Proposed Incentive Arrangements for the Provision of NTS Entry Capacity at Milford Haven

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Overview:
This document consults on the proposed introduction of new incentive arrangements for National Grid Gas plc as gas transporter in respect on the National Transmission System ("National Grid Gas NTS") in relation to the provision of gas transmission capacity at the new system entry point at Milford Haven. National Grid Gas NTS has sold gas transmission capacity at this entry point which may now be delivered later than envisaged at the time of the auctions. Any incentives should:

- encourage National Grid Gas NTS to provide new capacity in a timely and efficient manner
- ensure that the costs of any delays are shared between consumers, shippers and National Grid Gas NTS in an appropriate way, and
- provide a baseline against which shippers and the developers of LNG supply chain can plan their activities.
- be specific to Millford Haven and not impact on other price control decisions.

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Target Audience: National Grid Gas NTS, gas shippers and suppliers, representatives of consumers and any other interested parties.

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Context

In the quarterly system entry capacity (QSEC) auctions in 2004 National Grid Gas NTS sold between 452 GWh/day for the quarter beginning October 2007 and 650 GWh/day for the quarter beginning October 2008 of gas transmission capacity at Milford Haven. Up to 950 GWh/day has been sold in respect of subsequent years. Around 240 GWh/day of transmission capacity should be delivered in 2007 but the reinforcement investment required for additional capacity may not be completed until 2008.

If National Grid Gas NTS is unable to provide capacity which it has sold on a firm basis then it is subject to liabilities under the provisions of the Uniform Network Code (UNC). Given the potential for disruption to Liquefied Natural Gas (LNG) supply chains the costs of this disruption could be relatively large. The present incentive arrangements include a cap on National Grid Gas NTS's liability for these costs of £12½ million in each formula year, with any remaining costs being recovered across all shippers and consumers. It was originally envisaged that these incentives would be revised during the main transmission price control review and new incentives put in place from April 2007.

The process for planning and construction of the reinforcement work necessary to provide the capacity is already underway. Any new regulatory arrangements should further increase the incentives on National Grid Gas NTS to deliver the transmission system reinforcement in a timely way. In these circumstances it is appropriate to look at strengthening the incentive arrangements in the next few months, ahead of the main transmission price control review that is due to conclude toward the end of 2006.

Associated Documents

Two UNC modification proposals (0036 Limitation on Incremental capacity Offered in QSEC Auctions and 0043 Limitation on Offering for Sale Unsold Capacity) were approved by Ofgem in October 2005. These clarified the obligations on National Grid Gas NTS so that further NTS entry capacity will not be sold at Milford Haven unless it is reasonably certain that such capacity can be delivered.

This consultation only deals with the incentives on National Grid Gas NTS to deliver entry capacity at Milford Haven. Wider issues relating to the incentives on National Grid Gas NTS (including those relating to buyback costs at other entry points) will be dealt with in the transmission price control review.

Reports by Ofgem's engineering consultants Penspen on the gas transmission reinforcement investment required for Milford Haven has been published alongside this consultation paper.

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Summary

Background

Two major Liquefied Natural Gas (LNG) terminals are being developed at Milford Haven. Taken together these terminals should be able to meet around 25 percent of the demand for gas in Great Britain.

In the quarterly system entry capacity auctions in 2004 National Grid Gas NTS sold capacity to the shippers that intend to take gas from these terminals. Total capacity sales were between 452 GWh/day for the quarter beginning October 2007 and 650 GWh/day for the quarter beginning October 2008 of gas transmission capacity at Milford Haven. Up to 950 GWh/day has been sold in respect of subsequent years. Around 240 GWh/day of capacity should be delivered in 2007 but the reinforcement investment required to provide 650 GWh/day of capacity may not be completed until 2008.

If National Grid Gas NTS is unable to provide physical capacity that it has sold on a financially firm basis then there are arrangements within the uniform network code (UNC) that provide for the buyback of this capacity. As the potential shortfall in capacity is large and may extend over a number of months the potential liabilities created by these arrangements may be substantial.

Although the present price control arrangements include a mechanism designed to incentivise National Grid Gas NTS to minimise buyback costs these arrangements are due to expire on 31 March 2007 and so are due for review and possible replacement with new incentives from 1 April 2007. The present arrangements are based on a sliding scale with a £12½ million cap on the liabilities that can accrue to National Grid Gas NTS in any formula year. Any further costs would be recovered from shippers that in turn would seek to recover these costs from suppliers and consumers.

The process for planning and construction of the reinforcement work is already underway. Any new regulatory arrangements should be designed to increase the incentives on National Grid Gas NTS to deliver the transmission system reinforcement in a timely way. In these circumstances it is appropriate to look at policy options for strengthening the incentive arrangements in the next few months, ahead of the main transmission price control review that is due to conclude toward the end of 2006 and take effect from 1 April 2007.

Completion of NTS Reinforcement

Ofgem has employed the engineering consultants Penspen to review National Grid Gas NTS's estimates of the costs and timetable for the reinforcement. Penspen have estimated that using two contractors and four construction spreads National Grid Gas NTS should be able to complete the reinforcement work by the end of 2007. Nevertheless, this assessment is based on a number of important underlying assumptions. If circumstances are such that these assumptions do not hold capacity may not be available until 2008. Penspen estimate the cost of the connecting

pipeline and reinforcement to provide 650 GWh/day of capacity will be around £490 million in 2005 prices.

