Gas probe

Conclusions document

January 2006

Summary

The gas probe

During the second half of October 2003, there was a significant increase in spot gas prices, which reached a peak of 34p/therm on 28 October 2003. This was 80 per cent higher than the average forward price for the October product traded in September 2003. Ofgem's[1] preliminary analysis concluded that, on the basis of the information available to it, basic market fundamentals (i.e. changes in gas supply and demand) did not appear to explain the significant movements in wholesale gas prices. Ofgem therefore launched an informal probe on 14 November 2003 to look in more detail, at the causes of the rise in gas prices.

The purpose of the probe was to identify whether there were legitimate reasons for the movement in gas prices or whether there was any evidence of market manipulation and/or abuse.

In May 2004, Ofgem published its initial conclusions and considered seven possible features or 'price drivers' of the gas price that may have explained the higher gas prices in October and November 2003.

Ofgem was able to eliminate the majority of the seven price drivers originally identified. That left two key questions in relation to one of these potential price drivers - the composition of gas supply. The two questions were why were gas deliveries from the North Sea (beach deliveries) lower than expected based on previous years and why did the interconnector not begin to import gas from North West Europe more quickly when UK prices rose about European prices.

North Sea beach gas deliveries

Ofgem's analysis of beach deliveries concluded that a large proportion of the reduction in beach supplies observed over the period could be explained by a decline in the production capacity of the United Kingdom Continental Shelf (UKCS) and maintenance. The analysis also identified that, some gas sales contracts may have prevented gas that was physically available from flowing to the market during these periods of high prices.

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[1] Ofgem is the Office of the Gas and Electricity Markets, which supports the Authority, the regulator of the gas and electricity industries in Great Britain. Ofgem's aim is to bring choice and value to all gas and electricity customers by promoting competition and regulating monopolies.

After considering various contracts Ofgem's further analysis subsequently focused on the gas sales contracts relating to the Sean gas fields. At that time, these gas fields and associated facilities accounted for approximately five per cent of National Grid's forecast maximum daily gas delivery from the North Sea.

The Sean contracts – key conclusions

Following the publication of a conclusions and next steps document in October 2004, Ofgem launched an informal investigation into the extent to which, if at all, the Sean sales contracts[2] had contributed to high gas prices historically and may contribute to high gas prices in the future. The outcome of that informal investigation is presented in this paper.

On 23 June 2005, the Authority met to consider the analysis and findings of this informal investigation. The Authority considered Ofgem's analysis and written submissions from companies who were parties to the Sean field sales contracts. The Authority decided that there was no reason to take any further action at that stage but agreed that it would be necessary to maintain a watching brief as part of Ofgem's ongoing market surveillance activities. Ofgem therefore closed the outstanding GB aspects of its gas probe. The Authority also decided that it would be appropriate to publish the findings of the informal investigation, as far as possible, given the confidential nature of some of the information provided by the companies during the investigation.

Whilst the parties involved have provided written submissions during Ofgem's gas probe process and have been consulted during the preparation of this document, the analysis and views contained in this document are those of Ofgem.

European gas supply issues

Following a detailed consideration of the information submitted to Ofgem by interconnector shippers Ofgem raised a number of concerns with the European Commission. Ofgem's first concern was the apparent lack of effective competition in key European markets and its effect on GB gas prices and customers. The second related to specific concerns highlighted by the analysis of October/November 2003.

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[2] The Sean contracts comprise gas sales agreements for the sale of Sean gas to Centrica. There are separate contracts for sales by each of Shell, Exxonmobil and BP.

Ofgem's analysis, which was limited by the information available to us, left a number of unanswered questions such as:

- was all the contractually available gas in Europe sold into the higher priced GB market?
- were companies use of storage capacity reasonable? and
- was surplus gas pipeline capacity made available to suppliers with gas who wanted to export that gas to GB?

Partly in response to these concerns, the European Commission launched an inquiry into competition in gas and electricity markets to seek to identify possible distortions of competition, the functioning of wholesale markets, and barriers to entry on 13 June 2005. On 15 November 2005, the Commission published its interim findings[3] and concluded that "In the first phase of the inquiry important competition distortions have been identified in the gas and electricity markets". The Commission identified a number of categories as impediments to competition in energy markets; these are market concentration, vertical foreclosure, market integration, transparency, and price information. The Commission intends to identify and pursue remedies, using its powers under European competition law if necessary, over the course of 2006.

[3] http://europa.eu.int/comm/competition/antitrust/others/sector_inquiries/energy/issues_paper15112005.pdf

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1. Introduction

Purpose

1.1. Following the Authority's decision on 24 June 2005, Ofgem announced its decision to close the outstanding GB aspects of its gas probe. The purpose of this document is to set out, as far as possible, Ofgem's analysis and to give the reasons for the Authority's decision. Ofgem based its decision in part upon analysis of information submitted by the four companies who are counterparties to the Sean gas field sales contracts. Much of this information is commercially confidential. As a result, Ofgem has in the preparation of this document consulted with BP, Shell, ExxonMobil and Centrica to balance the need to protect commercial confidentiality with Ofgem's intention to act transparently and provide a detailed explanation of its decision to the market and customers. Ofgem has also sourced much of the information in this document from the public domain. Ofgem is grateful to Wood Mackenzie for the provision of some of the data contained within this document. Ofgem would also like to highlight that BP, Shell, ExxonMobil and Centrica have neither confirmed nor denied that such publicly available information is correct.

1.2. Whilst the parties involved have provided written submissions during Ofgem's gas probe process and have been consulted during the preparation of this document, the analysis and views contained in this document are those of Ofgem. Ofgem invited the four companies to outline their comments or views on the conclusions document. The views of companies who provided comments are set out in Annex 5.

Background to informal investigation

1.3. During the second half of October 2003, there was a significant increase in day ahead spot gas prices at the National Balancing Point (NBP). Price reached a peak of 34p/therm on 28 October 2003. This was 80 per cent higher than the average price for the October product quoted in September 2003. Prices remained high during November 2003, rising to a peak of 32p/therm.

1.4. In response to concerns expressed by customers and industry participants, Ofgem conducted a preliminary analysis into the high gas prices.

1.5. This analysis showed that:

- spot prices in October 2003 were, on average, 5.2p/therm higher than those anticipated by the market in the months prior to delivery;
- October/November 2003 prices were, on average 9p/therm higher than those observed during October/November 2002; and
- changes in the level of gas demand did not offer an obvious explanation for these relatively higher prices.

1.6. Ofgem concluded that, on the basis of the information available to it, basic market fundamentals could not explain the increase in wholesale gas prices. As a consequence, Ofgem wrote an open letter to the industry, customers and other interested parties on 14 November 2003,[4] inviting views on the possible reasons for the movements in gas prices.

1.7. In May 2004, Ofgem published its initial conclusions[5] (the May document) in relation to seven possible features or 'price drivers' of the gas market that may have operated during October and November 2003 to either lead to the increase in wholesale gas prices or to have maintained the higher prices. These 'price drivers' were identified as:

- changes to the composition of gas supply;
- higher levels of gas demand;
- alleged manipulation of gas stored in the national pipeline network (known as 'linepack') within day;
- price movements in linked commodity markets such as electricity and oil;

[4] This letter is available from Ofgem's website, www.ofgem.gov.UK – document reference 141/03 'Open letter on gas prices'.
[5] *Gas prices in October and November 2003: Interim Report*, Ofgem, May 2004.

- alleged manipulation of market prices;
- a decrease in market liquidity; and
- market sentiment.

1.8. Ofgem concluded that of the seven price drivers originally identified, it had a number of outstanding questions in relation to one of these potential price drivers (the composition of gas supply) – namely, low beach deliveries and the delay in the switch to importing gas across the interconnector with the NW European gas market.

1.9. In relation to these two lines of enquiry, Ofgem wrote to a number of specific field and sub-terminal operators as well as the interconnector shippers[6] on 28 May 2004, asking for their assistance in providing information to assist Ofgem in identifying the causes behind the higher gas prices.

1.10. Ofgem presented its analysis in a conclusions and next steps document published in October 2004[7] (the October document). The October document provided an update on developments in the market since the publication of the May document. These developments included the increase in prompt wholesale gas prices between July and September 2004, which had increased by 70 per cent[8] to levels that had historically only been seen on the coldest winter days. In addition, forward wholesale prices for the 2004/05 winter had also increased significantly, rising by 30 per cent since May 2004. Ofgem therefore extended the scope of its probe to cover these two periods of time.

1.11. The October document also analysed three potential drivers of higher forward gas prices over the period considered, these were:

- **the oil-price link**. Whilst in the GB gas market most long term gas contracts are now indexed to the spot price of gas rather than oil, the reverse is true on the Continent. This was considered by Ofgem to be the most important driver;

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[6] Shippers who own firm capacity to flow across the Belgian Interconnector.
[7] *Ofgem's probe into wholesale gas prices: Conclusions and next steps*, Ofgem, October 2004.
[8] Comparing the maximum of July 2004 with the maximum of September 2004.

- **declining UKCS gas supplies**. The major gas fields of the North Sea are now in decline and available supplies are falling year on year. The year on year decline was also identified as a factor in explaining price movements; and

- **European gas supplies**. Ofgem had concerns in three areas: the potential withholding of contractually available gas from gas markets in Continental Europe; whether the use of storage capacity was appropriate; and whether surplus transit capacity on the Continent was made available.

1.12. With respect to the third concern Ofgem called on the European Commission to devote more resources to identifying barriers to the development of effective competition and to take positive actions to reduce these barriers. The European Commission has now launched an inquiry into competition in gas and electricity markets to seek to identify possible distortions of competition, the functioning of wholesale markets and barriers to entry.[9] The European Commission announced the preliminary findings of its inquiry on 15 November 2005. The European Commission announced at the same time that it will continue its competition energy sector inquiry and identify adequate remedies. Such remedies may include action under the European Commission Treaty's rules on restrictive business practices, monopolies and state aids and a possible revision of EU merger rules.[10]

1.13. Ofgem's analysis of beach gas deliveries in October and November 2003 highlighted that some gas sales contracts may have prevented gas that was physically available from flowing to the market during periods of high prices. In the October document, Ofgem noted that it was continuing to consider these contracts and to look at whether they had contributed in a material way to the high gas prices. After considering various contracts Ofgem subsequently focused on the gas sales contracts relating to the Sean fields (the Sean contracts). These contracts account for just over five per cent of beach gas supply capability.

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[9] European Commission press release, *Competition: Commission opens sector inquiry into gas and electricity*, Reference: IP/05/716, 13 June 2005.
[10] European Commission press release, *Energy: Member States must do more to open markets; competition inquiry identifies serious malfunctions*, Reference: IP/05/1421, 15 November 2005.
http://europa.eu.int/comm/competition/antitrust/others/sector_inquiries/energy/issues_paper15112005.pdf

1.14. In its analysis, Ofgem considered whether the Sean contracts had contributed to high gas prices in the past and whether they had the potential to do so in the future. The outcome of this informal inquiry is presented in this document.

1.15. On 23 June 2005 the Authority met to consider Ofgem's analsyis. The Authority considered Ofgem's analysis and written submissions from the companies involved. The Authority decided that there was no reason to take any further action and therefore Ofgem closed the outstanding GB aspects of its gas probe.

Confidentiality

1.16. Some of the information collected to assist Ofgem in its informal gas probe was provided voluntarily by the companies involved with the Sean fields. A significant proportion of this information was commercially confidential and Ofgem has therefore consulted with the companies on what information can be presented in this report. The commercially confidential nature of some of the information has prevented Ofgem from presenting the full details of our analysis

1.17. Where one or more of the companies have not consented to the release of certain information Ofgem has followed the practice of the Competition Commission and 'excised' the relevant text from the report by using a black block to replace the text. Where one or more of the four companies consented to the release of information but one or more did not, we have, in the interests of fairness and transparency, identified those companies that prevented us from publishing the relevant text.

1.18. In preparing this document Ofgem has sought to be as transparent and possible and provide as much detail and explanation for our decisions without disclosing confidential information.

Document outline

1.19. This document is structured as follows:

- ♦ Chapter 2 provides a summary of the regulatory framework within which Ofgem operates;

- Chapter 3 provides a summary of the Sean field including the contractual counterparties, an overview of the contracts and the fields actual and anticipated usage;
- Chapter 4 provides an analysis of Centrica's use of the Sean contracts including a high level description of the way in which Centrica stated that it operated the Sean contracts. It also includes a qualitative summary of Ofgem's analysis as to whether use of the Sean contracts was in any way inconsistent with the strategy said to be operated by Centrica or a strategy which could be expected given the prevailing market conditions. This chapter also considers qualitatively the way in which Centrica may be expected to nominate the Sean contracts in the future;
- Chapter 5 considers the impact of the Sean contracts (as opposed to the nominations by the buyer) on the GB gas market. This chapter outlines the high level framework for the analysis conducted, describes the tests and relevant analysis undertaken, and provides a qualitative statement of the conclusions of this analysis and the factors which may affect Ofgem's conclusions going forward; and
- Chapter 6 summarises Ofgem's conclusions on the gas probe.

