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# Avonmouth Liquefied Natural Gas Facility Price Review: Final Proposals

## Final Decision

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**Overview:**

National Grid Liquefied Natural Gas (NG LNG) operates a storage facility at Avonmouth which provides a combination of commercial and regulated services. NG LNG's commercial services are subject to market forces, but its regulated services have been subject to a price cap since 1997. This has been reviewed and revised regularly to ensure consumers are protected. These Final Proposals set out the prices to be charged for regulated services at Avonmouth from 1 May 2013. We have undertaken a review in order to consider the requirements for Avonmouth until April 2018.

Alongside these Final Proposals, we are publishing the statutory consultation under section 23 of the Gas Act 1986 on the modifications required to NGG's licence to implement our decision. The statutory consultation on the licence modifications closes on 28 February 2013.

We currently plan to publish our decision following the statutory consultation for this licence change by 4 March 2013.

# Context

National Grid (NG) owns an LNG storage facility at Avonmouth. It provides a combination of commercial services to gas shippers and regulated services to both National Grid Gas (NGG) and Scotia Gas Networks (SGN). All of these regulated services are provided at prices currently specified in Special Licence Condition C3 of NGG's gas transporter's licence and from 1 April 2013 in Special Licence Condition 11E of NGG's gas transporter's licence which is being renumbered as part of the licence changes under the RIIO-T1 price control.

For the avoidance of doubt any reference in this document to Special Licence Condition C3 will include a reference to the future Special Licence Condition 11E under the proposed changes to the Gas Transporter's licence under RIIO-T1.

The regulated prices for NG LNG's Avonmouth and Partington facilities were last reviewed in 2010/11. Partington is now closed and has been decommissioned. NGG and SGN submitted their respective business plans as part of the RIIO price controls. The RIIO business plans highlighted their requirements for continued use of the Avonmouth facility for regulated services until 2018. Therefore, regulated prices need to be set for this five year period based upon the costs and revenues in this period.

This document follows on from a previous open letter and Initial Proposals consultation on the subject, and sets out our Final Proposals on the Avonmouth LNG facility price review. Alongside these Final Proposals, we are publishing the statutory consultation under section 23 of the Gas Act 1986 on the modifications required to NGG's licence to implement our decision.

# Associated documents

'Avonmouth Liquefied Natural Gas facility price review: Initial Proposals' 26/11/2012, http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=67&refer=Networks/Trans/GasTransPolicy/LNGPriceControl

'Avonmouth Liquefied Natural Gas facility C3 price review – Open letter' 25/09/2012, Ofgem:
http://www.ofgem.gov.uk/Networks/Trans/GasTransPolicy/LNGPriceControl/Documents1/120925_AvonmouthC3review_openletter.pdf

'National Grid Liquefied Natural Gas (LNG) facilities price control - Final Proposals' 21/02/2011, Ofgem (Ref: 18/11):
http://www.ofgem.gov.uk/Networks/Trans/GasTransPolicy/LNGPriceControl/Documents1/LNGPC%202011%20Final%20Proposals.pdf

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# Executive Summary

**Background**

National Grid LNG operates a Liquefied Natural Gas (LNG) storage facility at Avonmouth which provides both commercial and regulated gas storage services. It provides commercial storage services to shippers. The price for these services is dictated by the market. It also provides regulated services to National Grid Gas (NGG) to help it balance the gas transmission system and to Scotland Gas Networks (SGN) for supplying LNG through tankers to four towns in Scotland (known as the Scottish Independent Undertakings (SIUs)) which are not connected to the gas distribution networks.

These regulated services are subject to a price cap[1] currently specified in Special Condition C3 of NGG's gas transporter's licence[2]. This price cap was last reviewed in 2010/11 and applies until 30 April 2013. The purpose of this price regulation is to protect consumers; currently SGN has no alternative to using Avonmouth. In addition, the price regulation avoids cross-subsidy between the National Grid (NG) businesses.

NGG and SGN submitted their respective business plans as part of the RIIO price controls. The RIIO business plans have highlighted their requirement for continued use of the Avonmouth facility for regulated services until 2018. Therefore, regulated prices need to be set for this five year period based upon the costs and revenues in this period.

**Process to Date**

In September 2012, we issued an open letter which informed stakeholders of our intention to undertake this review. We asked for views on the scope, form and duration of the control. We received three responses to that letter.

In November 2012, we issued our Initial Proposals consultation for the revised price cap. We asked for views on the following parts of our policy:

- no change to the current price cap methodology for regulated services;
- continuing to apply a price cap and setting a <u>five year duration</u> for the control, to take funding for Avonmouth to 30 April 2018, on the assumption that <u>both</u> NGG and SGN will continue to rely on Avonmouth for regulated services until April 2018;
- remuneration <u>for efficient forward looking costs</u>, <u>but no allowance</u> for decommissioning costs;

[1] As part of the price cap we set the prices charged for regulated services. However the licence does allow NG LNG to charge regulated services at the price it has secured for commercial services if they are higher. As a result the price cap is in effect a minimum price.
[2] From 1 April 2013, it will be in Special Licence Condition 11E of NGG's gas transporter's licence

- amending the cost apportionment between regulated and commercial services. The regulated share would increase from 42 per cent to 44 per cent; and
- no provision for decommissioning costs and we will not allow any costs associated with the closure of Avonmouth.

We proceeded on the assumption that NG LNG will continue to receive revenues from commercial services until April 2018. The proposed change would amount to a decrease of 11% compared with the current price cap.

