to primary legislation, if applicable?	Costs:		Benefits:		
Annual cost (£m) per organisation (excl. Transition) (Constant Price)	Micro	< 20	Small	Medium	Large
Are any of these organisations exempt?	No	No	No	No	No

Specific Impact Tests: Checklist

Set out in the table below where information on any SITs undertaken as part of the analysis of the policy options can be found in the evidence base. For guidance on how to complete each test, double-click on the link for the guidance provided by the relevant department.

Please note this checklist is not intended to list each and every statutory consideration that departments should take into account when deciding which policy option to follow. It is the responsibility of departments to make sure that their duties are complied with.

Does your policy option/proposal have an impact on...?	Impact	Page ref within IA
Statutory equality duties ¹ Statutory Equality Duties Impact Test guidance	No	
Economic impacts		
Competition Competition Assessment Impact Test guidance	Yes	11
Small firms Small Firms Impact Test guidance	No	
Environmental impacts		
Greenhouse gas assessment Greenhouse Gas Assessment Impact Test guidance	No	
Wider environmental issues Wider Environmental Issues Impact Test guidance	No	
Social impacts		
Health and well-being Health and Well-being Impact Test guidance	No	
Human rights Human Rights Impact Test guidance	No	
Justice system Justice Impact Test guidance	No	
Rural proofing Rural Proofing Impact Test guidance	No	
Sustainable development Sustainable Development Impact Test guidance	No	

¹ Race, disability and gender Impact assessments are statutory requirements for relevant policies. Equality statutory requirements will be expanded 2011, once the Equality Bill comes into force. Statutory equality duties part of the Equality Bill apply to GB only. The Toolkit provides advice on statutory equality duties for public authorities with a remit in Northern Ireland.

Evidence Base (for summary sheets) – Notes

Use this space to set out the relevant references, evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Please fill in **References** section.

References

Include the links to relevant legislation and publications, such as public impact assessment of earlier stages (e.g. Consultation, Final, Enactment).

No.	Legislation or publication
1	Gas Security Regulation http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:295:0001:0022:EN:PDF
2	Gas Security Directive (repealed) http://www.energy.eu/directives/l_12720040429en00920096.pdf
3	European Commission's Impact Assessment http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=SEC:2009:0979:FIN:EN:PDF
4	Joint Gas Capacity Statement 2010 (showing Irish supply and demand projections) www.cer.ie/en/gas-capacity-statement.aspx
5	DECC's Security of Supply Publications including the Poyry Research www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/markets/gas_markets/gas_markets.aspx

+ Add another row

Evidence Base

Ensure that the information in this section provides clear evidence of the information provided in the summary pages of this form (recommended maximum of 30 pages). Complete the **Annual profile of monetised costs and benefits** (transition and recurring) below over the life of the preferred policy (use the spreadsheet attached if the period is longer than 10 years).

The spreadsheet also contains an emission changes table that you will need to fill in if your measure has an impact on greenhouse gas emissions.

Annual profile of monetised costs and benefits* - (£m) constant prices

	Y ₀	Y ₁	Y ₂	Y ₃	Y ₄	Y ₅	Y ₆	Y ₇	Y ₈	Y ₉
Transition costs										
Annual recurring cost										
Total annual costs										
Transition benefits										
Annual recurring benefits										
Total annual benefits										

* For non-monetised benefits please see summary pages and main evidence base section

Evidence Base (for summary sheets)

Background and Rationale for Intervention

The European Commission set out in the 2nd Strategic Energy Review an EU wide approach to security of supply. The review has been endorsed by the European Council and Parliament.

In January 2009, European gas security of supply came sharply into focus as a result of a Russian-Ukrainian dispute over the transit of gas through the Ukraine; this led to an interruption to all supplies of Russian gas to Ukraine meaning 30% of Europe's imports of gas were lost for two weeks. Whilst the UK gas market was largely unaffected, there were major disruptions to gas supplies in a range of European countries. Gas is an important commodity which is used not only for space heating in homes and businesses but also by gas-fired electricity generators and as a feedstock in industrial processes. The Commission have put forward an estimate of the cost of the January Russia-Ukraine crisis in terms of involuntary restrictions on gas supplies to industry in the order of EUR 1 billion for Slovakia, EUR 255 million for Bulgaria and EUR 70 million for Hungary. This underlined the need for increased preparedness by European countries in the case of major supply disruptions.