Costs of delay

If the completion of the reinforcement work is delayed then National Grid Gas NTS will need to buy back any capacity that it has sold to shippers and cannot deliver. The costs of such delay will depend on a range of factors including the revised target date for the commissioning of the reinforcement investment and the price of gas in GB and overseas. Initial estimates suggest that if the reinforcement investment is delayed from October 2007 to December 2007 then the costs of the disruption will be relatively modest. However, if it were delayed to the end of the first quarter of 2008 the costs could be relatively large.

Existing incentives in place in relation to entry capacity buyback, would be strengthened if National Grid Gas NTS were liable for a higher proportion of buyback costs.

New Incentives

Ofgem are proposing four alternative options for the revised incentive scheme. Option A is to expose National Grid Gas NTS to £12 million of any buyback costs arising before 1 January 2008 and expose it to buyback costs after this date with a cap on its liabilities of £24 million. The same sharing factor (35 percent) would apply to costs as now and the target level of costs would be zero - reflecting the desirability of National Grid Gas NTS delivering capacity consistent with the original timetable.

It might also be appropriate to consider whether the payments that National Grid Gas NTS might make under these arrangements should be profiled on a monthly basis in the form of a series of monthly caps that would prevent the incentive scheme becoming exhausted if high buyback costs were incurred. Option B could involves caps of £4 million for each of the 3 months October 2007 to Dec 2007 and then £8 million per month January 2008 to March 2008, giving a total liability of no more than £36 million. After this any buyback costs would be spread across all shippers and so consumers. Option C would involve caps of £2m for each of the 3 months October 2007 to Dec 2007 and then £8 million per month January 2008 to March 2008 and £1m per month from April 2008 to September 2008. Option D would involve caps of £2m for each of the 3 months October 2007 to Dec 2007 and then £6 million per month January 2008 to March 2008 and £2m per month from April 2008 to September 2008.

It may also be appropriate to consider arrangements such that National Grid Gas NTS is not subject to costs in relation to matters without its control.

Views are sought on the incentives proposed in this document.

1. The NTS Entry Capacity Regime

Chapter Summary

This chapter describes the main features of the present price control, incentive and commercial arrangements for NTS entry capacity. In particular it deals with
(a) baselines for entry capacity at existing terminals
(b) Quarterly System Entry Capacity (QSEC) auctions and incremental capacity
(c) capacity buyback incentives, and
(d) NTS TO Commodity Charges.

Background

1.1. The present price control and incentive arrangements were initially put in place following the 2001 Transco price control review. They were designed to provide incentives on what is now National Grid Gas NTS to invest in the gas National Transmission System (NTS) in a timely and efficient manner. The entry capacity auctions were designed to ration scarce capacity efficiently and to allow shippers to signal their long term needs with respect to future entry capacity.

Baselines for Entry Capacity at Existing Terminals

1.2. At the last price control review Ofgem based National Grid Gas NTS's transmission operator (TO) price control revenue on a range of entry and exit capacity output measures for each of the five years control period. The level of maximum physical capacity at each existing NTS entry point defined the TO baseline for entry capacity. Ofgem also defined a System Operator (SO) entry baseline calculated as ninety percent of the TO entry baseline.

1.3. National Grid Gas NTS's transmission operator (TO) price control revenue comes half from entry charges and half from exit charges. Entry charges are largely determined in long-term and short-term auctions.

1.4. National Grid Gas NTS is obliged to offer for sale the output measures defined within its licence through a series of long-term and short-term entry capacity auctions. Capacity is offered in quarterly blocks in long-term entry capacity allocations and in monthly and daily blocks in the shorter term auctions. Currently National Grid Gas NTS offers 80% of the Initial NTS SO baseline entry capacity figures for sale in long-term entry capacity auctions, whilst the remaining 20% is reserved for release in the shorter-term auctions.

1.5. Reserve prices for the auctions are derived from gross Unit Cost Allowances (UCAGs) contained within National Grid Gas NTS's licence. These UCAGs are proxies for long-run incremental costs and were calculated by Ofgem at the last National Grid Gas NTS price control review for each existing entry terminal. Reserve prices apply in the QSEC auctions, the annual monthly system entry capacity (AMSEC) auctions and the rolling monthly system entry capacity (MSEC) auctions. Reserve

prices for day-ahead entry capacity are set at two-thirds of the Unit Cost Allowance[1] (UCA) and there are no reserve prices for within-day capacity.

1.6. In addition to the requirements to make baseline obligated entry capacity available National Grid Gas NTS must also make available incremental entry capacity (typically 1½ times the SO baseline) available in the QSEC auctions. This allows shippers to signal the need for additional capacity. These arrangements are described in the following section.

QSEC Auctions and Incremental Capacity

1.7. In the case of existing and proposed new entry terminals the UCAGs determine the minimum value of QSEC bids that would justify National Grid Gas NTS releasing capacity above the SO baseline - which is called permanent obligated incremental entry capacity. This will typically require National Grid Gas NTS to invest in new infrastructure and so the provision of this additional capacity is subject to a Net Present Value (NPV) test.

