Promoting choice and value for all gas and electricity customers

Charging arrangements associated with methodologies for determination of NTS entry and exit capacity prices

Document type: Impact Assessment

Ref: 40/07

Date of publication: 6 March 2007

Deadline for response: 3 April 2007

Target audience: National Transmission System users and all other relevant stakeholders

Overview:
National Grid Gas plc (NGG) has responsibility for establishing how users of the National Transmission System (NTS) for gas, such as shippers, should be charged for entry and exit capacity to and from the network. In this context NGG has proposed changing from an engineering based model used to derive the exit and entry capacity prices to a transportation model. This change, if implemented might result in (i) stronger locational signals both through exit capacity and entry capacity prices compared with current prices; (ii) the exclusion of spare capacity from the model but the inclusion of backhaul flows in the model; and (iii) users being able to replicate the charge setting process for their own analysis.

Ofgem has the ability to intervene to stop the proposal being implemented if we do not think it is appropriate. Before making a decision, we have decided to publish an impact assessment seeking wider views. This document is our impact assessment.

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Context

Standard Special Condition A5 (Obligations as Regard Charging Methodology) of National Grid Gas plc's ("NGG") gas transporter licence in respect of the National Transmission System (NTS) requires it to keep its charging methodology under review at all times in order to achieve the relevant methodology objectives in relation to cost-reflectivity, promotion of efficiency and avoidance of undue preference in the supply of transportation services, promotion of competition between gas shippers and between gas suppliers, accounting for developments in the transportation business and any alternative arrangements put in place in accordance with a determination made by the Secretary of State[1].

NGG has raised a proposed modification in relation to the methodologies used to determine the NTS entry and exit capacity prices. On 25 January 2007 it submitted this to the Gas and Electricity Markets Authority (the "Authority")[2] for a decision.

The Authority is required to assess proposed modifications to the gas transmission transportation charging methodology and to decide whether or not to direct NGG not to implement those proposals. Under section 5A of the Utilities Act 2000 the Authority is required to carry out an impact assessment where it considers that a proposal is important. On 20 February 2007, we published a letter confirming our intention to undertake an impact assessment before the Authority makes a decision on this proposal. This document sets out that impact assessment.

Associated Documents

- Gas TCMF progress report: Development of alternative methodologies for NTS entry and exit capacity charges, Gas TCMF PR01, 24/10/06 www.nationalgrid.com/NR/rdonlyres/7626FB9C-8338-4779-BBCB-B62F8E58FB49/12354/GasTCMFProgressReportNTS_GTCMF_PR_01Developementof.pdf
- Consultation document: Modification proposals to the gas transmission transportation charging methodology NTS GCM 01: Alternative methodologies for determination of NTS entry and exit capacity prices, 02/11/2006 www.nationalgrid.com/NR/rdonlyres/E0797374-7E14-419D-A025-DFB744AFF7DB/12991/NTSGCM01CapacityCharging2ndNov06V2.pdf
- Conclusions report to the Authority: Modification proposals to the gas transmission transportation charging methodology NTS GCM 01: Alternative methodologies for determination of NTS entry and exit capacity prices, 25/01/07 www.nationalgrid.com/NR/rdonlyres/5D5AE27F-BD79-4A9E-B9A8-1E6929BF2962/15151/NTSGCM01RCapacityChargingReportV1.pdf

[1] Under Standard Special Condition 27(2A)(a) (Disposal of Assets) of the licence.
[2] Ofgem is the office of the Authority. The terms 'Ofgem' and 'the Authority' are used interchangeably in this letter.

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Summary

Issue

The charges and prices for entry to and exit from the National Transmission System (NTS) for gas transportation arrangements are set out in the gas transmission transportation charging methodology statement.

Ofgem, in an open letter to NGG in December 2005, asked NGG to develop and consult on modifying the charging methodology to de-couple the dual role of Unit Cost Allowances (UCAs) as a revenue driver and as a basis for entry prices and charges.

NGG has since developed and consulted on a new model for determining the entry and exit prices and has submitted its proposal to modify the charging methodology accordingly. The main change to the methodology involves the replacement of an engineering based model, Transcost, with a transportation model. Whereas Transcost ignores the benefits that may occur from certain gas flows on the system (i.e. flows that would reduce the need for network reinforcement), it includes spare capacity in the model. The transportation model does include benefits to the system of certain gas flows but ignores spare capacity. Arguably, if prices do not reflect spare capacity available on the network, there is an increased risk of underutilised assets. Another difference between the two models is that the transportation model is much simpler and will be in the public domain, thus enabling shippers and developers to replicate the charge setting process.

It is in the interests of consumers that the charging arrangements facilitate efficient use of and connection to the transmission system, which in turn helps to achieve efficient gas supply overall. Increased transparency reduces barriers faced by new entrants and therefore aids competition and ultimately benefits consumers. Stable prices are also important, not only for shippers and developers, but ultimately for consumers.

NGG argues that this proposed modification is more cost reflective, promotes efficiency, avoids undue discrimination and promotes effective competition between shippers and between suppliers.

Purpose of this document

The Authority is required to assess a modification proposal and direct that the change should not be made or else allow it because it achieves the relevant objectives set out in NGG's gas transporter licence in relation to our principal objective and general duties. Before making a decision on a modification proposal, the Authority may undertake an impact assessment in accordance with section 5A of the Utilities Act 2000. The Authority is required to undertake an impact assessment where it appears to the Authority that a proposal is important. Section 5A sets out the criteria for judging whether a proposal is “important”.

Having assessed NGG's modification proposal in relation to the charging arrangements associated with methodologies for NTS entry and exit capacity prices we concluded that this proposal met the importance criteria set out in the Utilities Act. On 20 February 2007 we published a letter confirming our intention to undertake an impact assessment before making a decision on NGG's charging proposal. The purpose of this document is to set out that impact assessment and seek further views from interested parties regarding the proposed change.

Way forward

This document provides four weeks for respondents to submit any comments. Having received and considered any responses, we are planning to take a decision on NGG's proposed modification by 25 April 2007. This date is chosen because Standard Special Condition A5 of NGG's gas transportation licence states that NGG will not make any modification to its charging methodology within three months of its charging methodology report being submitted to the Authority, which was submitted on 25 January 2007, where the Authority intends to undertake an impact assessment.

NGG is seeking to implement the modification proposal from 1 October 2007 and so if the modification proposal is implemented would intend to notify users of the new NTS exit capacity prices by 1 August 2007 and users of the new NTS entry capacity baseline reserve prices by 1 July 2007.

1. Background and structure of document

Chapter Summary

This chapter set out the background to this document and the legal framework against which the document is developed. It also sets out a summary of the chapter structure of the document.

Question box

There are no questions in this chapter.

Background

1.1. As part of the 2002-2007 Transco price control, Ofgem determined entry and exit point specific revenue drivers, known as UCAs (Unit Cost Allowances)[3] for the duration of the price control (a five year period). NGG (then Transco) based the reserve prices for the entry capacity auctions on these revenue drivers. In practice, this resulted in reserve prices being fixed for the duration of the price control period, although, they are adjusted for inflation.

1.2. During 2004 and 2005 Ofgem was approached by several developers who requested UCAs in order to be able to connect to the NTS. Ofgem asked NGG to undertake modelling in order to estimate the incremental costs associated with the proposed projects. For the smaller new entry points, NGG used the Transcost model. This is the same model which had been used at the 2002-2007 Transco price control for determining UCAs at all existing entry points.

1.3. The modelling indicated that, since the 2002 price review, there had been significant changes to the anticipated pattern of flows across the gas network. Also, there had been significant increases in the costs of steel and contracting costs. It was therefore argued that the current reserve prices were no longer cost reflective.

