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3rd Party Proposal: Storage Information at LNG Importation Facilities. Modification Reference Number UNC 104

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Target audience: National Grid Gas NTS, network owners, Shippers, operators of LNG importation facilities, LNG importers, consumers and other interested parties

Overview:

In August 2006, energywatch, the consumer watchdog, raised a proposal to release more information to the wholesale gas market. The aim of the proposal is to improve market transparency by requiring National Grid Gas to publish data regarding the aggregate volume of gas stocks across all LNG importation facilities on a 'day plus one' basis. In general, shippers and operators of LNG importation facilities have opposed the proposal, raising concerns regarding the commercial confidentiality of this information. On the other hand, large customers are in favour of the proposal as they value the increased transparency this information would provide as they ultimately believe that this will result in lower wholesale gas prices.

Ofgem is minded to approve the proposal. We set out our analysis of the impact of approving the proposal in this document and welcome views from all interested parties.

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Context

In recent years, a number of rule changes have been proposed which have sought to release additional information to the wider GB gas market. Arguably the most significant of these was energywatch's Modification UNC 006, approved in May 2006, which brought about the release of near to real time information regarding flows of gas coming onto the GB market. Feedback received since this modification was implemented has demonstrated to Ofgem the value of removing information asymmetries in the market. However there is the need to always carefully consider the balance between transparency in the market and protecting commercially confidential information such as parties' trading positions, This document considers a further proposal aimed at addressing a perceived information asymmetry between LNG import shippers and participants in the wider market, including large customers.

Associated Documents

- Information release under Gas Transporters Licence Standard Special Condition A7 Guidance Document: Version 2.0, November 2005
- 3rd Party Proposal : Publication of Near Real Time Data at UK sub-terminals Modification Reference Number UNC 006 (0727), Impact assessment, May 2005
- Letter from Steve smith re: Uniform Network Code (UNC) Modification Proposal 006 “3rd Party Proposal: Publication of Near Real Time Data at UK sub-terminals”, 25 July 2005
- 3rd Party Proposal: Publication of Near Real Time Data at UK sub-terminals, Modification Reference Number UNC 006, Impact Assessment, 3 February 2006
- Letter from Steve Smith re: 3rd Party Proposal: Publication of Near Real Time Data at UK sub-terminals, Modification Reference Number UNC 006, 3 May 2006
- Modification Report, 3rd Party Proposal: Storage Information at LNG Importation Facilities, Modification Reference Number 0104, Version 2.0
- Letter from Sonia Brown re: Authority view regarding Uniform Network Code (UNC) Modification Proposal 104 and the scope of the UNC, 7 September 2006
- Letter from Nick Simpson re: Rejection of urgent status for modification proposal UNC104: '3rd Party Proposal: Storage Information at LNG Importation Facilities', 9 August 2006

Table of Contents

Summary

Liquefied Natural Gas (LNG) importation terminals are facilities which are capable of accepting imported gas, in liquid form, and treating the product to convert it back to a gaseous state in order that it can flow onto the Great Britain (GB) gas system. At present, there is only one operational LNG importation terminal connected to the GB gas system, which is located at the Isle of Grain, but a number of additional facilities are set to become operational in GB over the coming years.

Given the function that LNG importation terminals and storage facilities perform and the flexibility that these facilities provide to the market, there are clear similarities between these supply sources. With respect to information available on gas storage facilities, aggregate stock data is published with a one day delay on National Grid's website relating to stocks of gas in short, medium and long range storage facilities.

The modification proposal

In August 2006, energywatch raised a proposal that, if implemented, would require National Grid Gas to publish information regarding stock levels across all GB LNG importation terminals, with a one day delay. There were 16 responses to the Draft Modification Report (DMR). Of these, four respondents were in favour of the proposal, eleven were opposed and one respondent remained neutral.

Ofgem's assessment

We considered the proposal could have a significant impact on the market and as such, carried out the impact assessment set out in this document for consultation.

Benefits	**The proposal**	
Economy and Efficiency		
Economic signals	£1.6m - £20m	
System balancing	Low	
Market volatility	Low	
Effect on Competition	Low	
Security of Supply	-	
Impact on customers	Medium	
Impact on the environment	-	
Costs of implementation	£0.055m	
Risks	Impact	Probability
Costs of information release	Low	Low
Commercial sensitivity	Low	Low
Withdrawal of information	Low	Low
Net Benefits		
High Case	**£19.95m**	
Medium Case	**£7.95m**	
Low case	**£1.55m**	

Our assessment, summarised in the table above, suggests that there are likely to be material benefits associated with implementing this proposal. We consider that publication of this information would enable market participants to better understand the overall GB supply picture, allowing them to reach more informed commercial decisions and therefore facilitating the efficient operation of the GB gas market. In quantitative terms, our assessment suggests that the benefits to customers associated with this information are in the region of £1.6 million to £20 million over a 15 year period[1].

In contrast to the potential benefits, the costs associated with implementing of the proposal are relatively low. National Grid Gas has estimated that the cost of system changes required to support the proposal would be in the region of £55,000; therefore significantly outweighed by the benefits that could be achieved through improved market signals. However, in carrying out this assessment, we recognise that there are potential risks associated with achieving these benefits.

One potential risk we have considered is the potential commercial exposure of the existing Isle of Grain LNG facility. We believe that this risk is mitigated to a large extent as it is possible for parties to use available market information to develop a reasonable estimate of stock levels at this facility. As part of this consultation we would welcome respondents' views on this risk and the extent to which other market sources of information mean that LNG storage stocks at the Isle of Grain can be derived. Where parties believe that they will face commercial exposure, consistent with our guidance on offshore information release, it would be helpful if these views could be quantified.

A further risk that we have identified is that at present there is only one LNG import facility where as the proposal seeks the release of aggregated date. We would therefore like to understand as part of this consultation whether respondents consider that the release of information concerning one LNG facility at Grain would be inconsistent with the intent of the proposal (i.e. which proposes that "aggregated" data should be released). To mitigate this risk we are seeking respondents' views on a proposal to delay the implementation of the proposal so that it only takes effect once more than one LNG importation terminal is operational in GB.

Even against these risks, we currently consider that there are significant potential benefits associated with implementing the proposal, and are therefore currently minded to approve it. We welcome views from market participants and interested parties on our analysis and initial conclusions provided in this consultation. We will consider the responses received to this impact assessment, and intend to reach a final decision in May 2007.

[1] The NPV has been calculated on the basis of the potential benefits that would be achieved in relation to improved economic signals and are assumed to accrue over the period 2008 to 2023 and have been discounted at a rate of 6.25%.

1. Introduction

Chapter Summary This chapter details what the proposal is seeking to achieve as well as background regarding the process followed to date. The chapter also sets out the structure of the document and provides details of how to respond.

Question box
There are no specific questions in this chapter.

1.1. The purpose of this document is to set out, for consultation, our Impact Assessment (IA) regarding UNC Modification Proposal 104 "Storage Information at LNG Importation Facilities" (the proposal)[2]. This is in line with the requirement, under Section 5A of the Utilities Act 2000, which states that the Authority must carry out an IA where the proposal is "important".

The proposal

1.2. The proposal, raised by energywatch, seeks the publication of information regarding the physical stock levels of LNG (in kWh) held in storage in LNG Importation Facilities. It is proposed that the aggregate figure across all such facilities is published on National Grid Gas's (NGG's) website on a D+1 basis, where this data is available to NGG[3].

1.3. If the proposal were implemented under current market arrangements it would only apply to one LNG importation terminal as, at present, there is only one fully operational facility connected to the GB system (at the Isle of Grain). Details regarding the role of the facility at the Isle of Grain, along with an overview of the information available at present related to this facility, are provided in Chapter 2.

[2] A copy of the Final Modification report is available from the Joint Office website at: http://www.gasgovernance.com/NR/rdonlyres/BBC5B714-7349-44EB-92CC-8C722FAAF5C6/13886/0104FinalModificationReportv20.pdf

[3] The proposal seeks for publication on National Grid's website (www.nationalgrid.co.uk) by 16:00 D+1, of the aggregate stock volume held at 05:59 on the previous day.

Process to date

1.4. The proposal was raised by energywatch in August 2006[4]. The proposal was discussed at the UNC Modification Panel (the Panel) on 17 August and members considered that as LNG importation facilities are situated upstream of the NTS they do not fall within the scope of the UNC[5]. To determine whether the information proposed for release did, in fact, fall within the scope of the UNC and therefore whether it would be possible for this proposal to proceed, the Panel sought a view from the Authority on this issue. The Authority wrote to the transmission workstream setting out that while it was not commenting on the merits of the proposal and could not fetter its discretion in this respect, its initial view was that the proposal did fall within the scope of the UNC[6].

1.5. The proposal then followed a period of industry consideration and consultation[7] and was subsequently discussed at the Panel meeting on 21 December 2006. At that meeting, the Panel voted unanimously against its implementation[8].

Structure and Approach

1.6. Chapter 2 of this document provides background information regarding:

- the LNG importation facility at the Isle of Grain;
- new LNG importation facilities due to come online in the next few years;
- information currently available regarding the Isle of Grain LNG importation facility; and

[4] energywatch raised this proposal as urgent on the basis of the imminent implementation of UNC Modification 006, which would release near to real time information regarding flows of gas onto the NTS. We rejected energywatch's application for urgency given that the proposal sought the release of storage and not flow information and therefore did not appear to be directly related to the implementation of UNC Modification 006. This letter is available from the Joint Office website at: http://www.gasgovernance.com/NR/rdonlyres/3FD670C1-9805-4460-A0FB-F1E3B177034D/9220/0104Ofgemrejecturgency.pdf

[5] The minutes of the Panel are available from the Joint Office website at: http://www.gasgovernance.com/NR/rdonlyres/B9B70198-C12E-40C5-8FB8-3A9621E5F682/9452/ModificationPanelMinutes17August06.pdf

[6] Letter dated 07 September 2006. This letter is available from the Joint Office website at: http://www.gasgovernance.com/NR/rdonlyres/6D2EE182-D448-4797-9455-31346E8C7332/10297/UNC104_Scope.pdf

[7] The proposal was sent for industry consultation on 6 November 2006, with responses requested by 27 November 2006.

[8] The minutes of the Panel meeting are available from the Joint Office Website at: http://www.gasgovernance.com/NR/rdonlyres/3C1247C0-4092-4376-B119-5352F8032A75/13984/ModificationPanelMinutes21December06.pdf

- information currently available on other gas supply sources as well as corresponding publicly available information regarding demand.

1.7. Chapter 3 of this document provides:

- an overview of the key arguments for and against the proposal as identified in responses to the Final Modification Report (FMR);
- our assessment of the costs and benefits of the proposal;
- conclusions and reasons underpinning our 'minded to' view to accept the proposal; and
- the way forward and next steps.