Contact

1.20. Ofgem would be happy to answer any questions that interesting parties have arising from this report. Please contact Sonia Brown on 020 7901 7021 or Helen Connolly on 020 7901 7267.

2. Regulatory framework

Ofgem's regulatory powers

2.1. This chapter summarises the main regulatory powers within which Ofgem operates.

2.2. In carrying out many of its functions, Ofgem must have regard to the principles that regulatory activities should be transparent, accountable, proportionate, and consistent and targeted only at cases in which action is needed.[11] In addition, Ofgem must also have regard to any other principles that appear to it to represent the best regulatory practice.[12] Ofgem considers that the publication of this report is consistent with these principles, in particular transparency.

2.3. Ofgem's formal powers are set down in the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, and the Energy Act 2004. Ofgem also has concurrent powers with the Office of Fair Trading under the Competition Act 1998 and the Enterprise Act 2002. More information on Ofgem's formal powers can be found in Annex 1.

2.4. There are a number of other regulatory bodies who have responsibility for the regulation and monitoring of various aspects of the gas market. These include: the Department of Trade and Industry (DTI); the Office of Fair Trading (OFT); the Financial Services Authority (FSA); the Competition Commission (CC); and the European Commission (EC).

Ofgem's informal investigation

2.5. The gas probe described in this conclusions document was undertaken informally by Ofgem. In undertaking this informal assessment, Ofgem benefited from the cooperation of the parties involved with the Sean contracts. As this document concludes, Ofgem considered that there was no requirement for it to undertake a more formal investigation.

[11] Section 4AA(5A)(a) of the Gas Act 1986.
[12] Section 4AA(5A)(b) of the Gas Act 1986.

2.6. Although the investigation was informal in nature, Ofgem considered that it was best regulatory practice to treat the information provided by the relevant parties as if it had been collected formally, given the confidential nature of the information. Ofgem has consulted with the relevant parties in the preparation of this document.

3. Background to the Sean contracts

3.1. This chapter sets out background information on the Sean contracts. To protect commercial confidentiality, this chapter contains information already in the public domain, all of which is sourced. This chapter also contains limited information that is not in the public domain, where this is the case its publication has been agreed by the relevant companies, and is acknowledged appropriately. This chapter outlines background information on the Sean gas fields, outlines the roles of the counter parties to the Sean contracts and sets out key terms of the Sean contracts.

Background to the Sean fields

3.2. The Sean North gas field was discovered in April 1969 and the Sean South gas field was discovered in January 1970.[13] Production began at both of these gas fields in August 1986.[14] Together these fields and associated facilities are capable of delivering around 17 mcm/day[15] – just over five per cent of National Grid's forecast of maximum daily gas delivery at the beach of 327 mcm/day.[16] The Sean gas fields are connected to the UK via a pipeline to the Bacton terminal (operated by Shell), as shown in Figure 3.1 below.[17]

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[13] Source: The information was obtained from Energyvision UK Upstream, Sean Key facts™, a product of Wood Mackenzie.

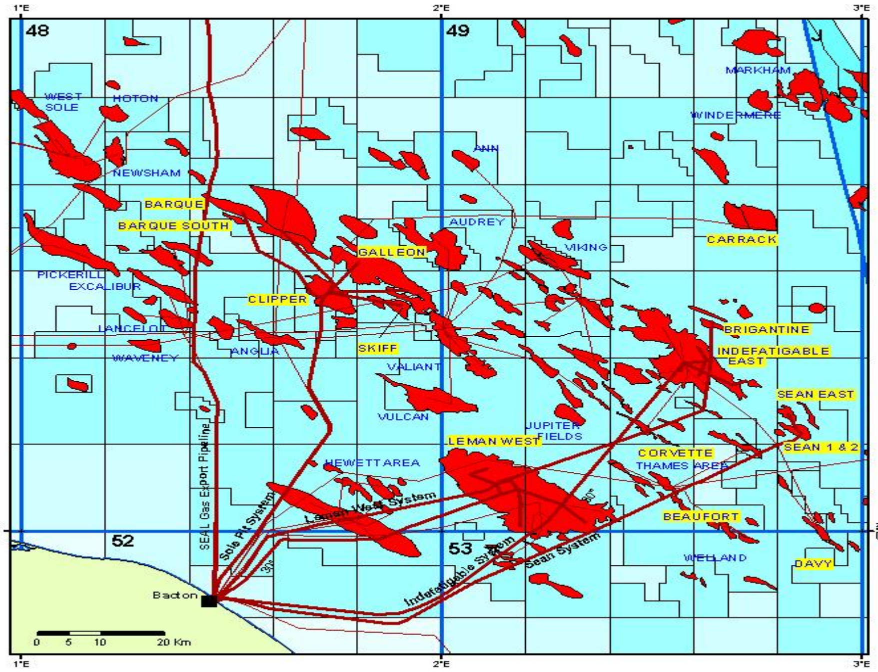
[14] Source: The information was obtained from Energyvision Uk Upstream, Sean key facts ™, a product of Wood Mackenzie. . There is also a Sean East field that was discovered in 1983 and started production in 1984, but this is not covered by the Sean contracts or included in this analysis.

[15] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.

[16] Source: National Grid, Winter Outlook Report 2005/06

[17] Source: The chart was obtained from Upstream Service, Sean Key Facts ™, a product of Wood Mackenzie.

Figure 3.1 Location of the Sean gas fields[18]



The Sean contracts

3.3. British Gas Corporation (BGC) signed principal sales agreements (the Sean contracts) with each of Esso Exploration & Production Ltd, Shell UK Ltd, Britoil Plc and Union Texas Petroleum (the sellers) to purchase natural gas from the Sean fields for 25 years until 2010.[19] The sellers, under the terms of the Sean contracts, can only sell gas from the Sean North and Sean South fields to BGC (i.e. it is an exclusive agreement).[20] Each of the four sellers had an equal share in gas from the Sean fields.

3.4. Since the signing of the contracts, there have been a number of corporate transactions and restructurings among the buyer and sellers.[21] For the remainder of this document we refer to the current counterparties as:

- Centrica (replacing British Gas Corporation);

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[18] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie

[19] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.

[20] The fact that the contracts are exclusive agreements is not in the public domain, however, the relevant parties have agreed to the inclusion of this information in this document.

[21] These are outlined in Annex 2.

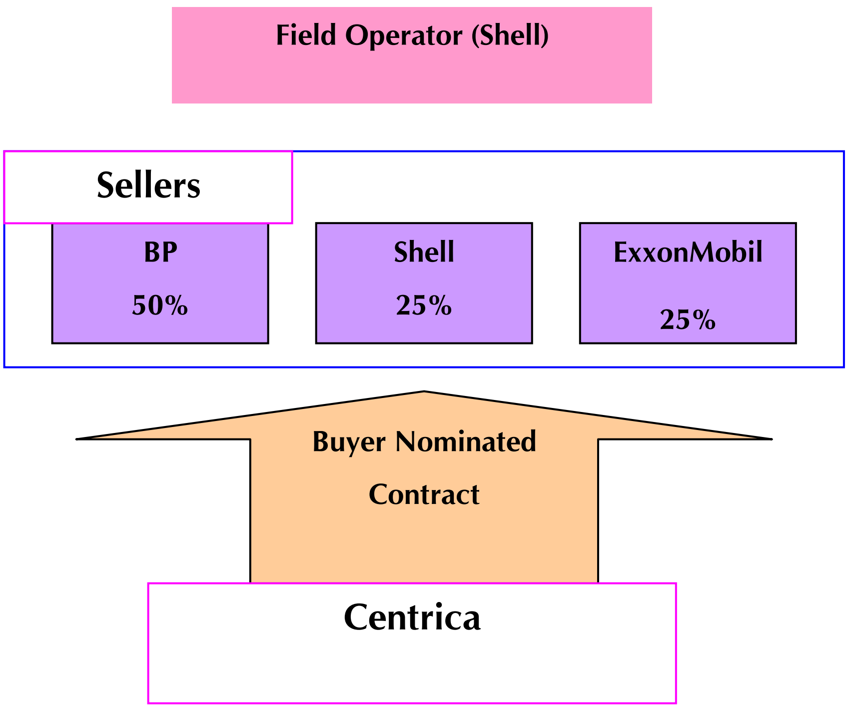
- Esso Exploration & Production Ltd;
- Shell UK Ltd; and
- BP (replacing Britoil Plc and Union Texas Petroleum).

3.5. The key activities of the current parties to the Sean contracts are summarised in Annex 3. Ofgem's understanding of the original context and rationale for the structure of the Sean contracts is discussed in Annex 4.

3.6. The Sean contracts set out the terms under which Centrica can nominate gas to be produced from the Sean fields and the way that prices for that gas are determined.

3.7. A Joint Operating Agreement exists between the sellers and Shell UK Limited, the party appointed by the sellers as operator of the Sean fields. Figure 3.2 below outlines the structure of the Sean field arrangements.

Figure 3.2 – Structure of Sean field arrangements[22]



[22] Source: Ofgem, based on information from obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.

Details of the Sean contracts

3.8. The Sean contracts are buyer nominated.[23] Buyer nominated contracts (or buyer's option contracts) typically take one of two forms – depletion or supply contracts:

- **depletion** contracts tend to be reservoir or field specific. The Annual Contract Quantity (ACQ) (i.e. the amount of gas that the buyer can nominate to be delivered under the contract) is typically declared by the seller one to two years in advance of each contractual year and varies with the physical performance of the field and the buyer's previous takes; and

- **supply** contracts are generally not related to a particular reservoir and the ACQ for each year of the contract life is agreed from the start of the contract.

3.9. The Sean contracts the form of buyer's option depletion contracts. Such contracts typically provide a high level of flexibility to the buyer. The Sean contracts give Centrica exclusive access to the gas from the Sean fields, and provide for gas to be taken from the field (lifted) subject to a maximum quantity on any given day,[24] for a maximum of 100 days per annum.[25]

Prices

3.10. Centrica pays an availability charge[26] to each of the sellers regardless of whether or not it nominates gas under the Sean contracts. The Sean contracts also set out the commodity prices for the sale of gas. The commodity prices are based on three pre-determined tranche prices, which fall in steps as Centrica takes more

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[23] Source: 'Centrica plc and Dynegy Storage Ltd and Dynegy Onshore Processing UK Ltd: A report on the merger situation', Competition Commission, August 2003.
[24] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.
[25] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.
[26] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.

gas from the fields.[27] As with similar contracts signed at the same time, the commodity prices are indexed to [redacted][28] and inflation.

Volumes

3.11. As noted above, the Sean contracts are buyer nominated contracts with Centrica as the exclusive buyer (i.e. they are exclusive sales contracts). As such the sellers are not entitled to sell gas to third parties even if the gas is not nominated for delivery under the contracts by Centrica. Centrica is entitled to nominate a quantity of gas up to currently around six million therms (16.7 mcm) per day.[29]

3.12. Under the agreement with Centrica, Sean gas is contracted to deliver up to six million therms per day of gas for 21 to 100 days annually for 25 years until October 2010.[30]

3.13. If Centrica wishes to nominate above the maximum level, and the sellers are able to facilitate this, the contracts provide that Centrica pays a premium for this 'excess gas'.[31]

Sales outside of the Sean contracts

3.14. The sellers and buyer together may agree to sell gas from the Sean fields outside the Sean contracts. The decision as to whether to do this and the terms of such sales is for the contracting parties to make.

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[27] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.
[28] Centrica, ExxonMobil and BP have provided their consent to this information being published. Shell UK Limited has not given consent to this information being published.
[29] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.
[30] Sources: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.
[31] Details of the excess gas arrangements in the contracts are not in the public domain, however, the relevant parties have agreed to the inclusion of this information in this document.

4. Centrica's use of the Sean contracts

4.1. As discussed in the previous chapters, Ofgem examined the rationale for the way in which the Sean contracts operate and the conduct of the companies who are parties to the contracts. Ofgem undertook this analysis to enable it to understand the features of and the use of the Sean contracts. The key issue was whether the way the contracts were being used, or terms contained within the contracts were preventing gas from flowing to the market when it would be economic for the gas to flow. The analysis undertaken by Ofgem with respect to the Sean contracts was therefore intended to answer two separate questions:

- did Centrica's exercise of the contracts result in gas being withheld from the market unreasonably? In other words, did Centrica's exercise of these rights differ from that which could have been expected to be undertaken by a stand alone trader behaving in an economic and rational manner?

- do the terms of the Sean contracts themselves act to restrict gas flows and prevent gas flowing to the market when it would be economic to do so and hence increase wholesale gas prices?