1.4. In the light of this, the May 2005[4] consultation covered not only issues relating to the UCAs for the proposed new entry points but also raised the possibility of

[3] UCAs are meant to be estimates of the long-run incremental costs associated with incremental flows on the network.

[4] http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/11541_13905.pdf?wtfrom=/ofgem/whats-new/archive.jsp

resetting all existing UCAs before the next round of long-term auctions to be held in September 2005.

1.5. Ofgem consulted in May 2005 on two main options going forward in relation to UCAs:

- Option 1 – calculate UCAs for the new applicants on the basis of the methodology set out in the May 2005 consultation document (using Transcost); or
- Option 2 – cap the UCAs for new entry points to the level of the UCAs at near-by existing entry points and leave existing UCAs unchanged. Then review all these UCAs as part of the next price control review.

1.6. In August 2005[5] the Authority, after carefully considering its principal objective and general duties and the consultation responses, decided to adopt option 2. The Authority also decided not to revise existing UCAs given the uncertainty this would create for shippers.

1.7. To inform the Authority, Ofgem appointed an expert economic adviser and an expert technical adviser. Both had serious concerns in relation to the Transcost model and the underlying assumptions. It was pointed out that a small change in an assumption could result in a significantly different cost estimate. Their reports were published on the Ofgem website[6].

1.8. In December 2005 Ofgem published an open letter[7] asking NGG to develop an appropriate charging methodology going forward given the intention to de-link the setting of entry charges and the determination of the revenue drivers as part of Transmission Price Control Review (TPCR). This de-linking would enable revenue drivers to be determined for the duration of the price control (five years), thus preserving their incentive properties. It would also enable reserve prices to be reviewed more frequently. The latter was regarded as desirable as it would improve cost reflectivity and hence ensure that reserve prices would provide the appropriate locational signals to shippers and developers.

5 http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12157_188_05.pdf?wtfrom=/ofgem/whats-new/archive.jsp

6 http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12162_188_link3.pdf?wtfrom=/ofgem/whats-new/archive.jsp
http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12163_188_link4.pdf?wtfrom=/ofgem/whats-new/archive.jsp

7 http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/13073_262_05.pdf?wtfrom=/ofgem/whats-new/archive.jsp

1.9. In response to the Ofgem open letter, NGG instigated a review of its charging arrangements with the industry via the launch of the Gas Transmission Charging Methodology Forum (Gas TCMF) in January 2006.

1.10. In conjunction with the industry through the Gas TCMF, NGG developed a range of options for the purpose of determining NTS Capacity Prices. This work culminated in a public consultation, Consultation document: Modification proposals to the gas transmission transportation charging methodology NTS GCM 01: Alternative methodologies for determination of NTS entry and exit capacity prices[8], which has resulted in NGG submitting Pricing Consultation NTS GCM 01 to the Authority for approval.

1.11. The Authority recognises that NGG has extensively consulted, both through the year long gas TCMF and its public consultation. However, given that the proposed methodology entails an important change to the charging arrangements, the Authority regards it important to provide the wider community with an opportunity to comment. The Authority has therefore undertaken to issue this impact assessment.

1.12. Given NGG's submission of pricing proposal NTS GCM01; Alternative methodologies for determination of NTS entry and exit capacity prices, the Authority has the option to direct NGG not to implement the proposal. Although NGG consulted on a number of options, the only option considered in this impact assessment, is NGG's proposed option (option 2b in NGG's public consultation document).

1.13. The Authority will make its decision by first assessing whether relevant charging methodology objectives, as set out in NGG's gas transporter licence, are achieved by the proposal and then in accordance with the Authority's statutory duties, whilst having considered responses to NGG's public consultation and responses to this impact assessment.

Legal framework

Gas Act 1986

1.14. The Gas Act 1986 (the “Act”) sets out the statutory framework under which the gas industry operates including the principal objective and general duties of the Authority.

1.15. The Authority’s principal objective is “to protect the interests of consumers … wherever appropriate by promoting effective competition”. In addition the Act places

[8] http://www.nationalgrid.com/NR/rdonlyres/E0797374-7E14-419D-A025-DFB744AFF7DB/12991/NTSGCM01CapacityCharging2ndNov06V2.pdf

a number of general duties on the Authority including carrying out its functions in a manner which is best calculated to secure a diverse and viable long-term energy supply and having regard to the effect on the environment of the conveyance of gas.

1.16. The Act also requires that the Authority, in carrying out its duties, must also have regard to any guidance issued by the Secretary of State in relation to social or environmental policies.

1.17. On 5 October 2004 the Authority was conferred with two additional duties through the Energy Act 2004. These relate to contributing to the achievement of sustainable development and having regard to the principles of best regulatory practice.

1.18. In addition to the regulatory framework set out under the Act, the gas industry is also subject to European Community law and competition law. Section 4B of the Act provides that the duties imposed on the Authority under sections 4AA to 4A of the Act do not affect other duties or requirements, whether arising under the Act or another enactment (and this would include Directive 2003/55/EC).

Licence obligations

1.19. Standard special condition A5 of NGG's gas transporter licence sets out the relevant licence objectives with which the gas transmission transportation charging methodology must conform. These are:

a. save in so far as paragraphs (aa) or (d) apply, that compliance with the charging methodology results in charges which reflect the costs incurred by the licensee in its transportation business;

aa. that, in so far as prices in respect of transportation arrangements are established by auction, either:

i. no reserve price is applied, or
ii. that reserve price is set at a level -

(I) best calculated to promote efficiency and avoid undue preference in the supply of transportation services; and
(II) best calculated to promote competition between gas suppliers and between gas shippers;

b. that, so far as is consistent with sub-paragraph (a), the charging methodology properly takes account of developments in the transportation business;
c. that, so far as is consistent with sub-paragraphs (a) and (b), compliance with the charging methodology facilitates effective competition between gas shippers and between gas suppliers; and
d. that the charging methodology reflects any alternative arrangements put in place in accordance with a determination made by the Secretary of State under paragraph 2A(a) of Standard Special Condition A27 (Disposal of Assets).

1.20. In making its decision whether or not to allow the proposed charging methodology the Authority will first consider if the proposals meet the relevant licence objectives setting out the relevant charging methodology objectives.

Impact assessment

1.21. Section 5A of the Utilities Act 2000 (Duty of the Authority to carry out an impact assessment) applies where: (a) the Authority is proposing to do anything for the purposes of, or in connection with, the carrying out of any function exercisable under or by virtue of Part 1 of the Electricity Act or the Gas Act; and (b) it appears to the Authority that the proposal is important, within the meaning set out in section 5A, but does not apply where the urgency of the matter makes it impracticable or inappropriate for the Authority to comply with the requirements of section 5A. Where section 5A applies, the Authority must either carry out and publish an impact assessment or publish a statement setting out its reasons for believing that it is unnecessary for it to undertake an impact assessment.

1.22. Section 5A(2) sets out the matters which would determine whether or not a proposal is "important" for the purposes of section 5A. These are where a proposal:

a. Involves a major change in the activities carried out by the Authority;
b. Has a significant impact on market participants in the gas or electricity sectors;
c. Has a significant impact upon persons engaged in commercial activities connected to the gas or electricity sectors;
d. Has a significant impact on the general public in GB or in a part of GB; and
e. Has significant effects on the environment.

Structure of document

1.23. The remainder of this document is structured as follows:

- Chapter 2 sets out a brief explanation of the current gas transmission transportation charging methodology and NGG's proposed modification to it.
- Chapter 3 provides an assessment of the impact of the proposal in relation to the relevant objectives.
- Chapter 4 provides as assessment of the impact of the proposal in relation to wider considerations.
- Chapter 5 sets out an assessment of the impact of the proposal in relation to the environment.
- Chapter 6 sets out the way forward.
- Appendix 1 provides details on the questions the consultation addresses and how parties should respond.
- Appendix 2 sets out the Authority's powers and duties.
- Appendix 3 lists the prevailing and indicative NTS exit capacity and NTS entry capacity baseline reserve prices which are used in the analysis in Chapter 3.
- Appendix 4 provides a glossary of terms used in this document.
- Appendix 5 is a questionnaire inviting comments on the consultation process.

