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Gas Transmission Exit Capacity Substitution and Revision Methodology - Initial Impact Assessment

Document type: Consultation

Ref: 17/11

Date of publication: 11 February 2011

Deadline for response: 11 March 2011

Target audience: NGG, gas shippers, storage operators, interconnectors, Transmission Connected Customers (TCCs), Gas Distibution Networks (GDNs), and other interested parties.

Overview:

Exit capacity substitution is the process by which unsold National Transmission System (NTS) exit capacity is moved from one or more NTS exit points to meet the demand for incremental exit capacity at another NTS exit point. Exit capacity revision is the process by which the level of baseline exit capacity is revised following the release of incremental NTS entry capacity.

Following a series of workshops in 2010, National Grid Gas (NGG) submitted its proposed exit capacity substitution and revision methodology for approval to the Authority on 4 January 2011.

The purpose of this consultation is to assess the impact of implementing the methodology submitted by NGG. The Authority is minded to accept the proposed methodology. Responses to this impact assessment will inform our final decision.

Contact name and details: Lewis Hodgart, Senior Manager Transmission

Tel: 01413316005

Email: lewis.hodgart@ofgem.gov.uk

Team: Gas Transmission

Context

Ofgem introduced a new obligation on National Grid Gas (NGG) to develop and implement gas transmission exit capacity substitution and revision for the gas National Transmission System (NTS) as part of the 2007-2012 Transmission Price Control Review (TPCR4).

Exit capacity substitution is the process by which unsold NTS exit capacity is moved from one or more NTS exit points to meet the demand for incremental exit capacity at another NTS exit point. Exit capacity revision is the process by which the level of baseline exit capacity is revised following the release of incremental NTS entry capacity. The main objective of exit capacity substitution and revision is to defer or avoid the need for new investment by substituting unsold exit capacity to meet incremental long term exit capacity needs. In our view substitution can help reduce the cost of gas transmission to gas customers, and can help reduce the environmental impact of gas transportation.

This document sets out Ofgem's impact assessment of the gas exit capacity substitution and revision methodology developed by NGG. This impact assessment takes into account the issues raised throughout the methodology development workshops and correspondence that accompanied the process.

Associated Documents

- TPCR 2007-2012 Final Proposals, Appendices, December 2006 http://www.ofgem.gov.uk/Networks/Trans/Archive/TPCR4/ConsultationDecisionsResponses/Documents1/16341-20061129_TPCR%20FP%20Supplementary%20Appendices_in_final.pdf
- UNC195AV Introduction of Enduring NTS Exit Capacity Arrangements, Ofgem January 2009. http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=286&refer=Licensing/GasCodes/UNC/Mods
- Derogation notice to delay the introduction of exit substitution and baseline revision methodology statements, Ofgem, February 2009 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=1&refer=Networks/Trans/GasTransPolicy/ExitSub
- Gas Entry Capacity Substitution Methodology Statement, Initial Impact Assessment, Ofgem, November 2009 http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=14&refer=Networks/Trans/GasTransPolicy/EntrySubstitution
- Authority decision on Gas Entry Capacity Substitution Methodology Statement, Ofgem, December 2009. http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=20&refer=Networks/Trans/GasTransPolicy/EntrySubstitution
- NTS Exit Capacity Release Methodology Statement, National Grid Gas, June 2010 http://www.nationalgrid.com/uk/Gas/Charges/statements/transportation/IExCR/

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Summary

We introduced a new obligation on National Grid Gas (NGG) to introduce entry and exit capacity substitution and exit capacity revision at the time of the last transmission price control review (TPCR4). In the case of exit capacity, substitution allows unsold capacity to be moved from one or more NTS exit points to meet the demand for incremental capacity at another NTS exit point. In so doing substitution promotes the efficient use of NTS capacity and can help avoid or reduce the need for investment to meet new capacity needs. Exit capacity revision is the process by which the level of exit capacity that NGG is obliged to make available is revised following the release of incremental NTS entry capacity. This process will increase the transparency of available exit capacity on the NTS.

In December 2009 we approved the implementation of NGG's entry capacity substitution methodology. Since then NGG has been developing its exit capacity substitution and revision methodology. It has held a series of industry workshops throughout 2010 and has conducted two industry consultations on its proposed exit capacity substitution and revision methodology. In keeping with the obligations imposed on it by Special Condition C8E of its Gas Transporter (GT) Licence, on 4 January 2011, NGG submitted its proposed exit capacity substitution and revision methodology to the Authority for approval. Since that time we have given notice to NGG of our intention to conduct an impact assessment under Special Condition C8E of the GT licence. This provides us with three months to consult and reach a decision on the proposed methodology. Following close of the consultation it is our intention to publish a final decision on the methodology by 4 April 2011.

Main issues and findings of the impact assessment

We remain of the view that exit substitution is in the interests of consumers and is consistent with our duties. We consider that exit capacity substitution will guard against the risk that capacity is sterilised at an exit point where it is not needed. By reducing the obligation on NGG to provide capacity at exit points with unsold baseline capacity, the methodology will allow additional capacity to be made available elsewhere. Where this occurs, the need for investment in new network reinforcement may be avoided. We consider that this has three advantages: (1) lower costs to customers as a result of the avoided capital expenditure, (2) environmental benefits associated with avoidance of constructing cross-country pipelines, and (3) avoiding potential delays and costs associated with the planning process linked to investment projects which can impact the timing of the delivery of new infrastructure.

Savings in capital expenditure will depend on the location of incremental capacity signals received and on their size. The approach we have taken is to provide an example of the capital expenditure savings which would be achieved using two theoretical substitution examples modelled by NGG. In NGG's 'north east' example sufficient capacity is available to support a new load without substitution so the capital expenditure savings would be zero. In the 'south east' example, where capacity is more constrained, NGG has calculated that substitution could avoid the need for £72m of investment.

To provide a view on the probability of these savings being realised, we have compared the data from the forecasts of incremental exit capacity investment submitted to the Authority by NGG as part of its October 2010 Forecast Business Plan Questionnaire (FBPQ) response to the Transmission Price Control Review adapted rollover (TPCR4 adapted rollover)[1], to the latest data on the location of unsold baseline exit capacity[2]. This data indicates that significant exit capacity investment is forecast in areas of the country where amounts of unsold baseline exit capacity may be available. In our view this analysis supports the view that quantitative benefits from substitution can reasonably be expected to be realised.

The proposed methodology has, at its core, the establishment of exchange rates which define the ratio of capacity moved from one exit point to another, and ways of prioritising which exit points receive capacity and which exit points provide capacity. The methodology proposes an exchange rate cap, which will limit the amount of capacity which can be substituted. We consider that the exchange rate cap provides a "soft landing" for the introduction of the proposed methodology, and will reduce the risk of unanticipated consequences.

NGG's GT Licence requires it to use reasonable endeavours to ensure that the methodology facilitates the achievement of the objectives set out in its licence. The objectives are set out in paragraphs 4(b)(iii) and 4(c)(iii) of Special Condition C8E of the GT Licence. This impact assessment assesses the methodology against these objectives and other relevant considerations. It also considers the quantitative and qualitative costs and benefits and requests views on these to inform our final decision.

Initial view

We are minded to approve NGG's proposed methodology, subject to consideration of the responses to this impact assessment and without fettering the discretion of the Authority.

We consider that the proposed methodology is likely to deliver the benefits anticipated from substitution whilst minimising the risk that inappropriate levels of capacity are substituted. We understand that the methodology is simple to administer, does not need major changes to IT systems and that its implementation will not give rise to significant costs.

We welcome views on all aspects of this impact assessment, including our assessment of the potential impacts associated with the implementation of the proposed methodology and on any impacts which respondents consider to be relevant. Where in this document we refer to Ofgem's views, that is a reference to our provisional views, and is subject to further consideration of any points raised in response to this consultation process. The consultation on this impact assessment will close on 11 March 2011.

[1] In 2009 the Authority decided to rollover the fourth transmission price control review (TPCR4) by one year to allow the conclusions of Ofgem's RPI-X@20 project to inform the next price control. The next transmission control (RIIO-T1) is scheduled for implementation from 1 April 2013.
[2] This data is available from NGG's website at the following location www.nationalgrid.com/uk/gas/data

1. Introduction

This chapter sets out the aim of the impact assessment of NGG's substitution and revision methodology. It also outlines some wider issues which have arisen in industry workshops during 2010 and considers their relevance to the substitution methodology.

Aims and objectives

1.1. We introduced a new obligation on National Grid Gas (NGG) to introduce exit capacity substitution and revision at the time of TPCR4[3]. Exit capacity substitution facilitates the transfer of unsold capacity at one or more exit points (the donors) to meet the demands for incremental exit capacity at another NTS exit point (the recipient). It is the process by which unsold baseline exit flat capacity[4] is moved from one or more NTS exit points to meet the demand for incremental exit flat capacity at another NTS exit point. Exit revision is the process by which exit capacity baseline levels are revised in the event that the release of incremental obligated entry capacity changes the availability of NTS exit capacity.