4.2. This chapter considers the first of these questions. The next chapter considers the second question.

4.3. The following sections set out Ofgem's overall framework for analysing Centrica's use of the Sean contract and then summarise the analysis undertaken and the qualitative results of that analysis.

Framework of analysis

4.4. As highlighted in chapter 3, the Sean fields are "buyer nominated fields".[32] This means that Centrica, as the buyer of gas from the fields, can nominate gas from the Sean fields (subject to the relevant contractual limits and terms).

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[32] 'Centrica plc and Dynegy Storage Ltd and Dynegy Onshore Processing UK Ltd: A report on the merger situation'; Competition Commission, August 2003.

4.5. Ofgem's starting assumption when analysing Centrica's use of the contracts was that Centrica should nominate gas from the Sean fields whenever its expectation of the gas wholesale market price was above the relevant commodity price within the Sean contracts. That is when it would be economical for Centrica to nominate gas from the Sean fields, rather than from the wholesale market. This basic assumption would hold, subject to several important considerations. In particular:

- if Centrica thought that gas prices could be higher later in the contract year for a greater number of days than it was contractually entitled to take, it may wish to wait for these more profitable opportunities to take the gas later in the year. Under such circumstances there is an option value to keeping the gas available at a later date (when prices may be higher), rather than taking it straight away;

- if the prices were expected to be sufficiently higher in future contract years Centrica might rationally decide not take the gas even when the market price is above the contract price. Given the limited volume of gas Centrica is entitled to take each year and that the gas reserves in the Sean fields are finite, under these circumstances it could be sensible to keep gas in the fields to capture future profit;

- similarly, because of the minimum take or pay requirements in the contracts (i.e. requirements on Centrica to consume a certain volume of gas irrespective of market conditions) if Centrica's view was that prices later in the year would be significantly lower than current prices, it might be sensible to nominate the Sean contracts even if the relevant commodity price was *above* current prices; and

- Centrica may decide to take gas when the gas price is below the relevant commodity price in order to access Tranche 2 and Tranche 3 prices (as discussed in more detail below).

4.6. If Centrica did not behave in this manner, a possible explanation could be that Centrica was taking into account the impact of its exercise of the Sean contracts on its wider portfolio of upstream and/or downstream positions.[33]

4.7. However, in considering whether Centrica has exercised its rights under the Sean contracts, in a way consistent with that which would be expected by a stand alone trader, three important factors must be taken into account:

- limitations on information available to Centrica at the time of nomination, in particular and as mentioned above, uncertainty about future market conditions and prices;
- restrictions in the contracts relating to Centrica nominations; and
- complications arising from the pricing structure in the Sean contracts.

The actual nomination strategy chosen will depend on a variety of factors, including the risk appetite of the company in question. Nevertheless, the issues above need to be understood as part of any assessment of Centrica's nomination strategy. Each of these factors is discussed in turn below.

Limitations on information available to Centrica

4.8. When determining how to exercise its nomination rights under the contracts, Centrica will need to consider its projections of wholesale gas prices relative to the relevant contract prices. While Centrica will be able to look at a range of indicators of likely price levels (e.g. short term forward prices, demand forecasts, weather predictions etc.), Ofgem recognised in its analysis that Centrica faced some uncertainty when making price projections.

4.9. Therefore, Ofgem accepted that there may be some small deviations between Centrica's actual use of the contracts compared with the likely use of a stand alone trader, as modelled by Ofgem, because of this uncertainty.

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[33] For example, if Centrica was "long" in gas (and therefore would benefit from a higher wholesale gas price, taking account of its contracted gas position and ability to pass on wholesale price increases to final customers) then this would suggest that it was in Centrica's interest to adopt a strategy that would increase the prices of gas or maintain high levels of gas prices. If Centrica is "short" in gas (and therefore would benefit from wholesale price decreases, taking account of its upstream and downstream positions), then this would suggest that Centrica may have an incentive to drive wholesale prices lower that a "stand alone" user of Sean.

Contractual restrictions in relation to Centrica's nominations

4.10. Ofgem also considered the possible effects of restrictions on Centrica's nominations under the terms of the contract. These restrictions are confidential.

Complications arising from the Sean contracts pricing structure

4.11. As discussed in chapter 3, there is not a single commodity price in the Sean contracts. The commodity prices in the contracts are based on three pre-determined tranche prices, which take effect as Centrica takes more gas from the field. Tranche price one applies for the first 20 days of flow, tranche price two for the next 20 days, and tranche price three for all remaining days. Each tranche price is lower than the previous one.[34]

4.12. The nomination window for gas from the Sean fields typically runs for an agreed number of winter months. Centrica must assess when to nominate Sean gas within the earlier parts of this nomination window based on the then current prices and its expectation of prices later in the winter (which it can forecast to some extent based on typical winter weather patterns that cause wholesale gas prices to peak). Faced with this situation, Centrica has two options in relation to the exercise of its rights under the Sean contracts:

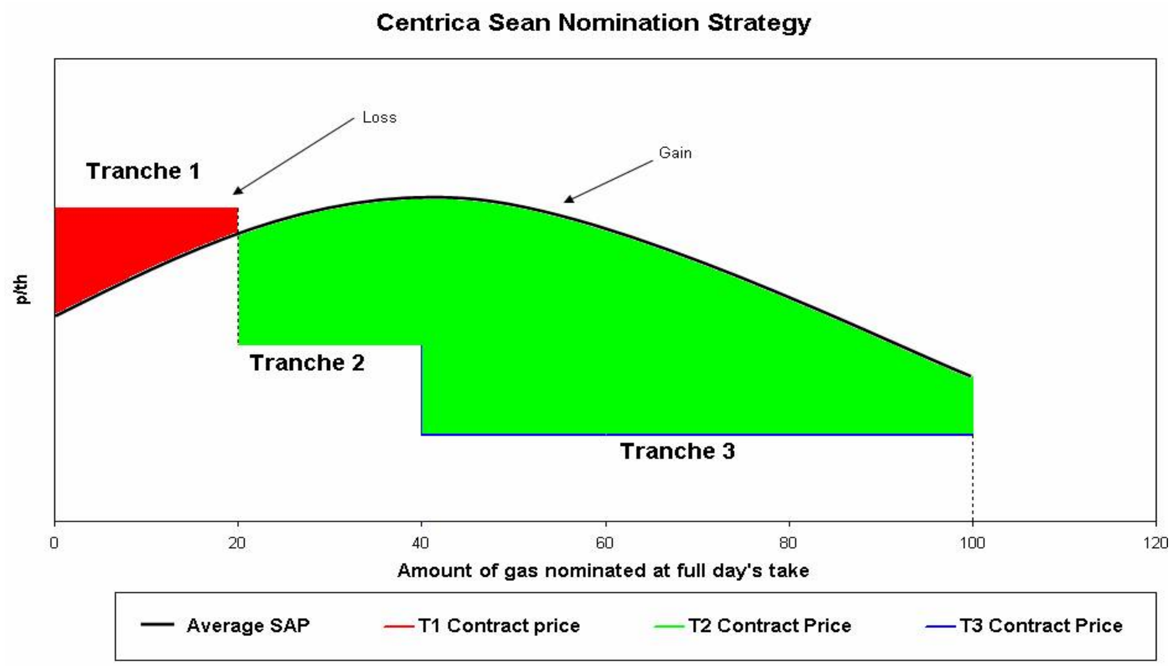
- **Non-discounting strategy**: exercise the contracts when Centrica considers wholesale gas prices will be above the level of the appropriate tranche price, irrespective of its forecasts of use over the whole nomination window. This strategy does not consider the possibility of nominating volumes at the higher tranche prices at a loss (i.e. when Centrica's projections of wholesale gas prices are below the Sean commodity prices) in order to make lower priced contract gas available at a later date;

- **Discounting strategy**: exercise the contracts irrespective of whether the wholesale gas prices is above the level of the current tranche price on

[34] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.

the basis that any current “loss” will be more than offset by future profits as lower priced gas becomes available in tranches two and three. This strategy clearly involves some risk, in that if outturn market prices are different to those forecast by Centrica, the offsetting profit may not materialise. For the purpose of illustration this is set out in Figure 4.1 below.

Figure 4.1 Illustration of hypothetical Centrica discounting strategy (not to scale)[35]



4.13. Figure 4.1, illustrates a scenario where Centrica accepts a loss over the first 20 days (where the relevant tranche 1 commodity price is below the wholesale market price). This is more than offset however by Centrica having access to tranches 2 and 3 commodity prices for days 20 to 100.

4.14. With perfect foresight the discounting strategy is likely to be at least as profitable as the non-discounting strategy, in that it takes full account of Centrica’s expectations of future prices, rather than relying simply on a short-sighted “snapshot” of the market today. However, the difficulty with forecasting market prices through the entire winter period makes the discounting strategy

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[35] Source: Ofgem, based on information. obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of Wood Mackenzie.

significantly more risky – the decision will therefore depend on the corporate appetite for risk. Therefore, in considering whether Centrica's exercise of the Sean contracts was consistent with that which a stand alone trader would follow, Ofgem accepted that failure to follow the discounting strategy would not necessarily be evidence of non-economic use of contractual rights.

Analysis of Centrica's historic exercise of the Sean contracts

4.15. To achieve an improved understanding of Centrica's use of the Sean contracts, Ofgem undertook analysis of the way in which Centrica chose to operate the contracts and its strategy given market conditions prevailing at that time.

4.16. In order to do this, Ofgem compared actual daily nominations made by Centrica against the nominations which, with perfect foresight and in the absence of any contractual restrictions or other dynamic considerations that may exist, would have been made by a stand alone trader given the differential between system average price, day-ahead price and system marginal buy prices on one hand and the tranche prices under the Sean contracts on the other. Both the discounting and non-discounting strategies were considered. This analysis was undertaken for each of the contracts years from 2000/01 to 2004/05.

4.17. An overview of the results from this analysis is set out below.

Exercise of nomination rights under the Sean contracts 2000/01 to 2003/04

4.18. Ofgem's analysis of data regarding the contracts years 2000/01 to 2003/04 indicated that:

- for 2000/01 to 2002/03, Centrica's nominations under the Sean contracts were consistent with those which might have been undertaken by a stand alone trader adopting either a discounting or non-discounting strategy[36]. The analysis concluded that, if anything, Centrica had

[36] For these years, both strategies would, with perfect foresight, have resulted in the same level of nomination.

nominated more gas then a stand alone trader would have been likely to nominate; and

- for 2003/04, Centrica's nominations were consistent with those which might have been undertaken by a stand alone trader using a non-discounting strategy. The analysis again indicated a potential over-nomination. The analysis of the discounting strategy indicated that, with the benefit of perfect foresight, more gas could have profitably flowed than Centrica nominated. However given the analysis indicated that such a strategy would not have been profitable for the previous three years Ofgem considers it reasonable that Centrica may have taken the view that the balance of risk of early losses against later benefit arising from undertaking such a strategy was not appropriate.

Exercise of nomination rights under the Sean contracts 2004/05

4.19. Using the same methodology, Ofgem has also undertaken analysis of the way in which Centrica chose to utilise the Sean contracts during winter 2004/05. In contrast to the analysis completed for the years 2000/01 to 2003/04, the analysis undertaken in relation to winter 2004/05 highlighted that actual nominations were below that which would have been expected given prevailing market conditions. Ofgem notes however, that the analysis undertaken assumed that Centrica had perfect foresight in relation to outturn wholesale gas prices and this analysis ignored any contractual restrictions that may have existed in respect of nominations.

4.20. When any contractual restrictions on nominations are taken into account, Centrica's exercise in 2004/05 looks more reasonable. Equally, Winter 2004/05 was atypical, in that it was very mild[37] but, mainly as a result of high European gas demand, GB prices were unusually high late in the winter. During this high-price period, Centrica was nominating the Sean fields at, and sometimes above, the contracted maximum delivery rate.[38]

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[37] 2004/5 was the sixth warmest winter in the last 77 years (National Grid Winter Outlook Report 2005/06).

[38] [redacted]

4.21. Ofgem therefore concluded that Centrica's nominations and use of the contracts for 2004/05 were reasonable. The small deviations between actual nominations and those that might have been expected from a stand-alone trader were reasonable given the uncertainty that Centrica faced in forecasting prices.

Conclusions on Centrica's exercise of historic nomination rights in the Sean contracts

4.22. Based on the analysis undertaken, Ofgem has concluded that there is no indication that Centrica's exercise of the Sean contracts has been significantly different from that which could be expected from a stand alone trader (i.e. that Centrica does not appear to have taken into account its wider portfolio in determining how to exercise its contractual rights). Historically, then, it does not appear that Centrica's exercise of the contracts has resulted in gas being withheld from the market unreasonably.