2. Current arrangements and outline of NGG's modification proposal

Chapter Summary

This chapter summarises the current gas transmission transportation charging methodology and NGG's proposed modification to it.

Question box

There are no questions in this chapter.

Current Arrangements

NTS Exit Capacity Prices

2.1. NTS exit prices were set in 2002 using the engineering model, Transcost. They have then been scaled each year to enable NGG to recover its maximum allowed revenue as determined by Ofgem as part of the transmission price control.

2.2. The Transcost model estimates the costs of reinforcing the NTS to transport gas between entry and exit points which is then used in setting NTS exit capacity prices. This model is described in more detail below.

2.3. Firstly the supply and demand forecasts set out in the base plan assumptions are used in the Transcost model to develop a base network to match demand and supply in the first year of the analysis. In each of the subsequent ten years Transcost reinforces the modelled network from the previous year so as to cater for demand and supply changes. This produces a set of networks, one for each year to match demand and supply.

2.4. With these networks in mind Transcost then calculates the cost of the additional investment required in new pipelines and or compressors to support an incremental flow of 2.834 mcm[9] along each route.

2.5. The estimated costs of such an increment in investment are then calculated for each network section using the following formula:

[9] This represents in general around 10% of the flow along a route and can be changed in Transco.

$$Transcost InvestmentCost = [0.0003115 \times diameter(mm) + 0.3505652] \times P + 30 \times C_g + 15 \times C_e$$

where: P = length in km of pipeline

Cg = Number of new Greenfield Compressor Stations

Ce = Number of new turbines in Existing Compressor Stations

2.6. The calculations of the minimum investments over the ten year period for each of the routes are grouped into exit zones and then project management and operating costs are added and then the total costs are annuitised. The sum of the discounted costs is then divided by the sum of the discounted volumes to give the appropriate costs.

2.7. The costs for each of the routes is then used to produce a charge for each entry and exit point such that when these are combined for a particular route they replicate as closely as possible the calculated costs for that route. These charges are then scaled to match allowed revenues to produce the NTS exit capacity prices.

2.8. The Transcost model automatically includes spare capacity in its workings. However, the Transcost model does not incorporate the benefits to the NTS from certain gas flows for example in relation to where an exit point locates itself, called backhaul. To illustrate this point Transcost may result in relatively high prices when a power station locates itself close to an entry terminal when one would expect it to provide benefits to the NTS from the reduced need for reinforcements.

NTS Entry Capacity Baseline Reserve Prices

2.9. The NTS entry capacity baseline reserve prices are determined using a similar basic approach as that for NTS exit capacity prices using the costs determined in the Transcost Model. However, there are a few differences, namely:

- A 6 mcm/d increment is used instead of the 2.834 mcm/d
- In the entry capacity baseline reserve price methodology the weighted average costs are calculated for each route over the ten years and then the entry and exit costs are fitted to these average costs. For the entry capacity charging methodology entry and exit costs are fitted for each year then a simple average entry unit cost is calculated across the ten years
- There is no scaling applied to the NTS entry capacity baseline reserve prices. A shortfall between auction revenue and maximum allowed revenue is recovered through the TO commodity charge which is levied on all shippers holding entry capacity.

Modification Proposal

2.10. The NGG consultation sought views on a number of options for modifying the methodology for determination of NTS entry capacity baseline reserve prices and NTS exit capacity prices which resulted in two broad approaches being advocated -

one favouring the Transcost model and the other a transportation model. On the basis of the consultation responses and its consideration of how the relevant methodology objectives are achieved NGG submitted its conclusions report to the Authority. This proposed the transportation model approach be used to modify the methodology for determination of NTS entry capacity baseline reserve prices and NTS exit capacity prices. A description of the Transportation model is provided below.

Description of proposal

2.11. The proposed modification put forward by NGG involves the replacement of the Transcost model under the prevailing methodology by a transportation model to determine the NTS exit capacity prices and NTS entry capacity baseline reserve prices. The transportation model is based on one year supply/demand analysis rather than ten years as used in the Transcost model.

2.12. This model would enable the simultaneous determination of entry and exit prices and could be applicable to both small and large capacity increments. The Transcost model cannot calculate entry and exit prices for all capacity levels as it is not suitable for flow increments in excess of 12 mcm/d. The transportation model would also be made publicly available.

2.13. The purpose of this model is to produce entry and exit capacity prices which are forward looking but also take into account historically incurred costs. This model incorporates benefits of certain flows on the system, e.g. backhaul, but excludes spare capacity and is based on the Ofgem baselines at each entry point for entry reserve price determination rather than NGG forecasts.

NTS Exit Capacity Prices

2.14. NTS exit capacity prices are determined from a Transportation model that calculates the costs of transporting gas from each entry point to a “reference node” and from the “reference node” to each relevant offtake point.

2.15. The transportation model minimises the flow distance of gas around the network given the assumed pattern of supplies and demands and the constraint that at any node, demand plus flow to other nodes must equal supply and flow from other nodes.

2.16. Any incremental flow down a line results in a reinforcement requirement, with a standard reinforcement cost which has been calculated using the standard Expansion Constant.

2.17. Therefore, this approach does not consider the way in which pressure, pipeline diameter / length and flow interact – it simply assumes that, for the standard cost of reinforcement, incremental flow can be routed down each existing pipeline route.

2.18. The Expansion Constant is determined from the average cost of incremental capacity for 900mm, 1050mm and 1200mm pipeline of 100km length and recompression to 85 bar(g). Based on this methodology, the expansion constant would be £2223/GWhkm from 1 October 2007.

2.19. Prices for each gas year are calculated using the relevant year's 1-in-20 peak base case data and the network model. The costs are therefore based on analysis for a single year, as opposed to ten years under the current arrangements.

NTS Entry Capacity Baseline Reserve Prices

2.20. The costs for determination of NTS entry capacity baseline reserve prices for use in entry capacity auctions (prior to any discount that may be applied) are based on the same approach as for NTS exit capacity prices, except for the following differences:

In respect of the supply and demand data input into the transport model:

2.21. Prices for each gas year are set on the basis of the relevant year's base case data and network model, but with adjustments to the supply flows to reflect the baseline/obligated capacity level at each entry point with supply adjustment at other entry points using a supply merit order to maintain a balanced network for charging purposes. For the avoidance of doubt, 1-in-20 peak demand flows will remain unadjusted.

2.22. The supply merit order for each NTS entry point reflects the least beneficial alternate supply flow, in terms of enabling capacity provision at that entry point.

2.23. The supply merit order is determined by use of the transportation model with the base case scenario to calculate pipeline distances from each NTS entry point to every other entry point.

2.24. For NTS entry points where flow needs to be added to the base case flow to align with the required capacity level, the remaining entry point flows are reduced in order of pipeline distance merit, starting with the furthest entry point ending with the nearest entry point.

2.25. For NTS entry points where flow needs to be reduced from the base case flow to align with the required capacity level, the remaining entry point flows are increased in order of pipeline distance merit, starting with the nearest entry point and ending with the furthest entry point.

In respect of the network model data used in the transport model:

2.26. The appropriate network model for each period of capacity allocation is used i.e. the network model that includes sanctioned projects expected to be completed by the start of the Gas Year that is being modelled.