1.2. Under the licence, NGG is required to develop and submit a methodology for exit capacity substitution and revision to the Authority for approval. Following two industry consultations and a series of industry workshops during 2010, NGG has developed it proposed exit capacity substitution and revision methodology. Consistent with Special Condition C8E of its Gas Transporter (GT) licence, NGG submitted its methodology to the Authority for approval on 4 January 2011.

1.3. The Authority is required to decide whether the methodology submitted by NGG meets the objectives set out in Special Condition C8E paragraphs 4(b)(iii) and 4(c)(iii) of its GT licence.. The aim of this impact assessment is to assist in this decision process. The main focus of this document is therefore to look at how the methodology supports the aims and objectives of substitution and to assess the likely impact of its implementation. In order to provide context to this evaluation, chapter two sets out the rationale and background to the introduction of the exit capacity substitution and revision methodology obligation.

Concerns expressed

1.4. During the Exit Capacity Substitution and Revision workshops held during 2010, some industry participants have questioned the overall merits of exit substitution. The concerns raised principally relate to security of supply. We have addressed the concerns during discussion in the workshops and during the development of NGG's entry capacity substitution methodology. We have also addressed such concerns in

[3] Exit Capacity Substitution and Revision obligations are contained in Special Condition C8E of the Gas Transporter (GT) Licence in respect of the NTS.
[4] NGG's capacity release obligations are defined in its GT licence. Baseline exit flat capacity is the volume of capacity which the licensee is required to offer for sale at an NTS exit point.

other documents, including our decision to approve NGG's Entry Capacity Substitution Methodology Statement in December 2009[5].

1.5. We remain of the view that substitution will reduce the risk, to the benefit of consumers, of not fully utilising the network. We set out our views on the impact of substitution on security of supply again below. We set out our views on NGG's proposed treatment of interconnectors under the methodology, including how this issue interacts with Gas Regulation (EC) 715/2009[6], in chapter four. For the avoidance of doubt, the discussion below relates only to the general principles of substitution and not to any specific aspect of the methodology proposed. We also provide comment on the issue of transparency of exit capacity information. This is an important issue, but one which we do not consider is central to any specific aspect of the methodology proposed.

Security of supply

1.6. Some stakeholders have raised concerns that the introduction of substitution may result in a reduction in spare exit capacity on the NTS and therefore a tightening of the system which, in times of peak use, would reduce the availability of off peak capacity and NTS flexibility capacity to the detriment of security of supply.

1.7. NGG is required under licence[7] to plan and develop its pipeline system to enable it to meet '1 in 20' peak aggregate daily demand[8]. NGG is also required to offer entry and exit capacity in accordance with the capacity baselines obligations set out in its licence and in accordance with any signals for incremental capacity received through the entry and exit capacity commercial arrangements. The introduction of substitution will not affect these firm capacity obligations. In considering any potential substitutions NGG will be obliged to consider the impact the substitution would have on its ability to meet these obligations.

1.8. NGG's obligations in respect of off-peak capacity are set out in the UNC. The introduction of substitution will not affect the rules concerning the availability of off-peak capacity. If substitution results in a more efficient use of the network it is possible that in some locations the probability that off-peak capacity may be curtailed could increase. The availability of off-peak capacity is valued by a number of NTS users, including gas storage operators, but by definition, the product carries no guarantee of being firm. Under the UNC, NTS users who require firm capacity are able to signal their long-term willingness to pay for such capacity via the annual capacity application window. We do not consider that substitution will impact on security of supply, and we do not think that special provision should be made for allocating exit capacity according to category of user.

[5] Authority decision on Gas Entry Capacity Substitution Methodology Statement, Ofgem, December 2009.

[6] Regulation (EC) No 715/2009 of the European Parliament and of the Council on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005

[7] Standard Special Condition A9 of the GT Licence

[8] '1 in 20' peak aggregate daily demand is defined as the peak aggregate demand level which, having regard to historical weather data derived from at least the previous 50 years, is likely to be exceeded (whether on one or more days) only in 1 year out of 20 years.

1.9. NGG has indicated that there is a relationship between the allocation of spare capacity on the system as flat capacity and the amount of flexibility capacity which could be made available. However, substitution is concerned with the allocation of unsold baseline capacity. NGG does not rely on the availability of unsold baseline capacity to meet flexibility capacity needs. Therefore we do not consider that substitution will impact on the availability of flexibility capacity within the system. On 16 December 2010 we published a consultation setting out our views on the principles and framework for the further development of system flexibility on the NTS[9]. In our view any interaction between system flexibility and baseline capacity obligations should be developed within this framework.

Publication of capacity information

1.10. As part of its proposed revision methodology NGG will model the effect increased gas flows at entry will have on exit capacity capability. In NGG's informal and formal consultations on the methodology, a number of parties have commented that NGG should be obliged to conduct a similar exercise using prevailing entry flows in order to establish if any additional capacity over and above exit baseline capacity is currently available on the system. Those parties consider that in conducting this analysis and publishing this information, NGG would increase the transparency of spare capacity on the system, and ensure compliance with Gas Regulation (EC) 715/2009.

1.11. Gas Regulation (EC) 715/2009 obliges gas transmission system operators to publish, among other things, the technical capacity of their systems. In April 2010 NGG initiated a project (MIPI[10] European Transparency project) to update its gas operational data publication systems to reflect the enhanced requirements of the regulation, as well as provide this information to a central European Network of Gas Transmission System Operators (ENTSOG) transparency information platform. This project was concluded in November 2010, with the publication of the enhanced requirements for all entry points/ exit points, aggregated system entry points, aggregated for power stations and aggregated for industrial offtakes.

1.12. NGG considers that the information published under its European Transparency project meets the requirements of Gas Regulation (EC) 715/2009 including the obligation to publish the technical capacity of its system. In January 2011 we published a consultation letter[11] relating to the definition of relevant points of a transmission system in connection with the regulation. In the letter we sought views on whether respondents agreed that the information published by NGG met the requirements of the regulation. This consultation closes on 1 March 2011. We do not currently anticipate implications from this piece of work for implementation of the substitution and revision methodology.

[9] Update consultation on NTS flexibility capacity, Ofgem, 16 December 2010.
[10] Market Information Provision Initiative, further details can be found at www.nationalgrid.com/uk/gas/data
[11] Consultation on "relevant points" of a transmission system for the purposes of Article 18(4) Gas Regulation (EC) No 715/2009, Ofgem, 18 January 2011

2. Background

In this chapter we highlight Ofgem's rationale for introducing the substitution and revision obligation and summarise the background to the development of the exit capacity substitution and revision methodology.

New obligations introduced as part of TPCR4

Re-allocating baselines

2.1. In our TPCR Initial Proposals document[12], published in June 2006, we introduced the concept of re-allocating NTS entry and exit capacity baselines[13] and described the framework that we anticipated would be developed to make this possible. The principles which we set out for re-allocating baseline capacity were as follows:

- after each long-term capacity allocation, NGG will review demands for capacity relative to the current baseline levels
- if there is an entry or offtake point where demand exceeds the baseline level of capacity and there is a 'reasonably substitutable' entry or offtake point with unsold, baseline capacity, then NGG will develop a proposal to transfer capacity between the relevant points
- NGG would need to consult and develop a methodology for identifying and proposing appropriate substitutions in these circumstances, and the methodology would be subject to Ofgem approval
- NGG would then submit a report to Ofgem following each long-term capacity allocation setting out how it proposed re-allocating baseline capacity. Once approved the baselines would be changed with effect from the delivery date of the capacity bought in the relevant long-term auction.

Exit Reform

2.2. The implementation of exit capacity substitution and revision mechanisms were intended to sit alongside the enduring exit capacity arrangements being developed under Exit Reform. Reform of the NTS Exit Capacity arrangements, 'Exit Reform', was progressed following the Authority's decision in 2005 to approve the sale of four of NGG's distribution network businesses and concluded in January 2009 with the implementation of the Uniform Network Code modification (UNC) 195AV 'Introduction of Enduring NTS Exit Capacity Arrangements'[14]. The objective of Exit Reform was to

[12] TPCR 2007-2012 Initial Proposals, June 2006 (Ref No. 104/06)
[13] Baselines define the levels of capacity that the transmission licensee is obligated to release. Baselines also determine the levels above which incremental capacity is defined.
[14] Uniform Network Code (UNC): Reform of the NTS offtake arrangements (UNC 0116V, 0116BV, 0116CVV, 0116VD, 0116A) and Introduction of Enduring NTS Exit capacity Arrangements (UNC 0195 and 0195AV) decision document, January 2009
http://www.ofgem.gov.uk/Licensing/GasCodes/UNC/Mods/Documents1/UNC195AVD.pdf

develop appropriate commercial arrangements and incentives in a divested industry structure.