Way Forward

1.8. We would welcome the views of interested parties regarding all aspects of this IA. Responses should be sent to wholesale.markets@ofgem.gov.uk to be received no later than **12 April 2007**. Details of how to respond can be found in Appendix 1. Based on our analysis of the issues, as well as the responses to this IA, we will issue a final decision on the proposal by the **end of May 2007**. In reaching a decision regarding the proposal the Authority will have regard to[9]:

- The relevant objectives of the UNC[10],
- Ofgem's wider statutory objectives[11],
- Ofgem's guidance document regarding Information release under Gas Transporters Licence Standard Special Condition A7[12].

[9] For further details of the issues that the Authority will have regard to in reaching its decision on the proposal , see Chapter 2 of the IA that was published in May 2005 regarding UNC Modification 006, which can be accessed at: http://www.ofgem.gov.uk
[10] As set out under Standard Special Condition A11 of NGG NTS's gas transporters licence.
[11] As set out in the Gas Act 1986.
[12] A copy of the document can be found at: http://www.ofgem.gov.uk

2. Background

Chapter Summary This chapter provides background regarding the proposal and the existing LNG importation facility at the Isle of Grain, and also provides detail regarding new LNG importation facilities that are due to become operational in the GB market over the next few years.

It also provides an overview of the operational information that is currently available to market participants with respect to the Isle of Grain and information relating to other sources of gas supply.

Question box
There are no specific questions in this chapter.

Background

2.1. An LNG importation terminal is a facility that enables a ship carrying cargo in the form of liquefied natural gas (LNG) to unload and store this prior to being re-gasified and then exported in the form of gas onto the National Transmission System (NTS).

Isle of Grain LNG importation facility

2.2. There is currently only one LNG importation facility operational in the GB market, which is located at the Isle of Grain. This facility has been operated by National Grid Grain (NG Grain) as a commercial LNG importation terminal since July 2005[13]. Following an open season process NG Grain signed a 20-year contract with BP and Sonatrach[14] (known as the joint shipper) which allows them to unload LNG ships and store LNG at the facility prior to re-gasifying and flowing gas onto the NTS.

2.3. The facility has the physical capacity to deliver up to 17mcm of gas per day to the NTS (equivalent to just under 3% of maximum GB supply deliverability). However, there are limits on the amount of gas that can flow commercially from the facility as there is a contract in place between the joint shipper and NGG for Operating Margins (OM) gas. As such the daily deliverability has this winter more frequently been seen to be around 12-13mcm/day.

2.4. The facility is fairly small in comparison to other sources of supply in terms of storage capacity. Therefore, if the terminal were full and were to flow at a maximum

[13] The facility was originally operated by NGG (then National Grid Transco) as an LNG storage facility but was recently converted into an LNG importation terminal.
[14] National Grid Grain was granted an exemption from regulated third party access (rTPA) for Phase 1 of the facility at the Isle of Grain.

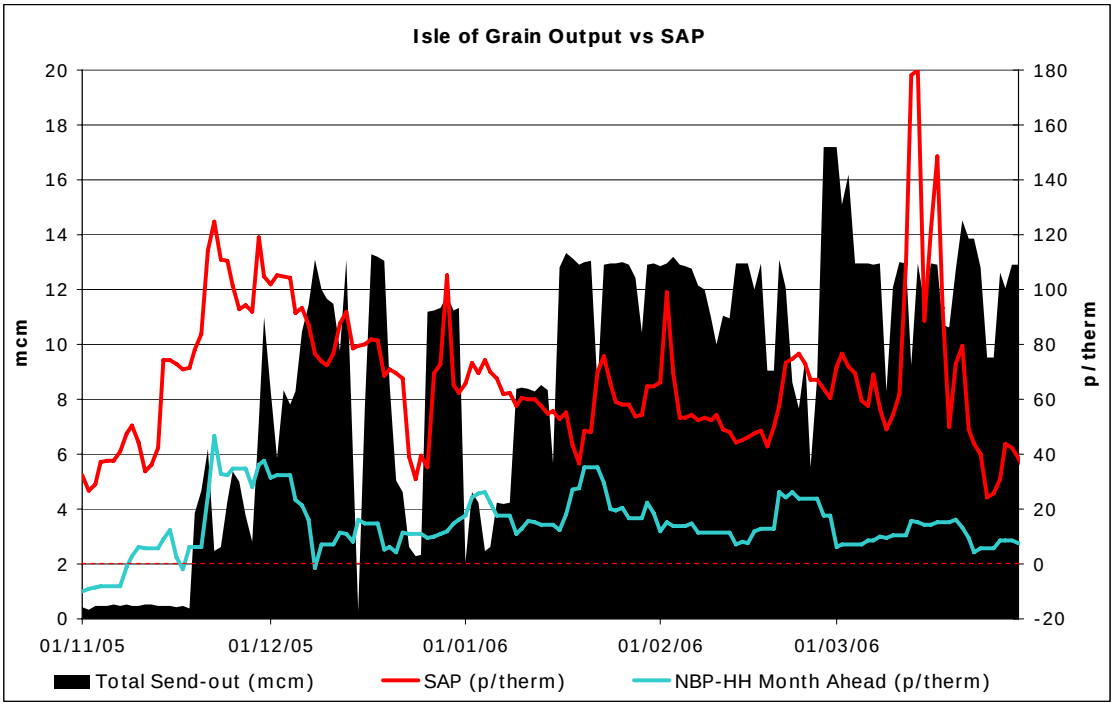
rate of 13mcm/day, without receiving any further cargoes, it would be able to flow for seven days before complete depletion of the commercial stocks.

How has the Grain terminal performed to date?

2.5. The Grain facility commissioned in July 2005. This means we have fairly limited operational experience of the facility. The following section provides an overview of our analysis and conclusions regarding the operation of the facility over this period.[15]

Winter 2005/06

2.6. Chart 2.1 below highlights the flows of gas from the Grain facility over the course of winter 2005/06, the prices observed in GB over that period and the differential between GB and US prices.



2.7. At times, over the course of winter 2005/06, send-out from the Grain facility was well below the maximum physical capacity despite unprecedented high prices in the GB market. Whilst this observation, in itself, is not a cause for concern, when accounting for the positive price differential as compared with US and European

[15] For more detail regarding the analysis that we have carried out with respect to the performance of the Grain facility, please see appendix 2.

markets, making the GB market the most expensive, it can be seen that LNG was not flowing to GB as might be expected under normal competitive conditions.

2.8. This observation led to concerns within industry and Ofgem regarding transparency of the Grain facility operations, as well as concerns regarding the effectiveness of the "Use It or Lose It" (UIoLI) arrangements in place at the facility[16]. Given these concerns, we initiated a dialogue with NG Grain, as operator of the terminal, and the joint shipper, to better understand these observations. Following these discussions the joint shipper developed revised UIoLI arrangements which were announced in July 2006[17].

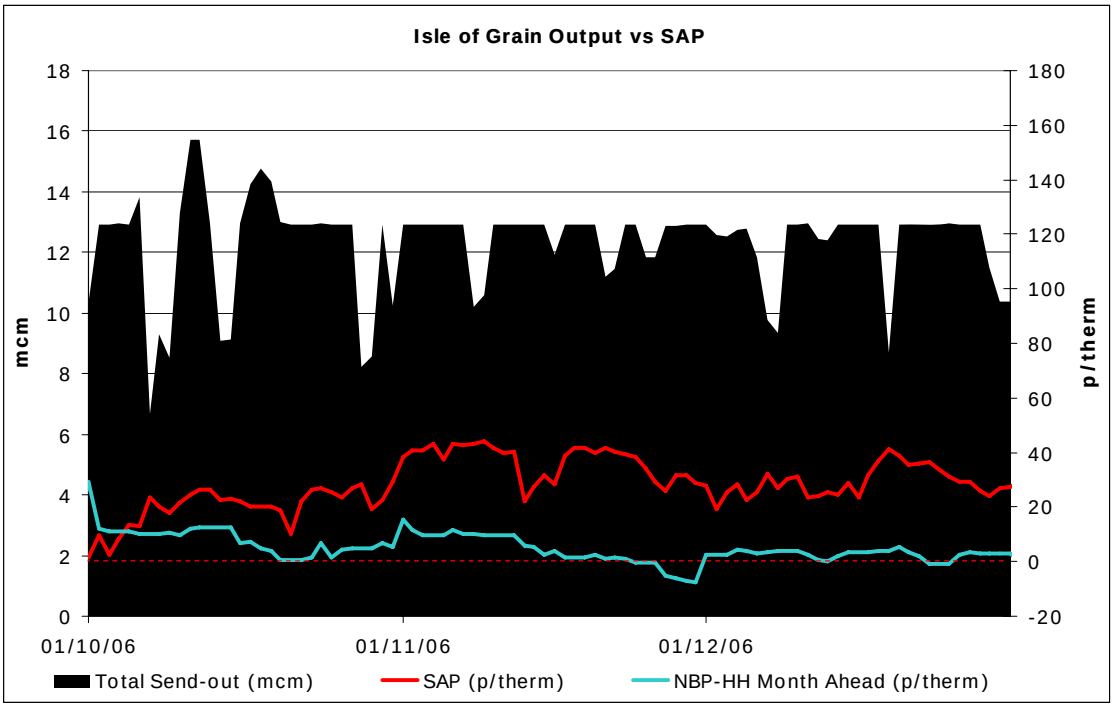
Winter 2006/07

2.9. Over the duration of the winter to date, the Grain facility has been flowing fairly consistently at approximately 13 mcm/day. This suggests that the facility may be performing more like a baseload supply source given that the send out from the facility does not appear to be directly related to changing levels of demand or price. This trend is highlighted by Chart 2.2 below.

[16] A letter setting out Ofgem's concerns in this regard, can be viewed at: http://www.ofgem.gov.uk

[17] These revised arrangements will provide that details of available secondary capacity at the facility will be published on the Grain website and offered to the market on a D-10 basis. Any such available berthing slots would be sold by auction to qualified bidders and would confer rights, upon parties successful in obtaining the secondary capacity, for the temporary storage of gas for seven days as well as the send-out of gas over seven days. For the purpose of clarity, Ofgem does not approve these arrangements but does monitors their effectiveness on an ongoing basis.

Chart 2.2



2.10. More recently, the differential between month-ahead GB prices at the NBP and the equivalent US contracts at the Henry Hub (HH) has been changing[18]. In light of this differential, we would rationally expect that some cargos of LNG would be diverted from GB to the US market given the potential for parties to make increased returns.

LNG importation facilities to be commissioned

2.11. While the Grain facility is currently the only operational LNG importation facility in the GB market, over the next few years, a number of additional facilities are set to also become operational. Table 2.1 below provides details of those projects that will come online out to winter 2008/09, as well as details of the current facility at Grain[19].