**Summary of our Final Proposals**

Having considered the responses and information received, we have developed our Final Proposals for the revised price cap. These are described in this document. We have considered the operating and capital expenditure submissions by NG LNG with regards to the costs it considers should be included to calculate the price cap levels. Our views on the appropriate levels are given in this document.

| Policy issue | Ofgem Initial Proposals | Ofgem Final Proposals |
|---|---|---|
| **Effect upon price cap** | An 11% decrease to the current price cap | No change to the current price cap. |
| **Return on portion of future capex** | 44% | 44% |
| **Depreciation** | Allow depreciation over economic life of 5 years (regulated portion only). | Allow depreciation over economic life of 5 years (regulated portion only). |
| **Decommissioning** | None allowed | None allowed |
| **Avonmouth Commercial Services** | Assumed continuation of commercial services until April 2018. | Assumed continuation of all services until April 2018. Assumed some volume uncertainty from 2016/17 across all services and built in a risk premium. |
| **Regulated Services** | Assumed continuation of regulated services until April 2018. | |
| **Cost assessment** | Allow 100% of all opex project costs (excluding depreciation) and 94% of all capex projects proposed by NG LNG. | Allow 100% of all opex project costs (excluding depreciation) and 94% of all capex projects proposed by NG LNG. |

**Next Steps**

Alongside these Final Proposals, we are publishing a statutory consultation under section 23 of the Gas Act 1986 on the modifications required to NGG's licence to implement our decision. The statutory consultation on the licence modification closes on 28 February 2013.

We currently plan to publish our decision following the Statutory Consultation for this review by 4 March 2013. The revised licence condition would take effect from 1 May 2013.

# 1. Introduction

**Chapter Summary**

This chapter explains the purpose of this document and the context of the Final Proposals.

## Background

1.1. NG LNG owns an LNG storage facility at Avonmouth. The facility provides a combination of commercial and regulated services. NG LNG previously owned four other LNG storage facilities that provided commercial and regulated services. These facilities were at Partington, Glenmavis, Dynevor Arms and the Isle of Grain. The Partington, Glenmavis and Dynevor Arms facilities have been closed[3]. The Isle of Grain facility was converted into a LNG import terminal in 2005.

1.2. These LNG facilities were located at the extremities of the National Transmission System (NTS). They were designed to deliver gas during a few days of high demand in each year. This was to ensure that NGG could meet firm demand in line with its system planning requirements. It was considered to be a more economical solution than investing in additional pipeline capacity in those locations.

1.3. LNG storage facilities operate by taking gas off the NTS and cooling it to about -165ºC, where it becomes a liquid. It is then stored in tanks until it is required back on the NTS. At that point, the liquid gas is vaporised and injected back into the NTS. The process of cooling the gas into liquid, maintaining it at low temperatures and regasifying the liquid is an energy intensive process, which makes the operation of the LNG storage facilities expensive. As well as being expensive to run, these facilities are slow to fill and have a limited storage capacity.

**Services provided by Avonmouth LNG Storage Facility**

1.4. LNG storage facilities have certain characteristics that make them useful for particular services. The storage facilities can regasify large quantities of gas very quickly which makes them ideal for providing rapid-response, but short-duration support. The services Avonmouth provides are described below.

[3] Dynevor Arms formally closed in March 2009. Partington formally closed in March 2012. Glenmavis will formally close once decommissioning has been completed.

## Operating Margin (OM) services[4]

1.5. Avonmouth supplies NGG with OM services. OM services are used to maintain system pressures when the system has been put under stress until other system management actions become effective. Typically, OM services are used in the period immediately following a supply loss, demand forecast change or plant failure.

1.6. A portion of LNG is reserved for the purposes of OM services in order to manage the orderly rundown of the system in an emergency. NGG must maintain a level of OM service bookings in order to comply with its safety case[5]. The price at which NGG can procure OM services is limited by the price cap in Special Licence Condition C3 of its gas transporter's licence.

1.7. Since the review of LNG prices we undertook in 2008, changes have been made to the Unified Network Code (UNC) and NGG's Safety Case to increase the number of providers able to offer OM services. In particular, this has allowed other market participants to compete with the NG LNG facilities for OM services provision through supply increase/demand reduction contracts. Going forward NGG has indicated a requirement for OM services at Avonmouth until 2018. Due to insufficient alternative providers, NGG will continue to rely on Avonmouth until that date.

## Scottish Independent Undertakings

1.8. SGN uses the tanker loading facility at Avonmouth to load road tankers which transport LNG to four remote towns[6] in Scotland known as the SIUs[7]. They use around 91km of pipes, which are owned by SGN, and which provide supply to around 7,500 consumers with regasified LNG. Glenmavis provided this service before it closed in 2012. Currently there are no other LNG facilities in Great Britain (GB) that can provide the same service as Avonmouth.

1.9. This service is provided as part of a bilateral contract between NGG and SGN that formed part of the distribution network sales package. The prices charged for this service are also restricted to those specified in Special Condition C3 of NGG's gas transporter licence. SGN has stated that it will continue to rely on Avonmouth as the sole source of gas for the SIUs. SGN has stated that it intends to submit its plans for an enduring solution to supplying the SIUs in 2015.

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[4] Further details on Operating Margin services can be found at: http://www.nationalgrid.com/uk/Gas/OperationalInfo/GasOperatingMargins

[5] Under the Gas Safety (Management) Regulations 1996 SI 1996/551, the Health and Safety Executive (HSE) requires gas transporters to submit for approval (and comply with) a 'safety case', which details how they manage the safety of the network. The procurement of OM services is part of NGG's safety case obligations.