2.3. A key part of Exit Reform was the introduction of an appropriate user commitment framework for the long term allocation of NTS exit capacity. We considered that a user commitment model would: improve investment signals reducing the risk of stranded assets emerging on the network; promote security of supply; and increase the transparency of the exit capacity arrangements. By moving capacity from exit points where there is unsold baseline capacity - which by definition is capacity without a user commitment – to meet signals for incremental capacity with a user commitment at other exit points, we considered that substitution, in tandem with the user commitment framework, would deliver long-term investment efficiency benefits.

Licence obligations

2.4. We set out our final views on exit capacity substitution in TPCR Final Proposals, published in December 2006[15] and we introduced a new obligation on NGG to facilitate the transfer of unsold capacity to meet demands for capacity elsewhere. To give effect to this obligation in a transparent manner we required NGG to establish a methodology, which would need to be consulted on with interested parties, and approved by Ofgem.

2.5. Following statutory consultation, in 2007, Ofgem modified NGG's GT licence for the TPCR4 package. The new licence conditions contained the following obligations in respect of exit substitution and revision:

- Special Condition C8E paragraph 3 (c) requires National Grid to use reasonable endeavours to:
  - substitute unsold NTS baseline exit capacity between NTS Exit Points such that the level of NTS obligated incremental exit flat capacity (i.e. necessary investment) is minimised.
  - revise the level of NTS baseline exit capacity in the event that the release of incremental entry capacity changes the availability of NTS Exit Capacity.

- Special Condition C8E paragraphs 4 (b)(i) and 4 (c)(i) require National Grid to prepare:
  - an exit capacity substitution methodology statement, setting out the exit capacity substitution methodology which it shall use to substitute NTS exit capacity.
  - an exit capacity revision methodology statement, setting out the exit capacity revision methodology which it shall use to revise the level of NTS baseline exit capacity

- Special Condition C8E paragraphs 4(b)(iii) and 4(c)(iii) set out that the objectives of the methodologies are:

[15] TPCR 2007-2012 Final Proposals, December 2006 (Ref No. 206/06)

- ensuring that exit capacity substitution / revision is effected in a manner which is compatible with the physical capability of the NTS;
- avoiding material increases in the costs (including NTS exit capacity constraint management costs in respect of NTS exit capacity previously allocated) that are reasonably expected to be incurred by National Grid as a result of substituting NTS exit capacity or revising the level of NTS baseline exit capacity; and
- in so far as is consistent with the above objectives, facilitating effective competition between relevant shippers.

Timetable for implementation

2.6. The exit capacity substitution and revision licence obligations introduced at the time of TPCR4 were intended to ensure that the exit capacity substitution and revision methodology was in place from the time of the reformed exit arrangements taking effect and under the licence NGG was originally required to submit its substitution and revision methodology statements by 1 April 2008. However, the introduction of the reformed exit arrangements was delayed. Consequently, on 29 February 2008, the Authority agreed to a delay to the introduction of the exit capacity substitution and revision obligations until 1 April 2009.

2.7. As referenced in the earlier part of this chapter, TPCR4 also introduced a number of significant changes to the entry capacity regime, specifically entry capacity transfer & entry trade, and entry capacity substitution. As a consequence of the extent of the work involved in the development of the entry capacity substitution methodology, NGG proposed that the development of the exit capacity substitution and revision methodologies should be delayed further until after entry capacity substitution had been implemented.

2.8. On 23 February 2009, the Authority published a letter[16] consenting to the delay. In reaching its decision the Authority was mindful of the industry workload in relation to entry substitution and the ongoing work in respect of the reform of the exit arrangements at the time. As a consequence of the letter, NGG was required to submit its exit capacity substitution and revision methodology statements to the Authority by 4 January 2011 (NGG has met this obligation). This would allow Ofgem to undertake its assessment by April 2011 so that new arrangements could be implemented from the July 2011 exit capacity application window. In granting a delay the Authority was conscious of the need to provide certainty that revised dates for delivery of exit capacity substitution and revision methodologies would be achieved. In addition to an industry consultation on its proposed methodology, we therefore required NGG to publish a timetable of planned workshops and to submit two interim reports setting out the progress of the development of the methodology.

2.9. We provide a summary of the development of NGG's exit substitution and revision methodology at the industry workshops held during 2010, and a summary of NGG's informal and formal consultations on its exit substitution and revision methodology, in Appendix 3.

[16] http://www.ofgem.gov.uk/Networks/Trans/GasTransPolicy/ExitSub/Documents1/C8E%20derogation%20090204.pdf.

3. NGG's Exit Capacity Substitution and Revision Methodology

This chapter describes the methodology submitted to Ofgem by NGG. It outlines how the methodology would work and indicates the potential effect of the methodology on capacity obligations by considering two scenarios with hypothetical signals for incremental capacity.

Question 1: Are there additional aspects of the methodology that should be highlighted?

Question 2: Are the scenarios analysed appropriate and relevant to system development? If not, why not?

Proposed methodology

3.1. NGG submitted its Exit Capacity Substitution and Revision Methodology statement to Ofgem on 4 January 2011[17].

3.2. The methodology sets out a process by which, in respect of substitution, NTS baseline exit flat capacity from one or more donor NTS Exit Points, is substituted to meet demand for incremental exit flat capacity (i.e. capacity over and above the prevailing level of NTS baseline exit flat capacity) at recipient NTS Exit Points. In respect of revision, the methodology sets out the process that applies for the revision of NTS baseline exit flat capacity values where the release of incremental obligated entry capacity[18] (i.e. capacity above the prevailing level of obligated entry capacity) creates additional NTS exit capability.

Substitution methodology

3.3. The substitution methodology will only be applied by NGG when it receives a signal for Enduring Annual NTS Exit (Flat) Capacity in excess of the NTS baseline exit flat capacity available at a given NTS Exit Point[19]. Holders of Enduring Annual NTS Exit (Flat) Capacity are obliged to pay the charges associated with that capacity for four years[20]. This obligation is known as the 'user commitment' and allows NTS users to signal a long term willingness to pay for capacity.

[17] A copy of the exit capacity substitution and revision methodology submitted to the Authority can be found on NGG's website at the following location: http://www.nationalgrid.com/uk/Gas/Charges/statements/transportation/ExCapSubMS

[18] The methodology applying to the release of incremental entry capacity is set out in NGG's Incremental Entry Capacity Release (IECR) methodology statement.

[19] The methodology applying to the release of NTS exit capacity is set out in NGG's Exit Capacity Release (ExCR) methodology statement.

[20] The four year user commitment is subject to limited exceptions as detailed in NGG's Exit Capacity Release Methodology statement (ExCR)

3.4. NGG has an obligation under its GT licence to meet requests for Enduring Annual NTS Exit (Flat) Capacity within 38 months. Where works are required, this is the maximum time considered necessary for NGG to be able to invest in its network to meet new exit capacity needs. Because substitution is intended to reduce the need for investment to meet incremental demand for exit capacity, NGG proposes that the methodology will not be applied to meet requests for capacity in a period shorter than 38 months.[21]

Capacity eligible for substitution

3.5. When NGG receives a signal for incremental Enduring Annual NTS Exit (Flat) Capacity, the capacity eligible for substitution will be defined following a series of rules. The fundamental rule applying to the methodology is that capacity which is already sold will not be eligible for substitution. This means that capacity allocated as Enduring Annual NTS Exit (Flat) Capacity; capacity reserved under the terms of an Advanced Reservation of Capacity Agreement (ARCA); and capacity allocated as Annual NTS Exit (Flat) Capacity for any day after the proposed date of release of the relevant incremental exit capacity, will not be available for substitution.

3.6. The methodology also sets out, that unsold capacity under consideration for substitution following a signal for incremental capacity at an annual application window, will not be made available for sale via ad-hoc applications or for reservation via ARCA's. Only if, and when, it is confirmed (through NGG's analysis or following a decision by the Authority to veto a proposed substitution) that such unsold capacity is not required to be substituted will it be considered in respect of ad-hoc applications or ARCA's.

3.7. In reaching this position NGG was concerned that Users should not be able to block the potential substitution of unsold baseline capacity by submitting speculative ad-hoc applications for capacity during the substitution analysis. If such capacity was excluded from substitution and the offer in respect of the ad-hoc application was subsequently rejected, then capacity may have been sterilised and unnecessary investment may have been triggered as a consequence. However, to protect Users who already have ad-hoc requests in progress at the time of the substitution analysis, NGG proposes that any unsold capacity for which there is an outstanding financial commitment will not be substitutable capacity. NGG consider that the financial commitment must be in respect of works to provide incremental capacity or a new exit connection and must be in respect of an ongoing downstream project. A downstream project will be ongoing where either the works are being undertaken at the time of the capacity application, or as determined solely by NGG.