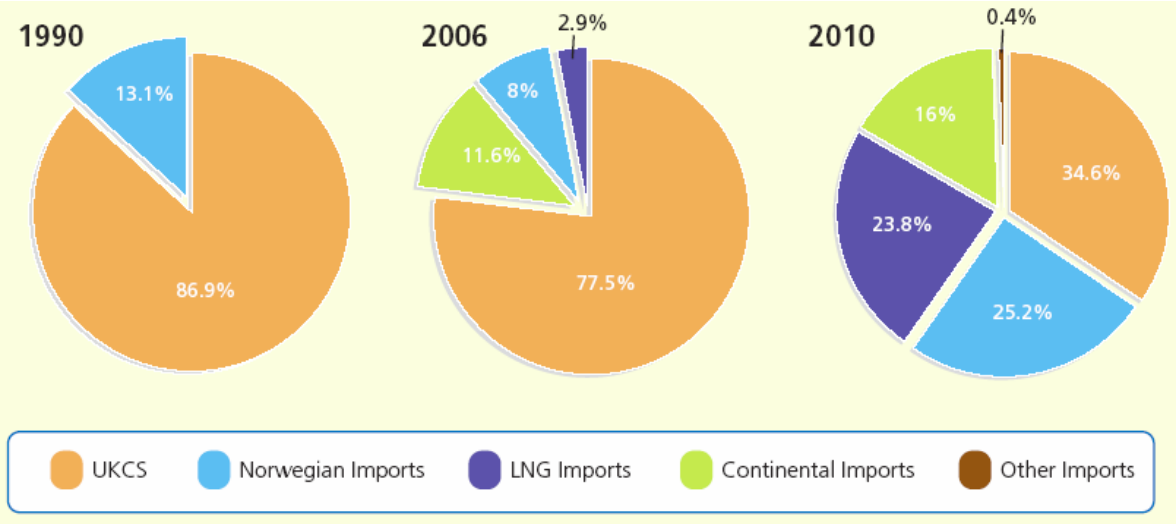
[18] This was observed during a short period at the end of November 2006 and from 5 January 2007 to date, HH has been trading at a premium to the NBP.
[19] In addition to the LNG importation facilities outlined in Table 2.1, the Excelerate project at Teesside has also been operational from January 2007. However, it is our current view that the re-gasification vessels used in that project would not captured within the definition of an LNG importation facility and therefore would not be required to comply with the proposal, if approved.

Table 2.1 LNG importation facilities to come online to 2008/09

Facility Name	Date online	Capacity (mcm)	Deliverability (mcm/d)	Days Storage
Isle of Grain (Phase I)	2005/06	117	17	7
South Hook (Phase I)	2007/08	272	29	9
Dragon	2007/08	196	16	12
Isle of Grain (Phase II)	2008/09	333	25	13
South Hook (Phase II)	2008/09	181	29	6

2.12. As can be seen in Table 2.1, all of the new facilities due to come on line will have both greater capacity and deliverability than the existing facility at Grain. As a result of these facilities, LNG importation will become a proportionally larger source of supply to the GB market in coming years. This is illustrated clearly by Chart 2.3 below which highlights that while LNG imports accounted for less than 3% of GB supply in 2006, by 2010 it is anticipated that LNG imports will account for nearly 24% of all GB supplies.

Chart 2.3 Forecast diversity of gas supplies in GB



Information available regarding the Isle of Grain

2.13. At present, there are three key sources of information available to the market regarding the existing Grain facility:

- **Information regarding flows from Grain onto the NTS:** Information regarding gas flows onto the NTS from all terminals and sub-terminals[20] is published on NGG's website on a near to real time basis[21]. This includes gas flows onto the NTS from the Grain facility[22]. Aggregate daily send out data from the Grain facility is also made available on the Grain LNG area of the NGG website, on a historical basis[23].

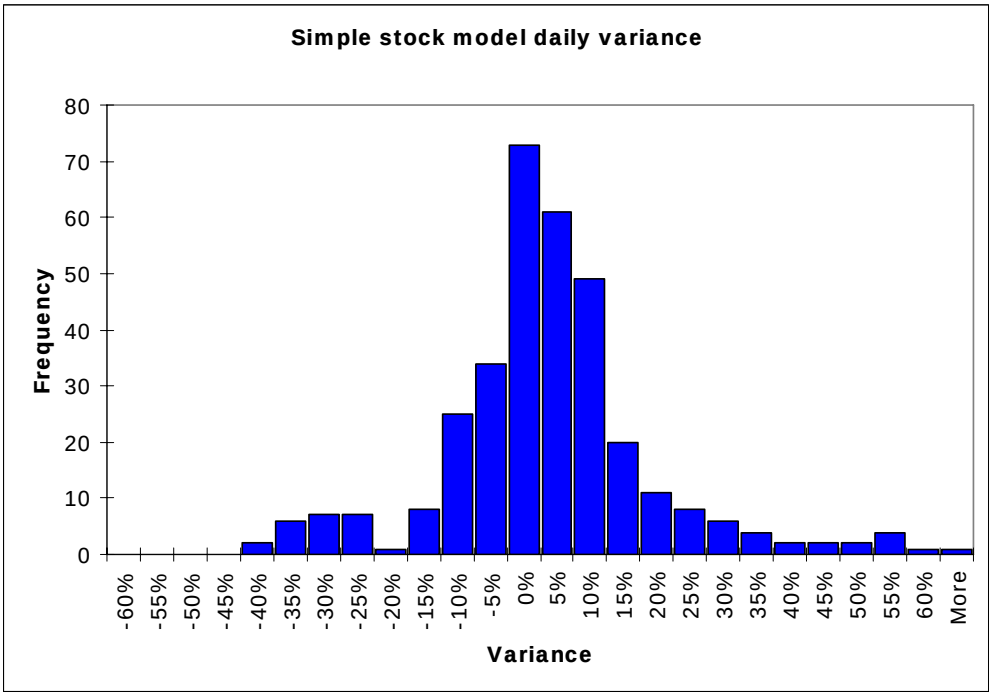
- **Information regarding available berths at Grain LNG importation facility:** The joint shipper makes available on its website a ninety day schedule of indicative dates for berthing slots at the facility[24].

- **LNG publications:** Information regarding the status of, and outlook for, global LNG markets is published by a number of different market analysts. For example the Heren LNG report, published on a weekly basis, incorporates information regarding the Grain terminal and details of cargos unloaded at the facility, as well as, on occasion, providing details of the ships carrying LNG. Similarly, the European Waterborne LNG report, published on a monthly basis, provides information regarding flows of LNG to individual importation facilities around Europe, including the facility at the Isle of Grain. A substantial volume of information can also be obtained from websites that relate specifically to the trade and supply of LNG[25]. Information is also published by Platts and by other information providers such as Bloomberg (however this information is not specific to the cargos docking at the Grain facility).

2.14. It is therefore clear that a lot of information is currently released with respect to the Grain facility. Given this, it is possible to create a model to estimate the level of stocks in store at the facility. To demonstrate this, using publicly available data, we constructed a simple estimation model and compared the model results to actual stock levels[26]. The difference (as a percentage) between the model predictions each day and actual stocks is shown in chart 2.4 below, for the period 01 February 2006 to 01 January 2007[27].

[20] This applies to all terminals and sub-terminals with the capability of flowing gas at volumes greater than 10mcm/day.
[21] In May 2006 the Authority approved UNC Modification 006 which sought the release of information on NGG's website regarding near to real time flows of gas onto the NTS.
[22] The flow information made available as a result of the implementation of UNC modification 006 can be viewed at: https://www.nationalgrid.com/uk/Gas/Data/EFD/
[23] http://www.nationalgrid.com/uk/GrainLNG/
[24] Where the joint shipper does not intend to utilise these berthing slots it must, under the terms of the UIoLI arrangements, make this capacity available to third parties. As such, interested parties can determine the schedule for ships docking at the Grain facility.
[25] Examples of such websites include: www.lngoneworld.com, www.sigtto.org
[26] We receive data regarding stock information, on a confidential basis, from NGG.
[27] The percentage difference is calculated as (model prediction – actual stock)/(actual stock) for each day over the period 01 February 2006 to 01 January 2007.

Chart 2.4



2.15. This chart clearly highlights that, for the majority of days, the difference between the actual stock information and the modelled stock information was low. For example, on 72% of days during the period, the difference was less than 10%. As such, the information currently available allows a reasonable approximation to be made of actual storage stocks at the Grain facility through a simple modelling process. However, it is important to note that a 10% difference in error in the approximation of stock levels could, on some days, be significant.

2.16. However, there are still a significant number of days on which the difference between the model results and actual stocks is much higher. Further, more generally, we consider that modelling the data in this way has some distinct drawbacks. In this respect, we note that:

- Without access to actual stock information, parties attempting to model storage stocks will have no way to calibrate or test their model, and hence will still need to assume a significant degree of uncertainty in the results;

- Available LNG publications obtain their data from various sources including ship brokers, traders, ship agents, ship inspectors and satellite services, amongst others. As such, there is uncertainty regarding the accuracy of information published in these reports relating to unloading of LNG into the Grain facility[28];

- There is ambiguity regarding the size of the boats docking at the Grain facility as well as uncertainty regarding whether a full cargo is being unloaded; and

- The collation and calculation of information as well as ensuring the integrity of the data could be time-consuming and costly.

2.17. We consider that all of these factors will be amplified once further LNG importation facilities become operational from winter 2007/08. These terminals will be capable of accepting larger cargos of LNG, given the size of their storage capability relative to Grain, and there is therefore likely to be more ambiguity regarding the size of the ships docking at the facilities. In addition, as the facilities are new, parties will not have prior understanding of the way in which these terminals will operate compared with Grain and therefore may have more difficulty in modelling potential behaviour[29]. In addition, as outlined in paragraph 2.12 above, as LNG importation facilities become a proportionally larger source of supply to the GB market in future years, the availability of this information will become increasingly important in forming an overall GB supply picture.

How does this information compare to other supply sources?

2.18. To further inform our consideration of the proposal, we also looked at data available regarding other gas supply sources. Table 2.2 below provides an overview, in respect of various gas supply sources to the GB market, and whether flow and stock data are currently available.

[28] In this respect, the European Waterborne LNG Report includes disclaimers outlining that the data included in the reports is unconfirmed.

[29] Both the South Hook and Dragon terminals have been granted exemptions from regulated Third Party Access (rTPA and, as a condition of this exemption, the operator of the facility must put in place effective UIoLI arrangements. As with the Grain facility, although Ofgem will monitor the effectiveness of these arrangements, we will not formally approve them. The structure or operation of the UIoLI arrangements implemented at those or other facilities may therefore be different from those at Grain.

Table 2.2 Available information regarding gas supply sources

	Flow data	Stock data
Beach	✓	N/A
Langeled	✓	N/A
BBL	✓	N/A
IUK	✓	N/A
LRS	✓	✓
MRS	Hornsea	✓
SRS	✓	✓
LNG import	✓	x

Information on flows of gas onto the NTS

2.19. As the table highlights, information regarding the flows of gas into the NTS is made available for the majority of supply sources following the implementation of UNC Modification 006 in October 2006. The exception to this is in relation to medium range storage where only information regarding Hornsea is made available to the market. This relates to the 'de minimis' threshold contained within UNC Modification 006 which required that near to real time flow information should only be made available with respect to sub-terminals that had the capability to flow gas at above 10mcm/day[30]. As a result, information regarding the flows of gas from Humbly Grove, Hatfield Moor and Hole House Farm, as medium range storage facilities, is not available to the market.