1.8. In the QSEC auctions National Grid Gas NTS offers for sale entry capacity at all NTS entry points in three month blocks for the formula years two to seventeen years ahead of the date of the auction. It provides a price schedule for each entry point that sets reserve prices for capacity up to the baseline levels. For existing entry points capacity above baseline would probably trigger network reinforcement and so the auctions are based on upward sloping price schedules, with additional capacity costing more than capacity below the baseline level. For new entry terminals (i.e. entry terminals which did not exist in 2001) no baseline levels of capacity were set at the last price control review. At these new entry points price schedules would typically (in the circumstances when National Grid Gas NTS would build the connecting pipeline) be downward sloping to reflect the economies of scale in the provision of new capacity. The September 2004 and December 2004 QSEC auctions of capacity at Milford Haven had downward sloping price schedules, set on the basis of UCAGs determined by Ofgem. Since the last price control Ofgem has also determined UCAGs for new entry points at Barton Stacey and Garton.

1.9. National Grid Gas NTS's Incremental Entry Capacity Release (IECR) Methodology Statement specifies that the NPV test requires the aggregate value of bids over eight years to equal at least half the assumed project value. The assumed project value is an estimate of the costs of providing incremental entry capacity and is calculated by multiplying the volume of incremental entry capacity being considered for release by the entry point's UCAG. If the NPV of bids for incremental entry capacity over thirty-two quarters equals at least half the assumed project value for the incremental entry capacity then National Grid Gas NTS will seek approval to release permanent incremental obligated entry capacity. To date Ofgem has approved all such requests that have been made by National Grid Gas NTS. It is then for National Grid Gas NTS to provide the additional network capacity, probably by investing in network reinforcement.

1.10. Consistent with the obligations in its licence in January 2005 National Grid Gas NTS notified Ofgem of its intention to release 650 GWh/day of permanent

[1] The derivation of UCAs from UCAGs is set out in National Grid Gas NTS's licence.

obligated incremental entry capacity from October 2007 and 950 GWh/day from January 2009 at Milford Haven to the shippers that had purchased entry capacity in the Long Term System Entry Capacity (LTSEC) auctions from October 2007. Ofgem did not veto the release of this capacity.

1.11. The UCAG for each entry point determines the reserve prices in the auctions and provides an implicit TO revenue allowance for each entry point. If National Grid Gas NTS raises revenue from auctioning of permanent obligated incremental capacity (i.e. capacity above the baseline) then it is allowed to keep this revenue (for five years) subject to a maximum cap on its real returns of 12.25 percent. This return is calculated as a return on the notional capital expenditure required to provide this incremental capacity (i.e. the UCAG) rather than actual expenditure. National Grid Gas NTS is also guaranteed a minimum real return of 5.25 percent on the notional capital expenditure.

Capacity Buyback Incentives

1.12. National Grid Gas NTS is obliged to offer 90 percent of the TO baseline capacity for sale in the entry capacity auctions (i.e. the SO baseline). The auction arrangements established in the uniform network code allow shippers to acquire certain financial rights to flow gas through entry points onto the NTS. If National Grid Gas NTS cannot provide baseline or permanent obligated incremental capacity that it has sold in an auction it has to buyback such capacity (possibly after interrupting any interruptible entry capacity) either in the daily buyback market or in advance through its capacity management agreements. Typically any buyback of entry capacity would be on the basis of bids made by the shippers that have purchased the entry capacity. National Grid Gas NTS faces an incentive to minimise these costs through capacity buyback incentive arrangements.

1.13. The entry capacity buyback incentive is a sliding scale incentive, with a target level of costs, sharing factors and a cap and collar. Table 1 summarises the key parameters of the buy-back incentive arrangements.

Table 1- Buyback Incentive

Targets, Cap and Collar (£m)					Sharing Factors	
Target 2002/3	Target 2003/4	Target 2004/5 - 2006/7	Cap	Collar	Upside	Downside
35	10-20	18	30	-12.5	50%	35%

1.14. Under the buyback incentive costs are defined as the costs National Grid Gas NTS incurs in buying back entry capacity less the revenue it earns from some types of entry capacity products (on-the-day sales of firm and interruptible NTS entry capacity, sales of non-obligated incremental firm NTS entry capacity) and also revenue from overrun charges (overrun charges are charges levied on a shipper when its total gas flowed at a terminal on a given gas day exceeds its holdings of entry capacity at that terminal on that day).

1.15. The purpose of buyback incentives is to allow National Grid Gas NTS to make efficient trade-offs in deciding to withhold capacity for operational reasons (e.g. maintenance) and to provide incentives to encourage the provision of new capacity

in a timely manner. Therefore, National Grid Gas NTS could choose not to undertake investment associated with the baseline outputs or obligated incremental capacity but in so doing it would potentially be exposed to entry capacity buy-back costs if it sells capacity that it cannot subsequently physically deliver. Because of the caps and sharing factors in the incentive scheme National Grid Gas NTS would need to able to demonstrate that these judgements had been made on a reasonable and efficient basis and were in the interests of consumers.

1.16. National Grid Gas NTS's incentive for deferring investment would be either equal to its allowed revenue (depreciation plus financing allowances) under the TO price control for baseline entry capacity or the revenue earned through its entry capacity incentive for obligated incremental capacity. It could use a proportion of this revenue to buy-back the capacity it has sold but has not physically delivered, allowing it to optimise investment and buy-back costs.