Process

3.8. Where exit capacity applications result in a requirement for NGG to release incremental exit capacity at more than one NTS Exit Point, the order in which

[21] Subject to the conditions of the ExCR methodology statement and the Uniform Network Code (UNC) Annual NTS Exit (Flat) Capacity, Daily NTS Exit (Flat) Capacity and Offpeak NTS Exit (Flat) Capacity are made available to NTS on a shorter term basis.

recipient NTS Exit Points are considered for receiving substitutable capacity will be determined by the value of the revenue driver[22] associated with that exit point. Exit points with no revenue driver will be considered first. Exit Points with revenue drivers will then be ranked in descending order according to the value of the revenue driver, taking the highest revenue driver first. Considering Exit Points with the highest revenue drivers first is likely to yield bigger investment cost savings than those with lower revenue drivers. NTS Exit Points with no revenue driver will be considered before those with a revenue driver because this is likely to reduce the risk of investment being required in respect of applications for incremental capacity at locations where a revenue driver has not yet been determined.

3.9. In determining donor exit points, spare capacity from notional exit points created as a result of exit capacity revision will be considered first (see section below for more detail on revision methodology). If no capacity, or insufficient capacity, is available at notional exit points, the most favourable donor NTS Exit Point with substitutable capacity will be identified. The most favourable Exit Point will be considered to be the furthest downstream Exit Point on the same feeder from the recipient Exit Point as measured by pipeline distance. The furthest downstream Exit Point is selected because, due to its position on the network, it is assumed to yield the largest capacity exchange. Where there is no substitutable capacity available at Exit Points downstream of the recipient exit point on the same feeder, potential donor exit points will be considered in the following sequence:

- downstream NTS Exit Points on adjacent connected feeders;
- upstream NTS Exit Points on the same feeder[23]; and
- upstream NTS Exit Points on adjacent connected feeders.

3.10. To evaluate the efficiency of the potential capacity substitution, the exchange rate for a given potential donor/recipient NTS Exit Point pairing will be determined. Where the exchange rate exceeds 3:1, the substitution will not be permitted. NGG consider that this cap is necessary to protect against inappropriate levels of aggregate capacity destruction. No capacity exchange rate collar is proposed. Therefore substitutions which yield additional aggregate baseline capacity will be permitted.

3.11. Potential substitutions are validated through network analysis which seeks to ensure that the substitution does not increase the incremental risk to the network; in other words, to ensure that NGG's existing commitments to flow gas can be met. The detailed steps that NGG will follow in conducting this assessment are explained in their methodology.

3.12. NGG will use network analysis to confirm an appropriate level of substitution and investment. Where, after exhausting the scope for substitution – including

[22] A revenue driver is a means of linking the revenue allowance in a price control to specific measurable events (see Glossary for more information). A high revenue driver implies a more costly investment relative to a low revenue driver.
[23] NTS Exit Points upstream of a recipient exit point will not be considered where they are also upstream of a compressor. NGG consider the capacity exchange would not justify substitutions of this nature.

consideration of multiple donor points in conjunction, a residual requirement for reinforcement remains and this reinforcement is uneconomic due to economies of scale, some of the proposed substitution may be rejected.

3.13. On completion of the analysis, NGG will review the effects of the exit capacity applications and accepted exit capacity substitutions. Where it considers that an accepted substitution is inappropriate, e.g. the proposed reduction in NTS baseline exit flat capacity at an NTS Exit Point would create difficulties for the downstream operator to meet their statutory and / or regulatory obligations, NGG will discuss with Ofgem whether:

- such accepted substitutions should be reversed (notwithstanding that they were determined by following the approved methodology);
- the level of residual investment increased accordingly; and
- the accepted substitution should be excluded from National Grid's proposals.

3.14. On completion of the above considerations, NGG will record and propose to the Authority the effects of the exit capacity applications and accepted exit capacity substitutions. Specifically NGG shall submit:

- a statement of NTS obligated incremental exit flat capacity released detailing:
  - the NTS Exit Points where NTS obligated incremental exit flat capacity is to be released;
  - the quantity of NTS obligated incremental exit flat capacity; and
  - the effective date for when the capacity is first made available for use.

- a statement of any proposed exit capacity substitution detailing:
  - the NTS Exit Points (including notional exit points) to which exit capacity substitution proposals relate;
  - the level of NTS baseline exit flat capacity at each recipient and donor NTS Exit Point;
  - the proposed quantities by which NGG is proposing the NTS baseline exit flat capacity shall be increased or decreased as a result of exit capacity substitution; and
  - the effective date(s).

3.15. The proposed adjustments to NTS baseline exit flat capacities as a result of exit capacity substitution will be implemented subject to the Authority not vetoing the proposal in accordance with Special Condition C8E of the GT Licence. In the event that the proposal is vetoed NGG will not revise the NTS baseline exit flat capacities.

Revision methodology

3.16. The revision methodology sets out the process that applies for the revision of NTS baseline exit flat capacity values where the release of incremental obligated

entry capacity[24] (i.e. capacity above the prevailing level of obligated entry capacity) creates additional NTS exit capability.

3.17. NGG propose that the revision methodology will only be applied when demand for incremental obligated entry capacity is met through investment. Where the release of incremental obligated entry capacity is satisfied through substitution of entry capacity from one Aggregated System Entry Point (ASEP) to another under the Entry Capacity Substitution Methodology[25], or through funded incremental obligated entry capacity and NGG pursues alternative to investment in new infrastructure, NGG will not apply the revision methodology. NGG consider that the effects on exit capacity of meeting incremental obligated entry capacity through these means would not justify applying the exit revision methodology.

3.18. NGG consider that because exit capability is dependent upon entry gas flows, and not just entry capacity bookings, exit capacity revision should not be applied until gas flows against capacity bookings have been confirmed. NGG consider it is unlikely that sufficient confidence in flows can be obtained until gas has flowed against the incremental capacity signalled for two years and therefore propose that, in respect of a specific release of funded incremental obligated entry capacity, the first exit capacity revision analysis will be undertaken two winters after the commissioning of relevant infrastructure built to support the release of the capacity. Where capacity flows are not demonstrated, NGG will undertake capacity revision analysis annually until the earlier of:

- consistent flows at the obligated entry capacity level are demonstrated and all capacity placed at the notional exit point has been substituted to an NTS Exit Point; or
- two years after the initial revision analysis, i.e. analysis thereby taking place for potentially three years in total.

3.19. Where funded incremental obligated entry capacity has been released and flows against the capacity have been demonstrated, analysis will be undertaken to determine how much additional exit capacity can be released as a result.

3.20. The first stage in the analysis will involve the creation of a notional exit point near to the relevant ASEP. The notional exit point will be created in order to act as a recipient exit point for any additional exit capacity which can be made available. Under the methodology, any such capacity placed at notional exit points will be made available for exit capacity substitution as described in paragraph 3.9. NGG consider that it would not be appropriate to allocate any such capacity to an existing exit point in advance of a signal for incremental exit flat capacity.

[24] The methodology applying to the release of incremental entry capacity is set out in NGG's Incremental Entry Capacity Release (IECR) methodology statement.
[25] NGG's entry capacity substitution methodology is available from NGG's website at the following link: http://www.nationalgrid.com/uk/Gas/Charges/statements/transportation/ecms/

3.21. After the creation of a notional exit point, flows will be increased at the relevant ASEP, to the level at which NGG is confident will be delivered on high demand days, and at all NTS Exit Points that have a high level of interactivity with the ASEP, to the level of the prevailing NTS baseline exit flat capacity plus any previously released NTS obligated incremental exit flat capacity. Flows will then be increased at the notional exit point by the level of increase as was made at the ASEP in order to determine the level of additional exit capacity, if any, which can be made available.

3.22. On completion of the analysis of the effects of the exit capacity applications and accepted exit capacity substitutions will be recorded and proposed to the Authority. Specifically NGG shall submit:

- a statement of NTS obligated incremental exit flat capacity released detailing:
  - the NTS Exit Points where NTS obligated incremental exit flat capacity is to be released;
  - the quantity of NTS obligated incremental exit flat capacity; and
  - the effective date for when the capacity is first made available for use.

- a statement of any proposed exit capacity revision detailing:
  - the notional exit points and ASEPs to which exit capacity revision proposals relate;
  - the proposed quantities by which NGG is proposing exit flat capacity shall be adjusted at notional exit points as a result of exit capacity revision; and
  - the effective date(s).

3.23. Any proposed adjustments to NTS baseline exit flat capacities as a result of exit capacity substitution from notional exit points (i.e. as a result of exit capacity revision) will be implemented subject to the Authority not vetoing the proposal in accordance with Special Condition C8E of the GT Licence. In the event that the proposal is vetoed NGG will not revise the NTS baseline exit flat capacities nor place exit flat capacity at notional exit points as described.