Information on gas stocks

2.20. With respect to stock information, aggregate data is made publicly available regarding long, medium and short range storage in GB[31]. This data allows parties to understand the volume of gas, in aggregate, contained within long, medium and short range storage facilities respectively on a D+1 basis. This is consistent with the approach taken by the European Regulators' Group for Electricity and Gas (ERGEG)

[30] This threshold was incorporated within UNC Modification 006 to provide most parties with sufficient protection from exposure of their commercial position.

[31] Long range storage refers to the Rough storage facility; Medium range storage refers to the storage facilities at Hornsea, Humbly Grove, Hatfield Moor and Hole House Farm; Short range storage refers to the LNG storage facilities at Partington, Avonmouth, Glenmavis and Dynevor Arms. Aggregate storage information is available on National Grid's website on the daily summary report page. This page can be accessed from the following link: https://www.nationalgrid.com/uk/Gas/Data/dsr/

where there has recently been steps taken to further improve transparency regarding storage facilities[32].

2.21. Information regarding "stocks" of gas at beach and from pipeline sources is not available to the same degree of disaggregation or to the same level of frequency as information regarding storage stocks. However, there is some data available regarding reserves of gas on the UK Continental Shelf (UKCS) and Norwegian Continental Shelf (NCS). In this respect, NGG carries out a yearly information gathering process[33], which sets out its latest projections for gas supply and demand over the next ten years. One aspect of this includes projections of the annual availability of supplies from the UKCS. Also, as part of the annual winter outlook process[34], NGG estimates the daily average and maximum volumes of gas that may flow from the UKCS over the winter period[35]. Information is also made available by the Norwegian Petroleum Directorate, on a yearly basis, with respect to the NCS and potential future production volumes by individual field[36].

2.22. Information regarding NGG's expectation of the average and maximum levels of gas that will flow through BBL and IUK over the duration of the winter is published as part of the winter outlook process, following consultation with market participants. Although actual information regarding expectations of the volume of gas that could flow through BBL and IUK on a daily basis is not published, assumptions can be made to estimate these figures. For example, parties can make assumptions regarding flows on the BBL based on public knowledge of contractual terms relating to that pipeline.[37] Further, given that information is available to the market in respect of where capacity is not being utilised (as part of the UIoLI arrangements on each pipeline)[38], this information can also inform the markets view as to likely gas

[32] for example through the Guidelines for Good TPA Practice for Storage System Operators (GGPSSO) (http://ec.europa.eu/energy/gas/madrid/jwg/ggpsso_23.3.2005.pdf). The GGPSSO put in place voluntary arrangements regarding various aspects of TPA to storage facilities in European member states. It also incorporates provisions relating to the transparency of information, specifically with respect to inflows and outflows of gas from storage as well as utilisation rates which the guidelines recommend should be made available weekly, on an aggregate basis.

[33] This process is referred to as Transporting Britain's Energy (TBE). Details of the process are available at: http://www.nationalgrid.com/uk/Gas/OperationalInfo/TBE/

[34] We request that NGG undertakes the winter outlook process on a yearly basis to forecast demand supply scenarios for the coming winter in both gas and electricity, through consultation with the industry.

[35] This is published for overall volumes as well as by individual terminals.

[36] This information is made available from the Norwegian Petroleum Directorate at: http://www.npd.no/English/Produkter+og+tjenester/Publikasjoner/

[37] This contract information is available in National Grid's Winter 2006/07 Consultation Update Document, published in July 2006. It states that "The primary driver for its [BBL] construction was a contract between Gasunie and Centrica, through which Gasunie will deliver 8 bcm/annum at the National Balancing Point to Centrica for ten years, with a winter:summer split of 5:3. This equates to roughly 27 mcm/d over the winter period."

[38] Information is available in this respect, regarding any offers of available capacity on the BBL pipeline at: http://www.bblcompany.com/en/Bulletinboard.asp. Any capacity for sale on

flows. However, despite the availability of some information on the volumes of gas that may flow through these pipelines, the actual flows observed will depend upon commercial decisions taken by shippers in response to market signals.

Information on demand

2.23. With respect to demand data, at present information is mainly published in an aggregated form. Currently, information is published on NGG's website regarding:

- forecast demand for the entire system; and
- aggregate end of day offtakes for the NTS, on a D+1 basis, which is also broken down by Local Distribution Zone (LDZ),[39].

2.24. We recently approved Modification UNC 0097a which sought publication, on NGG's website, of the previous day's net physical offtake flow for each pipeline interconnector at 11:00 on a D+1 basis. Once implemented[40] UNC 0097a will release data regarding flows of gas through both interconnector offtakes[41].

Information on LNG importation terminals in other markets

2.25. In Spain, the Transmission System Operator (TSO) Enagas, publishes a monthly report containing forecast daily disaggregated data regarding stock levels at each of the five LNG importation terminals in the country. Although it would appear that forecast information may not be a particularly accurate representation of the levels of LNG in store (as it is not actual data), the notice period required for offering unused capacity is longer in Spain and therefore it is likely that this information is representative. In addition to this, actual historic data is also made available on a monthly basis regarding the levels of gas stocks at each LNG importation facility but this information is not available until a few months in arrears[42].

2.26. Information is also made available on the U.S Department of Energy website regarding US LNG imports. In this respect information is published on a monthly basis regarding the origin and volume of tankers importing to the US, the volume of

IUK is similarly available from: http://www.interconnector.com/iuk/onlinepage.
[39] http://www.nationalgrid.com/uk/Gas/Data/EDR/After/SISR04.htm
[40] UNC 0097a will be implemented on 1 October 2007.
[41] This information will therefore relate to the Irish and Belgian Interconnectors. Two further UNC modification proposals have been raised seeking the release of information to the wider market regarding demand. These are UNC Modification Proposal 121 and UNC Modification Proposal 130. Both of these modification proposals will come to Ofgem shortly for decision.
[42] This information is available from: http://www.enagas.es/cs/Satellite?cid=1142417697670&language=en&pagename=ENAGAS%2FPage%2FENAG_informeGasista

LNG imported to individual LNG importation terminals and details of each import made to the US, including information regarding the name and volume of the tanker as well as the individual terminal[43].

[43] This information is available from the Department of Energy website: http://www.fossil.energy.gov/programs/gasregulation/publications/

3. Costs and benefits of the proposal

Chapter Summary This chapter provides an overview of the main arguments for and against the proposal as put forward by respondents to the Draft Modification Report (DMR). The chapter also outlines our assessment of the costs and benefits associated with the proposal including a description of the analysis that we carried out to better understand the potential benefits of its implementation. In addition, the chapter outlines our intended way forward.

Question 1: Do you agree that, on the basis of observations this winter, the Isle of Grain LNG importation facility generally operates as a baseload source of gas supply?
Question 2: Do you agree with the assumption that LNG importation facilities will operate similarly to storage following a diversion of LNG imports away from GB?
Question 3: Do you agree that the provision of stock information regarding LNG importation facilities would allow market participants to make more informed forecasts of when LNG facilities would flow following a diversion of LNG imports away from GB, and that parties could then factor this into expectations of market price?
Question 4: Do you think that the estimated benefits obtained from our quantitative analysis are reasonable?
Question 5: Do you agree that the proposal would improve the economic and efficient operation of the market?
Question 6: Do you think that our assessment of contract renegotiation required as a result of the proposal is fair?
Question 7: Do you agree that the proposal would improve competition?
Question 8: Do you think the proposal would positively benefit customers?
Question 9: Do you agree with our assessment of the impact of the proposal on short and long term security of supply?
Question 10: Do you think that our assessment of confidentiality and commercial sensitivities associated with the proposal is fair?
Question 11: Do you agree that, given current information available, concerns regarding the commercial sensitivity of the information are largely mitigated?
Question 12: Do you think that if the proposal were implemented prior to more than one LNG importation facility being operational this would be inconsistent with the intent of the proposal to publish aggregate stock information?

Summary of responses to the Draft Modification Report (DMR)

3.1. There were sixteen responses to the DMR. Of these, four respondents were in favour of implementing the proposal, eleven were opposed and one respondent remained neutral. The party that was neutral to the proposal recognised the benefits of information transparency but did not consider that the benefits of the release of this information were obvious.

3.2. Table 3.1 below summarises the principal themes of views raised by respondents' to the DMR. As such, the table is not intended to provide a comprehensive overview of the responses received[44].

Table 3.1

Four responses in favour of the proposal	Eleven responses opposed to the proposal
Understanding of marginal supply sources on tight days will facilitate improved commercial decisions	Discriminatory to particular market players, revealing their market position
Rational decisions may ease residual balancing required by NG	Parties unlikely to reveal this information to NG or enter into reserve contracts requiring the release of this data
Parties unlikely to forgo potential profits from investing in LNG import facilities	NG receives information as part of the NEA only because of OM contracts enduring from Grain's previous status as an LNG storage facility
Will lead to increased security of supply	May discourage long and short term investment
Will improve competition by assisting with the creation of a level playing field for market participants	Information sought can be modelled from available information (006 data and Grain website)
D+1 data sufficiently aggregated to conceal parties' commercial position	Benefits of the modification not demonstrated
	Information related to Demand Side Response unaddressed, creating a market distortion
	LNG import facilities should not be treated as storage

Assessment of the proposal

3.3. The following section outlines our views regarding the proposal. These also build on and respond to some of the issues raised by respondents to the DMR. In addition it details the analysis that we have undertaken to quantify the benefits associated with the proposal as well as the results of this analysis.

Considerations for assessment

3.4. In assessing the proposal we have considered the costs and benefits that may arise against a number of key areas which we think are relevant to the wider release

[44] A full version of non-confidential responses to the DMR can be found on the Joint Office Website at: http://www.gasgovernance.com/Code/Modifications/LiveMods/

of information to the market. This chapter therefore considers each of the following issues in turn:

- economy and efficiency;
- security of supply;
- impact on customers;
- the costs of implementation;
- impact on the environment; and
- any risks and unintended consequences associated with implementation.

3.5. In November 2005 we published updated guidance[45] on the issues that we will consider in assessing any UNC modification proposal that seeks to release information to the market.[46] We intend to follow this guidance when considering this proposal.

Baseline for analysis

3.6. On the basis of our assessment of the performance of the Grain facility (as discussed earlier in Chapter 2), we have assumed that the facility operates as a baseload source of supply except in instances where LNG imports are diverted away from the GB market. We consider that during periods where flows of LNG are diverted from the GB market, or the Grain terminal more specifically, tanks at Grain would effectively act as a withdrawal-only storage facility.