[6] These towns are Wick, Thurso, Oban and Campbeltown.

[7] Stornoway on the Isle of Lewis is also an SIU. It is not supplied with LNG and instead receives Liquid Petroleum Gas (LPG) from other sources.

Resolution of Local Constraints

1.10. In the past Avonmouth has provided Constrained LNG (CLNG), a type of NTS Transportation Support Service (NTS TSS). NTS TSS allows NGG to meet its capacity obligations in remote parts of the network without having to build additional pipeline capacity. NGG requires shippers who book capacity at a CLNG site to maintain minimum levels of gas in store to meet peak demand. NGG has the right to require those shippers to flow gas onto the system under certain conditions of high demand. In return, shippers who are prepared to book CLNG are given a discount, reflecting the saving in investment in the pipeline system. Revenues received in relation to this service are currently subject to NGG's CLNG incentive scheme and will be subject to the NTS TSS incentive scheme from April 2013, as part of our RIIO-T1 proposals.

1.11. NGG has indicated that it will continue to have a requirement for CLNG which it will need to source from Avonmouth. NGG has told us that its requirements will reduce once the NTS has been reinforced in the South West.

Commercial Storage Services

1.12. NG LNG has provided commercial storage services to shippers at Avonmouth. These services are not charged at the price cap levels, the provision of these services has not been discontinued.

## Interaction with RIIO price controls

1.13. We have undertaken the first price control to be conducted under our new RIIO model. Through RIIO, we are setting the regulatory framework for electricity and gas transmission companies and gas distribution companies from 1 April 2013 to 31 March 2021.

1.14. **RIIO- T1**: NGG requested funding for an enduring solution to its Avonmouth requirements in its RIIO-T1 business plans. In our RIIO-T1 Final Proposals we allowed funding for network reinforcement in the South West NTS. This network reinforcement will allow NGG to operate the NTS safely without using services from Avonmouth from 2018 onwards.

1.15. **RIIO- GD1**: SGN requested funding to continue to procure its requirements for the SIUs from Avonmouth and intended to submit its plans for an enduring alternative to relying on Avonmouth to tanker LNG to the SIUs in 2015. In our RIIO-GD1 Final Proposals we have allowed SGN a reopener in April 2016 to allow them to recover the efficient costs associated with the enduring supply solution for SIUs[8].

1.16. The costs for SGN procuring LNG from Avonmouth are currently subsidised at the direction of the Secretary of State for Energy and Climate Change. SGN only

[8] The funding is based on the costs of securing LNG from Avonmouth.

pays the average GB transportation charge for the SIUs; the difference is paid by NGG which in turn charges all GB customers. These arrangements are set to lapse on 31 March 2013. We stated in the RIIO-GD1 Final Proposals that we will allow SGN to log-up the transportation costs associated with the supply to the SIUs, and then recover these costs, including the financing costs, once the requisite statutory amendment and direction from the Secretary of State for Energy and Climate Change is in place.

# 2. Our Final Proposals for the price review

**Chapter Summary**

We issued our Initial Proposals consultation in November 2012. This Chapter summarises the responses to our Initial Proposals consultation and explains our response to them.

## Our Final Proposals

2.1. In order to determine the price cap, our Final Proposals are as follows -

<table>
<tr><th>Policy issue</th><th>Ofgem Initial Proposals</th><th>Ofgem Final Proposals</th></tr>
<tr><td>Effect upon price cap</td><td>An 11% decrease to the existing price cap</td><td>No change to the price cap.</td></tr>
<tr><td>Return on portion of future capex</td><td>44%</td><td>44%</td></tr>
<tr><td>Depreciation</td><td>Allow depreciation over economic life of 5 years (regulated portion only).</td><td>Allow depreciation over economic life of 5 years (regulated portion only).</td></tr>
<tr><td>Decommissioning</td><td>None allowed</td><td>None allowed</td></tr>
<tr><td>Avonmouth Commercial Services</td><td>Assumed continuation of commercial services until April 2018.</td><td rowspan="2">Assumed continuation of all services until April 2018. Assumed volume uncertainty from 2016/17 across all services and built in a risk premium.</td></tr>
<tr><td>Regulated Services</td><td>Assumed continuation of regulated services until April 2018.</td></tr>
<tr><td>Cost assessment</td><td>Allow 100% of all opex project costs (excluding depreciation) and 94% of all capex projects proposed by NG LNG.</td><td>Allow 100% of all opex project costs (excluding depreciation) and 94% of all capex projects proposed by NG LNG.</td></tr>
</table>

2.2. In September 2012, we issued an open letter which informed stakeholders of our intention to undertake this review. We asked for views on the scope, form and duration of the control. We received three responses to that letter summarised in our Initial Proposals, in November 2012. In our Initial Proposals consultation on the revised price cap, we asked for views on particular aspects of our policy. We received five responses to our Initial Proposals consultation[9]. There were three areas where respondents disagreed with our Initial Proposals: accelerated depreciation; decommissioning costs; and volume assumptions.

[9] Summary of responses in Appendix 1

## Depreciation

2.3. One respondent disagreed with our Initial Proposals to allow full remuneration in the five year control period. We sought further clarification and received confirmation that the respondent agrees with our position at Initial Proposals. **We continue to maintain our position as stated at Initial Proposals**.

