nationalgrid

CONCLUSIONS REPORT TO THE AUTHORITY

Modification Proposals to the Gas Transmission Transportation Charging Methodology

NTS GCM 14:

Constrained LNG Credits

20th January 2009

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Executive Summary

This document is issued by National Grid in its role as Gas Transporter Licence holder in respect of the NTS ("National Grid").

This document sets out final proposals for amending the Gas Transmission Transportation Charging Methodology (the "Charging Methodology") with regard to the calculation of the credits paid to Shippers that book the 'bundled' storage service at Constrained LNG (CLNG) storage sites.

In issuing this conclusions report, National Grid believes that, in principle, credits for Users that reduce the costs of Transmission through avoidance of network investment continue to be appropriate. National Grid believes that the level of the credit should reflect the specific costs avoided and that the proposed methodology for the calculation of CLNG credits better reflects the costs avoided by National Grid through the booking of the CLNG service.

National Grid proposes that the CLNG credits methodology be revised so that:

- The credit is related to the peak daily CLNG requirement identified by National Grid.
- The credit is based on the constrained entry node rather than the zone supported,
- The credit is based on the LRMC of providing exit capacity at the constrained entry node rather than the exit charge.

This proposal would be implemented for bookings made at CLNG facilities for the storage year 2009/10. Credits would be applicable from 1 May 2009.

The Notice of the CLNG credits applicable would be published by 1 March 2009.

This conclusions report has been placed on National Grid's industry information website:

http://www.nationalgrid.com/uk/Gas/Charges/consultations/CurrentPapers/

1 Introduction

Prevailing Arrangements

- 1.1 There are at present two Constrained LNG (CLNG) sites (Avonmouth and Dynevor Arms) where a credit may be paid via National Grid LNG to Shippers that book the 'bundled' storage service. In 2008/9 the credit was only paid to Shippers booking the 'bundled' storage service at Avonmouth since there was no requirement for this service at Dynevor Arms. This credit recognises the benefit of storage as a means of Transmission Support as an alternative to network investment on the gas National Transportation System.
- 1.2 Reserve prices for entry capacity are set following the methodology in GCM01. The NTS Transportation Model calculates the Long Run Marginal Costs (LRMCs) of transporting gas from each entry point to an exit point via a 'reference node'. The LRMCs are adjusted within the Tariff Model component of the NTS Transportation Model to maintain an equal split of revenue between Entry and Exit users. Under this methodology any negative reserve prices are set to the minimum level of 0.0001p/kWh/day within the Tariff Model.

Drivers for Change

1.3 The methodology for the calculation of the CLNG credits has not been reviewed for some time. The topic of paying credits to entry points with negative LRMCs was raised at the Gas Transmission Charging Methodologies Forum (Gas TCMF). It was suggested that credits should be paid to reflect avoided NTS costs. Investigation of this topic led National Grid to conclude that at this time the only avoided costs in relation to entry points with negative LRMCs related to Constrained LNG sites. This is because National Grid is required by its Licence and the safety case to ensure 1-in-20 security of supply and given the level of NTS physical exit capacity requires CLNG or suitable alternative arrangements to be in place. In discussions on the general topic of negative entry prices it became clear that the prevailing CLNG credit calculation methodology does not appropriately incentivise National Grid, as it does not effectively reflect the avoided investment costs.

Charging History

- 1.4 NTS GCM01 (November 2006) proposed alternative methodologies for the determination of NTS entry and exit capacity prices. At this time the principle of 'non-negativity' of capacity prices was retained with negative entry reserve prices being set to the minimum of 0.0001p/kWh/day.
- 1.5 Transportation credits for CLNG were last consulted upon in Transco Pricing Consultation PC52 (February 2000) and the methodology given in the conclusions report (April 2000) describes the calculation of the credit.

2 Background

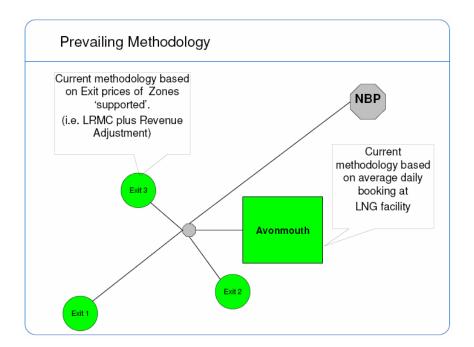
2.1 The methodology for deriving Transportation credits applicable at CLNG storage facilities was last revised under Pricing Consultation PC52 (Transportation Credits for Constrained LNG issued February 2000). The credit is related to the exit capacity charge rates at the relevant exit zones (i.e. the zones in need of Transmission support) and is applied to the CLNG facility deliverability (net of operating margins) booked by Shippers. These credits are available to Shippers that book the 'bundled' service offered by National Grid LNG Storage.