2.27. The relevant baseline capacity reserve price for each gas year is used to set prices in the various auctions.

Implementation date

2.28. Subject to the Authority not intervening to stop the proposal being implemented, NGG intends to implement the proposal on 1 October 2007. This would require it to notify users of the new exit capacity prices by 1 August 2007 and users of the new NTS entry capacity reserve prices by 1 July 2007.

3. Key impacts in relation to relevant objectives

Chapter Summary

This chapter sets out an assessment of the impact of the modification proposal in relation to the relevant objectives of NGG's gas transporter licence. In other words, it considers the relevant impacts in terms of cost-reflectivity, competition and reflecting development in the system.

Question box

Question 1: Do respondents have any views on the appropriateness of the transportation model given the relevant objectives specified in NGG's gas transporter licence?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

Question 4: Do respondents have any specific views on the (i) exclusion of spare capacity in the model; (ii) inclusion of backhaul into the model; and (iii) inclusion of only a single expansion factor into the model; and given these features of the proposed model whether the proposed model is an improvement compared with the current model (Transcost)?

Impact in relation to relevant objectives

3.1. We will assess the proposed change against the relevant objectives for NGG charging methodology, as specified in NGG's gas transporter licence. An assessment of the impact of the proposal in the light of each of these objectives is provided below. Where relevant, this draws on views expressed by interested parties to date.

3.2. The following relevant objectives are set out in NGG's gas transporter licence against which to assess NTS GCM01:

(1) Reflect the costs incurred by NGG 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.

3.3. The licensee will not make any modification where the Authority has given a direction not to make it.

Main differences between the current and proposed model

3.4. There are a number of key differences between the transportation model as proposed by NGG and the current model (Transcost). Firstly, the transportation model is not an engineering model, whereas Transcost is an engineering model. Other key differences lie in the treatment of spare capacity (which affects the strength of locational signals and the level of utilisation of existing network assets), the treatment of backhaul (i.e. benefits to the system) and the level of complexity/transparency. The first three differences are likely to impact on the assessment in relation to the first two relevant objectives, the last difference especially, is likely to impact on the third relevant objective.

Cost-reflectivity

3.5. NGG's charging methodology is required to be cost-reflective. In broad terms, the proposal could impact on the cost-reflectivity of the methodology in the following ways:

- It could reduce cost reflectivity as the model is not an engineering model and does not take into account the need for additional compressors and/or pipelines and only includes one expansion constant based on average costs of pipelines and compression;
- It could either reduce or increase cost reflectivity in relation to spare capacity, depending on whether spare capacity is permanent or transient;
- It could improve cost reflectivity by including backhaul;
- It could improve cost reflectivity as it does not rely on long-term flow forecasts with the associated forecasting errors;
- Charges calculated using the transportation model are based on more up to date costs compared with the current charges which were determined at the time of the 2002-2007 Transco price control and hence the former are arguably more cost reflective than the charges currently in place; and
- Exit tariff adjustment in order to recover the maximum allowed revenue.

3.6. Each of these areas is considered in turn below.

Transportation model instead of an engineering model

3.7. One of the main differences between the transportation model and an engineering model, like Transcost, is that the former does not consider the way in which pressure, pipeline diameter/length and flow interact. The transportation model assumes that for the standard reinforcement cost, incremental flow can be directed down each existing pipeline route. In practice, however, this might not be the case. It could therefore be argued that at least from an engineering perspective the transportation model might not result in truly cost reflective charges.

3.8. Also, the transportation model would only include one single expansion constant. This expansion constant would be determined from the average cost of incremental

capacity for 900mm, 1050mm and 1200mm pipeline of 100km length and recompression to 85 bar(g).

3.9. Although the proposed transportation model is somewhat similar to the model used in electricity transmission, it seems a lot simpler compared with the current model used in electricity.

3.10. Current charges have been determined with the engineering model Transcost and serious concerns have been raised in relation to their robustness. For example, in July 2006 Ofgem published two reports from its special economic and technical advisers, who raised serious concerns in relation to the Transcost model, underlying assumptions and the robustness of its outputs[10].

3.11. Given the above, it is difficult to determine whether charges calculated using the transportation model would, in absolute terms, be more or less cost reflective compared with the charges currently in place.

3.12. It could be argued that in order for prices to provide the correct locational signals, it is most important that relative prices are correct. This raises the question of whether relative charges resulting from the transportation model might be more appropriate compared with those resulting from Transcost. NGG and a number of respondents to NTS GCM01[11] have argued that the transportation model results in prices which are intuitively right, whereas this has not been the case with prices resulting from Transcost. For example, it has been observed that the transportation model results in higher charges for NTS exit points which are geographically more distant from NTS entry points than those NTS exit points located more closely, which one might expect.

Approach to spare capacity

3.13. The Transcost model automatically includes spare capacity; the transportation model does not do so. In principle, it could be argued that at least permanent spare capacity should be included.

3.14. An argument for including permanent spare capacity would be to ensure that prices provide the correct locational signals in order to reduce the risk of underutilised use of network assets. This could especially be an issue with declining

[10] http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12162_188_link3.pdf?wtfrom=/ofgem/whats-new/archive.jsp
http://www.ofgem.gov.uk/temp/ofgem/cache/cmsattach/12163_188_link4.pdf?wtfrom=/ofgem/whats-new/archive.jsp

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

production from the North Sea fields as this might result in spare capacity at many terminals.

3.15. From an economic perspective, it seems to make sense that if at a certain entry point there are 200 units of capacity available, but only 100 units are used, that users are encouraged to use the remaining 100 units through a lower price. It might be expected that the price of there remaining 100 units is below the forward looking incremental cost of increasing capacity at this entry point from 200 units to 250 units. It would be undesirable from a consumer's perspective, that investment in new infrastructure is undertaken with existing infrastructure not being fully utilised as a result of incorrect price signals.

3.16. It has been argued that it is difficult to define 'permanent' spare capacity. In practice, if spare capacity is indeed permanent, then the capacity trade and transfer mechanisms to be introduced as part of the Transmission Price Control Review (TPCR) arrangements, might result in a reduction of spare capacity on the network.

3.17. However, there might be situations where trade and/or transfer of spare capacity is not feasible for network operation reasons. In these situations, if the spare capacity is deemed permanent, there might be a risk of underutilised assets. Underutilised assets which have been included in the RAV are paid for by shippers and ultimately consumers. For example, in relation to gas transmission entry capacity, if auction revenue falls short of the maximum allowed revenue as determined by Ofgem at the time of the price control, NGG will recoup this shortfall through the TO commodity charge from all entry shippers.

3.18. It has been argued by several respondents to NTS GCM01 and by NGG, that the downside of including spare capacity is that it is more likely to result in unstable prices. The main reason for this would be that at first capacity is cheap (as at that point supply of capacity exceeds demand), but the moment a new entrant takes up this spare capacity the price of the capacity will increase. However, this would only be the case if the new entrant is large and takes up all the spare capacity in a relatively short period of time.

3.19. It has also been pointed out by respondents to NTS GCM01 and by NGG that including spare capacity could result in a significant shortfall of NGG auction revenue compared with its maximum allowed revenue for gas transmission entry as determined by Ofgem. This shortfall is recovered through the TO commodity charge. The TO commodity charge is levied on all entry shippers, other than at storage sites, and therefore there is a risk that these costs are being passed on to consumers. Table 1 shows historical TO commodity charges.

3.20. As the above shows, there are clear advantages and disadvantages of including spare capacity into the model. We would like to hear respondents' views, especially bearing the interests of consumers (future as well as current consumers) in mind.