Analysis of two potential scenarios

3.24. To illustrate the way in which the proposed substitution methodology could impact on two potential signals for incremental exit capacity, NGG presented, at workshop four, its analysis of hypothetical signals received in the south east and north east of the country. We outline and comment on these scenarios below.

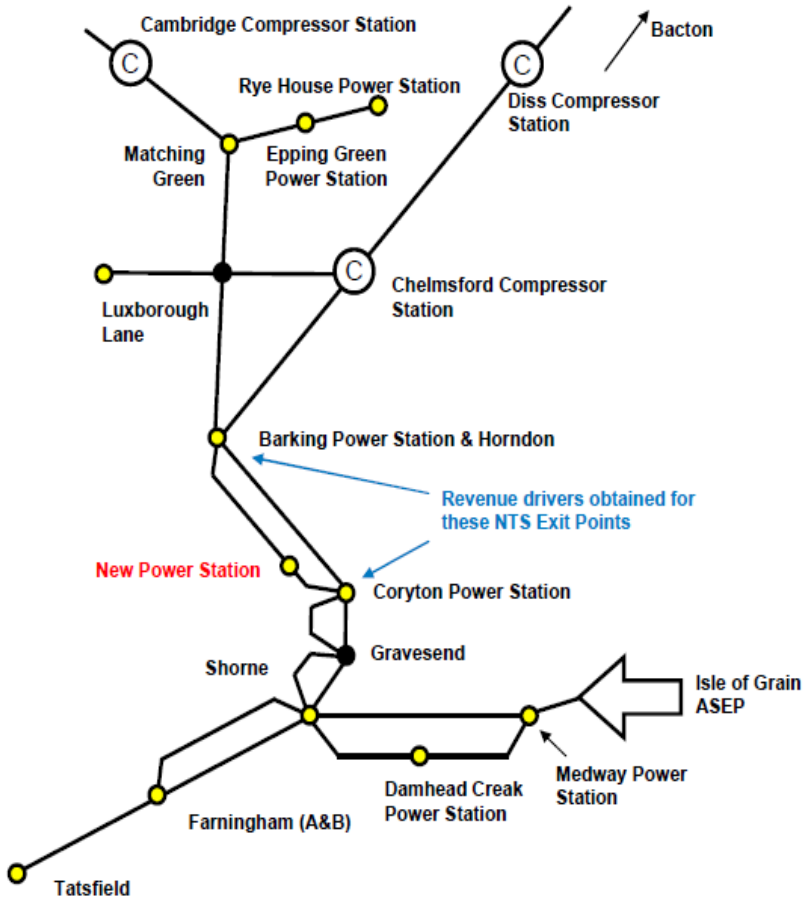
3.25. In its analysis NGG supplied data on the impact of the methodology on the network. In particular, they provided data on which Exit Points if any would be eligible, or required, to donate capacity in order to meet the incremental capacity signals, what the exchange rates would be and what the impacts would be on resultant exit capacity baselines. The scenarios are not intended as forecasts of incremental capacity signals, but the differences between them illustrate the impact substitution could have in a constrained and an unconstrained part of the network.

Scenario 1: Incremental signal for new capacity in the south east

Outcome for a 50 GWh/d incremental signal

It is assumed that a request for 50GWh/d of Enduring Annual NTS Exit (Flat) Capacity is signalled during the 2010 Application Window[26] for release from October 2013 (y+4) for a new power station connecting to the NTS at a new exit point near to the south east extremity of the system. Diagram 1 illustrates the network in the south east showing the location of the proposed new power station, other NTS Exit Points and other important features.

Diagram 1



[26] The annual application window opens in July each year and allows NTS users to signal their requirements for Enduring Annual NTS Exit (Flat) Capacity in years y+4, y+5 and y+6. The rules applying to the application window are set out in the Uniform Network Code – Transportation Principal Document Section B.

3.26. The methodology uses supply scenarios to assess changes to exit capacity levels. These scenarios focus on local supply sensitivities and conditions that are known to exist on the NTS. For example, supply scenarios may be developed to explore the conditions on a part of the network when gas flows can be assumed with confidence, or when gas flows are uncertain. In the south east scenario NGG considered scenarios centred on levels of flows from the Isle of Grain LNG facility, modelling two gas flow supply assumptions.

South east example: low Isle of Grain flows

3.27. National Grid considers that this scenario is the most realistic as it is based on analysis of historical actual flows at the Isle of Grain ASEP. As further phases of the Isle of Grain facility are established and consistent flows experienced, NGG consider higher flows may be assumed for future analysis. Under this supply scenario the level of "north to south" flow in the NTS feeders need to be higher as the Isle of Grain flows are insufficient to meet total local demand; hence pressure drops through the system are increased.

3.28. Analysis shows that the addition of incremental exit capacity at the new exit point means that Assured Offtake Pressures (AOPs) cannot be supported at the system extremity, even with compressors operating a maximum capability, and, in the absence of substitutable capacity, investment would be required to support the new load.

3.29. The quantity of unsold NTS baseline exit flat capacity at NTS Exit Points in the south east area at the time of the analysis is shown in table 1 below.

Table 1. Quantity of unsold NTS baseline exit flat capacity at NTS Exit Points in the south east

NTS Exit Point	Location	Unsold Quantity GWh/d
Tatsfield	Downstream	56.075
Farningham	Downstream	38.306
Shorne	Downstream	17.942
Barking Power Station	Upstream	7.3178
Horndon	Upstream	8.2292
Luxborough Lane	Upstream	56.025

3.30. In accordance with the proposed methodology NGG considered substitution from the furthest downstream NTS Exit Point first, which in the south east example, is Tatsfield. Analysis showed that a decrease in the NTS baseline exit flat capacity at Tatsfield of 32.46 GWh/d would be sufficient to support the new power station load of 50 GWh/d. This gives a capacity exchange rate of 0.649:1, and as no exchange rate collar is proposed, would result in a higher aggregate baseline capacity obligation. Baseline capacity at Tatsfield would be reduced by 32.46 GWh/d, leaving

just under 24 GWh/d of unsold capacity, and a new baseline quantity of 50 GWh/d would be added at the new exit point.

3.31. As a further demonstration of the effect of exit capacity substitution, analysis was repeated with the sold capacity at all downstream NTS Exit Points assumed to equal the baseline level. In this scenario substitution from upstream NTS Exit Points was assessed. Analysis shows that by decreasing the NTS baseline exit flat capacity at the three upstream NTS Exit Points by the maximum quantities available (see table above) only 46.298 GWh/d can be supported at the new power station. This gives an overall capacity exchange rate of 1.546:1, or 1.79:1 for Luxborough Lane and 1.025:1 for Barking/Horndon.

3.32. To enable 50 GWh/d to be released at the new power station the remaining 3.702 GWh/d would need to be satisfied through investment (and/or contract) at an approximate cost of £3m. NGG consider that due to the small amount of partial investment in this scenario, it may be efficient to reduce some of the proposed substitution, to optimise the economies of scale of the residual investment. As with all substitution proposals the Authority would reserve the right to approve or veto such a proposal.

South east example: high Isle of Grain flows

3.33. NGG considered that consistently high flows from Isle of Grain is not a credible scenario at the present time, but presented the analysis in order to demonstrate the range of possible outcomes according to flow assumptions.

3.34. With high entry flows at Isle of Grain, compressors that are usually required to support AOPs are not required to be operating. As a result, NGG consider that even with the addition of the incremental capacity at the new exit point, AOPs would continue to be able to be met and the increased exit capability generated by the certainty of gas entry flows at Isle of Grain would remove the requirement for investment and/or exit capacity substitution to support the new load.

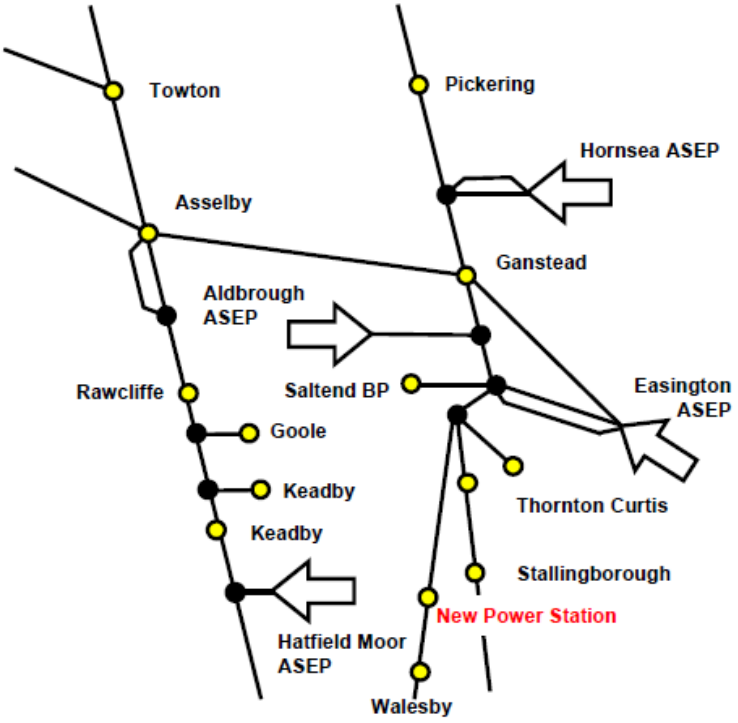
3.35. This supply scenario demonstrates that high Isle of Grain gas flows reduce network constraints in the south east. In fact, NGG indicate that high entry flows at Isle of Grain would result, following Exit Capacity Revision, in increased exit capacity within the south east area of approximately 300GWh/d. In the example 50 GWh/d would added to the NTS baseline exit flat capacity at the new NTS exit point and 250 GWh/d could be allocated to a notional exit point close to the Isle of Grain.