## Decommissioning

2.4. One respondent disagreed with our Initial Proposals not to allow £4m for decommissioning costs. It argued that the Avonmouth LNG facility should be treated as a regulated asset (i.e. as low pressure gas holders). In our view, Avonmouth is not a regulated asset; it is a facility which has provided a regulated service to NGG and SGN in addition to unregulated commercial services to which the price cap does not apply.

2.5. Consumers should not bear decommissioning costs, and we will disallow all costs associated with the closure of these assets. We consider that this is consistent with our treatment of the closure of Dynevor Arms, Partington and Glenmavis where no decommissioning costs have been allowed. **We continue to maintain our position as stated at Initial Proposals**.

## Volume Assumptions

2.6. Two respondents disagreed with our assumption that 100 per cent of both regulated services and commercial services would be required until April 2018. We undertook further analysis to assess the possible risk to and impact upon NG LNG of a number of scenarios if the projected volume split between regulated and commercial services did not match actual outturn.

2.7. We recognise there may be a degree of uncertainty in forecasting the volume apportionment between regulated and commercial services, particularly in the last two years of the control. Our analysis that there is little variation on the total costs allowed, the total depreciation allowed or the return allowed. On balance, the analysis showed that the price cap was particularly influenced by the volume of regulated services and the proportion of cost attributed to the regulated services.

2.8. For Final Proposals, we have maintained our assumption that NG LNG will continue to receive revenues until April 2018 from the regulated and commercial services that it provides at Avonmouth. However, we acknowledge the possibility of potential uncertainty over some of the volume assumptions in the last two years in the run up to SGN moving to an alternative source of supply and the planned closure of Avonmouth. We have not been provided with any information to quantify such uncertainty. We have assumed that NG LNG may experience a notional twenty-five per cent reduction of volume requirement across both regulated and commercial services from 2016/17.

2.9. **On this basis we therefore will allow a higher level of regulated revenues associated with the volume risk which has the effect of maintaining the current price cap.** This is a change from our Initial Proposals which proposed a reduction of 11 per cent.

2.10. We still maintain that it is very probable that there will be a requirement for both regulated and commercial services until April 2018. As we are providing NG LNG with a risk premium associated with a potential change to the volume requirement, we will not allow NG LNG a reopener to this price review if there are changes to the volume requirements across both regulated and commercial services as this has already been taken into account here.

2.11. We considered NG LNG's suggestion of developing a targeted incentive mechanism. However, as we have no regulatory relationship with NG LNG and therefore cannot impose or monitor incentive schemes placed upon NG LNG in the same manner as we can on network operators we did not consider that this suggestion would be possible.

# 3. Costs, Revenues and Calculations

**Chapter Summary**

This chapter details the cost and revenue information submitted by NG LNG and shows how this has been used to formulate our Final Proposals.

## Introduction

3.1. We have used data provided by NG LNG to develop our Initial Proposals and Final Proposals. This data covered both historical and forecast costs and revenues. We have taken a view on the appropriateness of elements of NG LNG's cost submissions, and used data submissions from previous reviews to assess the operating costs (opex) and capital expenditure (capex) levels and plans.

3.2. NG LNG submitted data for a six year period (2013-2019), in line with our information request. Subsequent to the receipt of this data we decided that it was appropriate that we set a revenue price cap for a five year period. Consequently we have aligned the costs over the five years until April 2018.

3.3. Following on from responses to our Initial Proposals, we will not be making any changes to our opex and capex assumptions for Final Proposals.

## Revenue Forecast

3.4. NG LNG provided specific forecasts of revenue streams up to 2019. These are largely based on (a) the level of OM services requirement being relatively constant until 2018, (b) SIU requirements falling away in 2015/2016 and (c) Avonmouth commercial services ceasing in 2015/16. The revenue information that NG LNG submitted is provided in the table below.

**Table 3.1: Summary of NG LNG's revenues forecast**

| £m 12/13 Prices | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 |
|---|---|---|---|---|---|
| Operating Margins | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 |
| SIU | 6.9 | 6.9 | 6.9 | 0 | 0 |
| Shipper | 2.5 | 2.5 | 2.5 | 0 | 0 |
| Constrained LNG | 0.4 | 0.4 | 0.4 | 0 | 0 |
| Regulated | 12.6 | 12.6 | 12.6 | 5.7 | 5.7 |
| **Total** | **15.5** | **15.5** | **15.5** | **5.7** | **5.7** |

3.5. We have considered the data in conjunction with NGG's estimates of future OM services requirement, and believe that NG LNG's estimates are reasonable. In its response to our open letter, SGN stated that it plans to continue using Avonmouth until 2018. In our Initial Proposals we assumed that SGN will continue to use Avonmouth until then and adjusted the revenue information accordingly. We have assumed that commercial services would also continue until April 2018. Therefore we have taken into account commercial revenue forgone when calculating the revenue price cap for Avonmouth for the full five year period.

3.6. However we recognise the potential risk that NG LNG faces in its revenues forecasts in OM services, SIUs and commercial services. To allow for this possible risk and the potential decrease in revenues in the latter years of the price review period, we have lowered our revenue forecasts in 2016/17 and 2017/18 by 25 per cent from Initial Proposals. We have also lowered the forecast CLNG revenue as it relies on the availability of commercial services.