Table 1: TO Commodity Charges

(p/kWh)	TO Commodity Charge
Oct 2004	0.0071
Apr 2005	
Oct 2005	0.0079
Apr 2006	
Oct 2006	0.0164
Feb 2007	
Apr 2007	0.0120[12]

Approach to backhaul

3.21. Another difference between the transportation model and Transcost is the treatment of backhaul. Backhaul can be defined as a commercial flow in the opposite direction to the physical flow. Inclusion of backhaul therefore recognises that certain flows are beneficial to the NTS as they reduce the need for network reinforcement.

3.22. Whereas the Transcost model does not include backhaul, the Transportation model does include backhaul. Inclusion of backhaul recognises explicitly avoided costs. It could therefore be argued that the remaining costs are more representative of the actual costs incurred in providing capacity. Similarly, it could be argued that in situations with backhaul, Transcost does not recognise the backhaul benefit that some flows provide and therefore does not apportion costs appropriately. In these situations, this would result in less reinforcement being carried out in practice and hence shippers might face costs which are artificially high as they do not reflect the actual costs faced by NGG.

3.23. This results in prices determined by the transportation model which are more intuitive. As a result relative prices coming out of the transportation model seem more credible compared with prices produced by the Transcost model.

Data

3.24. Another difference between the current model and the proposed model is the data used to calculate charges. The Transcost model relies on NGG's long-term forecasts (10 year data) of gas flows on the network. The risk with using forecasts over a 10 year time span is that actual flows will turn out to be very different compared with the predicted flows. As a result, network reinforcement projects which have been identified might never materialise in practice, however, shippers

[12] The TO commodity charges have been levied for the six month winter period only. However, from 1 April 2007 the TO commodity charge will be levied for the full 12 months. Therefore the April 2007 TO commodity charge would have to be double to make it comparable with earlier rates.

might nevertheless face charges based on these anticipated reinforcement projects. The transportation model will only use one year's data, therefore, the scope for forecasting errors would be greatly reduced.

3.25. Current charges for the majority of NTS entry points and all NTS exit points have been calculated using the Transcost model, and hence are based on long-term forecasts. Also, the current charges for the majority of entry points and all exit points were determined at the time of the previous transmission price control (Transco price control review 2002-2007). Since then the cost of steel has significantly increased and the contract market has tightened, so arguably current charges are based on cost data which is not up to date and hence current charges are not cost reflective.

Exit tariff adjustment

3.26. Ofgem determines NGG's maximum allowed revenue for providing entry and exit capacity. If NGG actual revenue falls short of its allowance, NGG recovers the difference on entry through the TO commodity charge. However, prices on exit are scaled in order to recover the maximum allowed revenue. The current exit prices have been multiplied by a number. Under the proposed approach these exit prices will be adjusted by adding a figure to each price. It has been argued that the latter approach would better preserve relative differences between prices and hence would provide better locational signals to shippers and developers.

Developments in the transportation business

3.27. It is possible that in the medium to long-term, the treatment of spare capacity would potentially become a largely theoretical question due to the introduction of capacity transfer and capacity trade mechanisms as part of the TPCR arrangements. However, we will only know this once these mechanisms have become operative.

3.28. Also, due to changing gas flow patterns it is likely that backhaul flows will become increasingly important going forward. In the past, the major gas flows on the NTS flowed from St Fergus and Bacton towards the South and West of Britain. However, with the decline of UKCS gas supplies, the flow pattern is changing. For example, with large volumes of gas entering at Milford Haven, the flow patterns in the West of Britain are reversing. This reduces the need for network reinforcement between South Wales and the remainder of the NTS towards the East. However, this will only be fully reflected in charges if backhaul is taken into account.

Competition

3.29. NGG's charging methodology is required to facilitate effective competition between gas shippers and gas suppliers. In broad terms, the proposal could impact on competition in the following ways:

- It makes the charging methodology more simple and transparent; and

- It enables shippers to replicate the calculation of charges as the model would be made accessible to shippers as long as all relevant information is publicly available.

3.30. Each of these areas is considered in turn below.

Simplicity and transparency

3.31. A potential barrier to competition is the lack of transparency and complexity in the rules under which shippers, developers and suppliers face in the gas wholesale market. The charging arrangements are one element of the arrangements.

3.32. The impact of the proposal is to simplify the existing arrangements and to increase transparency. There is no doubt that the current model is a lot more complex than the proposed model. However, given that the proposed model only includes one expansion factor it could be argued that it is over-simplistic.

Repeatability

3.33. One of the drawbacks of the current model (Transcost) is that it is not currently available to shippers in its populated version (due to data confidentiality and copyright issues). If Transcost were to be made available it would require network analysis experience to generate prices for entry and exit points due to the requirement to reset compressor and other network settings. As a result, shippers and developers are not able to undertake their own scenario analysis when they make a decision on where to locate and when to locate in that place.

3.34. The transportation model would however be made available to shippers with the relevant data (subject to a Uniform Network Code (UNC) modification proposal) in order for shippers to be able to replicate the charge setting process. Once a new entry or exit point has been added, new prices can easily be calculated as no compressor or other network settings are included in the transportation model.

Impacts on charges

3.35. This section compares prices at NTS entry and exit points under the current model compared with the proposed model. These prices are indicative and for illustrative purposes only.

3.36. Due to commercial confidentiality reasons we cannot publish the individual impact on costs paid by shippers for NTS entry and exit capacity arising from the proposed modification. Therefore we include figures how the revenue collected by NGG would be impacted on an individual exit and entry point basis. If a shipper flows gas predominantly through one entry or exit point then this analysis can be used to give an indication of the impact on them.

NTS Exit Capacity Prices

3.37. The maximum allowed revenue for entry and exit, as determined by Ofgem, will not be affected by the proposals. However, the various NTS users will be impacted differently according to the composition of their gas flows through various exit and entry points. We conducted an analysis of the impact on exit charges at various exit points resulting from the proposed modification.

3.38. In order to do this we compared the charges that would be levied on users under the prevailing exit price methodology against the indicative charges that would be levied under the proposed modification. Firstly, we took the prevailing exit prices from NGG's notice of gas transmission transportation charges[13] and the indicative NTS exit capacity prices calculated from NGG's proposal.

3.39. A number of adjustments had to be made so that these could be compared more effectively. The first adjustment converted the proposed indicative NTS exit capacity prices from 1 October 2007 prices to 1 April 2007 prices, which the prevailing prices are quoted in. This assumed that bi-directional sites were supply sites (i.e. zero demand), the 2006 base case supply forecast was adjusted to balance demand using merit order and that the annuitisation factor was 0.10272 and the TO exit firm revenue was £199.5 million.

3.40. The second adjustment involved scaling of the prevailing NTS exit capacity prices to match the revenue recovered under the proposed indicative NTS exit capacity prices.

3.41. The third adjustment removed the revenue adjustment factor from both sets of prices. The proposed indicative NTS exit capacity prices had a flat pence per kWh per day rate subtracted from all exit prices, subject to a minimum price. The prevailing NTS exit capacity prices had the same percentage reduction across all exit prices, subject to maintaining the same level of overall NGG exit capacity revenue. The different approaches taken reflect how the different methodologies apply the revenue adjustment factor, as described in paragraph 3.26. The resulting prices are included in Appendix 3.

3.42. Once the adjustments were made the quantity of gas capacity held in January 2007 at the various exit points was multiplied by the price sets. In the interest of commercial confidentiality our analysis shows only those exit points with ten or more shippers holding capacity.