Scenario 2: Incremental signal for new capacity in north east

Outcome for a 50 GWh/d incremental signal

3.36. It is assumed that a request for 50GWh/d of Enduring Annual NTS Exit (Flat) Capacity is signalled during the 2010 Application Window for release from October 2013 (y+4) for a new power station connecting to the NTS at a new exit point in the north east close to the Easington ASEP. Diagram 2 illustrates the network in the north east showing the location of the proposed new power station, other NTS Exit Points and other important features.

Diagram 2



3.37. In this example NGG consider that significant analysis would not be required to determine whether the capacity could be met through substitution. Potential net gas supply in this area is much larger than the local demand due to the presence of a number of existing large ASEPs which are currently not forecast to decline, and high transmission capability in the area as a result of recent entry driven system reinforcement and significant local compression (not shown on the diagram). As a result the main issue in this area is the network's ability to transport gas away and additional loads in this area would therefore have a beneficial effect. Based upon the size of the incremental capacity signal, analysis to consider differing supply scenarios

would not be required as there is sufficient capability within the system to accept the new load without network reinforcement or exit capacity substitution.

3.38. The scenarios modelled by NGG demonstrate the potential benefits which could arise through application of the substitution and revision methodology. NGG consider that the revision methodology formalises a practice that would take place in any case when they receive an incremental exit capacity signal. In our view the revision process will add transparency to the location of spare exit capacity on the system, and we note that even in situations such as those identified in the south east high flows scenario, the substitution methodology would have a role to play in ensuring the capacity created at the notional exit point through revision is efficiently allocated to meet incremental capacity needs at new or existing NTS exit points. In the following chapter we examine the potential quantitative and qualitative costs and benefits in more detail.

4. Assessment of NGG's proposed methodology

This chapter sets out and seeks views on our assessment of the impact of the proposed substitution methodology, including our qualitative and quantitative analysis.

Question 1: Do you agree with our assessment of the methodology (within the framework of the current licence)?

Question 2: Are there any quantitative benefits that have not been included in our assessment?

Question 3: Are there any qualitative benefits that have not been included in our assessment?

Question 4: Are there any quantitative costs that have not been included in our assessment?

Question 5: Are there any qualitative costs that have not been included in our assessment?

Ofgem's assessment of qualitative and quantitative impacts

4.1. The impact of exit capacity substitution and revision will depend on the opportunities that arise to apply the methodology. The revision methodology will be applied following confirmation of increased gas flows in respect of the release of funded incremental entry capacity. The substitution methodology will be applied following an application for incremental exit capacity. The costs and benefits of the combined methodologies will therefore be dependent on the location of the incremental capacity signals received and whether or not they are for capacity in areas of the network where capacity is scarce.

4.2. In our assessment of the costs and benefits we explain the quantitative benefits which would arise from the substitution scenarios set out in chapter three. The quantitative benefits which arise in NGG's south east scenario illustrate the size of the benefits which would arise if an exit capacity signal was received in that location. To provide a view on the probability of positive quantitative benefits being realised in that location, and other locations, we present the data from the forecasts of incremental exit capacity investment submitted to the Authority by NGG as part of its October 2010 Forecast Business Plan Questionnaire (FBPQ) response to the TPCR4 adapted rollover[27]. This data indicates that significant incremental exit capacity investment is forecast in the area used in the south east scenario as well as in the south west and the north west areas of the country. We compare this data to the

[27] See footnote 1

latest data on the location of unsold baseline exit capacity[28] and conclude that quantitative benefits, such as those identified in NGG's south east scenario, have a credible chance of being realised.

Quantitative benefits

4.3. In our view the most significant impact of the substitution and revision methodology is likely to arise from avoided or deferred capital expenditure. Where unsold baseline exit capacity can be substituted to avoid or defer the need for incremental exit capacity investment the savings are potentially significant.

4.4. Where NGG is able to release incremental exit capacity over and above baseline capacity, it receives funding for five years under its System Operator (SO) revenue driver arrangements. Where investment is required to support the new capacity, the investment is subject to an efficiency assessment at the end of the five-year period, and NGG is allowed to recover the residual value of the asset, and a return on the depreciating asset value, over the remaining 40 years of life under the Transmission Owner (TO) part of the price control. Since NGG does not receive additional funding where it is able to fully satisfy incremental capacity needs without investment (and without materially affecting its risk profile), all of the savings associated with the avoided investment would be passed on to consumers.

4.5. In our view the exit capacity revision methodology will add transparency to the availability of spare exit capacity on the system, and, in conjunction with the substitution methodology, has the potential to deliver quantitative benefits to consumers. However, we acknowledge that the revision methodology will not change the way in which NGG evaluates whether it can meet incremental exit capacity needs without investment. Therefore we have not attributed quantitative benefits to this part of the proposal.

Quantitative benefits of the south east substitution example

4.6. In chapter three we presented examples of how substitution analysis could impact on two 50 GWh/d signals for incremental exit capacity; one in the north east and one in the south east. The location of these examples was selected by NGG to provide an illustrative example of the extent to which substitution could help reduce or avoid the need for investment in an area of the country where capacity is considered relatively scarce, and in an area of the country where capacity is more abundant. The scenarios were not modelled on specific investment signals received, but we consider that they provide a good indication of how the methodology would work, and what the quantitative benefits would be where substitutions can be effected.

[28] This data is available from NGG's website at the following location www.nationalgrid.com/uk/gas/data

4.7. The north east example, and the south east example using the high Isle of Grain flow assumptions, indicated that substitution would not provide any benefits as in both scenarios sufficient spare capacity would be available to support 50 GWh/d incremental exit capacity without investment and without the need for substitution of unsold baseline capacity.

4.8. In the south east example, NGG indicated that substitution would provide a quantitative benefit, assuming low Isle of Grain flows. In NGG's view low Isle of Grain flow assumptions are consistent with confirmed Isle of Grain flows in recent years. NGG indicated that a decrease of 32.46 GWh/d in the NTS baseline exit flat capacity at Tatsfield (the furthest downstream exit point of the assumed new exit point with unsold baseline capacity) would be sufficient to support a new power station load of 50 GWh/d.

4.9. Since the incremental exit capacity signal used in the example is in respect of a new exit point not yet defined in the GT licence, a revenue driver specific to the exit point is not yet available. However, a revenue driver for the Coryton power station in respect of 46.2 GWh/d of incremental capacity is available. Given the similar location and size of the new load to this exit point, we have adopted the Coryton revenue driver for illustrative purposes.

4.10. The Coryton revenue driver is £129,552/GWh/d/year in 2005/06 prices. Applying an indexation factor of 1.14[29] to account for construction cost inflation, would result in an increase in SO allowed revenue of £7,384,464 per year for five years, in the event that investment was required to support the new load.

Revenue driver = £129,552/GWh/d/year = £129,552 * 50 * 1.14/year

= £7,384,464 per annum

4.11. Assuming the full amount of the investment was considered efficient, on the figures presented above, and assuming an annuitisation factor[30] of 0.10272, we have calculated that NGG would earn a return on an assumed investment of £72m when the value of the investment was added to their Regulatory Asset Value (RAV) at the end of the five year period.

Investment * annuitisation factor = Annual TO revenue in respect of investment

£72,000,000 * 0.10272 = £7,384,464 per annum

Therefore, if a request for 50 GWh/d of incremental exit capacity was received in the location specified in the south east example, substitution would provide quantitative benefits of £7,384,464 per annum, first of all through an avoided increase in SO

[29] Indexation factors are defined in Special Condition C8E (1) d (ii) of the GT licence, and are used as a multiplier to the revenue driver values established in 2005/06.
[30] The annuitisation factor is calculated to convert the allowed investment into a steady annual revenue allowance, taking account of depreciation and regulatory rate of return.

allowed revenues, and after five years, through an avoided increase in TO allowed revenues.