Europe's (and the UK's) exposure to supply risks may increase as it becomes increasingly reliant on imports as indigenous supplies of gas fall and if demand for gas remains constant or increases. The UK is rising to this challenge by passing legislation to empower Ofgem to quickly place more efficient and effective incentives on gas shippers to deliver enough supply in a gas deficit emergency. Other Member States are also acting to enhance their security of supply.

However, the EU Gas Security of Supply Regulation, which comes into force on 2nd December 2010, will help to strengthen EU security of supply further by ensuring a minimum level of diversity and resilience of infrastructure (potentially increasing the sources of available gas and allowing gas to flow to where it is needed most), ensuring Member States put in place measures to ensure supplies to 'protected customers', ensuring Member States put in place adequate plans to mitigate and prepare for an emergency, improving coordination between Member States, and ensuring that the internal market for gas functions for as long as possible. A European-level approach to enhancing gas security of supply is helpful (and compliments action by individual Member States) as the security of supply of one country (and the policies that a country employs to enhance its security of supply) can affect the security of supply of other countries; the regulation will allow gas to be efficiently transported between Member States and get to those customers that value gas the most.

The regulation (No. 994/2010) repeals Directive 2004/67/EC.

Options considered

Option 1: To not implement the regulation and to continue with the status quo

This notional option is used as the baseline counterfactual and all the impacts in option 2 are relative to this scenario. As the regulation is directly applicable in UK law and non-implementation would expose the UK to infraction proceedings by the European Commission this is not a realistic scenario. Therefore this notional option is not discussed further in this IA.

Option 2: Implement the regulation

In this (the preferred) option the regulation enters into force on 2 December 2010 and is directly applicable in UK law. In implementing the Regulation, the Government aims to meet the requirements in full, while not 'gold plating'.

Impact of the Regulation

Table 1: Summary of Key Measures and Direct Impacts on the UK

Action	Description	Impact on the UK
Planning		
Biennial Risk Assessment	This must use the supply standards, taking into account relevant circumstances, to consider security of supply in the event of high demand and supply disruption scenarios.	The UK already undertakes similar risk assessments.
Biennial Preventative Action Plan	This must, <i>inter alia</i> , ensure at a minimum measures to ensure compliance with the security of supply standard.	The UK meets the supply standards. The other reporting requirements are not burdensome
Emergency Plan		The UK already has in place an emergency plan.
Security of Supply Standards		
N-1 Infrastructure Standard	Capacity (minus the loss of the largest piece of infrastructure) must be sufficient to cover a period of high gas demand during the coldest period statistically occurring every 20 years.	None at present as the UK is already compliant. Compliance needs to be periodically re-evaluated and future assessments may lead to an investment requirement.
Assessment of bi-directional Flow on Interconnectors	This might require the interconnector with The Netherlands and Ireland to have some degree of reverse flow unless there is an exemption.	If an exemption is granted then no capital costs will be incurred. If reverse flow is required then it may be that some or all of the costs are not borne by the UK.
Ensuring Supply to Protected Customers	Supplies to households (and SMEs if Member States elect to do so) must be ensured.	None. The UK is already compliant.
Community Coordination		
Declaration of a Community Emergency	The Commission may declare a community emergency under some circumstances. In this case, Member States may not restrict the flows of gas to other Member States, or restrict access to storage. The Commission may also direct Member States to cease actions that may be inappropriate and harmful to other Member States.	This may have an impact in an emergency to ensure gas flows are unrestricted between Member States, enhancing community security of supply. The impact is expected to be beneficial to the UK in general, but could be adverse as described in the risks section.
Gas Coordination Group	A reconstituted group to improve coordination between MS.	The GCG has been in existence since the 2004 Directive which the UK already attends.
Information Exchange	In an emergency the member state is required to provide, <i>inter alia</i> i) flows and short-term projections of demand and supply during the emergency ii) after an emergency a detailed assessment of the impacts of the emergency	The UK already collects this information

Table 1 sets out the key measures that the regulation requires. Broadly, the areas can be categorised into three areas.

I. Planning requirements

The regulation calls for Member States to undertake regular risk assessments, draw up preventative plans and set up emergency arrangements. These requirements are not expected to create a significant additional burden on the UK as the UK already undertakes such steps. However, there may be some small additional administrative effort in conforming the UK's approach to the requirements of the regulation.