- 2.2 The prevailing methodology has not been revised since 2000.
- 2.3 The credit derived under this methodology is based on the average daily CLNG requirements over the 1 in 20 peak conditions and any subsequent demand thresholds on the 1:50 severe load duration curve.
- 2.4 The credit is based on the exit zone charges that the CLNG 'supports'. This therefore reflects the Long Run Marginal Cost of the provision of exit capacity and also includes a revenue adjustment which factors in non-asset and hence non-locational costs.
- 2.5 The present constrained storage sites are at Avonmouth and Dynevor Arms. In 2008/9 the constrained firm service is only required at Avonmouth.
- 2.6 The recent announcement concerning the disposal of the Dynevor Arms LNG storage facility has stated that there is no requirement by National Grid for a constrained service there in future. This means that Avonmouth will be the only constrained LNG storage facility from 2009/10.

3 Discussion and Issues

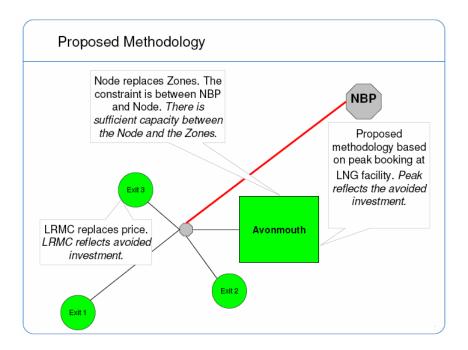
Reasons for Change

- 3.1 National Grid has a Licence obligation to ensure that charges reflect the costs incurred via the development of its charging methodology. The credit under the prevailing CLNG methodology is based on the exit zones that the CLNG 'supports'. This includes a revenue adjustment which factors in non-asset costs. The LRMC would be more cost reflective of the alternative to CLNG i.e. investment in additional exit capacity.
- 3.2 The incentive on National Grid should be to reduce the level of constrained booking to the level just necessary to support its peak day and severe period obligations under the Licence. CLNG should be used in preference to infrastructure investment where it is economic and efficient to do so. The prevailing methodology calculation is based on average daily CLNG requirements. Bookings made at the peak levels rather than average would better reflect the costs of the alternative infrastructure since pipes are built to meet the 1 in 20 peak day requirements.
- 3.3 As stated above, the prevailing methodology uses the exit prices at the zones supported by CLNG. However the constraint is actually between the National Balancing Point (NBP) and the Node, i.e. the constrained entry point (Avonmouth), rather than the Zones supported. There is sufficient capacity between the constrained entry point and the Zones. The diagram below illustrates this.



Proposed CLNG Methodology

- 3.4 The service provided to National Grid in terms of transmission support should receive a credit to reflect the costs of the alternative to transmission support i.e. system investment. This credit should continue to be made available to those Shippers booking the 'bundled service' at the constrained storage facilities as offered in the Annual Storage Invitation by National Grid LNG Storage.
- 3.5 The diagram below illustrates the proposed methodology.



- 3.6 There are three key elements of the proposed methodology, as follows:
 - The credit should be based on the LRMC rather than exit charges which
 include a revenue adjustment. This would be more cost reflective of the
 alternative to CLNG i.e. investment in additional exit capacity.
 - The credit should be based on the LRMC at the node rather than at the zones the CLNG supports since there is already sufficient capacity between the constrained entry point and the exit zones.
 - The credit should be based on **peak requirements** since investment in the network is to meet the 1 in 20 peak day Licence requirements. The prevailing methodology gives equal weight to the requirements over a number of days which is less reflective of the costs of investment.
- 3.7 The present constrained storage sites are Avonmouth and Dynevor Arms LNG storage facilities. In 2008/9 the constrained firm service is only required at Avonmouth. The requirements at these facilities and associated credits will be made available in the Annual Storage Invitation offered by National Grid LNG Storage. Note that the recent modification proposal concerning the disposal of the Dynevor Arms LNG storage facility has stated that there is no requirement by National Grid for a constrained service there in future. This means that Avonmouth will be the only constrained LNG storage facility from 2009/10.