3.43. Table 2 shows the different revenues recovered under the prevailing model prices and the proposed transportation model indicative prices for the capacity held

[13] http://www.nationalgrid.com/NR/rdonlyres/368B1C58-F343-41D5-8C3A-3412FAF7D943/14840/StatementofTransmissionTransportationChargesFeb200.pdf

in January 2007 at a number of different exit points. It then shows the increase in revenue that would result from each exit point if the proposed modification is made, in both monetary and percentage terms

Table 2: Comparison of NTS Exit Capacity Revenue under Prevailing and Proposed Methodologies

Exit Point	Transportation Model Revenue[14] (£)	Prevailing Model Revenue (£)	Increase in Revenue by moving to Transportation Model (£)	(%)
NW1	133,948	9,159,374	-9,025,426	-99%
EM1	34,145	840,554	-806,409	-96%
NE2	18,986	324,563	-305,578	-94%
SC2	24,785	203,374	-178,590	-88%
NE3	11	82	-71	-87%
NO2	9,650	65,987	-56,337	-85%
EM2	30,883	190,062	-159,179	-84%
EA3	278,124	743,438	-465,314	-63%
WA2	4,248,889	10,653,122	-6,404,233	-60%
EA2	733,841	1,103,963	-370,122	-34%
NW2	2,665,763	3,564,690	-898,927	-25%
NT3	6,956,327	8,254,356	-1,298,028	-16%
SO1	4,531,067	5,124,195	-593,128	-12%
NT1	1,163,153	1,301,029	-137,876	-11%
SE2	2,609,720	2,919,066	-309,347	-11%
WA1	1,427,245	1,487,166	-59,920	-4%
NT2	10,895,628	11,037,700	-142,072	-1%
SW3	9,397,027	9,241,746	155,281	2%
EM4	173,598	170,221	3,377	2%
SO2	15,325,423	13,854,318	1,471,105	11%
EA4	8,025,010	6,656,152	1,368,859	21%
SW2	7,630,453	5,822,207	1,808,246	31%
WM3	2,950,325	2,156,571	793,755	37%
EM3	8,617,641	6,227,572	2,390,069	38%
WM1	3,240,444	2,304,454	935,991	41%
SE1	22,372,314	15,298,223	7,074,091	46%
SC4	77,162	52,763	24,398	46%
NE1	81,848	55,968	25,880	46%
SC1	19,859	13,580	6,279	46%
NO1	86,313	59,021	27,292	46%
EA1	430,073	268,877	161,196	60%
SW1	1,609,641	1,006,331	603,309	60%
WM2	8,785,045	4,996,110	3,788,935	76%

[14] Based on the indicative NTS exit capacity prices in NGG's proposal

3.44. There are some considerable movements between the revenues recovered by NGG under the two methodologies. The exit points with large reductions in charges to shippers are those close to entry points which would be expected by moving to a model which incorporates backhaul benefits.

NTS Entry Capacity Baseline Reserve Prices

3.45. The revenue from entry is comprised of two main components each of which will be affected by the proposed modification. The first component is revenue from booking entry capacity through the entry auctions - the entry capacity charge. If the revenue collected through the auction process under-recovers relative to the maximum allowed entry revenue, as determined by Ofgem, then a TO commodity charge is levied to make up the shortfall. The TO commodity charge is a flat p/kWh rate which is applied to gas flowed through all entry points, except for storage.

3.46. Therefore when considering the impact of the proposed transportation model on revenue recovered from entry capacity we must also consider the secondary effect on NGG's revenue through the commodity charge.

3.47. In order to analyse this we took the charges that are currently levied on baseline entry capacity, which come from the prices paid at the most recent Quarterly System Entry Capacity (QSEC) auction in September 2006. We also took the indicative NTS capacity baseline reserve prices from NGG's proposal. These are listed in Appendix 3.

3.48. First, to evaluate the impact on the revenue from entry capacity we multiplied the allocated amounts of entry capacity by the corresponding prices from the 2006 QSEC auction for gas year 2008/9 for those entry points at which baseline entry capacity was sold.

3.49. Then we multiplied the same amounts of baseline entry capacity, as in paragraph 3.48, by the indicative NTS entry capacity baseline reserve prices from NGG's proposal. The difference of these two amounts provided the additional revenue that would be recovered from the capacity charge under the proposed modification from the amounts of baseline entry capacity sold.

3.50. Next we had to evaluate what impact the additional entry capacity charge revenue at the selected entry points had on the commodity charge. To do this we summed the additional revenue across all the selected entry points and assumed a total annual entry throughput of 1,100 TWh to obtain the p/kWh commodity charge.

3.51. The commodity charge was then multiplied by the base case forecast annual supply scenarios for each of the relevant entry points from NGG's Ten Year Statement. This gave the reduction in revenue from the commodity charge that would occur at each entry point as a result of the increased capacity charge.

3.52. Table 3 shows the revenue from the capacity charge at each entry point under both the prevailing and the transportation methodologies. It also shows the indicative increase in revenue from the capacity charge that would result if the proposed modification is implemented and the equivalent decrease in commodity charge that would be needed to ensure the same overall entry capacity revenue is recovered by NGG. The net impact of the proposed modification is the combination of the increase in capacity charge revenue minus the corresponding decrease in commodity charge revenue, the impact is shown in Table 3 in both monetary and percentage terms. There are only a few entry points shown as these are the only entry points for which both capacity was sold for 2008/9 in the 2006 QSEC and the Ten Year Statement provided a supply forecast.

Table 3: Comparison of NTS Entry Capacity Baseline Revenue under Prevailing and Proposed Methodologies

Entry Point	Capacity Charge Revenue (£000s)			Equivalent Commodity Charge Reduction (£000s)	Net Impact of Transportation Model	
	Prevailing Model	Transportation Model[15]	Increase in moving to Transportation Model		(£000s)	%
Easington	356	2,964	2,608	1,569	1,039	292%
Teesside	732	3,038	2,306	621	1,684	230%
St Fergus	5,559	9,222	3,664	3,229	435	8%
Bacton	393	624	231	1,512	-1,281	-326%
Theddle-thorpe	29	211	183	515	-332	-1148%

3.53. Note that the above assessment does not incorporate the discount factor for capacity sold in certain daily auctions.

3.54. There are some large increases and decreases in the net impact of the proposed modification which have a number of possible explanations. One is in terms of spare capacity. Where there was spare capacity five years ago the prevailing Transcost model would have incorporated this into the charges, therefore by moving to the transportation model the costs should go up, and vice versa. For example, five years ago Easington had some spare capacity at peak times, which combined with a low supply forecast would mean that we would expect an increase in the NTS entry capacity baseline reserve price as we move to the transportation model, which does not include spare capacity.

3.55. As entry capacity has already been offered for sale up to 2023 then entry capacity that has been sold already would not be affected by the proposed

[15] Based on the indicative NTS entry capacity baseline reserve prices in NGG's proposal

modification. Generally speaking, at least for incumbent shippers, the impact of the proposed modification would gradually feed through into the charges paid by these shippers for gas entry since some will already have bought capacity at prices determined under the prevailing methodology. Some shippers, in anticipation of potential changes to the NTS entry capacity baseline reserve prices, may have already incorporated this into their bidding strategy at the recent 2006 QSEC and at monthly auctions.

4. Assessment of other factors

Chapter Summary

This chapter sets out an assessment of the other key aspects of the proposal that are relevant to the Authority's wider duties. These include consideration of the impacts on security of supply and non-discrimination.

Question box

Question 1: Do respondents have any views on the additional analysis set out in this chapter?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

Areas for assessment

4.1. This section sets out an assessment of the impact of NGG's proposal on factors that are relevant to the Authority's principal objective and general duties. This assessment is not intended to be an exhaustive assessment of all general duties but only those we consider are of relevance to the assessment of the impact of NGG's proposal.

Security of supply

4.2. There were a few comments made in the consultation responses in terms of the impact of NGG's proposals on security of supply issues. There was concern that the proposals result in greater variation in the charges to users which would impact on investment decisions and ultimately adversely affect security of supply.

4.3. NGG in their proposals argue that the price variations would better reflect locational and temporal price signals whilst maintaining its security of supply obligations.