NTS SO Commodity Charge

1.17. In March 2004 National Grid Gas NTS raised pricing consultation 78 that proposed the introduction of a NTS TO commodity charge as a mechanism for dealing with under recovery of NTS price control revenue. This could be due to a number of situations for example where capacity is unconstrained and shippers bid in the short-term entry capacity auctions rather than the long-term entry capacity auctions, which results in lower or even zero reserve prices being applicable. Alternately if National Grid Gas NTS were to incur very large buy back costs then because of the cap on its liabilities the extra costs would be recovered by the SO commodity charge, which is spread across all shippers.

2. NTS Extension and Reinforcement Investment

Chapter summary

This chapter describes the investment required to extend the NTS to Milford Haven and to reinforce the system to allow the transmission of gas from the two Liquefied Natural Gas (LNG) terminals at Milford Haven in volumes consistent with the bids made by shippers in the 2004 QSEC auctions. The timetable for completing the reinforcement investment is particularly challenging and it is possible that there will be delays in the delivery of a proportion of the entry capacity that shippers have bought in the QSEC auctions.

Extending the NTS from Aberdulais to Milford Haven

2.1. The existing NTS network in South Wales consists of a 600 mm pipeline from Tirley on the England / Wales border to Dyffryn Clydach in the west. In 2002 it became clear that proposals to build the South Hook and Dragon Liquefied Natural Gas (LNG) terminals would require the extension of the NTS from Aberdulais (which is relatively close to Dyffryn Clydach) to Milford Haven, involving the construction of a new 128 km connecting pipeline

2.2. In 2002 and 2003 there was uncertainty as to the timing and volumes of transmission capacity that would be required by the new LNG terminals. National Grid Gas NTS relied on the data generated by its Transporting Britain's Energy planning processes in order to plan its investment programme. This indicated around 200 GWh/day of demand in 2007/08 with this demand steadily rising toward 1000 GWh/day by 2013/14. As demand of 200 GWh/day could be accommodated by the network extension and without the need for wider system reinforcement National Grid Gas NTS's immediate plans focused on the development of the connecting pipeline.

2.3. Given concerns expressed by National Grid Gas NTS about the difficulties of constructing the connecting pipeline within an assumed 3 year timetable used in the IECR the terminal developers were asked to enter into a pre-works agreement with National Grid Gas NTS in order to allow the preliminary feasibility work on the connecting pipeline to begin as soon as possible in order to give the best chance of delivery of capacity from October 2007. The first round of the QSEC auctions in September 2004 revealed 350 GWh/day of demand from October 2007 . On this basis National Grid Gas NTS proceeded with its investment plans to construct the connecting pipeline.

Reinforcing the NTS for Milford Haven

2.4. The second round of the QSEC auctions in December 2004 revealed 452 GWh/day of demand from October 2007 rising to around 950 GWh/day in January 2009. This was a more significant increase in demand than that for which National Grid Gas NTS had planned before the auctions. Therefore National Grid Gas NTS looked again at its plans for network reinforcement. These higher levels of capacity required the extensive reinforcement of the NTS in South Wales and

National Grid Gas NTS concluded that the most likely date for the provision of 650 GWh/day of capacity to the LNG terminals would be October 2008.

2.5. In the light of shippers' representations about the disruption to the LNG supply chains that the shortfalls in transmission capacity would create National Grid Gas NTS reinvestigated the options for reinforcing the NTS. It looked at a wide range of options including the construction of a new sub-sea pipeline in the Bristol Channel. A number of these options did not turn out to be practicable but a new route for reinforcement was identified that would have the advantages of requiring less time to construct and avoiding cutting through the centre of the Brecon Beacons National Park. Nevertheless, the costs of the new route are relatively high and there remain uncertainties and difficulties with respect to the timetable.

2.6. Ofgem employed the engineering consultants Penspen to review National Grid Gas NTS's estimates of the costs and timetable for the reinforcement investment and their report has been published alongside this consultation paper.

2.7. Penspen have estimated that if National Grid Gas NTS were to deploy two contractors and four construction spreads (i.e. four work teams) then it should be able to complete the reinforcement work by the end of 2007. This assessment is based on a number of important underlying assumptions including the time required to gain appropriate regulatory consents, local authority approvals and individual agreements required to complete pipeline and above ground installation construction.

2.8. In order to gain such consents National Grid Gas NTS will need to prepare submissions or applications that are of the sufficiently high standards and which demonstrate the regard given to stakeholder concerns. For example National Grid Gas NTS has to submit an Environmental Impact Assessment (EIA), based on twelve months of survey data due to be completed late this Summer, as part of the process for gaining consent to construct from the DTI; the time that the DTI takes to review and give consent is a function of the quality of the submission that it receives and other factors. Experience suggests that the time taken to gain consent can range between three and twelve months.

2.9. It is also assumed that that the weather conditions will not be significantly worse than average conditions experienced over the last 20 years, that construction will be carried out on at least 6 days per week and that any restrictions on land access would be manageable.

2.10. National Grid Gas NTS has highlighted the likely difficulties of working over the winter period (November - February) which mean that if it is unable to complete pipeline construction by the end of October it will likely not be able to complete it until March.

2.11. National Grid Gas NTS has also highlighted the logistical difficulties of attempting to deploy more than four construction spreads in constructing the key sections of the reinforcement work.

2.12. On the basis of the information set out above it appears that it is likely that the reinforcement work to provide 650 GWh/day of transmission capacity at Milford

Haven will be completed by December 2007 but that there remains a significant probability of further delay.