Economy and efficiency

3.7. There are a number of factors that can affect the economic and efficient operation of the market. With specific reference to this proposal we think that there are four key aspects which should be considered in turn:

[45] The guidance was originally published, for consultation in September 2005 and a revised version of the guidance was published following this consultation period in November 2005.
[46] The guidance highlights that we will follow a largely similar process to that adopted for the consideration of any proposed modifications to the UNC. However, it qualifies this by outlining that we will also have regard to any issues of confidentiality or commercial sensitivity, and if so the extent to which the proposal may seriously or prejudicially affect relevant parties' interests. The guidance also outlines that the onus is on parties that consider they may be adversely affected by implementation of the proposal to make representations to Ofgem as they will be best placed to understand and substantiate this risk.

- the potential for enhanced economic signals to the market;
- the effect on decisions taken by NGG NTS as System Operator (SO) and/or shippers in balancing their positions;
- the potential for market volatility; and
- the effect on competition.

Economic signals

3.8. We believe that transparent information is important for the effective functioning of the competitive market. Greater access to information will allow parties to better understand the functioning of the market and enable parties' commercial decisions to be based on a fuller picture of market conditions.

3.9. On the basis of our analysis of Grain's past performance, we have assumed that LNG importation facilities will typically operate as baseload supply sources during the winter season. However, we also consider that importers of LNG are likely to seek to arbitrage between markets; and therefore relative price differentials between these markets are likely to be the driver of LNG flows as opposed to absolute prices or absolute demand levels. As such, we are of the view that the assumption that LNG importation terminals operate as baseload facilities will only remain true where the price in the GB market is at a premium to prices in other markets for LNG (such as the US or Europe).

3.10. Where there is a diversion of LNG away from the Grain facility, i.e. due to a change in price differentials which leads to LNG being diverted away from the GB market, we think it is likely that tanks at LNG importation facilities will operate in a similar way to withdrawal-only storage facilities until supply resumes. Over any such periods, it is therefore likely that LNG importation facilities will become more responsive to absolute changes in demand, price and volatility. Further, we would expect during these periods that any decisions on whether to send out gas will be based on considerations of the volume of gas remaining in store and the expected time until arrival of the next cargo. Therefore, if shippers at LNG importation facilities had an expectation of an increase in the gas price at a later point during a period in which LNG had been diverted from GB, they might retain their gas in tanks with the expectation of achieving a higher return at that point.

3.11. Further, if LNG supplies were diverted from GB and importation facilities subsequently began to operate in a similar way to storage facilities, market participants would no longer have certainty regarding the volume of flows from these facilities as they would no longer be flowing as baseload supplies. In the absence of information on volumes of gas in store at the time of a diversion of LNG imports, market participants would have difficulty understanding the facility's capability over the duration for which LNG supplies were disrupted. That is, parties would not know if the facility was empty (or alternatively full to capacity) and therefore not have a clear understanding of the volume of gas that the facility would be capable of flowing. By not understanding the flexibility that these facilities could offer to the

market over a period of disruption to LNG supplies, parties would not therefore be able to factor this into their expectations of price under these circumstances.

3.12. If information on storage stocks were available, it would be possible for market participants to build this flexibility into their expectations of price. Given the knowledge of this additional system flexibility, as well as their understanding of forecast levels of demand, it would be possible to make informed projections regarding the likely time that the facility operator would choose to flow gas onto the NTS. Parties would therefore have a more informed understanding of available gas supplies over the period that LNG supplies were diverted from GB and could take better informed views regarding the likely evolution of prices over this period.

Overview of analysis to quantify benefits

3.13. In assessing these potential benefits, we have considered the impact on wholesale prices that the provision of this information may have during a period in which LNG imports were diverted from the GB market. In our analysis we have assumed that prices will tend to rise further where information on tank levels is not available as market participants will not be able to reach informed decisions on whether the facility will flow over this period. This ultimately translates to a higher cost to customers.

3.14. As discussed earlier, we recognise that a significant amount of data is already available to market participants from different sources[47]. However, for the purpose of clarity, our quantification is based on a more binary comparison of a situation where data is provided (as per the proposal), to a situation where the data is wholly unavailable. This comparison is appropriate in assessing the value of the formal provision of accurate data in the future if the proposal is implemented. We would note that we continue to believe that there are advantages to the release of information under this proposal as compared with the current baseline of information release.

3.15. We have modelled the impact on short term wholesale prices under two scenarios of data provision and market response, where the normal flow of LNG is diverted from the GB market for a period of time:

- **A "no information" scenario:** Under this scenario no information is made available with respect to stock levels at LNG importation facilities and consequently there is uncertainty amongst market participants as to whether LNG will flow over the period. We assume that market participants will discount this potential system flexibility, presume that no LNG will flow for the duration of the diversion of LNG imports, and that prices will respond accordingly.

[47] Details of the information already available are provided in paragraphs 2.12-2.14.

- **A "full information" scenario:** Under this scenario information regarding stock levels at LNG importation facilities is available to the market. An assumption is made that market participants will incorporate an understanding of the potential LNG flow into their buying and selling decisions, and therefore that the flexibility afforded to the market by LNG in store will be reflected in the market price. To model this in a simple manner, we assume LNG flows will occur during the highest demand days over the period during which LNG imports are diverted.

3.16. We used a simple price model to derive the differences in the market price that would be observed under the "no information" and "full information" scenarios[48]. The results obtained from the model, in terms of high, medium and low impact scenarios are outlined below in table 3.2[49].

Table 3.2

HIGH	MEDIUM	LOW
£20 million	£8 million	£1.6 million

3.17. As Table 3.2 highlights, in the high case scenario there are potentially significant benefits to customers, in NPV terms[50], associated with implementation of the proposal. In addition, given that these benefits are based on the deliverability and storage capability of the Grain terminal, once further facilities are commissioned we would expect that the value of the information would increase. However, we recognise that modelling of the potential price response in these circumstances may be complicated by uncertainty as to the distribution of stocks between terminals as the information will be published in aggregate.

3.18. We are of the view that the benefits demonstrated under the medium impact scenario are most likely to materialise as a result of implementation of the proposal. However, in the event that the benefits associated with the low impact scenario were to accrue, these would still outweigh the costs associated with implementation of the proposal and would therefore represent an overall net benefit to customers. It is clear, however, that if the medium or high impact scenarios were achieved, this would result in greater benefits for customers.

System Balancing

3.19. We recognise that there is scope for the provision of this information to reduce NGG's role as residual balancer with respect to the gas market. Primarily, this would

[48] The methodology used to derive the price model and associated differences in prices between the two scenarios is outlined in detail in Appendix 3.
[49] Further details of what the high, medium and low impact scenario's represent are provided in Appendix 3.
[50] The NPV has been calculated on the basis of the potential benefits that would be achieved in relation to improved economic signals and are assumed to accrue over the period 2008 to 2023 and have been discounted at a rate of 6.25%.

be as a result of better understanding of supply and demand fundamentals by market participants allowing them to make more rational commercial decisions which could reduce the requirement for NGG to engage in system balancing activities. This would particularly be the case during periods when LNG imports are diverted from the GB market.

3.20. We have not attempted to quantify this benefit separately from the general impact on price outlined above as part of our analysis.

Market volatility

3.21. Given that the release of data regarding stocks at LNG importation facilities would allow market participants to make commercial decisions on the basis of actual market information during periods when LNG imports are diverted to other markets, as opposed to being based on rumour or speculation, we consider that this would reduce levels of potentially inefficient price volatility in the market. In this respect, expectations regarding the evolution of prices would be developed in light of actual available supplies over the period during which LNG imports were diverted from GB and therefore would be more reflective of supply and demand fundamentals. As such, we would expect that a more rational reaction in market prices would be observed in response to a diversion of LNG imports to other markets, which would be proportionate given the change in market fundamentals.

Competition

3.22. We think that the provision of information regarding storage stocks at LNG importation facilities will promote effective competition by providing all market participants with equal access to information and will therefore help to create a level playing field. A number of respondents to the DMR stated that as the proposal only related to the release of one small piece of information its implementation would not impact upon the operation of effective competition within the market. We recognise that this information is not likely to be the complete picture in respect of assisting commercial decisions taken by market participants. However, we consider that improved access to information more widely will allow market participants to make better informed purchasing decisions as they will have a clearer picture of the overall availability of supply. We think that this will be especially evident during periods of when LNG imports are diverted away from the GB market. Therefore, on balance, we consider that the release of information under the proposal will help to promote effective competition in the market.

Security of supply

3.23. A number of respondents to the DMR outlined concerns with respect to the impact that the proposal may have upon security of supply in both the long and short term. In this respect, respondents considered that importers would be discouraged from shipping LNG to the GB market, and equally, that potential long term investors would be dis-incentivised from constructing LNG importation facilities as a result of the additional regulatory burden that the proposal would impose. A number of

respondents also considered that the proposal would create a disincentive upon LNG importation facilities to enter into contractual arrangements with NGG for the provision of OM gas or any other reserve services.

3.24. We consider that in a competitive market the flow of LNG in the short term will largely be determined by existing contractual obligations, combined with the observed differential in prices between different markets. In this respect, we think that parties will most likely ship LNG to the market from which they would achieve the greatest return. While it is likely that part of their consideration will also relate to the regulatory framework in place in certain markets, this will only form a limited aspect of their consideration.

3.25. We therefore anticipate that long term investment will ultimately be driven by signals regarding evolving market fundamentals. In this respect, parties will be most likely to construct LNG importation facilities where market fundamentals suggest that investment in additional sources of supply is required and therefore where they will receive a favourable return.

3.26. We think it would be unlikely that parties would be deterred from entering into contractual arrangements for reserve products, such as OM gas, due to concerns on the publication of aggregate storage stock information. In this respect, as the data proposed for publication would be aggregated, it would not be possible to discern details regarding the volumes of gas in store at individual LNG importation facilities, therefore limiting any concerns regarding confidentiality or commercial sensitivity of the data[51].

Impact on customers

3.27. We consider that the majority of the benefits associated with implementation of this proposal will be reaped by customers as a result of more efficient prices. In addition, we consider it is likely that large customers will use information regarding stocks at LNG importation facilities to directly inform their understanding of the GB supply picture at a particular point in time and to subsequently inform any commercial decisions that they make. This would include decisions as to the provision of short term demand response services.

3.28. Further, shippers that may not previously have had access to this information will be able to make more efficient decisions around meeting their customers' demand, with a corresponding beneficial impact on prices for customers. This includes shippers that do not operate at any operational LNG importation facilities and those that have not previously sought to model existing available data regarding the Grain facility to achieve an approximation of stocks at LNG importation terminals.

[51] These issues are discussed further, with respect to commercial sensitivities, in paragraphs 3.32 - 3.35.