3.7. We have assumed that all costs associated with maintaining these services continue until April 2018. Our Final Proposals on NG LNG's revenue forecasts are as follows –

**Table 3.2: Summary of Ofgem's Final Proposals revenues forecast**

| £m 12/13 Prices | 2013/14 | 2014/15 | 2015/16 | 2016/17 | 2017/18 |
|---|---|---|---|---|---|
| Operating Margins | 5.7 | 5.7 | 5.7 | 4.3 | 4.3 |
| SIU | 6.9 | 6.9 | 6.9 | 5.2 | 5.2 |
| Shipper | 2.5 | 2.5 | 2.5 | 1.8 | 1.8 |
| Constrained LNG | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 |
| Regulated | 12.6 | 12.6 | 12.6 | 9.5 | 9.5 |
| **Total** | **15.5** | **15.5** | **15.5** | **11.6** | **11.6** |

## Calculations

3.8. We have made no changes from Initial Proposals to our approach on calculations. In summary:

- all prices used have been adjusted to 2012/13 real prices, using an inflation assumption of 3 per cent;
- depreciation over five year period with option to revisit if Avonmouth does not close in 2018; and
- the cost of capital used is a pre-tax rate that varies between (5.15-5.19 per cent) as used in RIIO-T1 for NGG.

*Conclusion*

3.9. We are proposing that £70.5m of costs should be included when setting the price caps for the five year period. This is the same figure as in our Initial Proposals. NG LNG's proposed figure was £126m. The breakdown is shown in the table below.

**Table 3.3: Overview of cost components**

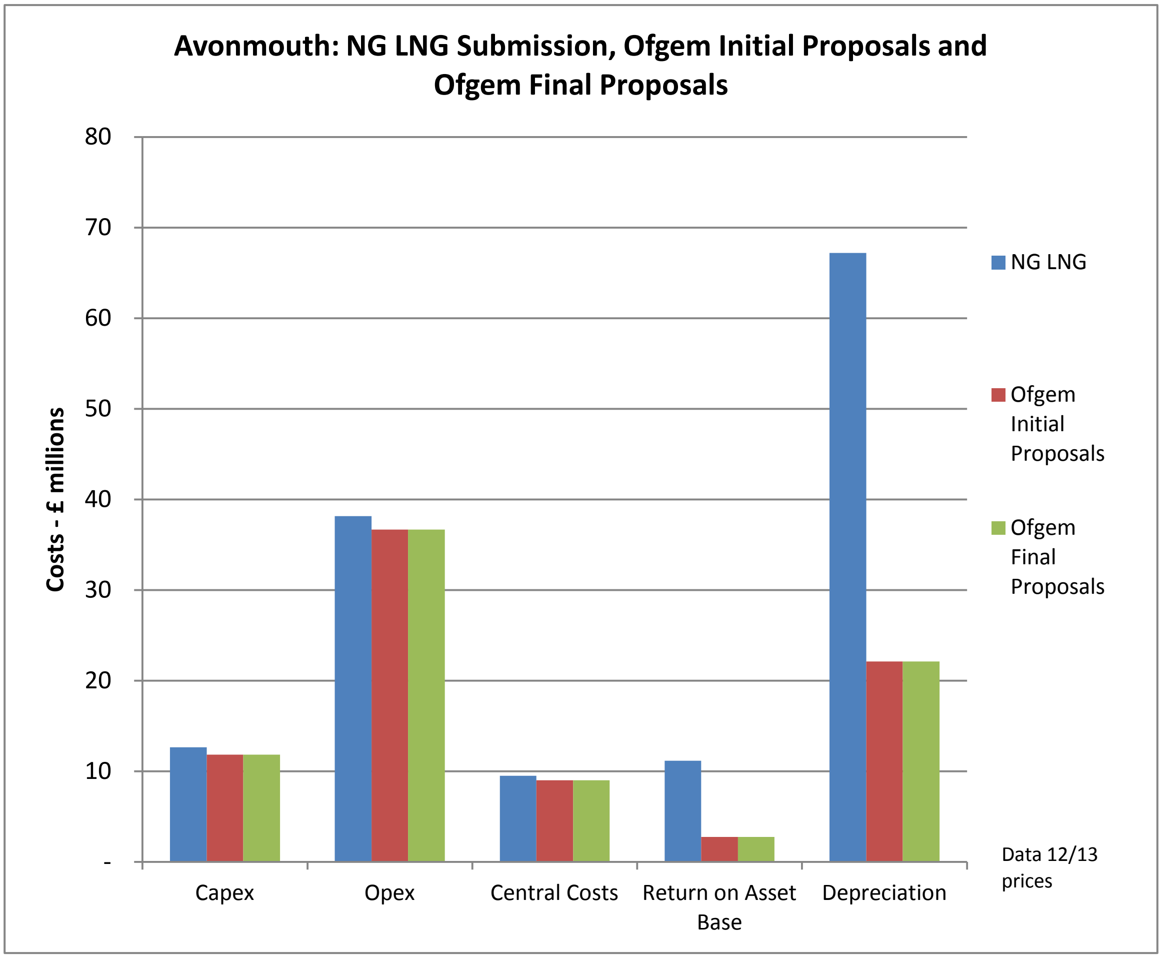
| Costs in 2012/13 Prices[10] | NG LNG Submission (£m) | Ofgem Initial Proposals (£m) | Ofgem Final Proposals (£m) |
|---|---|---|---|
| Capital Expenditure[11] | 12.6 | 11.8 | 11.8 |
| Operating Expenditure | 38.2 | 36.7 | 36.7 |
| Central Costs | 9.5 | 9.0 | 9.0 |
| Return on Asset Base | 11.2 | 2.8 | 2.8 |
| Depreciation | 67.2 | 22.1 | 22.1 |

3.10. The calculations based on the above assumptions are laid out in Appendix 4. Overall there is no change in the current price cap.