II. Security of Supply Standards

N-1 Infrastructure Standard

Broadly, the 'N-1' principle stipulates that in the event of the failure of a Member State's largest piece of supply infrastructure, a Member State should be able to have sufficient remaining infrastructure in place to meet a 1:20 winter peak day demand. An initial assessment of the N-1 standard has been included in Annex 1. It shows that the UK meets the required standard (the target number is at least 100%) even when exports to the Republic of Ireland are accounted for. These calculations indicate that the UK therefore needs to take no immediate action in order to meet this standard.

Assessment of Bi-directional Flow Requirements

There are two potential candidates for reverse flows - the interconnectors to Ireland at Moffat and on the BBL pipeline from The Netherlands. In both cases, if the market decides to enable reverse flow capacity for commercial reasons then the requirement under the regulation will presumably have been met.

If the market does not decide to bring forward investments in reverse flow then an assessment / exemption will be required. Without prejudice to any formal future assessment, DECC notes the following:

i) At present, Ireland relies on gas from GB to meet most of its demand and reverse flow capability at the present time would add little to GB security of supply. The case for having reverse flow would be strengthened if Ireland were to develop greater gas infrastructure in the coming years to allow it to meet its own demand and still have gas to export to GB. For this to be the case, it is likely that the Corrib field, Larne salt cavity storage site, and Shannon LNG site would all need to be developed in the coming years.

ii) At present, the Netherlands is an exporter of gas throughout the year and to date appears not to have had a need for exports of gas from GB (NB the BBL is already introducing virtual reverse flow in the near future); for example, the fact that UK was importing gas through the BBL (and exporting gas to the continent through IUK) during the recent Russia-Ukraine dispute indicates that even if physical reverse flow was possible there would likely have been other factors that would have prevented reverse flow from actually occurring. The case for reverse flow on the interconnector to The Netherlands (the BBL) would be strengthened if it could be shown that the Netherlands could not meet its own (gross) demand without supplies from GB.

In the case of both interconnectors an assessment would need to show that the security of supply benefits would exceed the costs involved.² Otherwise, an exemption from this requirement would seem appropriate.

If reverse flows were deemed to be appropriate on either or both of the interconnectors then an assessment on who the costs should fall would need to be undertaken. Without prejudice to that assessment, it may be that much or all of the costs may not fall on the UK. Article 6 of the regulation states that the cost allocation must be agreed by the relevant National Regulatory Authorities and that *"The cost allocation shall in particular take into account the proportion of the benefits of the infrastructure investments for the increase of security of supply for the Member States concerned."*

However, as part of the implementation of this Regulation the Government will ensure that the necessary market testing has been carried out to ensure compliance with the Regulation on this issue.

Ensuring Supplies to Protected Customers

The UK is presently compliant with this requirement. As the N-1 standard indicates, the UK has sufficient capacity in order to meet the capacity requirements associated with firm demand. Within firm demand, supplies to protected customers would be effectively prioritised.

Safety Monitor arrangements, operated by the System Operator (National Grid) in order to ensure that system pressures are maintained at a safe level during an emergency or sustained period of extreme cold weather, provide that sufficient volumes of gas are held in GB storage to supplement non-storage supplies as necessary to ensure that customers on local networks, including households, continue to receive supplies in a gas shortage. The Emergency Arrangements and Gas Priority User Arrangements ensure that households, and other vulnerable customers (including hospitals and care homes) are prioritised to receive this gas in such circumstances as long as the infrastructure remains in a state to supply them.

Earlier in the year DECC published research undertaken by Pöyry Energy Consulting regarding GB's gas security of supply. The analysis concluded that the UK's gas market was robust to a wide range of supply shocks even at times of very high demand and in no scenarios was household (or SME's) demand not met.

Whilst supplies to protected customers are ensured, there is still a small (but negligible) risk that supplies to other customers could be interrupted and higher prices experienced under certain extreme scenarios. As noted earlier, the UK is passing legislation to empower Ofgem to quickly place more efficient and effective incentives on gas shippers to deliver enough supply (or encourage greater demand-side response) in the event of a gas deficit emergency.

III. Community Coordination

Coordination between Member States will be enhanced by reconstituting the Gas Coordination Group, enabling the timely provision of market information and allowing the Commission under some circumstances the power to ensure Member States act in interests of community security of supply.