4.4. Ofgem considers that cost reflective prices are beneficial for a number of reasons. Firstly, they provide strong signals to investors where to locate projects, particularly at the margin. Secondly, shippers have choices in terms of their exposure of variation in charges through the possibility of buying long term capacity rights to hedge against this risk.

4.5. More generally, Ofgem considers that in order to promote the interests of consumers the best way to deliver secure energy supplies at reasonable costs to customers is through competitive energy markets. If a supply shortfall is encountered then responsive market signals through price variation work so that industry participants respond to fill the gap in supply.

Best regulatory practice

4.6. We recognise that generally we try to provide six weeks for responses to an impact assessment consultation. However, we note that in this case we may be required to publish a direction on the NGG modification proposal by 25 April 2007 and that there has already been considerably opportunity for comments to be made on the proposal as it was developed, and consulted on, as part of the gas TCMF and through NGG's public consultation NTS GCM01. Taking into account the need to provide a sufficient period of time to consider respondents' views and noting the extensive consultation process that has already been undertaken on this subject, we consider that a four week consultation period is appropriate in this case.

4.7. In addition, from the perspective of transparency, we published an open letter at the earliest possible stage setting out our intention to undertake an impact assessment and the implications of the timescales associated with that decision for our decision-making process.

4.8. We consider that the impact of providing such guidance is to provide industry with greater certainty regarding the likely future impact of proposals.

Interests of consumers

4.9. It is in the interests of consumers that the charging arrangements facilitate efficient use of and connection to the transmission system, which in turn helps to achieve efficient gas supply overall. It is therefore important that prices are cost reflective to ensure that shippers and developers face correct locational signals. This reduces the risk of underutilised assets and the risk of inappropriate investment in the transmission network given the level of underutilised assets elsewhere on the network.

4.10. Increased transparency reduces barriers faced by new entrants and therefore aids competition and ultimately benefits consumers. Stable prices are also important, not only for shippers and developers, but also for consumers.

4.11. In the past few years, the TO commodity charge has been significant. Given that this charge is a fixed cost for all users of entry capacity, there is a risk that these costs are passed on to consumers. It has been argued that reducing the level of the TO commodity charge would therefore be desirable.

Distributional effects

4.12. In assessing the impact of the modification proposal we must also consider the distribution of potential benefits and costs between groups or within groups. We consider that there are no distributional effects between different groups of consumers such as rural/urban or domestic/commercial.

4.13. However, there are likely to be distributional effects between shippers should the modification proposal be implemented. A qualitative illustration of this is that shippers which enter gas onto the NTS and/or exit gas off the NTS predominately at a number of points where the modification proposal results in increased charges would be faced with higher costs. Those entering and exiting gas at points where the modification proposal results in decreased charges would face greater benefits.

5. Environmental impact assessment

Chapter Summary

This chapter sets out an assessment of the environmental impacts relevant to NGG's gas transmission transportation charging methodology modification proposal.

Question box

Question 1: Do respondents consider that we have appropriately outlined the key environmental impacts of the proposal?

Question 2: Do respondents consider that there are other environmental impacts that should have been assessed?

Question 3: Do respondents have any additional analysis in relation to environmental impacts that they wish to present?

Utilities Act 2000

5.1. Pursuant to Section 5(2) of the Utilities Act 2000, it is a requirement of an impact assessment undertaken by Ofgem to include an assessment of the impact on the environment of the decision being considered. This section seeks to identify the different ways in which the proposal might impact on the environment.

Direct Environmental Impact

5.2. As this proposed modification is to substitute the Transcost model in the methodology for the Transportation model there is not considered to be any direct environmental impact arising from the modification proposal.

Possible Indirect Environmental Impact

5.3. One possible indirect link to the environment could arise from the inclusion of backhaul effects in the Transportation model. These will provide stronger locational signals to large exit users, such as power stations, to locate closer to NTS entry points. This could therefore have an impact on a small number of new gas fired generators deciding to locate closer to NTS entry points and so reducing the need for NTS reinforcements should they have located further from the entry point.

6. Process and way forward

Chapter Summary

This chapter sets out the process that we intend to adopt in order to reach a decision on the modification proposal and identifies a timetable for the publication of that decision.

Question box

Question 1: Do respondents have any views on both the process and timetable that are proposed for taking forward this assessment of the modification proposal?

Intended process

6.1. This document provides four weeks for respondents to submit any comments. Having received and had time to fully consider those responses the Authority will take a decision on NGG's proposed modification.

6.2. Standard Special Condition A5 of NGG's gas transporter licence sets out that NGG will not make any modification to the gas transmission transportation charging methodology within 3 months of its charging methodology report being furnished to the Authority, where the Authority intends to undertake an impact assessment. Therefore, we intend to publish our decision on NGG's proposal on or before 25 April 2007.

Implementation

6.3. NGG is seeking to implement the modification proposal from 1 October 2007 and so if the modification proposal is not vetoed intends to notify users of the new NTS exit capacity prices by 1 August 2007 and users of the new NTS entry capacity baseline reserve prices by 1 July 2007.

Further information

6.4. Appendix 1 sets out both the details for responding to this impact assessment and the appropriate contact details should you have any questions. It also sets out a list of all the key areas where we have sought respondents' views in relation to the contents of this document. Respondents' views are also welcomed on any other aspect of this impact assessment.

Appendices

Appendix 1 - Consultation Response and Questions

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

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

1.3. Responses should be received by 3 April 2007 and should be sent to:

- Richard Miller
- Manager, Gas Transmission Policy
- Ofgem
- 70 West Regent Street
- Glasgow G2 2QZ
- Richard.Miller@ofgem.gov.uk

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

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

1.6. Next steps: Having considered the responses to this consultation, Ofgem intends to publish its decision on NGG's proposal by 25 April 2007. Any questions on this document should, in the first instance, be directed to:

- Richard Miller
- Policy Manager
- Ofgem
- 70 West Regent St
- Glasgow G2 2QZ

- 0141 331 6013
- Richard.Miller@ofgem.gov.uk

CHAPTER: Three

Question 1: Do respondents have any views on the appropriateness of the transportation model given the relevant objectives specified in NGG's gas transporter licence?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

Question 4: Do respondents have any specific views on the (i) exclusion of spare capacity in the model; (ii) inclusion of backhaul into the model; and (iii) inclusion of only a single expansion factor into the model; and given these features of the proposed model whether the proposed model is an improvement compared with the current model (Transcost)?

CHAPTER: Four

Question 1: Do respondents have any views on the additional analysis set out in this chapter?

Question 2: Do respondents wish to present any additional analysis that they consider would be relevant to assessing the proposal?

Question 3: Do respondents consider that there are any aspects of the proposal that have not been fully assessed?

CHAPTER: Five

Question 1: Do respondents consider that we have appropriately outlined the key environmental impacts of the proposal?

Question 2: Do respondents consider that there are other environmental impacts that should have been assessed?

Question 3: Do respondents have any additional analysis in relation to environmental impacts that they wish to present?

CHAPTER: Six

Question 1: Do respondents have any views on both the process and timetable that are proposed for taking forward this assessment of the modification proposal?

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 legislation (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 European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.[16]

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[17].

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[18]; and
- The interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[19]

[16] entitled "Gas Supply" and "Electricity Supply" respectively.
[17] However, in exercising a function under the Gas 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 Electricity Act.
[18] 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.
[19] The Authority may have regard to other descriptions of consumers.

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

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

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

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation[21] 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.