Future exercise of the Sean contracts

4.23. The analysis above focused on Centrica's nomination under the contracts in the past. In addition to any potential effects of the contracts themselves on the market (which we consider in the next chapter), Centrica's future exercise of the contracts could clearly have an impact on customers were its behaviour to change from that which has been historically observed.

4.24. Given Centrica's overall position in the gas market, and the importance of Sean as a source of flexible gas, Ofgem intends to keep a watching brief on the use of the contract as part of our ongoing market surveillance activities.

[redacted] Centrica, ExxonMobil and BP have provided their consent to this information being published Shell UK Limited has not given its consent to this information being published.

5. Analysing the effects of the Sean contracts on the gas market

5.1. Chapter 4 set out Ofgem's analysis of Centrica's exercise of its contractual rights under the Sean contracts and whether this appeared reasonable given wider market conditions. This chapter sets out Ofgem's analysis of the impact of the Sean contracts on the GB gas market.

5.2. This chapter sets out:

- the overall framework for the analysis;
- a description of the analysis undertaken;
- a qualitative summary of the results of the analysis carried out;
- a summary of factors affecting the results; and
- Ofgem's conclusions.

5.3. This chapter presents qualitative results with some illustrative examples of the analysis undertaken and limited high level quantitative analysis. It should be noted that a significant amount of quantitative modelling was undertaken as part of Ofgem's probe but this analysis was based on confidential information provided by the relevant parties and the detailed results cannot therefore be published.

Framework of analysis

5.4. The analysis in Chapter 4 indicated that Centrica appeared to respond appropriately to the incentives created by the Sean contracts, in that it tended to nominate gas from the Sean fields when the wholesale market price was greater than the commodity price outlined in the contracts. The analysis in this chapter examines whether the existence of the Sean contracts, and the incentives that they create, gave rise to anti-competitive effects and/or harm to customers through the withholding of gas from the market when it was economic for the gas to flow and artificially raising prices as a result.

5.5. Any contract could include clauses which could be argued to affect the supply and demand conditions in any market. For example, if a party were to agree to supply a given volume of a product to a customer, at a fixed price for a fixed duration, it could be argued that this would affect supply and demand conditions as it would limit the amount of uncertainty that the contract counterparties would be exposed to. Offshore gas supply contracts are no different, and typically include contractual terms that determine the price for certain volumes of gas, the rights of the buyer/seller to nominate the delivery of gas to a certain location and the periods during which it is possible to make such nominations.

5.6. In a competitive market, gas supply contracts would typically be written to seek to maximise the value of the gas produced from the field to which the contract relates. Companies would agree contracts based on their expectations of future gas prices at the time the contract was entered into. These expectations would typically be based on forecasts of future gas supply and demand conditions. Contracts struck on this basis would typically maximise profit to the owners of the field and ensure that gas was available in the periods in which customers place the most value upon it. The contract would therefore operate in the interests of the owner of the field as well as the interests of customers.

5.7. However, it is possible that in some situations long term contracts will cease to deliver maximum value or to align the interests of the owner of the field and the purchaser because of the changing nature of the gas market. In these circumstances companies may seek to renegotiate contracts so that they better reflect current market conditions. This happened in the GB gas market, in the mid to late 1990s, where a number of contracts were re-negotiated to reflect the impact of falling wholesale gas prices following the opening of the whole gas market to competition in 1998.

5.8. Against this background, the issue considered in this chapter is whether the structure of the Sean contracts and specific clauses contained within them, may have had an adverse effect on the current GB gas market, to the detriment of customers.

5.9. The structure and terms of the Sean contracts were relatively common at the time the contract was entered into. When the contracts terms were agreed, there was no traded market for gas in GB and Centrica (British Gas at the time) was the monopoly buyer of gas from producers, and seller of gas to consumers,in Great Britain. British Gas would have entered into the Sean contracts to secure supply to meet peak demand levels for gas. To ensure this demand was met, British Gas required a source of gas which could respond to changes in demand levels, and which it would only need to nominate at times of relatively high gas demand.

5.10. However, the resulting contracts have a number of features which, in the context of today's gas market, may give rise to concerns. In particular, concerns may relate to three key elements:

- contract pricing;
- contract volume - restriction clauses; and
- exclusivity and contract duration.

These aspects of the contracts are discussed in turn below.

Contract pricing

5.11. As described in chapter 3, the commodity prices in the Sean contracts are based on a series of predetermined price levels. The pricing terms of the Sean contracts therefore have the potential to restrict the flow of gas to the market if any movements in these prices diverge from movements in gas prices. For example, if contract prices were high relative to gas prices, the pricing terms in the contracts would likely determine that gas would not be nominated from the Sean fields (as noted in the previous chapter, gas is typically only nominated when the commodity prices are lower than the market price).

5.12. If the supply of gas under the Sean contracts was restricted due to high contract prices, it would have a consequential impact on the wholesale gas price. This is because for any given level of demand, the sources of supply from which demand could be met would be reduced. This would clearly have an impact on the price paid by customers for wholesale gas, although the extent of this effect would depend on the other sources of gas supply available at that time.

5.13. If the contract prices were relatively high and the level of demand was such that Sean production was required and was, in fact, the marginal source of gas, then Sean gas could directly set wholesale market prices at the high contract prices.

5.14. As stated in chapter 3, it is important to note that, because of its inherent flexibility, Sean gas is unlikely to flow when there are low levels of demand, and will predominantly be used when demand is high. At times of high demand, market prices are more sensitive to changes in the volume of gas available, and so the withdrawal of a given volume of gas is likely to have a larger impact on price levels than would be the case at lower demand levels.

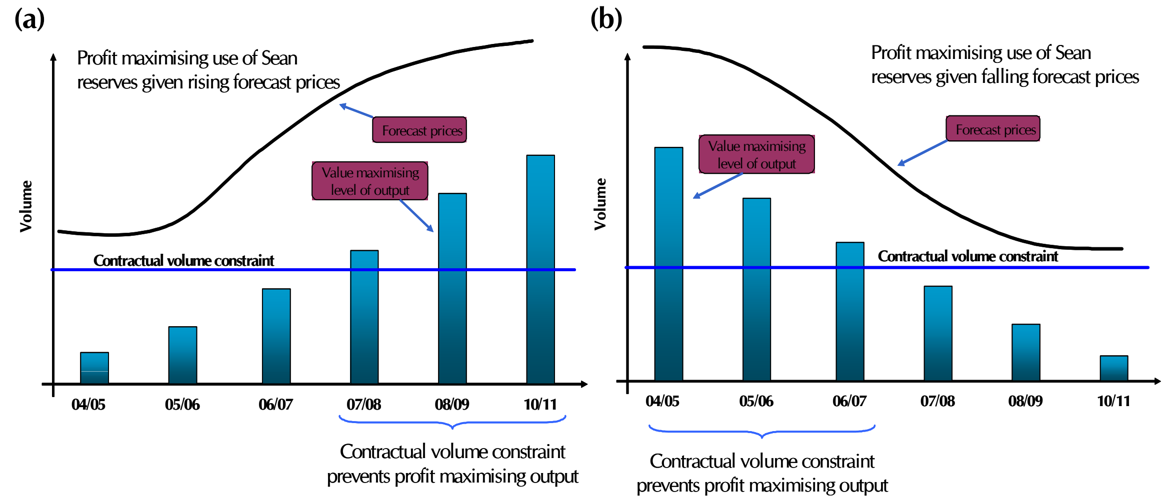
Contract volume clauses

5.15. As outlined previously, the Sean contracts allow a maximum annual delivery of gas to the buyer at contract commodity prices. This restriction may result in gas flow profiles which do not maximise the value of production available. However, there are some further confidential elements of the contractual arrangements which may, in some market conditions, reduce the extent to which this restriction binds.

5.16. Whether the restriction would bind would clearly depend on expectations of future gas prices. Given the finite reserves of the Sean fields, the value of production in the short term has to be compared with the option of retaining the gas and producing it in a subsequent winter, taking into account the potential value of future production. For example, if a period of high prices were expected to be followed by prolonged periods of low prices, it may be most profitable to increase short term production to increase the value derived from gas sales now. However, if high prices were expected to be followed by even higher prices, then withholding some gas would be the most profitable strategy.

5.17. Figure 5.1 below illustrates how the contractual volume limitation may prevent a production profile being adopted which maximises the value of the Sean gas. Figure 5.1 (a) outlines how the contractual maximum volume might constrain a value maximising production profile given rising forecast prices, while Figure 5.1 (b) illustrates how it may constrain a value maximising profile given falling forecast prices.

Figure 5.1 – Projected use of the Sean contracts under different market conditions[39]



5.18. If the volume limitation in the contracts were binding this could have an impact on the wholesale gas price by restricting the supply of gas relative to the potential volume available. For any given demand level the existence of the volume limitation in the Sean contracts would reduce the sources of supply from which demand could be met, requiring higher priced sources of gas to be used than would otherwise be necessary.

Exclusivity and contract duration

5.19. The exclusive nature of the contracts may also be a cause for concern, as it may lead to the foreclosure of supply of gas from the Sean fields to other potential buyers. In other words, even if the producers could sell Sean gas profitably to retailers other than Centrica, the exclusivity clause would prevent this. The importance of this impact will depend on a number of factors, including:

- whether there were concerns in relation to Centrica's position in the downstream market (i.e. whether they were viewed as already being dominant); and

[39] Source: Ofgem

- whether substitute sources of flexible gas were available to shippers on reasonable terms.

5.20. If Centrica was dominant in the downstream retail market, and there were relatively few substitutes for retailers to the flexible gas supply from the Sean fields, there may be a concern that the exclusive nature of the contracts would increase the strength of Centrica's downstream market position relative to their competitors. This could reduce the scope for new entry and/or restrict the ability of existing competitors to take market share from Centrica. To the extent that this increased the ability or incentives for Centrica to abuse its position, this could harm customers.

5.21. The duration of the contracts could be viewed as increasing the concerns relating to exclusivity, simply because it could result in the volumes being foreclosed to other suppliers for a long period of time.

Impact of the contracts through time

5.22. Any concerns regarding the exclusivity of the Sean contracts are likely to continue, at least until new investment in substitute, flexible gas sources become readily available to other suppliers. In contrast, the impact of price and volume clauses contained in the contracts will depend on prevailing market conditions for the reasons outlined above.

Analysis of the impact of the contracts

5.23. This section presents a summary of Ofgem's analysis of the impact of the price and volume clauses in the Sean contracts and a summary of Ofgem's analysis of the potential effects of the exclusivity conditions. This section also provides a qualitative overview of the results obtained from the analysis and limited high level quantitative results.

5.24. The Sean contracts benefited from a number of the exclusions from Chapter I of the Competition Act referred to in Chapter 2 of this document. The final exclusions fell away in May 2005. Prior to this point, the provisions of Chapter 1 of the Competition Act did not apply to the Sean contracts. Therefore, Ofgem's analysis in relation to the effect of the contracts is forward looking, and considers whether the contracts could be considered likely to have an effect since May 2005. Further information on such exemptions can be found at Annex 1.

Price and volume restriction analysis

5.25. In order to investigate whether the price and volume clauses in the contracts could have a significant impact on gas market prices, Ofgem analysed:

- the gas flow profile that would maximise the value of production from the Sean fields over its lifetime, in the absence of the contracts (the "uncontracted" profile); and
- the gas flow profile likely to occur over the same time period given the price and volume clauses in the contracts (the "contracted" profile).

5.26. This analysis had three steps:

- **Step 1** - estimate of wholesale gas market prices over time;
- **Step 2** – estimate of Sean production (a) with the contracts in place and (b) without the contracts in place; and
- **Step 3** - estimate of the market impact of the contracts.