- 3.8 The prevailing CLNG methodology is administered via the 'bundled' storage service available to Shippers that book this service at the constrained storage sites.
- 3.9 The following table shows example CLNG credits, for the prevailing and proposed methodologies, as presented at the Gas TCMF held on 6 November 2008. The initial requirement is assumed to be a daily requirement for 60 GWh on the peak day, 20 GWh on Day 1 and 10 GWh on Day 2. This example shows the impact of reducing these requirements by 5 GWh per day at 2008/9 price levels at Avonmouth.

CLNG	Storaç	ge Requirement	Indicative Annual Credit (£m)		
Volume (GWh)	Days	Peak Day (GWh/day)	Prevailing Methodology: Average & Exit Charge & Zonal Cost	Proposed Methodology: Peak only & LRMC & Nodal Cost	
90	3	60	£2.9m	£2.9m	
75	3	55	£2.5m	£2.7m	
60	2	50	£2.9m	£2.4m	

- 3.10 Appendix A explains the calculation of the credit under the proposed methodology for the example above.
- 3.11 The existing methodology does not incentivise National Grid to appropriately consider investment in relation to CLNG costs since there is an incentive to invest in the first 5 units of capacity to reduce the CLNG requirements from 90GWh to 75GWh but further investment in another 5 units of capacity to bring the requirements down to 60GWh results in increased CLNG costs for National Grid.
- 3.12 The proposed methodology results in reducing costs to National Grid as investment is provided as an alternative to CLNG. National Grid believes this better supports the long term incentive to invest where it is economic and efficient to do so.

Effect on Existing Credits

- 3.13 The existing credit rate at Avonmouth CLNG facility for the gas storage year May 2008 to April 2009 is 0.0032 pence per peak day kWh per day (p/pdkWh/d) and the rate that would have applied under the proposed methodology is 0.0049 p/pdkWh/d.
- 3.14 It can be seen that for bookings at this year's requirement level, the proposed methodology would have resulted in additional costs to National Grid. However, the cost differential may reduce or increase in future years due to the discontinuity of the existing methodology (as shown in 3.9 above). This creates significant uncertainty for National Grid and potentially undermines any investment case.

Effect on Transportation Charges

3.15 National Grid has a fixed allowance under the SO incentives with which to procure CLNG for the purposes of Transmission support. The incentive on National Grid is to minimise its expenditure by booking only the necessary level of CLNG. Changes in the CLNG credit methodology as proposed will have no effect on the fixed allowance under the SO incentive scheme and as a consequence there will be no resulting change in the SO commodity charge level. There will be no effect on any other transportation charges.

4 Terms of the Original Proposal

- 4.1 Through NTS GCM 14, National Grid proposed that the CLNG credits methodology be revised so that:
 - The credit is related to the peak daily CLNG requirement identified by National Grid.
 - The credit is based on the constrained entry node rather than the zone supported,
 - The credit is based on the LRMC of providing exit capacity at the constrained entry node rather than the exit charge.

Implementation

- 4.2 This proposal would be implemented for bookings made at CLNG facilities for the storage year 2009/10. Credits would be applicable from 1 May 2009.
- 4.3 The Notice of the CLNG credits applicable would be published by 1 March 2009.

5 Representations Made

5.1 National Grid NTS received 5 responses to its consultation on NTS GCM 14; all 5 were in support. None of the responses were marked as confidential, and copies of the responses have been posted on the Gas Charging section of the National Grid information website.¹

Support for the Proposal

Respondent	Abbr.	View
British Gas Trading	BGT	Support
E.ON UK plc	EON	Support
EDF Energy plc.	EDF	Support
RWE npower	RWE	Support
Scottish and Southern Energy plc	SSE	Support

Summary of Responses by Consultation Question

Credit Calculation

Respondents Views

5.2 British Gas Trading (BGT) "supports the proposed changes in GCM14 for CLNG credits.

Specifically these are:

- Making the credit related to the peak requirements rather than based on average daily CLNG requirements. As investment in the network needs to meet the 1 in 20 peak day Licence requirements, this change will better reflect the costs of investment. This change will also remove the perverse effect of the incentive on National Grid, whereby additional investment in capacity could result in increased CLNG costs for National Grid.
- Making the credit based on the LRMC at the CLNG node rather than based on the LRMC of zones 'supported'. Since there is no constraint in the exit zones but instead is between NBP and the node, any investment needed would be between NBP and the node. Hence, changing the LRMC to the CLNG node is logical in its reasoning.
- Changing the credit so that it is based on the LRMC of providing exit capacity at the CLNG node rather than based on the exit zone capacity charge rates that the CLNG 'supports'. This change is more cost reflective as it is more consistent with the alternative of investment in additional exit capacity (as no revenue adjustment is added to the LRMC)."