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

Appendix 3 - Exit and Entry Prices

NTS Exit Capacity Prices 2007/8[22]

	Transportation Model (p/peak day kWh/day)	Prevailing Model (p/peak day kWh/day)
AM Paper	0.0034	0.0028
Baglan Bay PG	0.0039	0.0170
BASF Teesside	0.0001	0.0001
Bacton I/C	0.0001	0.0022
Sappi Paper Mill	0.0002	0.0068
BP Saltend (HP)	0.0001	0.0008
Connahs Quay PG	0.0063	0.0081
Bridgewater Paper	0.0067	0.0081
Corby PG	0.0052	0.0037
Thornton Curtis PG	0.0001	0.0003
Coryton PG	0.0108	0.0069
Kingsnorth PG	0.0103	0.0072
Didcot PG	0.0136	0.0127
EA1	0.0035	0.0022
EA2	0.0055	0.0083
EA3	0.0011	0.0029
EA4	0.0108	0.0090
EM1	0.0001	0.0025
EM2	0.0001	0.0006
EM3	0.0088	0.0064
EM4	0.0053	0.0052
Teesside PG	0.0001	0.0001
Brimsdown PG	0.0116	0.0099
BP Grangemouth	0.0001	0.0001
Goole Glass	0.0001	0.0001
Longannet PG	0.0001	0.0001
Great Yarmouth PG	0.0001	0.0022
Terra Billingham	0.0001	0.0001
ICI Runcorn	0.0083	0.0082
Terra Severnside	0.0150	0.0120
Zeneca	0.0001	0.0001
Immingham CHP	0.0001	0.0003
Keadby PG	0.0001	0.0001

[22] These NTS exit capacity prices have had the adjustments made as described in paragraphs 3.39 to 3.41 and are used to indicate the impact of the modification proposal.

Kings Lynn PG	0.0040	0.0021
Little Barford PG	0.0070	0.0046
Moffat I/C	0.0001	0.0001
NE1	0.0001	0.0001
NE2	0.0001	0.0017
NE3	0.0001	0.0008
NO1	0.0001	0.0001
NO2	0.0001	0.0007
NT1	0.0151	0.0169
NT2	0.0108	0.0109
NT3	0.0102	0.0121
NW1	0.0001	0.0068
NW2	0.0045	0.0060
Phillips Seal Sands	0.0001	0.0001
Peterhead PG	0.0001	0.0001
Rocksavage PG	0.0083	0.0082
Rye House PG	0.0123	0.0099
Saltend PG	0.0001	0.0008
Seabank PG	0.0150	0.0116
SC1	0.0001	0.0001
SC2	0.0001	0.0008
SC4	0.0001	0.0001
SE1	0.0131	0.0090
SE2	0.0151	0.0169
Seabank PG	0.0150	0.0116
Kemira Ince	0.0080	0.0082
SO1	0.0104	0.0118
SO2	0.0177	0.0160
Spalding PG	0.0011	0.0016
Stallingborough PG	0.0001	0.0008
Stallingborough PG	0.0001	0.0008
Sutton Bridge PG	0.0026	0.0016
SW1	0.0105	0.0066
SW2	0.0164	0.0125
SW3	0.0251	0.0247
Teesside Hydrogen	0.0001	0.0001
WA1	0.0084	0.0088
WA2	0.0060	0.0150
WM1	0.0075	0.0053
WM2	0.0101	0.0057
WM3	0.0087	0.0064
Brunner Mond	0.0039	0.0028

NTS Entry Capacity Baseline Reserve Prices 2008/9

Entry Point	Transportation Model[23] (p/kWh/day)	Prevailing Model (p/kWh/day)
Avonmouth LNG	0.0001	0.0022
Bacton	0.0100	0.0063
Barrow	0.0085	0.0005
Burton Point	0.0001	0.0001
Caythorpe	0.0072	
Cheshire	0.0001	0.0001
Dynevor Arms LNG	0.0020	0.0000
Easington	0.0100	0.0012
Fleetwood	0.0064	0.0000
Garton	0.0082	0.0013
Glenmavis	0.0156	0.0183
Hatfield Moor	0.0025	0.0014
Hole House Farm	0.0001	0.0001
Hornsea	0.0080	0.0053
Humbley Grove (Barton Stacey)	0.0001	0.0000
Isle of Grain	0.0001	0.0064
Milford Haven	0.0157	0.0089
Partington	0.0001	0.0003
St Fergus	0.0365	0.0220
Teesside	0.0083	0.0020
Theddlethorpe	0.0073	0.0010
Wytch Farm	0.0001	0.0000

[23] These are indicative prices from the NGG modification proposal

Appendix 4 - Glossary

A

The Authority/ Ofgem

Ofgem is the Office of the Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (GEMA), the body established by section 1 of the Utilities Act 2000 to regulate the gas and electricity markets in Great Britain.

G

Gas Transmission Charging Methodology Forum (Gas TCMF)

The Gas TCMF is an industry forum that discusses National Grid NTS's charging methodologies and the principles behind them. The aim of the forum is to provide the means for Users to raise issues they felt worthy of review and provide the opportunity for Users to provide comment on National Grid NTS proposed modifications to its charging methodologies.

Gas transmission transportation charging methodology

The methodology which NGG is required to have in place by its gas transporter licence and which is used to calculate the charges to customers in relation to transportation of gas, including that for NTS exit capacity prices and NTS entry capacity baseline reserve prices.

N

National Grid Gas (NGG)

The licensed gas transporter responsible for the national gas transmission system, and four of the regional gas distribution networks.

National Transmission System (NTS)

The high pressure gas transmission system in Great Britain.

NTS Entry Capacity Reserve Baseline Price

The price levied on a p/kWh/day basis by NGG on users entering gas onto the NTS, which reflect the estimated costs of reinforcing the NTS to transport additional gas between entry and exit points. NTS Entry Capacity Reserve Baseline Prices vary for each entry point onto the NTS and is the price paid for baseline capacity in Quarterly System Entry Capacity (QSEC) auctions and provides the floor price in Monthly System Entry Capacity (MSEC) and Rolling Monthly System Entry Capacity (RMSEC) auctions.

NTS Exit Capacity Price

The price levied on a p/kWh/day basis by NGG on users taking gas off the NTS to recover allowed revenues, which reflect the estimated costs of reinforcing the NTS to transport additional gas between entry and exit points. NTS exit capacity prices vary by location on a zonal basis.

Node

A node is a point on the NTS at which pipelines meet.

R

Revenue Driver

A means of linking revenue allowances under a price control to specific measurable events which are considered to influence costs. An example might be to allow a specified additional revenue allowance for each MW of new generation connecting to the electricity network. Revenue drivers are used by Ofgem to increase the accuracy of the revenue allowances.

T

Transmission Price Control Review (TPCR)

The TPCR will establish the price controls for the transmission licensees which will take effect in April 2007 for a 5-year period. The review applies to the three electricity transmission licensees, National Grid Electricity Transmission, SP Transmission Ltd and Scottish Hydro Electric Transmission Ltd and to the licensed gas transporter responsible for the gas transmission system, NGG.

U

Uniform Network Code (UNC)

The gas transporters' licences held by the owners of the NTS and the main gas distribution networks require the production of a network code which sets out the contractual framework for the NTS. There are six individual network codes in existence. The gas industry has evolved a single Uniform Network Code (UNC), which was written as part of the process undertaken by National Grid Transco (as NGG was previously called) to support the sale of some distribution networks. Apart from reference to the particular licence holder each of the six individual network codes is identical and contains no substantive provisions which impact the commercial and physical arrangements which support the transportation of gas. Instead each of the individual network code references the provision of the UNC, such that common arrangements apply across Great Britain.

Unit Cost Allowance (UCA)

A parameter of the current revenue restriction for NGG. A UCA is set for each entry point, and is intended to reflect the cost of providing additional capacity at that point on the network. The actual additional revenue entitlement for NGG if it releases such

additional capacity at a particular entry point is a function of the UCA for that entry point. NGG also uses the UCAs as reserve prices in its auctions of entry capacity.

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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