Step 1 Estimate of future wholesale gas market prices over time

5.27. To estimate a forward price for each year, as a proxy for the price the owners of the Sean fields could expect to receive for different amounts of gas over future winters, the relative prices of different sources of gas supply were estimated.[40] For any day, the different sources of gas supply (beach / interconnector / Sean etc.) were assumed to be used in ascending order of relative (estimated) price until estimated demand was met. In other words, it was assumed that the cheapest source of gas would be nominated first with each subsequent nomination being sourced from the next cheapest source of gas (until supply equals demand). The price of the most expensive source of supply required to

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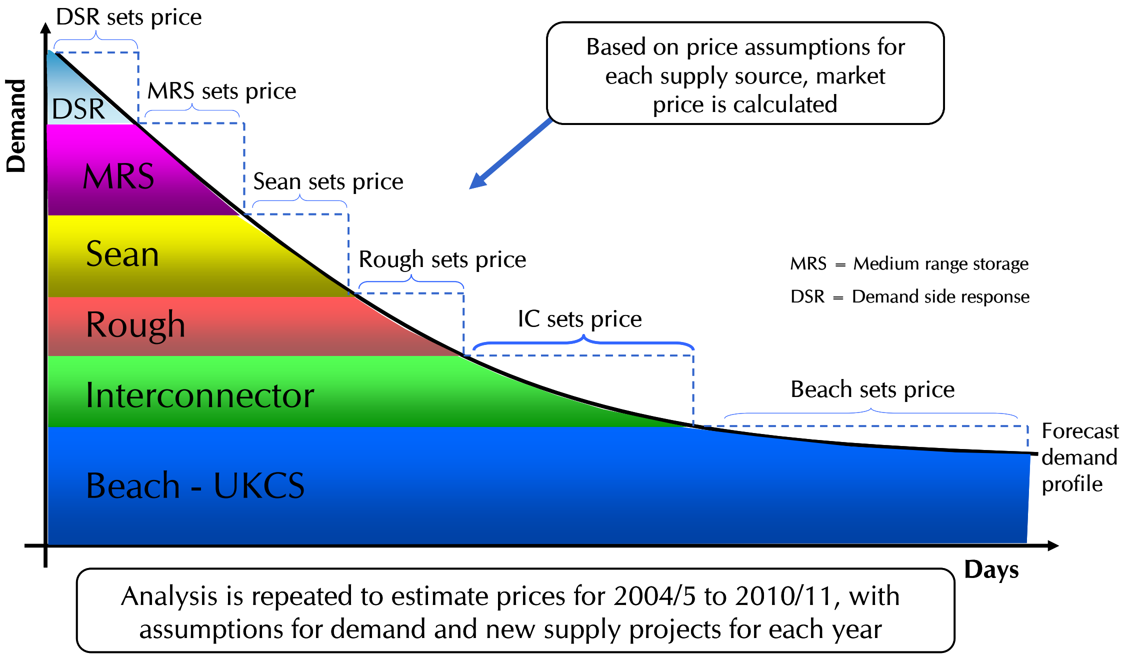
[40] In undertaking this analysis, a number of assumptions were made in relation to the availability of new supply sources (e.g. interconnector reinforcement, Ormen Lange and the likely profile of UKCS decline etc).

meet demand was then assumed to be the market price for gas on that day. In all years, demand levels were based on the assumption of a normal winter.

5.28. This process was repeated for each year from 2004/05 to 2010/11. Figure 5.2 provides a stylised example of the analysis used to derive future market prices.

Figure 5.2 – Estimate of market prices over time[41]



Step 2 – Estimate of Sean production with and without contracts

5.29. Based on these prices, an estimate was reached regarding the likely production of gas from the Sean fields, for the years 2004/05 to 2010/11, first with the contracts in place and then without the contracts in place.

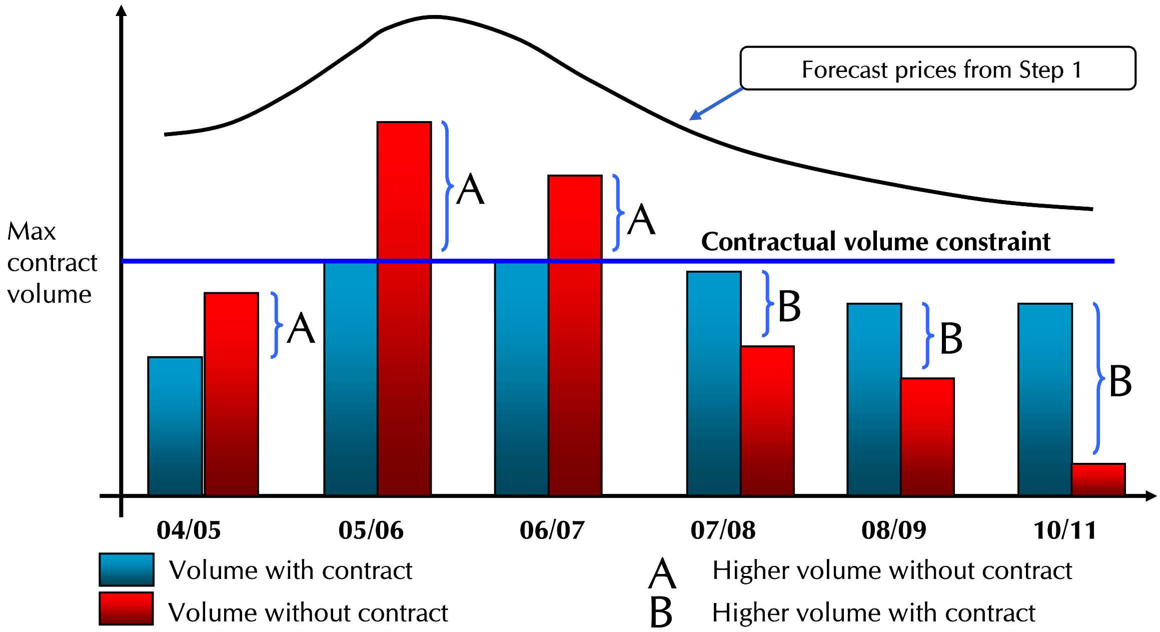
5.30. To estimate production with the contracts in place, the projected forward gas prices were compared with the projected Sean contract prices and an assumption was made that when the forward gas price was above the Sean contract prices, Sean gas would be produced. Within this analysis, flow in any one year was constrained by the 100 day contractual maximum take.

[41] Source: Ofgem

5.31. To estimate production without the contracts in place, it was assumed that the producers would schedule their production so as to maximise the present value of expected future revenue from the field, taking into account the estimated field reserves available. In doing so, a number of simplifying assumptions were made. For example, it was assumed that the field could move from zero production to full production within a day.

5.32. Figure 5.3 presents a stylised version of the output of this modelling.

Figure 5.3 – Estimate of Sean production with and without contracts[42]



Step 3 – Estimate of the market impact of the contracts

5.33. Finally, the model of sources of supply to the GB system was used to estimate the impact on market prices of the change in Sean production estimated to occur if the contracts were not in place. This was achieved by comparing the estimate of market prices with output levels of Sean under the contracts and those without the contracts in place.

5.34. Figure 5.4 below presents a stylised representation of this analysis.

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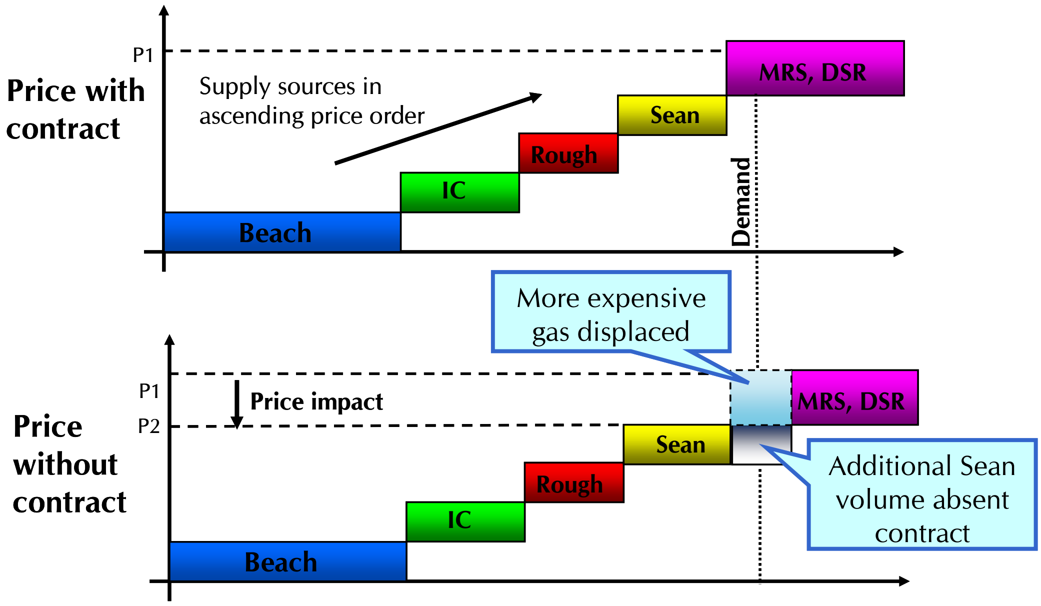
[42] Source: Ofgem

Figure 5.4 – Estimate of the market impact of the contracts[43]



5.35. These prices were then converted into estimates of the cost of wholesale gas to GB customers with and without the Sean contracts in place.

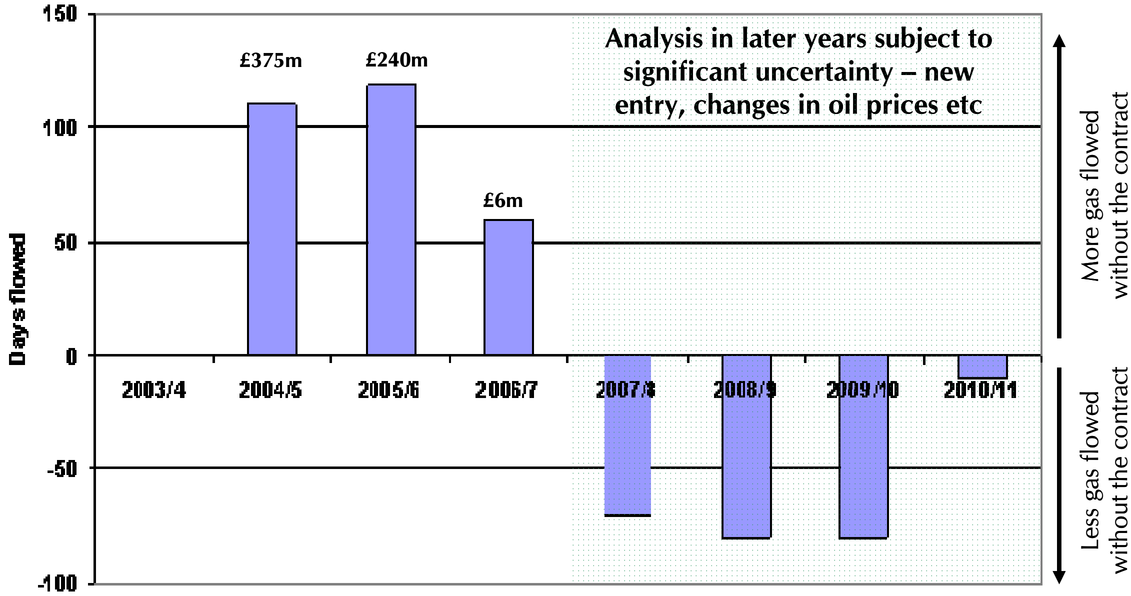
5.36. Clearly, it is not possible to model all of the complexities of the gas market and therefore the modelling described above was carried out with the intention of providing an assessment of the *relative* differences between flow profiles and prices with and without the contracts in place, rather than to forecast robustly actual usage and pricing. Similarly, no contract will be perfect as it will reflect expectations at the time that is was struck and will therefore never exactly match market conditions throughout its entire lifetime. The purpose of the modelling was to determine whether there appeared to be a *material* divergence between the uncontracted and contracted situations.

Results of analysis

5.37. The output of this modelling is shown in Figure 5.5.

[43] Source:Ofgem

Figure 5.5– Difference between gas production with and without the Sean contracts[44]



5.38. Looking at the years 2007/08 to 2010/11, while Figure 5.5 appears to show lower production in the absence of the contracts and therefore a potential benefit of the contracts to customers, the actual impact on customers will depend on the market's response to faster depletion of Sean reserves. Over this sort of time scale, sources of gas supply and flexibility are not fixed and companies can build new supply infrastructure and storage facilities. Current publicly announced investment plans will, for example, lead to an additional 60-100bcm of new gas supplies coming to market over this period and may also see a doubling of GB storage capacity. If these new sources of supply and/or storage were economic at prices close to, or below, the current Sean contracts prices there would be no benefit to customers associated with the contracts in later years. Given the current Sean contracts prices relative to the reported costs of new storage and/or flexible sources of supply, this would appear to be a reasonable assumption.

5.39. The analysis indicates that with the contracts in their current form, in the years 2004/05 through 2006/07, flows of gas under these contracts may be less than expected under the uncontracted scenario (i.e. those which would maximise production value). This implies a detrimental impact to customers as gas prices

[44] Source: Ofgem

would be higher as a result. To put this in context, the wholesale value of annual gas consumption at the time of the investigation was around £12bn. In NPV terms, and before taking into account treatment of taxation and the option value, this simplified analysis would therefore indicate that the average annual detriment over the years 2004/5 through 2006/7 amounts to around 1% of the annual value of wholesale gas.

5.40. The results over these years (2004/05 to 2006/07) are of interest as these are years in which wholesale gas prices are anticipated to be high as new sources of gas will not have come on stream to replace the anticipated decline in UKCS production.