2.13. Penspen estimate that on the basis of four construction spreads reasonably efficient costs of the reinforcement work should be about £330 million (in 2005 prices) and the costs of the connecting pipeline should be about £160 million (in 2005 prices) giving a total of about £490 million (in 2005 prices) to provide 650 GWh/day of capacity. This compares with an estimate of total costs of £205 million (in 2005 prices) used by Ofgem in setting the UCAG for Milford Haven in 2003 and National Grid Gas NTS's estimates of costs in 2003 and 2004 of £250 million and £320 million respectively (all in 2005 prices). Around £60 million of the £490 million estimate of total costs relates to the additional costs of the new route corridor which avoids the centre of the Brecon Beacons National Park.

2.14. Further reinforcement work will be required by 2009 to provide the 950 GWh/day of capacity and it is Ofgem's understanding that this is being carried out.

3. The Economic Costs of Disrupting LNG Supply Chains

Chapter Summary

This chapter summarises a report by Deloitte into the economic costs of disruption to the LNG supply chains supporting the South Hook and Dragon LNG terminals. If National Grid Gas NTS is able to deliver 650 GWh/day of transmission capacity by the end of 2007 - consistent with its present plans - then there should be little or no disruption. However, there remains the possibility of delay and if this were to be for a period of several months then these costs may be substantial. Estimating the costs that such disruption would cause is inherently uncertain because these estimates depend on assumptions about the completion of major construction projects (the LNG supply chains and the reinforcement of the NTS), the future market price of gas in the UK and internationally and the ability to divert LNG cargoes to alternative destinations.

Scope of Analysis

3.1. In order to inform its decisions on the possible shortfall in NTS entry capacity at Milford Haven and the associated incentive arrangements Ofgem commissioned Deloitte to estimate the likely range of economic costs from disruption to the LNG supply chains by considering:

- differences between the cost of bringing gas into the NTS at Milford Haven and the revenue from selling this gas on the UK wholesale market and so lost profits
- measures that the LNG supply chain operators could adopt to ameliorate any lost profits from not being able to sell gas in the UK (including any technical and commercial constraints on selling gas to other markets)
- estimates of future wholesale gas prices in the UK and overseas, and
- the likely impact of any restricted flows from Milford Haven on UK wholesale prices.

3.2. Deloitte produced a report on these matters in August 2005 but due to commercial sensitivities this has not been published along side this consultation paper. As noted above it deals with matters that are inherently uncertain and the report does not recommend any course of action for Ofgem or any other parties. The conclusions of the report as summarised here do not necessarily represent the views of Ofgem, National Grid Gas NTS, the South Hook or Dragon consortia or any third parties. The analysis in the Deloitte's report and this summary of it is intended to facilitate further discussion and should not be relied upon by any party for any other purpose.

Assessing Economic Costs

3.3. Deloitte estimated the economic costs of disruption to the LNG supply chains as the likely impact of constraints on NTS entry capacity on the profitably of importing LNG, adjusted for the profits (if any) of being able to sell the displaced gas in other markets. This method estimates only the direct financial costs to the parties concerned. Questions relating to wider costs are dealt with in paragraph 3.17.

3.4. The calculations of the economic costs are illustrated below:

$L = \left(R^e - R^s\right) - C^a - (R^o - C^o)$ where:

L is lost profit at Milford Haven

R^e is revenue from planned sales in the GB market

R^s is revenue from actual sales in the GB market

R^o is revenue from additional sales in other markets

C^a is costs avoided in the GB market

C^o is additional costs in other markets

3.5. In making these calculations a number of assumptions were made including:

- that NTS entry capacity would be traded between shippers in such a way that the party that would suffer the greatest loss if the capacity were not available ends up holding any available NTS entry capacity, and
- that shippers can realise the prevailing market price for gas. It is possible that commercial negotiations will lead to prices that differ from the prevailing market price. For instance if a party is in a position of being a distressed seller and market liquidity is limited then it may not be able to obtain a normal market price of its gas.

3.6. If either of these two assumptions were not to hold then this would tend to significantly increase lost profits and economic costs.

Alternative Markets for Gas

3.7. In the circumstances where LNG might have to be diverted from Milford Haven then the following other markets were considered by Deloitte:

- delivery to the UK by other entry points
- other European markets
- the US Gulf and East Coast, and
- the Far East and the US West Coast.

Deloitte assessed the outlook for each of these markets as it appeared at the time of its report.

3.8. Whilst there are a number of operational LNG terminals in mainland Europe it is unclear whether any of these would be able to provide guaranteed alternative destinations for LNG that could not be received for gas redelivery from Milford Haven. Capacity at such terminals is most likely already sold and secondly there may be physical limitations such as the terminal's ability to receive larger LNG carriers. Even if LNG could be diverted to alternative European terminals only the Zeebrugge LNG terminal offers the prospect that the gas subsequently redelivered might find its way to GB due to its proximity to the interconnector.

3.9. Furthermore diversion of LNG to European terminals might be limited by the difficulty of accessing pipelines and the lower liquidity of wholesale markets in Europe.

3.10. The size and liquidity of USA gas market makes it a potentially attractive destination for LNG shippers. There are new regasification terminals under

construction in Louisiana and Texas and if these are commissioned in time this should further increase the scope for diverting gas to the USA.

3.11. LNG markets in Far East include Japan and South Korea. However, spot markets are not well developed in Asia, which limits the scope for short term sales.