http://www.nationalgrid.com/uk/Gas/Charges/consultations/

GCM14 consultation responses can be found at :

- 5.3 EDF stated "In relation to this specific elements of NGG's proposal EDF Energy believes that:
 - It is appropriate to base credits on the LRMC rather than the exit charges which have been scaled² up to match allowed revenue and so are not reflective of the investment required to remove the constraint.
 - The credit should be based on the LRMC at the constrained LNG node rather than the exit zones, as it is between the constrained LNG node and the NBP that the constraint exists.
 - The credit should be based on the peak requirements rather than the average requirements, as it is the peak requirements that the investment will have to meet in line with NGG's licence obligations.
 - These changes will result in a charging methodology that is more cost reflective than the prevailing arrangements and so help to facilitate SLC A 5. "
- 5.4 RWE stated "We support the key elements of the proposed methodology, namely that Constrained LNG (CLNG) credits should be determined based on the LRMC at the relevant CLNG node (rather than exit charges at the zones the CLNG supports) and on the 1 in 20 peak day CLNG deliverability requirement (rather than the space monitor requirement averaged over the forecast duration of days required)."

National Grid's View

5.5 National Grid continues to believe that the CLNG credit calculation methodology needs to be modified in order to ensure that it appropriately reflects the avoided investment costs and provides a consistent incentive on National Grid to optimise CLNG bookings.

Application for the gas storage year 2009/10

Respondents' Views

5.6 There were no comments by respondents regarding the application for the gas storage year 2009/10.

Summary of Responses by Relevant Objectives

5.7 BGT "believes that the GCM14 changes listed above continue to support National Grid's relevant GT licence objectives."

Reflect the Cost Incurred by the Licensee

Respondents' Views

5.8 E.ON stated "We agree that it would be more cost-reflective to base the credit on Long Run Marginal Costs (LRMCs), which represent the capital investment cost in additional pipe and / or compression which would be incurred (or saved) by an incremental change in supply or demand respectively at that point. We agree that the methodology should have a nodal (rather than zonal) basis and be based on peak day (rather than average) requirements."

NTS GCM 14R

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² Note that exit charges are not scaled to meet allowed revenue but a constant adjustment is added to each LRMC.

- 5.9 E.ON also stated "Based on the evidence put forward in the consultation paper, it is clear that the proposed methodology would better incentive National Grid NTS to appropriately consider investment in relation to CLNG costs. Under the prevailing methodology there is the potential for a perverse outcome whereby investment in additional exit capacity results in additional CLNG costs. The proposed methodology ensures that costs reduce as incremental investment is provided as an alternative to CLNG, which is a more logical outcome. Ultimately, this should result in more efficient bookings for the CLNG requirement."
- 5.10 EDF Energy "believes that implementation of this proposal will result in charges that better reflect the costs incurred on the system, and so facilitate National Grid Gas' (NGG's) Licence Conditions."
- 5.11 RWE stated "we believe these measures will lead to greater cost reflectivity and should avoid the perversity of National Grid not always being incentivised to economically invest to reduce the need for CLNG, which could arise under the prevailing methodology."
- 5.12 SSE stated "SSE believes in principle, that credits for Users that reduce the costs of Transmission through avoidance of network investment are appropriate and that the level of the credit should reflect the specific costs avoided.

Specifically in the case of Constrained LNG credits SSE believe:

- 1. The credit should be based on the LRMC rather than exit charges which include a revenue adjustment. This would be more cost reflective of the alternative to CLNG i.e. investment in additional exit capacity.
- 2. The credit should be based on the LRMC at the node rather than at the zones the CLNG supports since there is already sufficient capacity between the constrained entry point and the exit zones.
- 3. The credit should be based on peak requirements since investment in the network is to meet the 1 in 20 peak day Licence requirements. The prevailing methodology gives equal weight to the requirements over a number of days which is less reflective of the costs of investment."

National Grid's View

5.13 National Grid believes that the proposed revision to the methodology for the calculation of the CLNG credits would better meet its Licence conditions as detailed in section 8 below.