5.41. At face value, the analysis would indicate that the price and volume terms in the contracts may have restricted gas flow in 2004/05 and may be likely to restrict gas flow in the years 2005/06 to 2006/07, given forward gas prices at the time the analysis was carried out[45]. There are, however, a number of additional, mitigating factors which influence this conclusion which are not taken into account in the above analysis, and which are outlined below.

Additional factors

5.42. The modelling described above does not take into account a number of important factors in relation to the actual exercise of the Sean contracts. These factors make it less likely that gas would flow in the absence of the contracts in the early years of the period analysed, implying that Ofgem's analysis may overstate any restriction on output resulting from the contracts being in place. These factors include:

- excess gas provisions;
- option value;
- field dynamics; and
- impact of Petroleum Revenue Tax (PRT).

[45] Since the analysis was carried out, forward (and spot prices) for winter 2005/6 and 2006/7 have risen significantly and the likelihood of the Sean contracts restricting gas flows appear to be very low.

5.43. There are also specific confidential features of the contracts themselves which Ofgem considers reduce the probability of any restriction binding.

5.44. Each of these factors set out above are discussed in turn in the following section.

Excess gas provisions

5.45. Ofgem's analysis was based on the contractual volume limitation (i.e. a maximum output of 100 days at full flow each year). In other words, an assumption was made that, with the contracts in place, production would remain below a fixed volume irrespective of gas prices.

5.46. [redacted][46].

5.47. Provided Centrica make reasonable use of these provisions in years of very high wholesale gas market prices the excess gas provisions may result in higher flows under the 'with contract' scenario than indicated by Ofgem's analysis. Therefore, where the contractual volume limitation restricts the amount of gas under the 'with contracts' scenario, use of excess gas provisions may increase the volume of gas available and hence reduce the estimated detrimental impact of the contracts modelled above. Ofgem will, therefore, continue to monitor Centrica's use of the contracts as outlined in the previous chapter.

Option value

5.48. The Sean gas fields are very flexible fields with finite reserves. Because of this flexibility, this field can quickly respond and capture periods of high prices if, for example, there was a shock to the market such as a large supply loss or sudden increase in demand. As future gas prices are uncertain this gives rise to an 'option value' because leaving gas in the field reservoir today leaves open the

[46] Centrica, ExxonMobil and BP have provided their consent to this information being published. Shell UK Limited has not given its consent to this information being published.

option to flow in future. This option value of leaving gas in the ground will increase the greater the uncertainty about future prices.

5.49. The loss of this option value is a cost associated with the use of gas from the Sean fields and may influence Centrica's decision to nominate gas on any given day. The above analysis does not consider this option value but simply optimises the expected present value of commodity revenue from gas sales assuming normal winter conditions and without assumptions on gas price volatility.

5.50. We note that, since remaining field reserves revert to the producers at the end of the contracts, the existence of this option value may provide them with an incentive not to renegotiate the contracts to release more gas beforehand.

5.51. The existence of a significant option value associated with the Sean fields would imply that the value of production may be maximised by holding more production back in early years than the above modelling would indicate. This would suggest that Centrica would trade off a loss of average commodity revenue from the Sean fields in the early years of the contracts in order to maintain the ability to respond to price spikes in the future.

5.52. However, the option value of the field declines with time, as field reserves decline and therefore, the future ability to respond to price spikes would also reduce. Equally, changes in market conditions, such as entry of new gas supplies, would affect the option value.

5.53. Assessing option value is inherently difficult. As part of Ofgem's investigation into the Sean contracts, Ofgem obtained an estimate of the option value associated with the Sean fields and undertook further analysis to assess the likely option value. The results of the analysis undertaken by Ofgem indicated that the option value could be significant and potentially in excess of £100m over the remaining period of the contract. This is clearly material in scale relative to the potential customer impact identified by our analysis.

Field dynamics

5.54. The analysis presented in this chapter also ignored the complexities associated with managing a gas field and, in this respect, assumed that the field can deliver reliably at full daily rate until it is empty. However, high deliveries in early years are likely to reduce the daily deliverability of the field and potentially its reliability towards the end of the field life.

5.55. If incorporated into the analysis, this would reduce the value associated with the scenario in which the Sean contracts were not in place, as it may potentially overstate the volume of later gas deliveries.

Impact of Petroleum Revenue Tax

5.56. Ofgem's analysis presented above ignored the impact of Petroleum Revenue Tax (PRT) on the producers' revenues from the sale of gas from the Sean fields. However, the impact of the taxation regime on any gas production is significant. Ofgem therefore undertook detailed analysis, verified by third party tax advisors, to assess the way in which the tax regimes, relevant for revenues from the Sean fields, could affect the conclusions of the analysis. Again, as this analysis is based on commercially confidential data, it cannot be published in full although the work undertaken and the conclusions drawn are outlined below.

5.57. Revenues from gas production are subject to an effective marginal tax rate of 70 per cent through a combination of PRT and Corporation Tax (CT). This clearly impacts on the producers' incentives to seek to flow more gas, for example, through a renegotiation of the contracts to unlock the potential additional value that Ofgem's analysis highlighted.

5.58. The PRT regime and in particular the impact of Oil Allowance[47] has a further effect on the *post-tax* profile for some fields in that it can reduce incentives to flow over a certain volume in each half year.[48] This effect is significant where the buyer pays a large upfront capacity fee in addition to commodity related charges. Essentially, as a result of the operation of Oil Allowance, the effective

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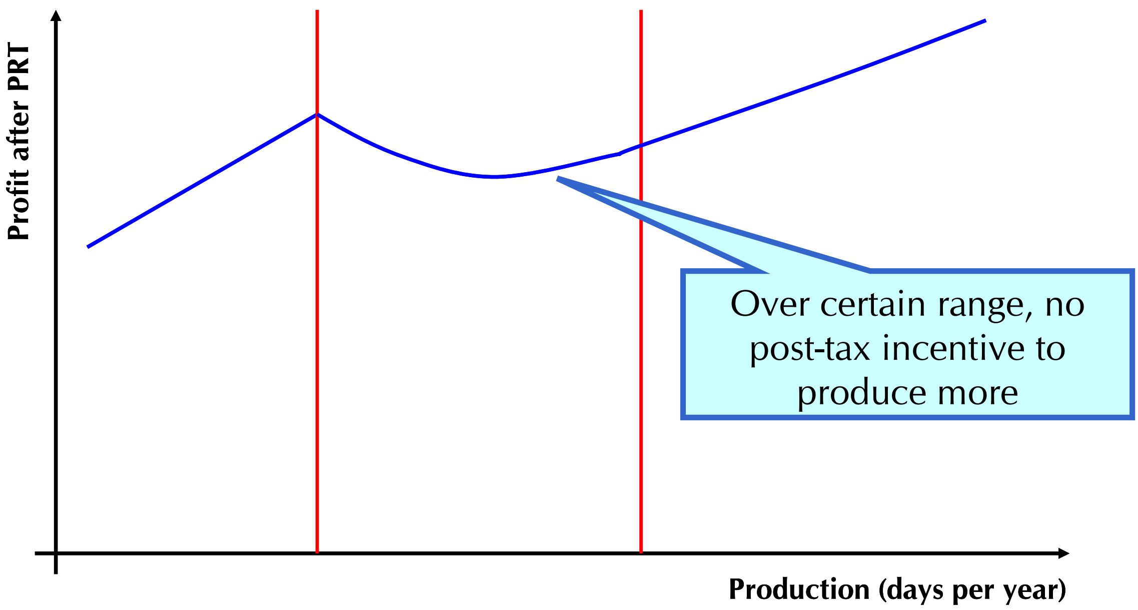
[47] Oil Allowance is a volume based tax allowance – production below a certain level is exempt from PRT. While Oil Allowance is specified in volume terms, the monetary value used in calculating tax payments is derived by multiplying the volume allowance by a price derived from average contract receipts which covers both capacity and commodity payments. Hence, for low levels of production the monetary value of Oil Allowance is high because of the capacity payment, and as production increases the monetary value of the allowance falls. Therefore, while PRT is always levied at 50% of taxable profits, increasing production results in a lower value of Oil Allowance and hence a larger absolute tax bill for the producer, lowering post tax revenues and profits.

[48] PRT is assessed on a half yearly basis.

marginal rate of tax for such production varies as production increases, and under certain assumptions can exceed 100%.

5.59. The relationship between profit after PRT and production is highlighted in Figure 5.6 below, which shows a stylised example of the way in which post-tax profit may vary with production for gas sold under a contract with a significant capacity fee.

Figure 5.6 – Relationship between profit after PRT and production[49]



5.60. The implication of this additional feature of the PRT regime is that, for fields where Oil Allowance has not been exhausted, even without the maximum volume limitation in the contracts, as long as the significant capacity payment remained in place there would be a weaker incentive to increase production.

5.61. Ofgem has analysed the impact of all aspects of taxation on the overall revenue stream from Sean under both the scenario in which the Sean contracts are in place and the scenario in which they are not. The estimated impact of tax is to reduce the difference in value to the sellers of the "with contracts" and "without contracts" scenarios by a factor of 3.5.

[49] Source: Ofgem

5.62. In this respect, when the effects of taxation are taken into account, the difference in value between the with and without contracts scenarios is lower, and the actual incentives to increase production to a value maximising level without the contracts in place, may be lower than indicated by the modelling described above.

Conclusions on price and volume clauses

5.63. The results from Ofgem's analysis and modelling presented in this chapter indicated that the price and volume clauses in the Sean contracts could result in gas being withheld from the market in future years relative to the case in which the contracts were not in place. This withholding effect could increase wholesale gas prices and harm customers who would have to pay these higher wholesale prices. Our initial analysis indicated that this impact could be material.

5.64. However, considering the full range of additional factors which would influence the actual flow of gas from the Sean fields in the absence of the current contracts, there are good reasons to consider the results overstate likely production in the early years under this scenario. In particular, the impact of taxation and option value are likely to increase the cost of such early production and therefore imply that any withholding effect is likely to be small and immaterial.

5.65. Having undertaken quantitative analysis to assess the relative magnitude of the additional factors[50] described above, Ofgem has concluded that the price and volume clauses in the contracts are unlikely to have any material adverse effect on gas market prices.

Exclusivity and contract duration

5.66. The potential concern in relation to the exclusive nature of the contracts is whether it led to the foreclosure of supply of gas from the Sean fields to other potential buyers. As noted above, this would be a matter for concern if, *inter*

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[50] This quantitative analysis is not presented here as it is based on confidential information provided to Ofgem by the companies, however, some numbers are provided.

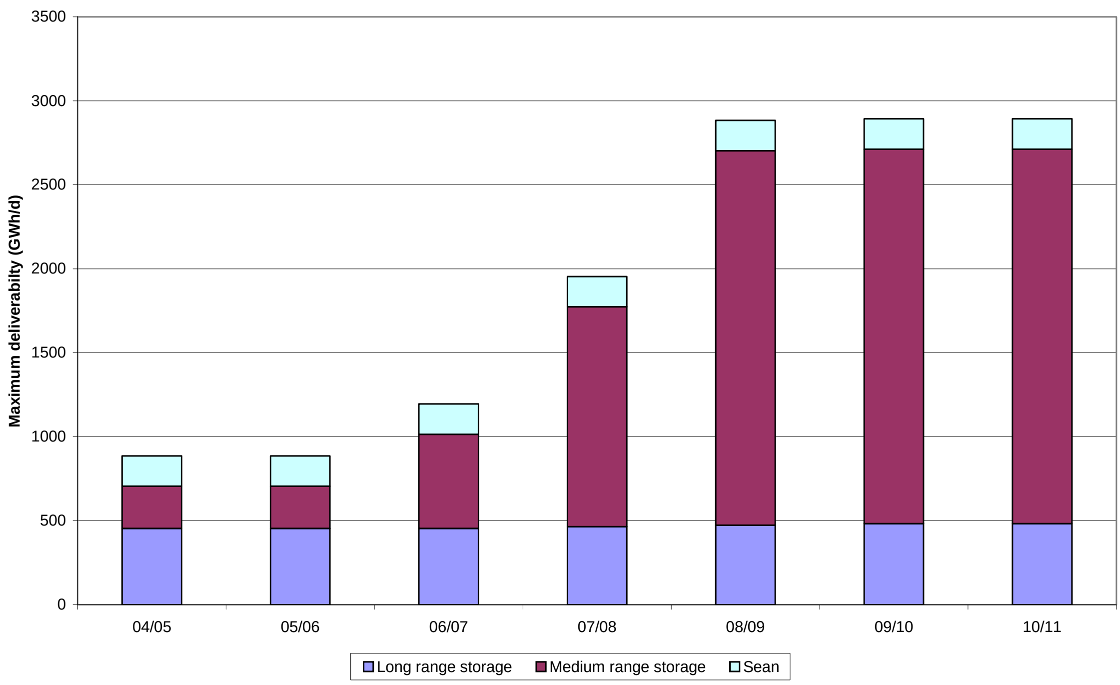
alia, there were limited substitute sources of flexible gas available to shippers on reasonable terms.