Additionality of the Regulation and Existing European Legislation

² No detailed planning or costing for a project enabling reverse flow on the BBL has been undertaken at this time. However the costs would likely be at least in the tens of millions as amongst other things there are complex issues around the technical requirements, commercial matters, planning and the access to any land required to enable reverse flow. By way of reference, and although not directly comparable, it is interesting to note that increasing the flow capability of IUK from Bacton to Zeebrugge from 8.5bcm per year to 25.5bcm per year took several years and cost around £160m.

The regulation repeals Directive 2004/67/EC and not all the measure in the regulation are new. For example, the Gas Coordination Group was established by that directive, albeit the regulation usefully reconstitutes the group and clarifies some of its roles and responsibilities.

It is assumed in the notional Option 1 that the UK would continue to comply with the Directive. Table 2 sets out the measures required by the 2004 directive.

Table 2: Summary of Key Measures in the 2004 Directive

Action	Notes
Planning	
Emergency Planning	National Emergency Measures are required to be prepared in advance
Security of Supply Standards	
Ensuring Supply to Protected Customers	Supplies to households and SME should be ensured in the event of supply disruptions and periods of high demand
Community Coordination	
Gas Coordination Group	This group is established by the directive.
Information Exchange	Member States need to provide to the Commission certain information (such as storage capacity and amount of long-term contracts).

Benefits

As discussed above, the UK is largely compliant already with the requirements of the Regulation and is in a much stronger position as regards gas security of supply compared to some other European countries. The measures may have a greater impact on some other Member States and there may be indirect impacts on the UK, as discussed below.

Increased Interconnection

The regulation requires reverse flows on interconnector pipelines where this will enhance security of supply commensurate with the costs. This will allow increased flows of gas between Member States. The 'n-1' standard also ensures that sufficient supply capacity is in place in order to meet demand even if the largest piece of infrastructure were to fail - this could lead to increased interconnection between Member States and / or increased storage or import capacity which will provide additional flexibility and sources of gas to Member States. The result will be an increase in the European gas market's resilience which may benefit the UK.

Improving the Responsiveness of Gas Flows

As the Commission states in the regulation – the completion of the internal market and effective competition offer the community the highest level of security of supply for all Member States. There are two pipelines which connect the UK to Europe, one to The Netherlands and the other to Belgium. As the UK's indigenous production of gas declines, having access to reliable and flexible sources of gas from the continent will be increasingly important. The regulation should allow for improved access to gas by allowing markets to operate for as long as possible in an emergency and by reducing the scope for individual Member States to deploy 'beggar my neighbour' policies that might aim to hoard gas which would prevent gas flowing to neighbours where prices are highest and need is greatest.

Allowing gas to flow to countries with greatest need will help reduce the (aggregate) impact of any supply interruption. A consequent benefit could also be that less infrastructure is needed to meet a given level of demand and that infrastructure could be developed at a lower cost. For example, if the UK could rely on access to storage outside its borders in the event of an emergency it might need to build less storage within UK borders. Therefore, the benefits from allowing markets to act unfettered could be very great.

Improved Preparation and Response to Emergencies

The regulation could help to allow the market to operate for as long as possible in an emergency and to encourage a more coordinated and integrated approach to managing supply risks and transparency about each member state's supply and demand position. Further information about gas supplies and the potential for the Commission to help coordinate will further help ensure gas flows between Member States efficiently.

Costs

Capital Costs: It is assumed in this impact assessment that the UK does not need to bear any capital costs. Analysis suggests that we comfortably meet the N-1 standard at present, and bi-directional flows may not be required on interconnectors.

Administrative Costs: The UK already has in place many of the requirements of the regulation, and some parts of the regulation were previously introduced in the 2004 directive. Given this the administrative costs are not judged to be large; table 3 sets out estimates of the administrative costs to DECC, Ofgem and National Grid.

Figure 3: Estimated Administrative Costs (Rounded)

	Government Costs (DECC and Ofgem)	National Grid
Transitional Costs	£30k - £35k for the next two years	£40k
Both Assessments of Bi-directional Flow	£210k	£160k
On-going Costs (average per annum)	£14k – £24k	£18k - £22k

Source: DECC and estimates provided by Ofgem and National Grid.