Other issues raised during the Consultation

Application to entry points with negative LRMCs

Respondents' Views

5.14 E.ON stated "As noted in the consultation paper, this issue has arisen following industry discussions about E.ON UK's proposal for 'Rebates for Entry Points with a Negative LRMC'. We believe this consultation paper highlights further that the current charging methodology does not properly reflect the costs incurred by the Transporter. Due to the current constraint in the 'Transportation' charging model, it could be argued that the system benefits provided through avoided investment (provided by incremental gas flows) are not properly reflected in charges faced by Users. We recognise that CLNG credits are currently paid to Users as the commitment to flow gas when required is formalised in a specific contract. However, given that the majority of entry points with negative LRMCs are either gas storage sites or LNG importation terminals - and therefore predominantly demand-responsive, we believe that the high level of predictability of flows could be used as a market-based proxy (or indeed a replacement) for the CLNG contract. It could also be argued that undue preference is currently given to CLNG sites over other entry points with a negative LRMC, which provide the same or similar system benefits (i.e. avoided investment), but are treated in different ways. As such, we believe that National Grid NTS needs to do more work to ensure all entry points with a negative LRMC are treated equally and that the benefits that these points provide are properly reflected in the charging methodology. "

National Grid's View

5.15 National Grid has identified that the only entry points with negative entry long run marginal costs (LRMCs), as identified through the NTS charging transportation model, that genuinely result in avoided investment for exit (to satisfy the '1 in 20 demand conditions') are CLNG sites. If evidence of a clear and consistently available benefit from other entry points with negative costs can be provided, National Grid will consider further developments in this area.

Information provision

Respondents' Views

- 5.16 BGT stated "As with all NTS charges or credits, BGT would like to reiterate that the information required to calculate the credit (such as the credit per unit of entry capacity per day) is made transparent. This information should be clearly sourced, detailed, and available in the public domain so that industry users can calculate and predict CLNG credits if desired."
- 5.17 RWE stated "Whilst we support the proposed methodology we should point out it is not immediately transparent to us what the parameters that directly influence the CLNG credit under the prevailing methodology (i.e. the space monitor requirement and the forecast duration of days required) have been historically, what they represent and how they have been set. Whilst the proposed new methodology is not directly influenced by these parameters (being influenced only by the peak day deliverability required) we would welcome greater visibility in this area such that Shippers can have full confidence in the CLNG credits going forward."

National Grid's View

5.18 National Grid believes that the revised methodology is more transparent than the prevailing methodology and details the effective credit as required by the UNC and the actual credit received via LNG storage. Details of the calculation would be published with the notification of the credits to apply which is published by 1 March for applicability to the gas storage year starting in May.

6 Changes to the Original Proposal in the light of Representations Made

6.1 National Grid believes that no changes to the proposal are required in light of responses and questions raised throughout the GCM14 consultation process. As a result of communications received during the consultation we have clarified the illustrative calculation shown in Appendix A. The final proposal is therefore the same as the original proposal and is detailed in Section 7 below.

7 Final Proposal

- 7.1 National Grid believes that a revision to the methodology for the calculation of the CLNG credits would better meet its Licence conditions.
- 7.2 Therefore, through NTS GCM 14, National Grid proposes that the CLNG credits methodology be revised so that:
 - The credit is related to the peak daily CLNG requirement identified by National Grid,
 - The credit is based on the constrained entry node rather than the zone supported,
 - The credit is based on the LRMC of providing exit capacity at the constrained entry node rather than the exit charge.

Implementation

- 7.3 This proposal would be implemented for bookings made at CLNG facilities for the storage year 2009/10. Credits would be applicable from 1 May 2009.
- 7.4 The Notice of the CLNG credits applicable would be published by 1 March 2009.

8 How the Proposed Modification Achieves the Relevant Objectives

Licence Relevant Objectives

- 8.1 The National Grid Gas plc Gas Transporter Licence in respect of the NTS requires that proposed changes to the Charging Methodology shall achieve the relevant methodology objectives.
- 8.2 Where transportation prices are not established through an auction, prices calculated in accordance with the methodology should:
 - (1) Reflect the costs incurred by the licensee in its transportation business;
 - (2) So far as is consistent with (1) properly take account of developments in the transportation business:
 - (3) So far as is consistent with (1) and (2) facilitate effective competition between gas Shippers and between gas suppliers.
- 8.3 Where prices are established by means of auctions, either
 - (4) No reserve price is applied or
 - (5) Reserve prices are calculated at a level that promotes efficiency, avoids undue preference in the supply of transportation services and promotes competition between gas Shippers and between gas suppliers.
- 8.4 National Grid NTS is obliged to keep the NTS Charging Methodology under review at all times for the purposes of ensuring that it achieves the relevant objectives.