3.11. The differences between our Final Proposals, Initial Proposals and NG LNG's submission are illustrated in figure 3.1 below.

[10] Within our Initial Proposals document a similar table (3.3) had prices that were mistakenly stated as being in NPV terms when in fact they had not been discounted. The numbers within this table vary slightly from the numbers within Initial Proposals due to rounding or the correction of this error. These changes are purely illustrative and have no effect on our findings and results.
[11] Whilst we allow a regulated proportion of capex, it is not included directly in the costs allowed. It is instead fed through into the asset base and is included as both a return on the asset and depreciation.

**Figure 3.1: Graphical comparison of Ofgem and NG LNG proposals**



# 4. Next Steps

**Chapter Summary**

This Chapter outlines the next steps and the timeframe for the remainder of the Avonmouth LNG facility price review.

4.1. Alongside these Final Proposals, we are publishing the formal consultation under section 23 of the Gas Act 1986 on the modifications required to NGG's licence to implement our proposals. The statutory consultation on the licence modification closes on 28 February 2013.

4.2. We currently plan to publish our decision following the statutory consultation for this review by 4 March 2013.

# Appendices

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# Appendix 1 - Consultation Responses

1.1. In our Initial Proposals consultation Ofgem sought the views of respondents about a number of questions. The questions along with respondent's views are set out below.

Summary of responses

1.2. Responses received by Ofgem which were not marked as being confidential have been published on Ofgem's website www.ofgem.gov.uk.

1.3. The following is a summary of those responses which were received to the following questions. We received five responses to the Initial Proposals consultation.

**Question 1:** Do you agree with our Initial Proposals that NGG and SGN should be more exposed to the capex costs and return on asset base associated with the provision of regulated services at Avonmouth?

1.4. One respondent agreed with our Initial Proposals that NGG and SGN should be more exposed to the capex costs and return on asset base associated with the provision of regulated services at Avonmouth. One respondent noted the change in regulated share from 42 per cent to 44 per cent. Another considered it was difficult to see how the funding provided via Initial Proposals would meet the need for the continuation of a reliable service at Avonmouth. Two respondents did not comment.

1.5. One respondent did not believe that Ofgem's Initial Proposal to allow a 44 per cent recovery and return on capex costs was sufficient. It believes that the regulated and commercial service volume splits are likely to be different from Ofgem's projected volume splits. Consequently it considers that this will lead to significant underfunding from regulated customers and place additional risks on NG LNG.

**Question 2:** Do you agree with our Initial Proposals to remunerate the regulated share of Avonmouth based on the economic life of the asset rather than its design life?

1.6. Two respondents agreed with our Initial Proposals to allow full remuneration in the five year control period. Two respondents did not comment and one respondent disagreed. We sought further clarification from the respondent that did not agree and received confirmation that it does agree with our position at Initial Proposals.

**Question 3:** Do you think it is appropriate to include commercial revenues foregone in the consideration of the C3 price cap?

1.7. Four respondents agreed with our Initial Proposals to include commercial revenues foregone in the consideration of the price cap. One respondent did not comment and one respondent disagreed. It believed that the any revenues and risks incurred by Grain LNG should be considered entirely separate from the regulated NG LNG business. In addition, it asserted that irrespective of investment in Grain LNG, Avonmouth revenues would decline as other terminals provided services at lower cost and risk then through re-liquefaction and storage.

**Other comments**

1.8. **Future of SIUs**: One respondent sought clarification on the future of the SIUs beyond April 2018. It urged Ofgem to ensure that SGN’s plans and our decisions are available to all stakeholders and to allow early engagement**.**

1.9. **Operating Margin services**: Another respondent argued that the price cap should be maintained at the existing level for the five year period. It expressed concern that a reduced price cap will reduce the level of OM services that can be provided for by the market. It stated that it would like OM services to be fully provided for by the market rather than relying on Avonmouth LNG but recognise that Ofgem and NG LNG do not consider this feasible. It went on to highlight that there is a balance to ensure the price cap is cost reflective, protecting consumers and assessing the wider impact upon market participants.

1.10. **System Operator Incentives**: One respondent highlighted that the RIIO-T1 Final Proposals introduces an SO reputational incentive that seeks to incentivise NGG to promote competition in the procurement of OM services. The respondent highlighted that if NGG is successful in enhancing commercial participation in OM service provision it is likely to reduce the requirement for regulated bookings and associated revenue at Avonmouth LNG storage facility.

1.11. **Volume Assumptions**: One respondent believes that there is a disproportionate split in cost recovery and their forecasts of demand for futures services are a prudent and fair reflection of the most likely case going forward. It also states that Ofgem has ignored the risk of significant withdrawals of stock in a single year which would limit NG LNG’s ability to offer commercial services. Another respondent argued that regulated prices need to be sufficient and flexible enough for Avonmouth to maintain a reliable service if the regulated volume requirement reduces.

1.12. **Incentive Mechanism**: One respondent welcomed further work with Ofgem to develop a more targeted incentive mechanism around revenues which it stated that through the application of caps and collars would ensure a fair allocation of risk and reward between consumers and shareholders.

# Appendix 2 - Glossary

**C**

### Capital Expenditure (Capex)

Expenditure on investment in long-lived assets, such as LNG storage tanks and process plant.

### Consumer

In considering consumers in the regulatory framework we consider users of network services (for example generators, shippers) as well as domestic and business end consumers, and their representatives.