Materiality of quantitative benefits

4.12. It would not be appropriate for us to forecast where incremental capacity signals will be received, but we consider that a comparison of the forecasts of incremental exit capacity investment submitted to the Authority by NGG as part of its FBPQ submission for the TPCR4 adapted rollover with the latest data on the location of unused exit baseline capacity, provides a useful indication of the extent of the potential quantitative benefits arising from substitution.

4.13. NGG submitted its FBPQ for the TPCR4 adapted rollover in October 2010. Among other things, the submission included forecast incremental exit capacity investment for the financial years up to and including 2017/18. NGG's investment forecasts are informed by incremental capacity signals received through the commercial exit capacity booking arrangements[31] and by long-term forecasts of supply and demand. This investment planning process[32] is described in NGG's Transmission Planning Code[33] which outlines its approach to planning and developing the NTS over the long term.

4.14. If the substitution methodology is approved it will be applied from 1 July 2011 in respect of incremental requests for Enduring Annual NTS Exit (Flat) Capacity. NGG is obliged to meet requests for incremental exit capacity within 38 months. Therefore the methodology will affect capacity released from October 2014 at the earliest. In considering incremental exit capacity investment which could potentially be affected by substitution we have therefore looked at NGG's investment forecasts for the financial years 2014/15 to 2017/18 only.

4.15. Table 2 presents the incremental exit capacity investment forecast by NGG for the years 2014/15 to 2017/18 in its FBPQ submission for the TPCR4 adapted rollover. Investment forecast as a result of incremental capacity signals is considered triggered investment, while investment forecast by long term forecasts of supply and demand is considered anticipatory investment. By its nature anticipatory investment is less certain and more subject to planning assumptions. Given the time period over which the investment forecasts presented in the table relate, at this stage it is likely that a significant amount of this investment is anticipatory rather than triggered and therefore the forecasts are indicative and based upon initial estimates only.

[31] User can book long term exit capacity under the enduring annual application processes, the ad-hoc process, or a bi-lateral Advanced Reservation of Capacity Agreement (ARCA), each of which are defined within the GT Licence, the Uniform Network Code, and NGG's Exit Capacity Release Methodology Statement

[32] Refer to appendix C for the investment planning process in response to Ofgem's query on 11th August 2010.

[33] This document is published in accordance with Special Condition C11 of National Grid Gas's Transporter Licence in respect of the NTS. This document can be found on National Grid's website: http://www.nationalgrid.com/uk/Gas/TYS/TPC/

Table 2. NGG's incremental exit capacity investment forecast

2014/15	2015/16	2016/17	2017/18	Total
£110m	£271m	£387m	£408m	£1178m

4.16. The extent of the investment forecast in Table 2 contrasts with the incremental exit capacity investment data presented by NGG in its Informal Consultation in June 2010. The data presented in June 2010 covered actual investment in the years 2007/08 to 2009/10 and forecast investment for 2010/11. The total investment for the four year period, taking actual and forecast together, was £194m. At the time this investment was considered low relative to the amount of investment taking place in respect of incremental entry capacity. As a result it was considered that the benefits arising from exit substitution could reasonably be expected to be low relative to entry substitution.

4.17. We do not propose that all of the incremental exit capacity investment presented in the table could be avoided or deferred through substitution, but we do consider that if substitution was able to reduce a relatively small proportion of the investment, the savings could be more substantive than previously thought. Based on the revenue driver and annuitisation factor assumptions described in the section above, a 10% saving on the total incremental exit capacity investment forecast in table 2 could reduce NGG's allowed revenue by in the region of £12m per annum. The calculation below illustrates this example:

10% of total investment * annuitisation factor = Annual TO revenue from investment

(10% * £1178m) * 0.10272 = £12,100,416 per annum

4.18. NGG attribute the majority of the potential incremental exit capacity investment forecast in the period up to 2017/18 evenly across three categories: south west demand; south east demand; and north west storage. In our view this information supports the credibility of the illustrative south east substitution example presented above: subject to the assumptions outlined, the example demonstrates that substitution could avoid the need for investment, and the FBPQ investment forecasts demonstrate that new investment is anticipated in this area.

4.19. In its narrative explanation of its investment forecast, NGG consider that changes to the interruption arrangements[34] coupled with a significant number of

[34] The implementation of UNC90 'Revised DN interruption arrangements' and UNC195 'Enduring Offtake Arrangements' changes the interruption arrangements applying on the GDNs and on the NTS from October

enquiries received for new storage facilities and an increased number of requests for new CCGT connections is likely to result in a marked shift in system usage away from historical seasonal trends. As such they consider that a number of single customer-driven developments or combinations of developments may cause a significant shift in the operation of the system and require deep reinforcement remote from the entry or exit location where the new capacity is required.

4.20. At an aggregate level a significant amount of unsold baseline capacity is available on the NTS. In January 2011 almost 40% of NTS baseline exit capacity remained unsold[35]. However there is significant variation across the system, with many exit points fully utilising all baseline capacity and some areas of the country being constrained. On NGG's current modelling assumptions exit capacity in the south of the country is considered to be more constrained than in the north. Given that significant investment is forecast in the south, any unsold baseline capacity here would be potentially very useful if it was eligible for substitution.

4.21. NGG has not commented on the extent to which substitution could be used to mitigate any of the investment forecast and we are not in a position to make forecasts in this area, but based on capacity bookings in January 2011, we note that quantities of unsold baseline capacity are available. Unsold baseline capacity is more limited in the south east, but in the south west and in the north west, both locations where NGG forecast significant investment, we estimate in the region of 100 GWh/d remained unsold. The extent to which this capacity could be substituted to support incremental exit capacity needs will depend on the size and location of the incremental capacity signal as well as prevailing capacity bookings at the time the incremental capacity is required to be delivered. As noted above we do not propose that all of the incremental exit capacity investment forecast in table 2 could be avoided or deferred through substitution, but the availability of unsold baseline capacity in areas where investment is forecast increases the potential that substitution will deliver quantitative benefits.

Qualitative benefits

Environmental benefit

4.22. Even where it is carefully planned and appropriate mitigating measures are identified and properly applied, construction activity can have both temporary and longer lasting effects on the environment. Temporary effects can manifest themselves in terms of noise, pollution, and transport and visual amenity disruption. Longer term effects can include destruction of natural habitat and in some cases permanent changes to the landscape. Our initial view is that the proposed methodology has the potential to lead to a beneficial impact on the environment through the reduction in the volume of such works and any associated impacts.

2011 and October 2012 respectively.

[35] Data published by NGG under the transitional exit capacity reports section of its website http://www.nationalgrid.com/uk/Gas/Data/TransitionalExitCapacityReports/

Planning benefit

4.23. A further benefit is the avoidance of planning costs and planning-related delays that can be associated with the delivery of additional built capacity on the network. Where a signal can be met by substitution of capacity there are benefits to the economy as a whole. Construction of cross-country pipelines and associated installations has well defined planning processes which allow for objections about the development to be raised during the consultation stages. Resolving such objections and agreeing appropriate mitigating measures can increase the time it takes to conclude the process and this can result in significant planning delays. Where substitutable capacity is available such difficulties altogether could be avoided.

Quantitative costs

NGG costs

4.24. In industry workshops and its interim exit capacity substitution and revision methodology reports, NGG has indicated that it does not foresee additional IT costs arising from the introduction of the proposed methodology.

4.25. Following a request for information, in December 2010 NGG submitted to the Authority estimates of the costs it will incur in implementing and operating the substitution and revision methodology. NGG considers that the costs will be dependent on the following factors:

- complexity of the specific substitution opportunity, eg incremental load size, and hence remoteness and number of potential donor exit points;
- interaction of multiple substitution opportunities; and
- potential to aggregate incremental capacity releases to simplify analysis.

As a consequence, NGG considers that the estimate cost (man-hours) to undertake substitution analysis is subject to a degree of uncertainty. It estimates that the assessment of a substitution opportunity would typically take 65 man-hours for analysis work plus 5 man-hours for management activities. Any additional time incurred; eg in the governance process, has been ignored. This equates to a fully absorbed cost (ie with uplift) of £4840. As a rough estimate NGG expects simpler and more complex examples to fit in the range 50% to 125% of the "typical" assessment, ie £2420 to £6050.

Shipper/GDN costs

4.26. We do not consider that the methodology will introduce additional costs to shippers or GDNs. The methodology deals with the way in which NGG undertakes analysis in respect of meeting incremental exit capacity needs, but it does not affect the process by which shippers and GDNs can obtain capacity, and it does not affect NGG's obligation to deliver incremental exit capacity within 38 month lead times.

4.27. In contrast to the entry capacity substitution methodology, the proposed exit capacity substitution methodology does not have a 'retainer mechanism' whereby shippers can protect unsold baseline capacity from substitution by way of an upfront capacity payment refundable in the event that the capacity is booked.