Costs of implementation

3.29. NGG has estimated that implementation of the proposal would cost around £55,000. This estimate incorporates costs associated with the changes that would need to be made to NGG systems in order to permit publication of aggregate LNG stock information on its website. While these costs appear relatively high given the limited system changes that would be required to support the release of one additional piece of information, we are of the view that these will be more than offset by the benefits that would be achieved associated with improved economic signals, outlined above. As we have noted in respect of other modification proposals, we would welcome further assessment of these costs by NGG and market participants in response to this IA to ensure that these costs represent the most efficient option.

Impact on the environment

3.30. We consider that it is important to assess the potential environmental impact that any change in the gas market arrangements may have. In the case of this particular proposal, we think that it would likely have a neutral impact upon the environment. Although there may be some small positive impacts resulting from improvements in system balancing during periods when LNG imports are diverted away from the GB market, these are not likely to be material. In any case, any benefits that may be observed in this regard are likely to have already been accounted for in the quantitative assessment detailed earlier in this chapter.

Risks and Unintended Consequences

Costs associated with release of the information

3.31. In the event that the proposal were implemented with immediate effect and therefore prior to the effective operation of the South Hook and Dragon facilities (or any other new facilities that may also be developed in future), we understand that the joint shipper holds concerns that it may face costs associated with exposure of its commercial position. We believe that this risk is largely mitigated as it is possible for parties to use market information that is already publicly available, to develop a reasonable estimate of stock levels at Grain, as discussed in paragraphs 2.14 - 2.15. However, we recognise that the proposal is seeking the release of *aggregate physical LNG in store levels* and therefore we would be keen to understand the views of respondents on whether the release of stock information regarding the facility at Grain would be inconsistent with the intent of the proposal. One way to mitigate any potential effects in this respect would be to delay implementation of the proposal until such time as there is more than one LNG importation facility operational in the GB market. We would be interested in receiving views from respondents in respect to this option.

Commercial sensitivity of the information

3.32. One of the key reasons underpinning respondents' opposition to the proposal related to concerns that release of this information would expose the commercial position of the joint shipper at Grain and that this would be discriminatory.

3.33. As discussed above in paragraph 3.31, we think that commercial confidentiality concerns are limited given that it is possible to derive a reasonable estimation for stock levels at the Grain facility on the basis of currently available information. However, we also recognise that the intent of the proposal is to publish stock data regarding LNG importation facilities on an aggregate basis. We would therefore welcome the views of respondents on the extent to which confidentiality concerns are mitigated by the availability of existing information as well as views regarding the appropriateness of delaying implementation of the proposal until there is more than one LNG importation terminal operational in GB.

3.34. Following the commissioning of other facilities, in the unlikely event that the operators of new LNG importation facilities are not willing to provide the relevant data to NGG, it will not be in a position to calculate aggregate stock levels. In these circumstances, we would expect it to indicate that the levels were unknown, rather than publish partial, and potentially misleading, data from those facilities that have made stock information available. Ofgem therefore believes that, in the future, there should be no circumstances under which the stock data relating to only a single facility would be made publicly available.

3.35. While to date no parties have brought any specific issues of commercial sensitivity issues regarding this information to our attention to demonstrate how the release of this information could be damaging to their position, we would welcome the receipt of any such information in response to this consultation. With respect to whether the release of this information may have serious or prejudicial effects on any company, given that it is possible to approximate the level of stocks at the Grain facility using a simple modelling process[52], we consider that this risk is limited.

Withdrawal of information

3.36. We are aware that the stock information that is proposed to be released under the terms of the proposal is currently already provided to NGG by the Grain facility. NGG has outlined that information regarding stock data is provided under the terms of the Network Entry Agreement (NEA)[53] that it has in place with the Grain facility. While we recognise that there is some potential risk associated with the operators of the Grain facility withdrawing the provision of storage stock information to NGG, we consider this to be highly unlikely. In this respect, we do not think that they would

[52] For further information regarding this, please see paragraphs 2.14-2.15.
[53] The NEA is a contract in place between NGG and National Grid Grain which sets out the terms for flowing gas onto the NTS from the terminal at the Isle of Grain.

choose to breach the terms of the arrangements in place for the provision of this information under the NEA and potentially forgo any revenue associated with the OM contract that they have in place with NGG. In addition, as outlined above we think that the current availability of information regarding the Grain facility largely mitigates any concerns regarding the commercial sensitivity of the information proposed for release. In the event that NGG does not have access to all of the information that it requires, it should follow the process outlined in paragraph 3.34.

Summary of costs and benefits

3.37. We consider that the benefits associated with the release of aggregate stock information at LNG importation facilities could be significant. Table 3.3 below highlights the potential benefits that could accrue over the next 15 years associated with implementation of the proposal. We consider the likely benefits achieved would lie between the medium and high scenario's given the conservative assumptions used as part of our assessment and in light of the number of new LNG importation facilities that are set to become operational in GB over the coming years.

Table 3.3 Summary of estimated costs and benefits of the proposal

Benefits	**The proposal**	
Economy and Efficiency		
Economic signals	£1.6m - £20m	
System balancing	Low	
Market volatility	Low	
Effect on Competition	Low	
Security of Supply	-	
Impact on customers	Medium	
Impact on the environment	-	
Costs of implementation	£0.055m	
Risks	Impact	Probability
Costs of information release	Low	Low
Commercial sensitivity	Low	Low
Withdrawal of information	Low	Low
Net Benefits		
High Case	**£19.95m**	
Medium Case	**£7.95m**	
Low case	**£1.55m**	

Way Forward

3.38. On the basis of the assessment outlined above, we are minded to accept the proposal. However, we would be interested to hear the views of industry participants on our overall assessment of the proposal and would therefore welcome responses regarding the questions posed at the beginning of this chapter as well as any other areas relating to the proposal that interested parties consider appropriate.

Appendices

Index

Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 12 April and should be sent to: Hannah Cook (wholesale.markets@ofgem.gov.uk)

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. Respondents are asked to put any confidential material in the appendices to their responses.

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to publish a letter regarding its final decision on the proposal. Any questions on this document should, in the first instance, be directed to: Hannah Cook (hannah.cook@ofgem.gov.uk)

CHAPTER: Three

Question 1: Do you agree that, on the basis of observations this winter, the Isle of Grain LNG importation facility generally operates as a baseload source of gas supply?

Question 2: Do you agree with the assumption that LNG importation facilities will operate similarly to storage following a diversion of LNG imports away from GB?

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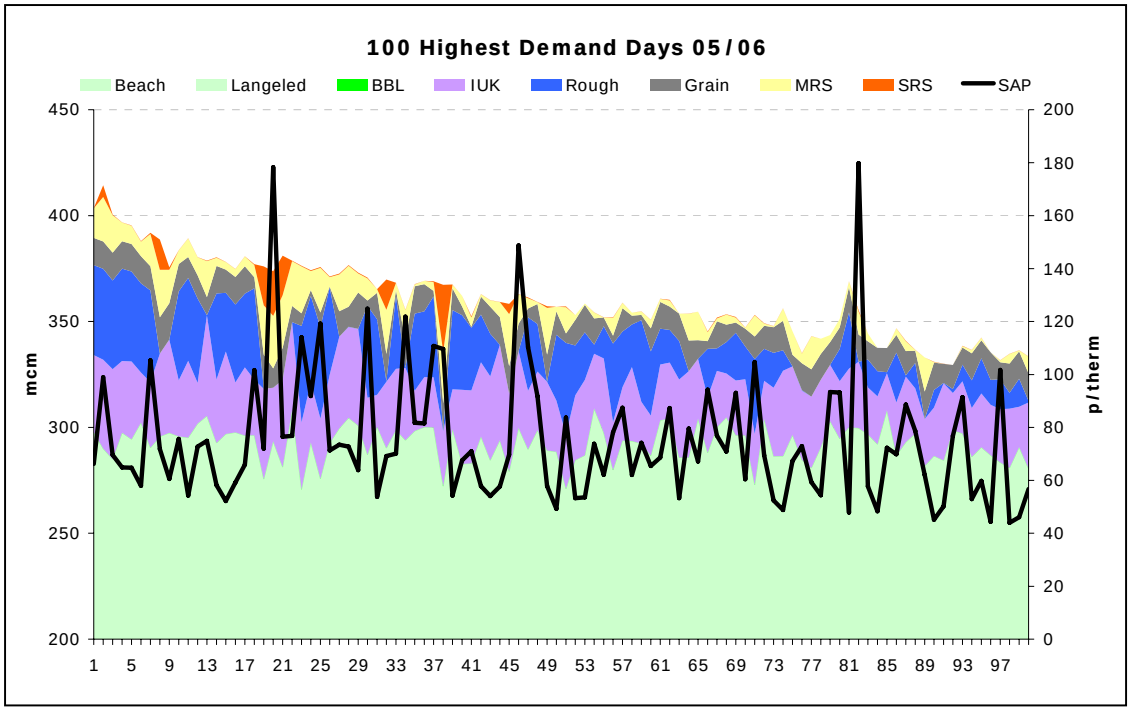
Appendix 2 - How has the Grain facility performed?

Winter 2005/06

1.1. Chart A2.1 below outlines, for the top 100 demand days over winter 2005/06, the gas supply sources that responded to meet system demand. As the chart highlights, there are various sources of supply which effectively operate as baseload flow[54] and, as such, these supply sources flow without showing significant sensitivity to demand or price. In this respect, it is clear that beach gas (defined as flows from the United Kingdom Continental Shelf (UKCS) and Vesterled) was flowing over the duration of the period shown in Chart A2.1, as certain fields on the UKCS will flow continuously as baseload supply, for example, the Elgin, Franklin and Morecambe fields. While there is some evidence of varied flows from the Grain facility, which could suggest that it was not operating as a baseload supply source, these do not appear to be correlated with changes in system demand or price.