5.67. However, Ofgem does not believe that there are particular concerns related to the exclusivity and duration of the contracts in this case as:

- there are a number of alternate sources of flexibility including for example, capacity in Rough[51], interconnector capacity, medium range storage capacity and customer interruption. Figure 5.7 below illustrates the way in which flexibility may evolve over time; and

- shippers could purchase gas from Centrica at the NBP which matches the flow capability of the Sean field and provided Centrica made this gas available on reasonable terms,[52] there would have been no physical foreclosure to Sean gas.

Figure 5.7 – Evolution of sources of flexibility[53]



Factors determining the effect of the contracts

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[51] While Rough is owned by Centrica, the undertakings required by the Competition Commission imply that at least 80% of capacity is made available by Centrica to third party shippers.

[52] If Centrica were believed to be dominant, failure to make this gas available could constitute abuse of a

5.68. The conclusions in relation to the impact of the price and volume clauses in the contracts depend on a number of assumptions in relation to a range of wider energy market factors. The most important of these are:

- oil prices;
- gas supply-demand balance; and
- gas demand (which is largely weather-driven).

5.69. A significant change in any of these factors from estimated values could result in a change to the likely impact of the Sean contracts from that presented above.

5.70. Therefore, while the contracts do not appear to have an impact given reasonable assumptions in relation to current and future market conditions, a significant change in these energy market fundamentals could affect this conclusion. Although Ofgem has concluded that there were not any observed effects on the market of the existence of the Sean contracts, Ofgem will be continuing to monitor the market, including the Sean contracts, as part of its ongoing market surveillance activities. Ofgem plans to place particular emphasis on assessing whether the assumptions on which the above analysis is based will continue to be observed in the future.

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dominant position, and be subject to separate regulatory intervention.

[53] Source: Ofgem

6. Conclusions and Way forward

6.1. As outlined in chapter 1, in response to concerns expressed by customers and market participants, Ofgem undertook preliminary analysis into wholesale gas prices in November 2003, following significant increases in prompt and forward prices. Ofgem's preliminary analysis concluded that, on the basis of the information available to it, basic market fundamentals could not explain the increases in wholesale gas prices.

6.2. This chapter summarises Ofgem's conclusions from that investigation which were presented in its May 2004 and October 2004 documents, and are also outlined in chapter 1 of this document, as well as Ofgem's conclusions from the subsequent informal probe into the Sean sales contracts, which have been presented in the preceding chapters of this document.

Initial conclusions – May 2004

6.3. In May 2004 Ofgem outlined, in its initial conclusions document, seven possible features or 'price drivers' of the gas market that may have operated during October and November 2003 to either lead to the increase in wholesale gas prices or to have maintained the higher prices. These 'price drivers' were identified as:

- **Changes to the composition of supply** – this related to concerns regarding low beach supplies, the use of storage and the behaviour of the gas interconnector, which remained in export mode for much of October 2003.
- **Higher levels of demand** – this questioned whether higher wholesale gas prices were due to higher-than-expected demand.
- **Alleged manipulation of linepack within-day** – this questioned whether shippers were profiling gas supplies to create an impression that the NTS was short of gas.
- **Price movements in linked commodity markets** – this questioned whether higher prices in the power gas, coal or gas oil markets could have contributed to the rise in gas prices.
- **Alleged manipulation of market prices** – this included concerns that market participants may have posted 'false' bids on the electronic platforms and

submitted false information on trades to providers of benchmark prices to influence prices.

- **Decrease in market liquidity** – this questioned whether the exit of major market players meant that a few players were able to influence prices.
- **Market sentiment** – this questioned to what extent the mood or feeling of the market was responsible for the price rather than market fundamentals.

6.4. In the May document, Ofgem concluded that of the seven price drivers originally identified, it had a number of outstanding questions in relation to one of these potential price drivers, the composition of gas supply. These questions related to:

- The low level of beach supplies; and
- The delay in the switch to importation of gas across the interconnector.

Conclusions and next steps – October 2004

6.5. Ofgem presented its outstanding conclusions and next steps in a further document published in October 2004. This October document also set out an update on further increases in wholesale gas prices since the publication of the May document. As a result of these prices increases, Ofgem extended the matters to be considered by its probe to cover prompt wholesale gas prices between July and September 2004 and forward wholesale gas prices for the 2004/05 winter period.

Level of beach supplies

6.6. In its October document, Ofgem was able to explain the apparently low level of UK beach gas supplies during the period October/November 2003. Available gas supplies were 40 per cent lower than in the previous year. 18 per cent of this was the result of a year on year decline in the rate at which ageing gas fields could produce gas, and 18 per cent was the result of both planned and unplanned maintenance.

6.7. Ofgem concluded that the remaining reduction, which represented four per cent of peak day supplies, was the result of contractual arrangements which may have prevented gas that was physically available from flowing. In relation to this possible effect, Ofgem undertook a further informal enquiry. The conclusions of this informal enquiry have been presented in this document.

UKCS contractual arrangements: The Sean contracts

6.8. As noted above, subsequent to the October document, Ofgem undertook an informal enquiry into the contracts which were highlighted as potentially preventing the flow of gas which was physically available. This informal inquiry concentrated on the Sean contracts which were the most material (in volume terms) of the contracts highlighted. At the time these represented around four per cent of peak day supplies.

6.9. Ofgem undertook a detailed assessment of the conduct of the counterparties to the Sean contracts and of the contractual arrangements themselves with the co-operation of the three producers associated with the field, Shell UK Limited, Esso Exploration and Production Limited (ExxonMobil) and BP, and the buyer of gas from the Sean fields, Centrica plc.

6.10. The nature of the Sean contracts are outlined in chapter 3 of this document and Ofgem has presented its conclusions with respect to Centrica's use of these contracts in chapter 4 of this document and with respect to the effects of the Sean contracts on the gas market in chapter 5 of this document. These conclusions are summarised below.

Centrica's use of the Sean contracts

6.11. Ofgem has concluded that there is no indication that Centrica's exercise of the Sean contracts has been significantly different from that which could be expected from a stand alone trader (i.e. that Centrica does not appear to have taken into account its wider portfolio in determining how to exercise its contractual rights). Historically, then, it does not appear that Centrica's exercise of the contracts has resulted in gas being withheld from the market unreasonably.

Analysis of the effects of the Sean contracts on gas prices

6.12. Ofgem's analysis concluded that the contracts do not at present appear likely to have a material adverse impact on the GB gas market, given reasonable assumptions in relation to current and future market conditions and considered against the counterfactual of an un-contracted Sean field. However a significant change in gas market conditions could affect this conclusion.

6.13. The conclusions in relation to the impact of the price and volume clauses in the contracts depend on a number of assumptions in relation to a range of wider energy market factors. The most important of these being:

- oil prices;
- gas supply-demand balance; and
- gas demand (which is largely weather-driven).

6.14. A significant change in any of these factors from estimated values could result in a change to the likely impact of the Sean contracts from those presented in chapter 5 of this document.

6.15. Although Ofgem has concluded that there were not currently any observed effects on the market of the existence of the Sean contracts, it intends to keep a "watching brief" on these contracts as part of its ongoing market surveillance activities. In particular, Ofgem will continue monitoring:

- Centrica's use of the Sean contracts as part of its ongoing market surveillance activities; and
- the Sean contracts as a whole as part of its ongoing market surveillance activities. Ofgem plans to place particular emphasis on assessing whether the assumptions on which the analysis, presented in chapter 5, is based will continue to be observed in the future.

6.16. If, as part of this ongoing monitoring of the Sean contracts, Ofgem discovers that the parties to the Sean contracts are acting in a way which adversely effects the gas market then, if applicable, Ofgem will consider which of its powers are appropriate to address any such behaviour.

Use of the interconnector

6.17. Ofgem also, in the October 2004 document, presented its conclusions in relation to the delay in the switch to the importation of gas across the interconnector. Ofgem's analysis confirmed that the interconnector appeared to operate as would be expected in response to relative prices in Belgium and Great Britain, and that no company using the interconnector sought to manipulate the direction of flow.

6.18. However, Ofgem's analysis concluded that a number of features of some gas markets in continental Europe meant that some gas could not be traded at the Zeebrugge Hub in Belgium which could otherwise have allowed arbitrage and so reduced NBP prices. These included :

- higher demand due to cold weather in several European countries; and
- an increased requirement for gas to be placed into store in Europe ahead of winter because of operational problems on the interconnector before the period covered by Ofgem's investigation.

6.19. Further, Ofgem was not, on the basis of the information available to it, able to answer a number of important questions:

- whether any of the European gas companies withheld surplus gas supplies and prevented more gas flowing to the UK;
- whether European gas companies withheld transportation capacity on the European pipeline networks and prevented more gas flowing into the UK; and
- whether European gas companies' decisions to continue to place gas in store, rather than sell it to the UK, were reasonable given their forecast customer demand and supply contracts for that winter.

6.20. As noted in chapter 1, Ofgem shared its analysis with the European Commission and other regulators at the time. Subsequently, on 13 June 2005, the European Commission commenced an inquiry into competition in gas and electricity markets. The main objective of the European Commission's inquiry is to gather information to identify possible distortions of competition, with its main results being published in 2006. Ofgem has been actively contributing to the inquiry, including through the secondment of senior Ofgem personnel.

Way forward

6.21. As noted above, market surveillance is a key part of Ofgem's role. Ofgem continually monitors all aspects of the wholesale energy markets for any signs of anti-competitive behaviour and as outlined in chapter 2 has powers to take action against companies who are found to have behaved anti-competitively.

Appendix 1 Ofgem's formal powers

Competition Act 1998

1.1 The Competition Act 1998 prohibits anti-competitive agreements and abuse of a dominant position where such agreements or conduct may affect trade within the United Kingdom (respectively the Chapter I and Chapter II prohibitions). The Competition Act 1998 also provides for investigations into, and enforcement action in respect of, the European Community competition law equivalents of Chapter I and Chapter II. These are Articles 81 and 82 of the EC Treaty which respectively prohibit anti-competitive agreements and conduct where such agreements or conduct may affect trade between Member States.

1.2 The OFT and the Authority are able to enforce the Chapter I and Chapter II prohibitions, as well as Articles 81 and 82, using their powers under the Competition Act 1998. Section 36A(3) of the Gas Act 1986 provides that the Authority has concurrent jurisdiction with the OFT under the Competition Act 1998 in relation to anti-competitive agreements and conduct, in terms of both domestic and European competition laws. Section 36A(4) of the Gas Act 1986 provides that this concurrent jurisdiction exists where such agreements and/or conduct relate to the carrying on of (essentially) activities that the Authority licences and activities ancillary to these activities.

1.3 Chapter I prohibits agreements between undertakings, decisions by associations of undertakings or concerted practices, which have as their object or effect the prevention, restriction or distortion of competition within the United Kingdom and which may affect trade in the United Kingdom. Chapter II prohibits conduct by one or more undertakings which amounts to the abuse of a dominant position in a market in the United Kingdom which may affect trade within the United Kingdom. Articles 81 and 82 essentially prohibit the same kinds of agreements and conduct where such agreements or conduct may affect trade between Member States.

1.4 Under the Competition Act 1998 the Authority has the power to impose financial penalties for breaches of the Chapter I/Chapter II and Article 81/82 prohibitions.

Exclusions/Exemptions from the operation of Chapter I/Article 81

1.5 Historically, a number of exclusions existed with regards to the applicability of Chapter I to certain vertical agreements:

- Certain agreements, relating to gas won under the authority of petroleum production licence, were excluded from the operation of Chapter I (or equivalent legislation) by virtue of section 62 of the Gas Act 1986 (or similar earlier provisions). Section 62 has now been repealed[54] and this exclusion ceased to operate on 1 March 2005; and

- Vertical agreements were also 'block' excluded from Chapter I by virtue of the Competition Act 1998 (Land and Vertical Agreements Exclusion) Order 2000. This exclusion order was revoked with effect from 1 May 2005.[55]

1.6 Chapter I/Article 81 will not apply to agreements that satisfy, respectively, the requirements of section 9 of the Competition Act 1998 or Article 81(3).[56] These requirements are essentially that the agreement contributes to improving production or distribution, or promoting technical or economic progress, allows consumers a fair share of the resulting benefit, and does not contain restrictions that are not indispensable to the attainment of those objectives or give the undertakings concerned the possibility of eliminating competition in respect of a substantial part of the products in question.