Price Scenarios

3.12. The lack of liquid forward markets in mainland Europe makes it difficult to rely on forward prices to give a clear indication of the likely differences in wholesale prices between GB and mainland Europe. Nevertheless, the extent of interconnection between GB and mainland European gas markets has increased and is projected to increase further with the expansion of the GB interconnector and the development of the BBL and Langeled pipelines. In the light of this Deloitte assumed that by 2008 average prices in GB will move in line with mainland Europe on an annual average basis, but with some important seasonal variations (in particular Winter wholesale prices in GB will continue to be above the levels in mainland Europe). Prices in forward markets in GB and the USA (Henry Hub) prevailing at the time of Deloitte's report indicated that in general prices in GB were expected to be higher than Henry Hub in the Winter and lower in the Summer.

Economic Costs

3.13. The profile of purchased capacity by the developers is such that the economic costs of any disruption to transmission capacity are expected to be relatively modest in 2007.

3.14. Costs rise significantly if there were to be disruption in the first quarter of 2008. Up to 410 GWh/day of gas would need to be sold into alternative markets to minimise the costs of disruption.

3.15. Nevertheless, if prices were higher in GB than overseas (consistent with the above assumptions) the cost of disruption in the first quarter of 2008 could be up to £100 million. If alternative markets could not be found for any of the gas then the economic losses could be much higher, perhaps in excess of £300 million.

3.16. In the light of the assumptions set out above on relatively low prices for gas in the GB wholesale market during Summer 2008 then the costs of any disruption should be much lower in quarters two and three.

Wider Costs

3.17. Consistent with the assumption made above that average gas prices in GB over the period will be linked to those in mainland Europe the above estimates assume that disruption at Milford Haven will not greatly increase wholesale gas prices in GB on average over the year, although there may be changes over short periods. If there were to be a significant increase in prices then the costs of disruption to consumers could increase by £100 million or more.

4. New Incentive Arrangements

Chapter Summary

National Grid Gas NTS is planning to deliver the necessary transmission system reinforcement investment for the Milford Haven LNG terminals by the end of 2007. Nevertheless there remains the possibility of delays and if these circumstances were to transpire then the economic costs of disruption to LNG supply chains could be relatively large. This chapter discusses proposed new regulatory arrangements to increase the incentives on National Grid Gas NTS to deliver the reinforcement investment and associated transmission capacity in a timely manner.

Question Box

Views are sought on any of the issues raised in this chapter and in particular on:
Question 1: should new incentive arrangements for National Grid Gas NTS be developed in relation to the delivery of gas transmission capacity for Milford Haven?
Question 2: are the principles identified in paragraph 4.3 an appropriate basis for new incentive arrangements?
Question 3: should National Grid Gas NTS's exposure to buyback costs be deferred if there are undue delays due to consents for the construction of the reinforcement pipelines, adverse weather conditions or other exceptional factors?
Question 4: what are the advantages and disadvantages of the new incentive arrangements described in this chapter?
Question 5: Should this deferral 'skip' the period November - February during which construction is not practical?
Question 6: What are the advantages and disadvantages of the new incentive arrangements described in this chapter?
Question 7: are there further steps that should be taken to encourage National Grid Gas NTS and the relevant shippers to enter into arrangements that would minimise the economic costs of any delay in the provision of transmission capacity at Milford Haven.

Background

4.1. National Grid Gas NTS has auctioned NTS entry capacity at Milford Haven on the basis of providing 452 GWh/day from 1 October 2007 and 650 GWh/day from the 1 January 2008. Information now available (and summarised in chapter 2) suggests that National Grid Gas NTS may only be able to deliver 240 GWh/day of capacity from 1 October 2007 and while 650 GWh/day of capacity should be available by 1 January 2008 there is the possibility that there will be further delays in the provision of this additional 410 GWh/day of capacity.

4.2. The existing incentive arrangements are described in chapter 1. These cap National Grid Gas NTS's GB wide liability for buyback costs at £12½ million per formula year and are scheduled for review alongside the main price control and replacement in April 2007. In the light of these circumstances (including the materiality of the possible costs of further delay and the impact of these on consumers) it is for consideration as to whether it is appropriate to develop any new

incentive arrangements specific to Milford Haven, ahead of consideration of these issues for other entry points as part of the main price control review.

Principles

4.3. It would seem appropriate that any new incentive arrangements should:

- protect consumers from meeting costs that have arisen because of inefficiency or are above the level consistent with the operation of a reasonably efficient gas transmission system
- encourage National Grid Gas NTS to deliver additional NTS capacity in a timely and cost effective (i.e. taking account of both its investment costs and the economic costs of disruption to the LNG supply chains) manner
- protect National Grid Gas NTS from risks that might have the effect of unduly increasing its overall business risk and cost of capital, and
- be consistent with a stable regulatory framework that promotes investment in the gas supply chain, including LNG import facilities. If National Grid Gas NTS is unable to meet its contractual commitments for the provision of firm NTS entry capacity and where interruptions lead to substantial costs for shippers that cannot be mitigated, then it will be important to recognise that it might be appropriate that compensation should be greater than a simple refund of transportation charges.

Form of New Incentives

4.4. If there are substantial costs (i.e. NTS capacity buy-backs) as a result of entry capacity at Milford Haven being delivered at a date later than envisaged in the December 2004 auctions, it is for consideration whether National Grid Gas NTS should bear a proportion of those costs, rather than their being simply recovered from charges spread across all shippers and consumers. The present incentive arrangements provide for a target level of costs (across all entry points) of £18 million per formula year, with National Grid Gas NTS bearing 35 percent of costs above this level up to a maximum of £12½ million.