Chart A2.1

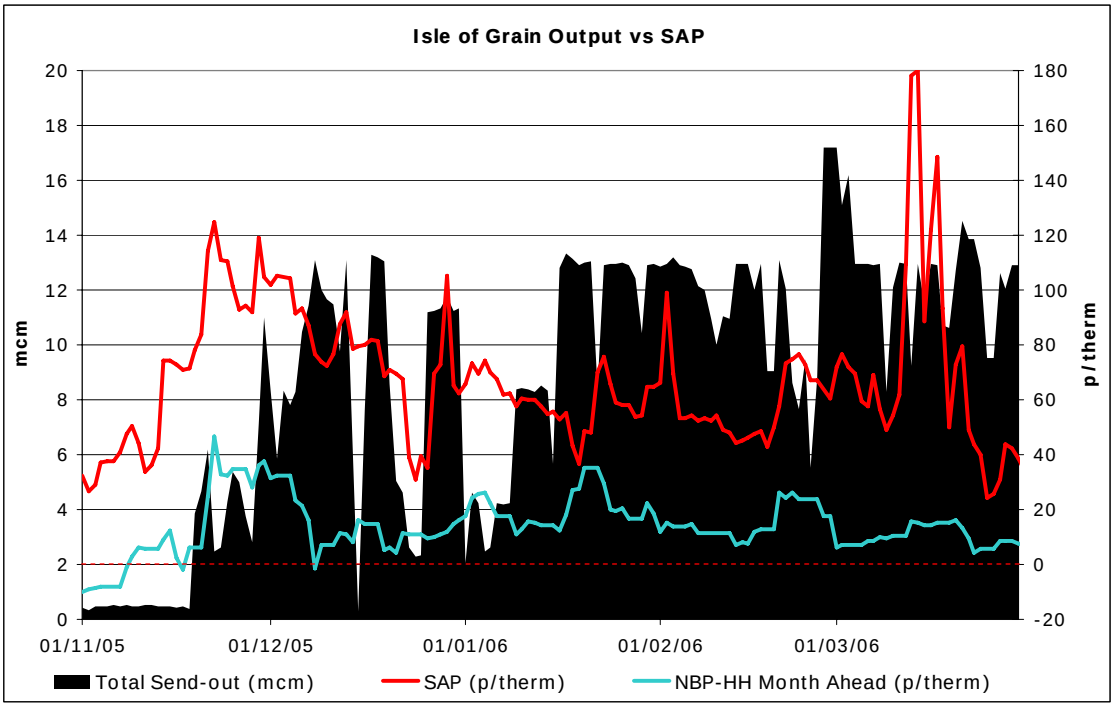


1.2. Chart A2.2 below shows daily send-out from Grain for winter 2005/06. At the beginning of November, send-out was frequently well below the maximum physical

[54] A definition of the term "baseload" is contained within the glossary at Appendix 5.

capacity despite unprecedented high prices in the GB market. Whilst this observation, in itself, is not a cause for concern, when accounting for the price differential with prices in the US market[55] it can be seen that LNG was not flowing to the GB market as might be expected under normal competitive conditions. Over the period shown in the chart (from November 05 to March 06), GB prices were more expensive than US prices, with an average differential between National Balancing Point (NBP) and Henry Hub prices was 14.5p/therm and an average differential over November 2005 of around 11.5p/therm[56]. Similarly, with respect to the differential with European gas markets, the NBP was trading at a premium throughout the duration of the winter period.

Chart A2.2



1.3. These observations led to concerns within industry and Ofgem that, despite the premium of GB gas prices over both the US and European markets throughout the majority of the winter, gas was not flowing from the Grain facility to the GB market when, in a competitive market, this would rationally have been expected. Specifically, concerns were raised regarding the transparency of information on potential deliverability from the Grain facility and the availability of information on

[55] Measured as the difference between prices traded on the NBP (in the GB market) and Henry Hub (in the US market).
[56] Definitions of NBP and Henry Hub are contained within the glossary at Appendix 5.

the "Use It or Lose It" (UIoLI) Arrangements as well as concerns regarding the UIoLI arrangements themselves[57].

1.4. As a result of these observations, we initiated a dialogue with NG Grain LNG, as operator of the terminal, as well as the joint shipper (which had access to capacity at the facility), to better understand these observations. Two industry seminars were also held which provided interested parties with an opportunity to contribute to this dialogue. Although we made clear that we would not formally approve any UIoLI arrangements put in place by the joint shipper, we made clear that these would need to be open, transparent and non-discriminatory. Following these discussions the joint shipper developed revised UIoLI Arrangements to ensure that appropriate anti-hoarding measures were in place to allow third party access to unused berthing slots at the Grain facility[58]. The revised UIoLI arrangements were implemented prior to winter 2006/07.

Winter 2006/07 to date

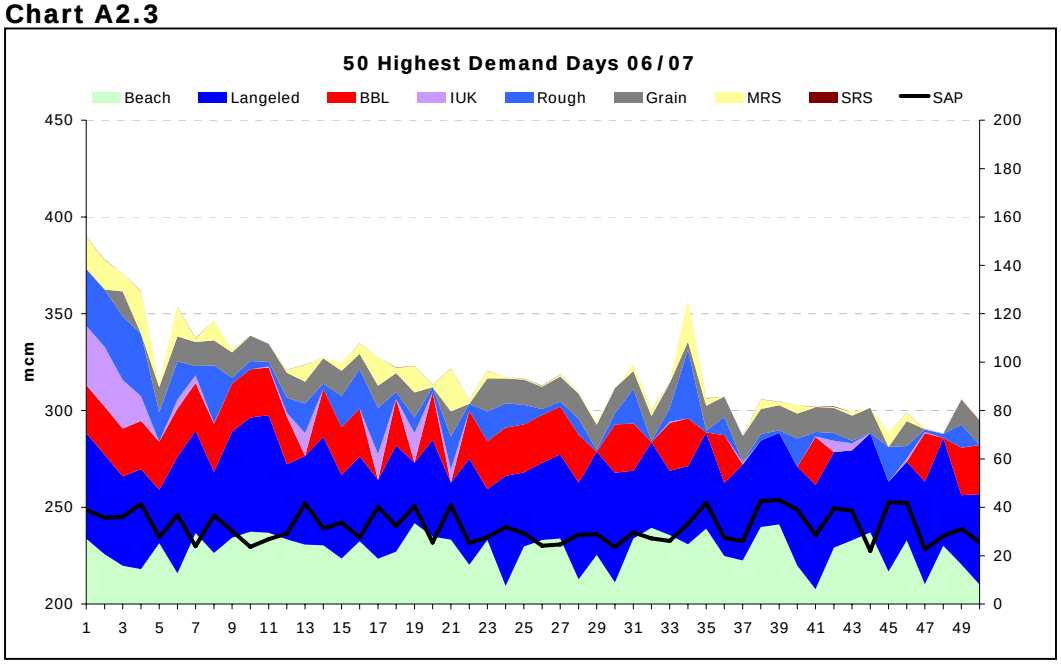
1.5. Chart A2.3 below shows, for the top 50 demand days over the first three months of winter 2006/07 (i.e. from October to December 2006), the gas supply sources that responded to meet system demand. A striking difference between last winter and winter 2006/07 is the reduction in system demand observed, largely due to the relatively mild weather this winter. Another key difference is the availability of the new Langeled and BBL pipelines[59] which have been flowing fairly consistently at high levels over the top demand days. This chart highlights, similarly to Chart A2.1 above, that although there has been some variation in the flows observed from the Grain facility, this does not appear to be directly linked to changing levels of demand. As compared with last winter, the Grain facility has also been flowing more consistently and therefore appears to be operating more akin to a baseload gas supply source, such as beach gas.

[57] A letter setting out the concerns in this regard, can be viewed at: http://www.ofgem.gov.uk

[58] These revised arrangements provided that details of available secondary capacity at the facility would be published on the Grain website and offered to the market on a D-10 basis. Any such available berthing slots would be sold by auction to qualified bidders and would confer rights, upon parties successful in obtaining the secondary capacity, for the temporary storage of gas for seven days as well as the send-out of gas over seven days.

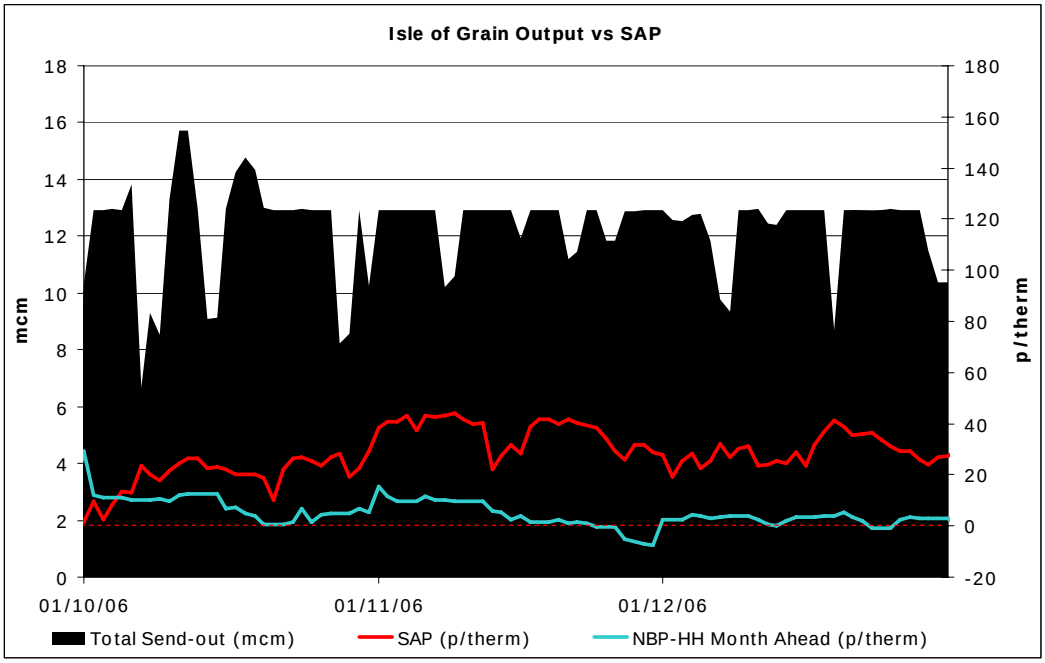
[59] Definitions of the BBL and Langeled pipelines are contained in the glossary at Appendix 5.

Chart A2.3



1.6. This trend is reinforced by Chart A2.4 below which highlights that the Grain facility has been flowing fairly consistently at around 13mcm/day for the majority of this winter.

Chart A2.4



1.7. More recently, the differential between month-ahead GB prices at the NBP and the equivalent US contracts at the Henry hub has been changing. In this respect, for a period of around ten days at the end of November 2006, US Henry hub prices were at a premium of around 3p/therm compared with GB NBP prices. This differential reversed during December but from 5 January 2007 switched again and the US price has traded at a premium to GB prices since then. This premium has been around an average of 12.5p/therm and has increased to a maximum of around 23.8p/therm. In light of this differential, we would rationally expect that some cargos of LNG would be diverted from GB to the US market given the potential for increased returns. On 23 February, an announcement was made on the NG Grain site of an available slot at the Grain facility on 2 March 2007. Although LNG has not been diverted away from the GB market in response to the changing price differential as quickly as may have been expected, the flows have responded to changing price differentials.

Appendix 3 - Methodology for quantitative analysis

Background

1.1. To evaluate the difference in market prices between these scenarios, we utilised a simple price model, described below, that determines a spot price based on supply and demand. In the "no information" scenario, we removed Grain supply from the model completely where LNG imports were diverted away from the GB market. In the "full information" scenario, we retain Grain supply for the 7 highest demand days over this period (corresponding to the 7 days of flow for full tanks at maximum deliverability). In taking 7 days as the indicative number of days that Grain is capable of flowing at, we have used as an indicator the volume at which Grain usually flows (i.e. 12-13mcm/day) and therefore assumed that NGG has contracted with NG Grain for 4mcm of OM gas.

1.2. To determine an overall benefit for consumers, we calculated the difference in value corresponding to spot volumes traded at each set of prices.