**D**

### Design Life

The period an asset has been designed to last for.

**E**

### Economic Life

The period over which an asset performs a useful function.

**G**

### Gas Safety (Management) Regulations 1996 (GSMR)

The GSMR regulations apply to the conveyance of natural gas (methane) through pipes to domestic and other consumers and cover four main areas:

- The safe management of gas flow through a network, particularly those parts supplying domestic consumers, and a duty to minimise the risk of a gas supply emergency.
- Arrangements for dealing with supply emergencies.
- Arrangements for dealing with reported gas escapes and gas incidents.
- Gas composition.

**H**

### The Health and Safety Executive (HSE)

A public body responsible for regulating health and safety in Great Britain with the primary function to secure the health, safety and welfare of people at work and to protect others from risks to health and safety from work activity.

**L**

### Liquefied Natural Gas (LNG)

LNG consists mainly of methane gas liquefied at around -162°C. Cooling and liquefying the gas reduces its volume by 600 times such that a tonne of LNG corresponds to about 1,400 cubic metres of methane in its gaseous state. LNG may be stored or transported by special tanker.

**N**

### National Grid Gas (NGG)

The licensed gas transporter responsible for the gas transmission system and four of the regional gas distribution companies.

### National Grid Liquefied Natural Gas (NG LNG)

A trading division of NGG, which owns and operates the LNG Storage facilities which are the subject of this review.

### National Transmission System (NTS)

The high pressure gas transmission system in Great Britain.

**O**

### Operating Expenditure (Opex)

The costs of the day to day operation of the sites such as staff costs, repairs and maintenance expenditures, and overheads.

### Operating Margins (OM)

In relation to gas, OM is gas in storage which is reserved by the NTS to ensure that the supply of gas is maintained in the event of a network emergency.

**R**

### Regulated Asset Base

The value ascribed by Ofgem to the capital employed in the licensee’s regulated business.

### RIIO (Revenue = Incentives + Innovation + Outputs)

Ofgem's new regulatory framework, stemming from the conclusions of the RPI-X@20 project, to be implemented in forthcoming transmission and distribution price controls. It builds on the success of the previous RPI-X regime, but better meets the investment and innovation challenge by placing much more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers.

### RIIO-Gas Distribution Price Control Review 1 (RIIO-GD1)

The price control review to be applied to the gas distribution network operators, following GDPCR1. This price control would be expected to run from 1 April 2013 and will be the first distribution price control review to reflect the new regulatory framework, RIIO, resulting from the RPI-X@20 review.

### RIIO-Transmission Price Control Review 1 (RIIO-T1)

The price control review to be applied to the electricity and gas transmission network operators, following the TPCR4 rollover. This price control would be expected to run from 1 April 2013 and will be the first transmission price control review to reflect the new regulatory framework, RIIO, resulting from the RPI-X@20 review.

**S**

### Scotland Gas Network (SGN)

The gas transporter licence holder for the Scotland gas distribution network.

### Scottish Independent Undertakings (SIUs)

Four remote towns in Scotland (Wick, Thurso, Oban and Campbeltown), comprising around 7,600 customers, that receive regasified LNG via road tankers loaded at the Avonmouth LNG facility.

**T**

### Transmission Price Control Review 4 (2007-12) (TPCR4)

The TPCR established the price controls for the transmission licensees which took effect in April 2007 for a 5 year period. The review applies to the three electricity transmission licensees, National Grid Electricity Transmission (NGET), Scottish Power Transmission Ltd (SPTL), Scottish Hydro Electric (SHE) Transmission PLC and to the licensed gas transporter responsible for the gas transmission system, NGG.

### Transmission System Operator (TSO)

The system operator has responsibility to construct, maintain and operate the NTS and associated equipment in an economic, efficient and co-ordinated manner. In its role as SO, NGG NTS is responsible for ensuring the day-to-day operation of the transmission system.

# Appendix 3 – Regulation of Storage Facilities

**Unbundling from Transco's Regulatory Asset Base**

1.1 Historically, the LNG storage facilities formed part of Transco's Regulatory Asset Base (RAB). These assets (which at that time also included the Isle of Grain and Dynevor Arms sites) were removed from the RAB and a separate price control was put in place with effect from 1 April 1997. The rationale for the removal of these assets from Transco's RAB was in part to promote competition in what we viewed as contestable services. Our decision to unbundle these assets was supported by the Monopolies and Mergers Commission in 1997[12] and by a subsequent Fair Trading Act investigation in 1999.

1.2 The 1997 price control for LNG storage facilities set price caps for the provision of services by these facilities. In 2000, Ofgem granted derogation for NG LNG to charge in excess of the regulated price caps in providing services to shippers (but not in providing services to NGG). This occurred in parallel with the introduction of auctions of capacity at these facilities. The 2002 Transco price control review renewed the regulated price cap in respect of services supplied by the LNG storage facilities to NGG but again allowed NG LNG to charge in excess of this price cap for other services. This allowed NG LNG to operate a proportion of the facilities on a commercial basis during these periods.

**Transmission Price Control Review 2007**

1.3 In the Transmission Price Control Review (TPCR4) 2007-12, Ofgem sought views on amendments to the price regulation framework. We decided to amend the existing price caps such that, when considered in conjunction with commercial revenues, they were likely to cover the forward looking capital and operating expenditure of the LNG storage facilities. These amended price caps were (and still are) linked to a reference market price for commercial storage services sold at the NG LNG storage facilities; if these market prices are higher, then the price caps default to these levels. Where the commercial prices are lower, then the price caps prevail. This means that the price cap levels represent a price floor for the regulated services, rather than a price cap. Therefore, NG LNG is exposed to downside risk on volume of regulated services, but has upside benefit in relation to both price and volume.