Enterprise Act 2002

1.7 The Authority and the OFT also have concurrent jurisdiction under section 131 of the Enterprise Act 2002 to make market investigation references to the Competition Commission. A reference can be made where the Authority (or the OFT) has reasonable grounds for suspecting that any feature of a market in the United Kingdom prevents, restricts or distorts competition. A feature of the

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[54] SI 2000/311, Article 18.
[55] SI 2004/1260, Article 2.
[56] Including the application of Article 81(3) by means of a relevant Commission "block exemption".

market can relate to either the structure of the market or the conduct of participants.[57]

European Commission and National Competition Authorities

1.8 The division of case work between Member States is the responsibility of the Commission and Member States' competition authorities inside the European Competition Network (ECN).[58] Since May 2004, the European Competition Network has brought together National Competition Authorities (NCA), along with the European Commission, to co-ordinate the application of modernised European competition law under Council Regulation (EC) 1/2003. In consequence of the modernisation of this law, NCAs are empowered to apply European law directly. The main criteria for which authority should take on a case is effectiveness: a competition authority is considered to be well placed to handle cases if it can effectively investigate and bring to an end an infringement that arises in or affects its territory.[59]

1.9 A case could potentially be handled by one NCA, by several NCAs acting together, or by the Commission. A case is more likely to be handled by the Commission where the case covers more than three Member States, when it involves a Community interest or could further an important legal principle.[60]

Ofgem's information gathering powers

1.10 When investigating potential infringements under the Competition Act 1998, the Gas Act 1986 and the Electricity Act 1989, or issues under Part 4 of the Enterprise Act 2002, the Authority may need to seek information from various undertakings and other relevant persons. When requesting information, the Authority will specify the potential infringement it is investigating and the legal instrument under which the questions are set. Where more than one of the Authority's powers (Article 81, Article 82, the Chapter I prohibition or the Chapter II prohibition or sector specific powers) is considered to be potentially appropriate the Authority may make separate information requests under each of

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[57] Section 131(2)(a) (b) and (c) of the Enterprise Act 2002.
[58] See paragraphs 1 to 3 of Commission Notice on cooperation within the Network of Competition Authorities, 2004/C 101/03.
[59] Ibid, paragraphs 8 – 11.

these legal instruments. This will enable the Authority to decide which specific power(s) are likely to be the most appropriate to address the conduct or agreement concerned.[61]

1.11 If it becomes clear to the Authority when conducting its investigation that a particular power is no longer appropriate to the particular case, it will cease to request information under the respective power and will inform the undertaking concerned. Also, the Authority will inform an undertaking if a new infringement is suspected after the investigation has commenced, which may affect the powers the Authority considers could be appropriate to address the suspected infringement(s).[62]

1.12 Where information has been gathered using powers under the Competition Act 1998, the Authority may use information gathered to investigate other matters under the Competition Act 1998, the Gas Act 1986 and Electricity Act 1989, or Part 4 of the Enterprise Act 2002, subject to and in accordance with the provisions of these Acts, relevant EC legislation and case law. Where information has been received from the European Commission or an NCA in another Member State, the Authority may only use this information for the following purposes:

- the application of Article 81 or 82 in relation to the subject matter for which it was collected; or
- the parallel application of national competition law to a case which is being considered under Article 81 or 82 and will lead to the same outcome.[63]

Disclosure of information

1.13 Part 9 of the Enterprise Act 2002 sets out a general restriction on disclosure of information obtained by a public authority in connection with the exercise of functions under or by virtue of, amongst other things, the Competition Act 1998.

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[60] Ibid, paragraphs 14 and 15.
[61] Office of Fair Trading, *Application in the Energy Sector: Understanding Competition Law*, January 2005, paragraph 4.5, page 23.
[62] Ibid, paragraph 4.6, page 23.
[63] Ibid, paragraph 4.7, pages 23 – 24, footnotes from original source omitted.

The Enterprise Act 2002 requires that such information relating to the affairs of an individual or any business of an undertaking must not be disclosed during the lifetime of the individual, or while the undertaking continues, unless the disclosure is permitted under Part 9 of the Enterprise Act 2002.[64]

1.14 Disclosure is permitted in a number of circumstances, including where the disclosure:

- is made with the consent of the person who provided the information, and the consent of the person or business to whom the information relates;[65]
- is required for the purpose of a Community obligation;[66] or
- is made for the purpose of facilitating the exercise by the authority of any function it has under an enactment[67].

1.15 Section 105 of the Utilities Act 2000 sets out a general restriction on the disclosure of information obtained under or by virtue of, amongst others statutes, the Utilities Act 2000, and Part I of the Gas Act 1986 and the Electricity Act 1989. Section 105 is broadly the same as Part 9 of the Enterprise Act 2002 containing similar 'gateways' which permit the disclosure of information falling within the ambit of the general restriction on disclosure. Information obtained by the Authority in the exercise of functions which are exercisable concurrently with the OFT under Part I of the Competition Act 1998 is subject to Part 9 of the Enterprise Act 2002.[68]

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64 See further: Office of Fair Trading, *Powers of Investigation: Understanding Competition Law*, December 2004, paragraphs 6.8 – 6.13, pages 20 – 22.
65 Section 239.
66 Section 240.
67 Section 241 of the Enterprise Act 2002
68 Utilities Act 2000, section 105(11).

Appendix 2 Parties to the Sean contracts

2.1 The current status of each of these parties is discussed below.

British Gas Corporation / Centrica

2.2 The British Gas Corporation was privatised in 1986 as British Gas plc. In 1997, the shareholders of British Gas plc approved the demerger of Centrica plc. Centrica plc comprised the gas supply, services and retail businesses of British Gas plc, together with the gas production business of the North and South Morecambe gas fields. The other upstream exploration and production business of British Gas plc, along with the gas network assets, was renamed BG plc (restructured and renamed as BG Group plc in December 1999). As a consequence of the demerger, Centrica plc is now the buyer under the Sean contracts.

Esso Exploration & Production Ltd

2.3 Esso Exploration & Production Limited is an ExxonMobil group company, and continues to have rights to a 25 per cent share of gas from the Sean fields.

Shell UK Limited

2.4 Shell UK Limited is a company in Royal Dutch Shell plc and continues to have a 25 per cent share of gas from the Sean fields.

Britoil Plc / BP

2.5 In 1987 BP successfully bid for Britoil plc, a large independent oil exploration and production company, which had extensive interests in the North Sea. As a consequence of the acquisition, BP gained rights to 25 per cent of the Sean fields.

Union Texas / BP

2.6 In 1999, BP successfully bid for the Atlantic Richfield Company (ARCO), Union Texas's parent company. Following the merger BP group now holds a 50 per cent share in the Sean fields.

Appendix 3 Activities of the parties to the Sean contracts

3.1 Table A3.1 shows the sectors of the energy industry in which the parties to the Sean contracts participate. Table A3.2 shows the share of UK gas production held by each of the parties to the Sean contracts.

Table A3.1 : Up and down-stream activities/interests of group companies at the time of the informal gas probe.[69]

	Exploration /Production	LNG Terminal	Shipping /Supply	Trading[70]	Storage	Electricity generation	I&C sales	Domestic sales
Centrica	✓		✓	✓	✓	✓	✓	✓
Shell	✓		✓	✓		✓	✓	
Exxon-Mobil	✓	✓	✓	✓				
BP	✓	✓	✓	✓		✓		

Table A3.2: Parties to Sean contracts - share of UKCS production at the time of the informal gas probe.

GROUP	SHARE OF UKCS PRODUCTION[71]
Centrica	9%
Shell	11%
BP	13%
ExxonMobil	14%
All	**47%**

69 Source: Ofgem

70 In the table 'Trading' means the buying and selling of gas in the wholesale market (including the On the Day Commodity Market) for financial and/or physical purposes.

71 Source: Wood Mackenzie Corporate Analysis Tool database, 2004 UKCS Gas Production data. Share of UKCS gas production based on equity ownership of UKCS production assets

Appendix 4 Ofgem's understanding of the original rationale for the Sean contracts

4.1 This annex sets out Ofgem's understanding of the original context and rationale for the Sean contracts.

4.2 The basis for any long-term sales contract backed by the physical production of gas will be the need to establish a certain, profitable method for the field owners to generate revenue from their assets.

4.3 Gas exploration involves significant up-front costs whether or not gas is discovered. In addition, the construction of production assets and transportation assets (in this case a pipeline from the field to the Bacton terminal) involves considerable up-front expenditure on long-lived assets. Construction of the production assets at the Sean fields cost around £612million in 2005 terms.[72]

4.4 In the absence of a sales contract that would ensure an appropriate return on the capital expenditure incurred by the producers, the producers would face a large up-front expenditure and an uncertain income stream from those assets. As such, a contract of an appropriate length, at pre-agreed prices, reduces the risk borne by producers.

4.5 The UK Offshore Operators Association (UKOOA) has estimated that up to 75 per cent of gas produced is sold to shippers at beach head terminals under medium to long term contracts.[73]

4.6 Against this background, a significant part of the original rationale of the Sean contracts may be explained with reference to the position of the British Gas Corporation at the time of entering the Sean contracts.

4.7 In order to deliver gas from the Sean fields to the closest gas market, the producers would have had to agree sales contracts with British Gas Corporation, who at the time held a statutory monopoly in the transportation and sale of gas in the UK.

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[72] Source: The information was obtained from Energyvision UK Upstream, Sean Key Facts ™, a product of

4.8 British Gas Corporation's incentives at the time of entering into the Sean contracts were unlikely to have been strictly commercial, in contrast to the incentives that its successors face under the current market framework.

4.9 It appears that British Gas Corporation contracted gas from fields in one of two ways to match their profile of contractual rights to the profile of their customers' gas demand:

- inflexible fields, largely those with associated oil production, were contracted under seller-nominated contracts and provided "base load" supplies; or

- relatively flexible fields, largely those producing from gas-only reservoirs, were contracted under buyer-nominated contracts with pre-defined levels of seasonal swing.

4.10 Within this framework, the Sean fields were contracted to provide short-term flexibility to the British gas market, to enable British Gas Corporation to meet volatile demand and to meet the risk of significant reductions in supply (outages) from other gas sources. It is likely that the structure of the contracts was driven, in part, by the desire to maintain supply of flexible gas over a significant period of time (e.g. by limiting production to a relatively small number of days in any given year). Equally, the counterparties to the Sean contracts have indicated that British Gas Corporation's requirements also affected the development of the assets, arguing that they were developed in a way that maximised the provision of flexibility to the market thereby potentially avoiding the cost to British Gas Corporation of investing in the development of additional storage capacity.

Wood Mackenzie.
[73] UKOOA's submission to the Trade and Industry Committee – Inquiry into Fuel Prices (Nov 2004)

Appendix 5 Parties' comments on the Gas Probe Conclusion Document

5.1 As stated in Chapter 1 of this document, the views expressed in this document are the views of Ofgem. As Ofgem did not share its analysis with Shell UK Limited, Centrica, BP and ExxonMobil, we invited these parties to outline their comments in respect of the Gas Probe Conclusions document for inclusion in an annex to the document. The views received from BP and ExxonMobil are directly incorporated below. Ofgem did not receive any views from Shell UK limited or Centrica for inclusion in this annex.

BP comments

"BP is a 50% owner of the Sean Field through interests obtained in the acquisitions of Britoil and Arco British Limited.

BP has cooperated with Ofgem's probe into the Sean field throughout and is pleased that this report again makes clear the decision of the Authority in June that there is no reason to take further action in respect of the sales contracts and to close the probe.

BP considers that the Sean field provides an excellent service to the UK gas industry representing an important component of the market providing significant capacity to respond to periods of peak winter demand.

Whilst BP welcomes the fact that the probe has been closed it wishes to make clear that it was not a party to the analysis undertaken by Ofgem and that it does not agree with the analysis undertaken nor with some conclusions of this report.

BP considers that the Sean Field and the associated sales contracts provide material benefit to the GB gas market and that this conclusion is robust to all reasonable assumptions in relation to market conditions and to changes in energy market fundamentals."

<u>ExxonMobil Comments</u>

"Ofgem invited ExxonMobil to provide summary comments for inclusion in this Annex.

***Closure of Probe**.*

ExxonMobil welcomed the decision taken by the Gas and Electricity Markets Authority on 23 June 2005 to close the Gas Probe.

Ofgem Analysis

Ofgem have stated in this document that the analysis undertaken is their own and have acknowledged to us that it is not accepted or agreed by any of the parties to the Sean contracts. ExxonMobil believe that Ofgem should consult with industry on the details of the analytical model that it is using to evaluate potential effects of contracts on the market and the legal basis of such application.

Legal Basis

At all times during the course of the probe, ExxonMobil has maintained its position that the Sean field arrangements and contracts are entirely consistent with applicable law, including applicable European and UK Competition law. ExxonMobil has been advised by Ofgem that in undertaking the gas probe, including their review of the Sean field arrangements and contracts, neither Ofgem nor the Authority took any formal view as to whether there were reasonable grounds to suspect an infringement under the Competition Act; there was no consideration of the prohibitions contained in the Competition Act; and the procedural steps set out under the Competition Act were neither required nor undertaken.".