1.3. We note that our two scenarios represent “extremes”, as it would be unlikely that, on the one hand, tanks would be assumed to be completely empty or completely full, and on the other, that prices would respond perfectly relative to future uncertain demand levels. To account for this, we have therefore reduced our calculated benefit by 50%.

Price model

1.4. To model the type of price response that might be seen during a period over which LNG imports were diverted from the GB market, both with and without the information proposed for release, we constructed a simple price model based on a 2-part linear relationship between price and the supply/demand position. The data used to derive this is shown in Chart A3.1, where:

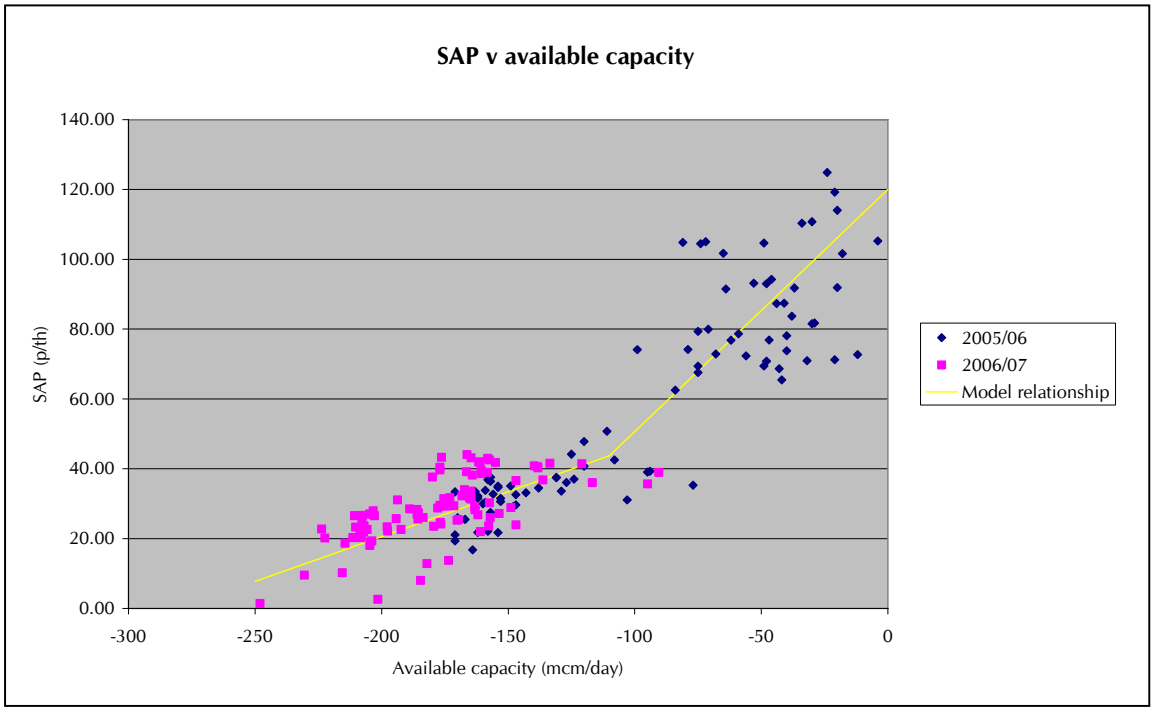
- the System Average Price (SAP) is plotted on the Y axis; and
- available capacity (calculated as the difference between maximum supply deliverability and demand on each day[60]), is plotted on the X axis.

1.5. To avoid seasonal changes in the relationship between price and supply/ demand, as a result of the changing use of storage over the course of the winter, we have derived the relationship from historical data for Quarter 4 (i.e. October to December) only for both 2005/06 and 2006/07. The yellow line on the chart shows

[60] Deliverability includes UKCS, interconnectors, and LNG import (but excludes storage).

the derived linear relationship from this historical data which we subsequently used to model the price response that would be seen in the event that LNG imports were diverted away from the GB market both with and without the data proposed for release.

Figure A3.2



1.6. Using this price model, it was possible to derive a price profile for each of the scenarios detailed in paragraph 3.15. The benefits associated with release of information regarding stocks at LNG importation facilities was estimated by calculating the absolute difference in prices that would be observed on the spot market under each scenario and then multiplying this by an average volume of trades on the On-the-day Commodity Market (OCM).

Model assumptions

1.7. A number of assumptions are made with respect to different aspects of the model. A brief overview of each of these is outlined below:

- **Frequency of diversions of LNG imports away from GB:** These periods are most likely to occur due to a commercial decision to divert LNG cargoes to a different market. For the purposes of our analysis, we assume a frequency of one diversion of LNG imports away from the GB market per year.

- **Duration of diversion of LNG imports:** The normal berthing schedule is weekly. In our analysis we assume that LNG imports are diverted such that two

simultaneous berthing slots at the Grain facility go unused and therefore there is a period of 21 days between deliveries, compared to the usual 7.

- **Evolution of supply and demand:** To avoid making assumptions about future developments of supply and demand, we have evaluated the impact of a diversion in LNG imports using data on infrastructure and outturn demand from Quarter 4 2006.

- **Volumes traded on the spot market:** Rather than attempting to estimate total spot traded volume, we took a more conservative approach of assuming a volume similar to that traded historically on the OCM. OCM volumes in December 2006 totalled 14,715 GWh, an average of about 45 mcm/day. As such we used a more conservative 25 mcm/day as the volume impacted by our calculated price changes.

Results

1.8. Using the approach outlined above, the benefit we calculated for a single diversion of LNG imports away from GB is £0.9m. Assuming one such incidence of diversion of imports per year, the NPV of the benefit over a 15 year period is approximately £8m[61].

1.9. To assess the potential range of outcomes using this modelling approach, we repeated the analysis using higher and lower assumptions on the following parameters:

- the slopes of the 2-part linear relationship between price and supply/demand;

- the reduction in benefit to reflect lack of "perfect foresight"; and

- the assumption on the spot volumes traded.

1.10. This sensitivity analysis produced a "low" value for a single case in which LNG imports are diverted from the GB market of £170k, and a "high" value of £2.2m. Over 15 years, these give NPVs of £1.6m and £20m respectively.

[61] Our 15 year period starts in 2008 to reflect the fact that, if approved, we would not expect implementation to occur until after commissioning of the Milford Haven terminals. We used a discount rate of 6.25%.

Appendix 4 – The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ("the Authority"), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[62]

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly[63].

1.4. The Authority's principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of consumers, present and future, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- The need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- The need to secure that all reasonable demands for electricity are met;
- The need to secure that licence holders are able to finance the activities which are the subject of obligations on them[64]; and
- The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[65]

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

[62] entitled "Gas Supply" and "Electricity Supply" respectively.
[63] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.
[64] under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.
[65] The Authority may have regard to other descriptions of consumers.

- Promote efficiency and economy on the part of those licensed[66] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- Protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity;
- Contribute to the achievement of sustainable development; and
- Secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- The effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- The principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- Certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[67] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

[66] or persons authorised by exemptions to carry on any activity.
[67] Council Regulation (EC) 1/2003

Appendix 5 - Glossary

B

Baseload

Supply sources which provide a generally continuous flow of gas unreactive to price and market demand in normal conditions.

BBL

The Balgzand Bacton Line (BBL) is a pipeline connecting the Netherlands and the United Kingdom. As of 1 March 2007, BBL will be capable of importing up to circa 42mcm/day into the UK.

E

energywatch

energywatch is the independent watchdog for gas and electricity consumers and provides free, impartial advice on a range of energy issues. energywatch also investigates complaints on behalf of consumers who are experiencing difficulty in resolving problems directly with their energy suppliers.

H

Henry Hub

The Henry Hub is the largest centralized point for natural gas spot and futures trading in the United States. The prices of products traded at Henry Hub are taken as a standard for the prices of US gas trades.

I

Interconnector UK (IUK)

The IUK gas pipeline links the GB (at Bacton) and Continental Europe (at Zeebrugge). The pipeline provides bi-directional transport capability to facilitate energy trading in both markets. As of October 2006, the GB import capacity has been 23.5 billion cubic meters per year.

L

Langeled

Pipeline transporting gas from Norway to the Easington terminal in the UK. Langeled is capable of delivering up to 74 mcm/d of gas to the NTS and was commissioned in October 2006.

Liquid Natural Gas (LNG)

LNG consists mainly of methane gas liquefied at around -160 C. Cooling and liquefying the gas reduces its volume by 600 times such that a tonne of LNG corresponds to about 1,400 standard cubic metres of methane in its gaseous state. LNG may be stored in tanks or transported by ocean going tankers or, in small quantities by road tankers.

LNG importation facility

Facilities that permit an LNG cargo to unload and store its cargo before re-gasification and export in the form of gas to the transmission or distribution system

LNG storage facility

A facility at which gas taken from the NTS can be liquefied and stored until it is required to be regasified and delivered back onto the system. LNG storage facilities provide short range storage for the NTS

N

National Balancing Point (NBP)

The National Balancing Point (NBP) is a notional point on the UK gas system through which all gas passes for the purposes of balancing and accounting.

National Grid Gas plc NTS

The owner and operator of the National Transmission System throughout Great Britain.

National Transmission System (NTS)

A high-pressure system consisting of terminals, compressor stations, pipeline systems and offtakes. Designed to operate at pressures up to 85 bar.

Net Present Value (NPV)

NPV is the net level of potential costs and benefits after discounting at an appropriate rate.

O

Operating Margins (OM) gas

Gas purchased by National Grid Gas NTS on an annual basis typically used to maintain system pressures in the period before other balancing measures become effective.

S

Sub-terminal

The main entry points to the NTS.

System Operator (SO)

NGG NTS as operator of the National Transmission System (NTS).

Secondary capacity

Capacity unused by the primary shipper made available to secondary shippers.

T

Transmission System Operators (TSOs)

The entity responsible for managing the gas transmission system. NGG is the operator of the gas NTS in GB.

U

United Kingdom Continental Shelf (UKCS)

The UKCS is the area of the sea bed over which the UK exercises sovereign rights of exploration and exploitation of natural resources. The limits of the UKCS are set out in orders made under section 1(7) of the Continental Shelf Act 1964.

Uniform Network Code (UNC)

The Uniform Network Code (UNC) sets out the legal and contractual framework for the supply and transportation of gas. It provides a common set of rules for all industry players to ensure that competition can be facilitated on equal terms. The Network Code came into effect in March 1996 after two years of negotiation between Transco and shippers. Following the sale of four of the gas distribution networks from NGG NTS to three independent buyers, the Network Code was replaced by the UNC which is managed by the Joint Office of Gas Transporters.

Use It or Lose It (UIoLI) arrangements

Arrangements requiring primary shippers to make unused capacity available to the market.

Z

Zeebrugge prices

Prices at which gas is traded at the Zeebrugge hub in Belgium.

Appendix 6 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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