EU Gas Regulations

- 8.5 EC Regulation 1775/2005 on conditions for access to the natural gas transmission networks (binding from 1 July 2006) states that the principles for network access tariffs or the methodologies used to calculate them shall:
 - > Be transparent
 - > Take into account the need for system integrity and its improvement
 - Reflect actual costs incurred for an efficient and structurally comparable network operator
 - > Be applied in a non-discriminatory manner
 - > Facilitate efficient gas trade and competition
 - > Avoid cross-subsidies between network users
 - Provide incentives for investment and maintaining or creating interoperability for transmission networks
 - > Not restrict market liquidity
 - ➤ Not distort trade across borders of different transmission systems.
- 8.6 All but the last of the principles listed above map onto the objectives for National Grid's Transmission Transportation Charging Methodology. In terms of cross border trade, the Regulation recognises that funding for network investment may require different tariffs across different transmission systems.

National Grid's View

Cost Reflectivity

- 8.7 National Grid believes that, in order to comply with its licence obligation for the charging methodology to be cost reflective, CLNG credits (effectively negative charges) should reflect costs avoided.
- 8.8 National Grid believes that a credit, based on the LRMC (rather than the exit charge) at the Node (rather than the Zones) supported, better reflects the costs of the alternative infrastructure investment that would be necessary to support the 1 in 20 peak day requirement.
- 8.9 A credit related to National Grid's peak daily CLNG requirement, as opposed to an average daily requirement, is more cost reflective since investment in infrastructure is for peak day requirements.

Promoting Efficiency

- 8.10 National Grid believes that credits based on the costs of the alternative infrastructure will promote efficiency in that where the costs to National Grid are lower by making use of CLNG, unnecessary investment will be avoided. Where the costs of CLNG are more expensive the more appropriate long term solution of investment will be encouraged. Credits based on peak day requirements rather than average requirements will better promote this.
- 8.11 The proposed methodology will remove the anomaly, under the prevailing arrangements, whereby a requirement for a lower number of days (following additional infrastructure investment) results in increased costs to National Grid rather than the expected decrease. This anomaly may lead to sub-optimal investment decisions.

Avoiding Undue Preference

8.12 All Shippers booking the 'bundled storage service' at the CLNG facilities will receive the same credit.

Promoting Competition

8.13 The proposed methodology would facilitate competition by providing appropriate credits to users of CLNG facilities in recognition of the benefits provided through transmission support.

Assessment against EU Gas Regulations

8.14 National Grid believes that this proposal (NTS GCM 14) is consistent with the principles of the EU Gas Regulations.

Appendix A

Illustrative calculation of the credit under the proposed methodology at Avonmouth

Total Space	GWh	860.400	860.400	860.400	A
Operating Margin Space	GWh	177.400	177.400	177.400	В
Period of Actual Deliverability	Days	5.50	5.50	5.50	С
	_				_
Space Monitor Requirement	GWh	90.000	75.000	60.000	D
Forecast Maximum Duration	Days	3	3	2	E
Deliverability required*	GWh/d	60.000	55.000	50.000	F
CLNG as % of Available after OM		13.2%	11.0%	8.8%	G=D/(A-B)
TO Exit LRMC Apr 09; Avonmouth	p/pdkWh/d	0.0132	0.0132	0.0132	н
	_				_
CLNG Credit 1 May 2009 (per unit of entry					
capacity per day)**	p/pdkWh/d	-0.0051	-0.0046	-0.0042	I=-F/(A/C)*H
% deliverability required		38.4	35.2	32.0	J=F/(A/C)
Annual discount £	£'s	-2,890,800	-2,649,900	-2,409,000	K=-F * H * 10000 * 365
Annual credit pence per kWh of storage space(Excluding operating margins)***	p/kWh	-0.4233	-0.3880	-0.3527	= K * 100 / (1000000 * (A - B))

^{*}Under the proposed methodology the credit is dependent on the deliverability required for the peak day.

^{**} As defined in UNC. Effective credit based on Shippers booking NTS entry capacity at a level equal to the maximum deliverability of the facility. This assumes that no deliverability is booked for OM purposes.

^{***} Credit received via LNG storage (rounded to 4 decimal places).