Based on the above, a range for total administrative costs can be generated:

- Low: this gives a net present cost of £740k. This takes the lower range of the costs and assumes only one assessment / exemption application will be required regarding bi-directional flows.
- Central: this gives a net present cost of £1.03m. This takes the central range of the costs and assumes two assessment / exemption applications are required for bidirectional flows.
- High: this gives a net present cost of £1.13. This takes the high range of the costs and assumes two assessment / exemption applications are required regarding for bidirectional flows

The above estimates are based on table 3 and discounted over a twenty year period. The allocation of costs between DECC and Ofgem will depend on the allocation of responsibilities between the two organisations. The figures shown should be a reasonable estimate of the total cost to the public sector.

Risks and assumptions

Whilst on balance we would expect the regulation to significantly enhance European and UK security of supply, there is the risk that in some circumstances the requirements may enhance European security of supply at the cost of UK's security of supply. For example:

- i) the increased interconnection between Member States may lead to greater demands for gas from the UK as a result of a shortfall in supply in Eastern Europe (although it's possible that the market will deliver more capacity to meet such demands and thereby neutralising the risk). This might be beneficial to UKCS producers but lead to a reduced security of supply to the UK, and
- ii) Member States, including the UK's, actions may be coordinated in a way that might not maximise the benefits to the UK.

Some cost data (to inform figure 3) has been provided by National Grid and Ofgem; DECC is not in a position to quality assure this data.

Competition: Specific Impact Assessment

The benefits section describes how measures in the regulation will, amongst other things, impact on the European gas market.

The increased physical interconnection between Member States could have a lasting positive impact on competition. By helping to reduce transport costs, any price differentials between Member States could be reduced as a result of increased arbitrage. The potential increase in the effective size of markets and, related, the number of players that can compete in a given area should increase competition. The materiality of any benefit in competition arising from greater physical interconnection will depend on the nature and extent of new interconnections that are made as well as the mechanism to recover the cost of providing the infrastructure.

Other non-market barriers could also be reduced in an emergency, for example, by ensuring Member States' policies are not harmful to other Member States, by ensuring adequate information is shared and a response to an emergency is coordinated. The materiality of any competition benefits will depend on the nature of any emergency and how much the measures improve the functioning of the market (as compared to the counter-factual).

Annex: Initial Calculations for the N-1 Capacity Standard

Table A: Initial calculations for the N-1 Capacity Standard

	Capacity (mcm/d)		Notes and Assumptions
	<i>UK only</i>	<i>UK and Ireland</i>	
Main Infrastructure (I_m)	74	74	This is: IUK 74 mcm.
Max imports (EP_m)	250	250	This is: IUK:74 mcm; BBL mcm: 50 mcm; Langed: 70 mcm; Vesterled: 36 mcm, Tampen & Gjoa: 20 mcm. ³
Max indig. production (P_m)	184	184	2010 forecast for 2010/11. ⁴
Max storage (S_m)	108	108	Estimated storage deliverability. ⁵
LNG (LNG_m)	124	124	This is South Hook: 72 mcm, Dragon: 20 mcm, Isle of Grain: 56 mcm ⁶ (Dragon and South Hook increased by 25% for peak). Milford Haven flows (South Hook and Dragon) have been restricted to 68 mcm reflecting current network constraints. ⁷
Max demand ($D_{max}-D_{eff}$)	492	514	2010 forecast for peak 1 in 20 demand for 2010/11. This includes 8 mcm of exports to Northern Ireland and the Isle of Man (~0.5 mcm). This number represents undiversified ⁸ 1 in 20 firm demand. All interruptible demand is assumed to be off due to demand-side response.
N-1 Calculation	120%	115%	

Source: National Grid Calculations

URN: 10D/1004

³ Tampen & Gjoa adjusted for FLAGS. Source 2010 Development of Energy Scenarios.

⁴ From October 2010 Winter Outlook Report (Table A1).

⁵ From October 2010 Winter Consultation Report (Table A7).

⁶ Source 2010 Development of Energy Scenarios.

⁷ NB: This excludes LNG import capacity Teesside GasPort.

⁸ Source: National Grid Calculations (forthcoming). The demand scenario uses undiversified demand which is calculated as the sum of regional peak demand estimates. This slightly over-estimates the expected level of demand that would be expected across the whole country as it is not necessarily the case that each region will experience peak demand on the same day.