4.5. Incentives would be strengthened on National Grid Gas NTS if, *ceteris paribus*, it were liable for a higher level of costs in the event of delivery being delayed. Bearing this in mind Option A would be expose National Grid Gas NTS to a proportion of any buyback costs arising at Milford Haven before 1 January 2008 of up to a cap of £12 million and expose it to costs of up to £24 million after this date. The same sharing factor of 35 percent would apply to costs of now and the target level of costs would be zero - reflecting the desirability of National Grid Gas NTS delivering capacity consistent with the original timetable. As noted above incentive arrangements for other entry points would be dealt with as part of the transmission price control review due to take effect from 1 April 2007.

4.6. It would also be appropriate to consider whether the payments that National Grid Gas NTS might make under these arrangements should be profiled on a month by month basis. This could imply a series of monthly caps that would prevent the incentive scheme becoming exhausted if for instance wholesale gas prices in GB were particularly high compared with those in alternative markets. Option B would involves caps of £4 million for each of the 3 months October 2007 to December 2007 and then £8 million per month January 2008 to March 2008, giving a total liability of

no more than £36 million. After this any buyback costs would fall entirely on shippers and consumers. Option C would reduce the earlier caps in line with the estimates produced by Deloites that indicate only modest costs of disruption in 2007. It would also be possible to extend the payments further in to 2008 in order to continue to incentivise National Grid Gas NTS to deliver capacity its construction were to be very significantly delayed. This profile would involve £2 million per month October 2007 to December 2007, £8 million per month for each of the following 3 months and then £1 million per month thereafter, giving a total liability of no more than £36 million. Option D would be similar to Option C but with a flatter profile in 2008 of £6 million per month January to march and then £2 million per month until September 2008, also giving a total liability of £36 million. Table 2 illustrates different profiles of caps for Options B to D.

Table 2 - Illustration of the options for profiling incentives

		2007			2008									
	£m	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
OPTION	A	**12**			**24**			**0**	**0**	**0**	**0**	**0**	**0**	36
	B	**4**	**4**	**4**	**8**	**8**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	36
	C	**2**	**2**	**2**	**8**	**8**	**8**	**1**	**1**	**1**	**1**	**1**	**1**	36
	D	**2**	**2**	**2**	**6**	**6**	**6**	**2**	**2**	**2**	**2**	**2**	**2**	36

4.7. This approach should reduce the costs that consumers would bear and would enhance the incentives on National Grid Gas NTS to deliver investment in a timely and efficient manner, consistent with protecting the interests of consumers. Moreover, by enhancing incentives to complete the provision of entry capacity on time, such an approach would enhance confidence in investment in new gas supplies, to the benefit of security of supply and the promotion of effective competition. Any new incentive arrangements would require a consultation to take into account the views of interested parties before the Authority could reach final decisions on these matters.

4.8. Any incentives of the sort proposed here will work alongside and enhance the incentives created by National Grid Gas NTS's licence obligation to operate an efficient and economic system.

Possible factors without National Grid Gas NTS's control

4.9. As noted in chapter 2 the reinforcement investment requires the completion of an EIA based on 12 months of survey data as part of the process for gaining consent from the DTI for construction for the pipeline. Having received the completed EIA the DTI will review the information and consult with other stakeholders. The above ground installations (for compressor stations and valves) are subject to consent under the normal planning process. In addition if landowners refuse to give consent for the siting of assets then it may be necessary for National Grid Gas NTS to issue

compulsory purchase orders for the acquisition of rights to construct and then operate those aspects of its network.

4.10. The consents process creates a significant degree of risk and uncertainty for the timeliness of this construction programme and has the potential to delay the provision of the new gas transmission capacity at Milford Haven. National Grid Gas NTS started gathering data for its EIA in June 2005 and expects to be able to submit its completed EIA and request for consent in August 2006. If it receives the necessary consent in 3-4 months preliminary work could commence in December 2006. This would allow construction to start in the Spring and a full build season to be completed by Autumn 2007. Provided that the weather allows normal construction and that the building contractors can get access to the land then, given adequate contractor resource, material supplies, landowner consents, planning consent etc. it may be possible to commission the pipeline in 2007.

4.11. If consent is significantly delayed or consent is given with onerous conditions with respect to access to land then the reinforcement work may not be completed until 2008. If the delay in consent arises because National Grid Gas NTS has provided a poor quality EIA then it may be appropriate for it to be liable for the sort of penalties discussed in paragraph 4.5-4.6. However, if the delay in consent is caused by factors outside of its control then it may be that the timetable for the payment of penalties under the incentives should be adjusted to take account of this.

4.12. As noted in chapter 2 adverse weather conditions could significantly impact on the ability of National Grid Gas NTS to complete the work in the anticipated time. Although National Grid Gas NTS can take some action to mitigate this effect (for example by working longer hours or compensating landowners for damage due to working in bad conditions) the argument could be made that National Grid Gas NTS is unable to control these factors and should not be penalised for them.

4.13. There may be other exceptional factors over which National Grid Gas NTS have no control.

4.14. Therefore it may be desirable to defer to start of the incentives if there are such delays due to consents, adverse weather or other exceptional factors and if National Grid Gas NTS has made reasonable endeavours to avoid and mitigate these delays.