1.4 TPCR4 also considered whether it was appropriate to reincorporate the LNG storage facilities into the NGG RAB. Although one element of capital expenditure in

[12] BG Plc: A report under the Gas Act 1986 on the restrictions of prices for gas transportation and storage services' 29 May 1997, Monopolies and Mergers Commission

relation to the Glenmavis facility was allowed for in calculating the 2007-12 NGG RAB, we concluded that it was not appropriate for consumers to underwrite the long-term cost of facilities which might not be needed. We also confirmed our view that the decommissioning costs of these facilities should not be paid for by consumers.

1.5 Additionally, TPCR4 introduced a new licence obligation[13] on NGG to establish a transparent and robust process for the competitive provision of the operating margins services currently being supplied by the LNG storage facilities.

1.6 It was intended that, if the terms of this new licence condition are met, then NG LNG storage facilities should be able to tender on the same basis as other potential storage providers. This would imply the disapplication of the current regulated prices for the provision of OM services as specified in Special Condition C3 of NGG's gas transporter licence.

**LNG Storage Price Control 2008**

1.7 The price cap was reviewed in 2008. At that review, there was no change in real terms to the price cap. They were set to endure until the earlier of: 2012 or, the establishment of OM contestability.

**National Grid LNG Facilities Price Control 2010**

1.8 Before the 2010 price control NG LNG closed the facility at Dynevor Arms due to a lack of OM requirements. As a result of OM contestability being introduced, NGG was also able to award some OM contracts to new providers in 2010/11, reducing its need for OM services from NG LNG.

1.9 During the 2010 review of the price control a leak developed in the cold box in the Glenmavis facility and Glenmavis was removed from the price control. The provision of LNG tankering services for the SIUs was moved to Avonmouth from Glenmavis.

1.10 The price cap for the price control was set to run until 2013 to align with RIIO-T1 so that long term funding issues could be considered. In determining the price cap we took account of the commercial revenue foregone at Partington due to NG LNG withdrawing commercial volumes from the market because of commercial issues and not a decrease in market demand.

1.11 We continued to not allow any decommissioning costs in line with previous decisions that NG will be responsible for the costs. We also depreciated assets over their design life rather than the economic lives.

[13] Special Condition C25

**Changes since the 2010 control**

1.12 NG LNG performed a strategic review in 2010 of its storage facilities. As a result it stopped offering commercial storage services at Glenmavis and Partington from early in 2011. The closure of the Glenmavis and Partington facilities was subsequently announced in June 2012[14], leaving Avonmouth as the only functioning LNG storage facility.

1.13 NGG and SGN have both stated their desire to continue to use Avonmouth. NGG has plans to reinforce the South West NTS to remove its requirement for Avonmouth from October 2018; SGN is still working on its enduring solutions.

[14] National Grid, 'Closure of Partington and Glenmavis LNG Storage Facilities', 27 June 2012. Available at: http://www.nationalgrid.com/uk/gas/lngstorage/media

# Appendix 4 – Final Proposals Financial View

| | |
|---|---|
| **Data source** | Ofgem Final Proposals |
| **Site** | Avonmouth |
| **Opening asset base allowance** | 17.0 |
| **Cost of capital** | Variable (5.19% decreasing to 5.15%) |
| **Asset Depreciation (years)** | 5 |
| **Year of provision for SIUs** | 2013/14-2017/18 |

| Year ending 30 April<br>£m 12/13 | **2014** | **2015** | **2016** | **2017** | **2018** | | |
|---|---|---|---|---|---|---|---|
| **Capex forecast** | 4.8 | 4.5 | 1.8 | 0.6 | 0.1 | | |
| **Cost breakdown** | | | | | | | |
| Opex | 6.9 | 6.7 | 6.6 | 6.7 | 6.6 | | |
| Decommissioning | - | - | - | - | - | | |
| Central costs | 1.8 | 1.8 | 1.8 | 1.8 | 1.8 | | |
| Rates | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | | |
| Depreciation | 3.5 | 3.9 | 4.3 | 4.5 | 5.8 | | |
| Return on Asset Base | 0.8 | 0.8 | 0.6 | 0.4 | 0.2 | | |
| Total | 13.7 | 13.8 | 14.0 | 14.0 | 15.0 | | |
| Net Present Value (NPV) of total | 12.7 | 12.2 | 11.7 | 11.2 | 11.4 | | |
| Scenario NPV | | | | | | | **59** |
| **Revenue Forecast** | | | | | | | |
| NG LNG forecast | 15.5 | 15.5 | 15.5 | 11.6 | 11.6 | | |
| NPV of revenue | 14.3 | 13.6 | 13.0 | 9.2 | 8.8 | | |
| Scenario NPV | | | | | | | **59** |
| **Revenue less Cost** | | | | | | | |
| Present Value (PV) of Revenue less costs | | | | | | **-** | **0** |
| **NGG LNG income from regulated services** | | | | | | | |
| NG LNG regulated services income | 12.6 | 12.6 | 12.6 | 9.5 | 9.5 | | |
| NPV of NG LNG regulated services income | 11.7 | 11.1 | 10.5 | 7.5 | 7.1 | | |
| Scenario NPV | | | | | 47.9 | | |
| Percentage change to price cap required | | | | | | | **0%** |

# Appendix 5 - 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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