4.15. If the commencement of the incentives (or part thereof) were to be deferral following delays outside of National Grid Gas NTS's control as discussed above and additional question is whether the deferral of the commencement of incentives should be one to one with the delays. Arguably if National Grid Gas NTS is unable to work November - February (as discussed in chapter 2) the start of the incentive should jump that period. Thus a one month (unavoidable) delay would mean that the incentive would commence on 1 March 2008 as opposed to 1 November 2007.

The Treatment of Investment Under the Price Control Regime

4.16. Ofgem's June 2003 proposals document on New Entry Terminals to National Grid's National Transmission System[2] explained how permanent obligated incremental entry capacity would be remunerated over the longer-term. The revenues that National Grid Gas NTS derives from the provision of this entry capacity derive from a mixture of SO incentive revenue and TO price control revenue.

4.17. As explained/illustrated in the June 2003 document, costs associated with MH will enter the RAB from 1 April 2007, subject to an efficiency review.

4.18. On the basis of National Grid Gas NTS's latest estimates it will have spent around £365.5 million of capital expenditure to provide transmission capacity at Milford Haven in this price control period (i.e. in 2004/05, 2005/06 and 2006/07). This is significantly more than Ofgem envisaged in setting the UCAG for Milford Haven in 2003. The transmission price control review will deal with issues of capital expenditure over and under spend for the period 2002/03 to 2006/07.

The Milford Haven Shippers and National Grid Gas NTS

4.19. It will be important that each of the shippers that have acquired capacity at Milford Haven (BG, ExxonMobil and Petronas) continue to work constructively with National Grid Gas NTS with a view to:

- mitigating economic losses associated with any shortfall in entry capacity at Milford Haven;
- if appropriate entering into arrangements that will either fix or cap the costs of compensation ahead of 2007/08 such that the uncertainties for other shippers and consumers about these costs would be reduced or eliminated.

[2] *New entry terminals to Transco's National Transmission System - Ofgem's views on Transco's proposals and Explanatory notes to accompany the section 23 notice of proposed modifications to Transco's gas transporter licence*, Ofgem, June 2003

Appendices

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Appendix 1 - Consultation Response and Questions

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

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

Responses should be received by 12th May 2006 and should be sent to:

- Robert Hull
- Transmission
- Ofgem
- 9 Millbank
- London
- SW1P 3GE
- robert.hull@ofgem.gov.uk

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

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

Next steps: Having considered the responses to this consultation, Ofgem intends to determine its policy on these matters and, if necessary, issue a decision document. Any questions on this document should, in the first instance, be directed to:

- David Howdon
- TPCR - Gas Entry Incentives
- Ofgem
- 9 Millbank
- London
- SW1P 3GE
- 020 7901 7420
- david.howdon@ofgem.gov.uk

CHAPTER: Four

Question 1: should new incentive arrangements for National Grid Gas NTS be developed in relation to the delivery of gas transmission capacity for Milford Haven?
Question 2: are the principles identified in paragraph 4.3 an appropriate basis for new incentive arrangements?
Question 3: should National Grid Gas NTS be shielded from buyback costs if there are undue delays in the DTI giving consent for the construction of the reinforcement pipelines, adverse weather conditions or other exceptional factors?
Question 4: what are the advantages and disadvantages of the new incentive arrangements described in this chapter?
Question 5: Should this deferral 'skip' the period November - February during which construction is not practical.
Question 6: What are the advantages and disadvantages of the new incentive arrangements described in this chapter?
Question 7: are there further steps that should be taken to encourage National Grid Gas NTS and the relevant shippers to enter into arrangements that would minimise the economic costs of any delay in the provision of transmission capacity at Milford Haven.

Appendix 2 - The Authority's Powers and Duties

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

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[3]

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly[4].

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

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

- The need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- The need to secure that all reasonable demands for electricity are met;
- The need to secure that licence holders are able to finance the activities which are the subject of obligations on them[5]; and
- The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[6]

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

- Promote efficiency and economy on the part of those licensed[7] under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;

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

- Protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity;
- Contribute to the achievement of sustainable development; and
- Secure a diverse and viable long-term energy supply.

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

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

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[8] and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

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

Appendix 3 - Glossary

A

AMSEC
Annual Monthly System Entry Capacity

B

BBL
Balgzand Bacton Line

D

DTI
Department of Trade and Industry

E

EIA
Environmental Impact Assessment

G

GB
Great Britain

GWh/day
Gigawatt hours per day

I

IECR
Incremental Entry Capacity Release

L

LNG
Liquefied Natural Gas.

LTSEC
Long Term System Entry Capacity

M

MSEC
Monthly System Entry Capacity

N

National Grid Gas NTS
National Grid operating in its capacity as operator of the NTS.

NPV
Net Present Value. For discount rate δ the NPV of an income stream $X = \{x_0, x_1, ..., x_T\}$ is given by $NPV(X) = \sum_{t=0}^{T} \delta \bullet x_t$

NTS
National Transmission System

O
Ofgem
The Office of Gas and Electricity Markets.

Q
QSEC
Quarterly System Entry Capacity

S
SO
System Operator

T
TO
Transmission Operator

U
UCA
Unit Cost Allowance

UCAG
Gross Unit Cost Allowance

UNC
Uniform Network Code

USA
United States of America

Appendix 4 - Feedback Questionnaire

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

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

1.2. Please send your comments to:

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9 Millbank
London
SW1P 3GE
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