4.28. Shippers or GDNs who rely on the shorter term availability of capacity (Annual NTS exit (flat) capacity, Daily NTS Exit (Flat) Capacity and Offpeak Daily NTS Exit (Flat) Capacity) may have to reconsider their booking strategies and the value they place on capacity certainty, in the light of substitution. Shippers did not provide information on any potential costs associated with this evaluation in their responses to NGG's informal and formal consultations, but we invite respondents to this consultation to submit information on these costs if appropriate.

Qualitative costs

4.29. We have not identified any qualitative costs to implementing the methodology. Concerns have been expressed about the principle of substitution and the effect it could have on security of supply. We address these concerns in chapter one of this document.

4.30. As described in chapter three, as part of its methodology, NGG has indicated that unsold capacity under consideration for substitution will not be made available for sale via ad-hoc applications or for reservation via ARCAs. In our view this is an appropriate safeguard to prevent the potential for ad-hoc applications for capacity to undermine the substitution process. Capacity under consideration for substitution is capacity which will carry a financial user commitment upon allocation. At the stage of an ad-hoc application, no such financial user commitment applies, and any capacity offer made by NGG may subsequently be rejected. Concerns were expressed that this rule could inhibit NGG's ability to make timely capacity offers in respect of ad-hoc and ARCA applications. NGG has stated that this will not be the case and has stated that it will continue to make capacity offers in response to ad-hoc and ARCA applications in accordance with the timescales defined in the UNC. We therefore do not anticipate that this aspect of the methodology will incur additional costs.

Other considerations

Treatment of interconnectors

4.31. NGG considers that, pending the implementation of European network codes concerning access to the gas transmission networks, it would not be appropriate to treat interconnectors differently from other exit points, and has not proposed the exclusion of exit capacity at interconnectors from the substitution methodology. NGG considers that retaining capacity at interconnectors over and above the level of capacity bookings, when incremental capacity has been signalled elsewhere, runs the risk that unnecessary investment may be required for other exit points.

4.32. As part of its Third Legislative Package on liberalisation of European energy markets, in July 2009, the European Parliament published Regulation 715/2009[36]. The regulation addresses conditions for access to gas transmission networks across the EU, including at interconnectors. Development of the requirements of the regulation has been progressed by the European Regulators' Group for Electricity and Gas (ERGEG) during 2009 and 2010 with the objective of setting out clear and objective principles for the development of European network codes by the European Network of Gas Transmission System Operators (ENTSOG) for access to the gas transmission networks.

4.33. The most recent publication by ERGEG on capacity allocation mechanisms was in December 2010[37]. The publication states that:

"The network code shall set out that transmission system operators jointly offer bundled firm capacity services. The corresponding exit and entry capacity available at both sides of every point connecting adjacent entry-exit systems shall be integrated in such a way that the transport of gas from one system to an adjacent system is provided on the basis of a single allocation procedure and single nomination.

In order to progressively bundle the entire technical capacity at a given interconnection point, capacity becoming available on one side of an interconnection point exceeding the available capacity on the other side of the interconnection point shall be allocated for a duration not exceeding the expiration date of the corresponding capacity on the other side of the border. Transmission system operators shall seek to maximise the bundled capacity and to accelerate the bundling of capacity at interconnection points by encouraging their network users to free up their capacity booked on one side of interconnection points before its expiration date."

4.34. The requirement for a bundled capacity product and the requirement to maximise bundled capacity has raised concerns among some GB interconnector operators and third parties affected by GB interconnector capacity provision, that unsold exit capacity at interconnectors should be excluded from the possibility of substitution from the outset of the implementation of the substitution methodology. In our view it is appropriate that NGG continues to monitor the development of ERGEG's work and responds appropriately in the event that modification to the proposed substitution methodology is required.

4.35. EU Regulation 715/2009 is legally binding on GB energy market arrangements. The conclusions of ERGEG's work in respect of the development of European codes for capacity allocation will have to be adopted within the network codes of member states – in the case of GB, within the Uniform Network Code (UNC) – and it will therefore also be necessary that NGG's substitution and revision methodology takes

[36] Regulation (EC) No 715/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the natural gas transmission networks and repealing Regulation (EC) No 1775/2005

[37] Revised Pilot Framework Guideline on Capacity Allocation Mechanisms, ERGEG, 7 December 2010.

account of any implications the changes may have. The European codes necessary to deliver the requirements of EU regulation 715/2009 have not yet been developed. This work is expected to be progressed and consulted on throughout 2011 with a view to implementation by 2014 at the latest.

4.36. This issue has been of particular importance to parties affected by the Moffat interconnector connecting the GB transmission system to Ireland, Northern Ireland and the Isle of Man. We note that in reaching its decision NGG has considered the specific circumstances applying at Moffat and has indicated that in the short to medium term there would appear to be a very small risk of capacity being substituted away from Moffat (there is currently no unsold baseline exit capacity at Moffat) or, given the technical capacity available at both sides of the interconnector, insufficient exit capacity being available at Moffat to meet reciprocal entry capacity needs on the other side. We further note, that in the event that NGG submitted a substitution proposal for approval to the Authority which we considered adversely affected the security of supply of either GB or another member state, the Authority would have the ability to veto the change.

Exchange rates

4.37. During industry discussions on the substitution methodology there was debate about the appropriate level at which any cap or collar on capacity exchange rates should be set. NGG addressed this issue in its industry consultations and respondents indicated support for a 3:1 cap, but no collar. These parameters have been adopted by NGG in its methodology statement.

4.38. We consider that the exchange rate cap of 3:1 represents a reasonable compromise which keeps the exit substitution methodology consistent with the entry substitution methodology in this respect, and permits substitution whilst preventing excessive loss of capacity rights. We consider that not having a collar will ensure that where additional capacity is created as a consequence of substitution this incremental capacity will be represented in the revised exit capacity baselines which will increase the transparency of available capacity on the system.

Capacity release date with substitution

4.39. NGG proposes that substitution will only apply in respect of the release of incremental capacity beyond investment lead times. Because NGG has an obligation to meet incremental capacity requests within 38 months this effectively means that substitution will only be considered for incremental exit capacity requests from y+4 at the annual application window.

4.40. This approach was supported by a majority of respondents to NGG's formal consultation. It was noted that substitution was intended to reduce or avoid the need for new investment and that incremental capacity released earlier than y+4 would, in a majority of cases, be capacity for which investment was not required. It was also considered that using substitution to meet incremental capacity requests with shorter lead times, potentially as short as m+7, may provide an insufficient

notice period to users of shorter term capacity that the capacity they need is no longer available. However in their formal consultation NGG noted that this approach could mean that requests for incremental exit capacity which could be met through substitution earlier than 38 months may be turned down.

4.41. In our view NGG's approach strikes an appropriate balance between efficient use of the system and providing adequate user protection. Based on prevailing investment lead times, we note that it is unlikely that NGG would undertake works to meet an incremental capacity request earlier than y+4 when substitution could satisfy the request from y+4, so we do not consider that the proposal is likely to result in investment inefficiency. We do recognise that situations may arise where an incremental request for capacity could have been satisfied through substitution earlier than y+4, but we note that if such capacity is available for substitution, daily off-peak capacity is likely to be available in that location, which may allow the incremental capacity request to be satisfied until the enduring exit (flat) capacity can be released.

Exit capacity revision methodology

4.42. NGG propose that the revision methodology will only be applied when demand for incremental obligated entry capacity is met through investment, and where consistent flows at the obligated entry capacity level are demonstrated over a period of two years.

4.43. NGG consider that sold entry capacity relates to users peak capacity requirements and, without confirmation of actual entry flows, are insufficient to justify the revision of exit capacity baseline levels which must be made available 365 days a year. In addition, NGG considers that the probability of incremental exit capacity being available when incremental entry capacity has been released without investment would not justify the costs of doing the assessment.

4.44. This issue attracted comment from respondents to NGG's informal consultation, with a majority considering NGG's approach lacked flexibility. We recognise the importance of gas flows against entry capacity bookings in delivering the system pressures necessary to support exit capacity capability, but we tend to agree that NGG's approach appears conservative.

4.45. Given the importance of flows to exit capability we question the exclusive importance of incremental entry capacity investment to exit capacity revision, and would be interested to see analysis of the effect incremental entry capacity released as a consequence of partial or full entry substitution, could have on exit capability. We also query whether modelling the probability and level of gas flows against incremental entry capacity release would allow NGG to conduct exit capacity revision with sufficient confidence ahead of confirmation of actual flows. In this respect we note that a level of risk is inherent in any release of incremental exit capacity following exit capacity revision, as even where entry gas flows are confirmed over a two year period, such flows provide no certainty as to the level of gas flows in the future.

4.46. As a condition of our minded to decision to approve NGG's substitution and revision methodology we consider that it would be appropriate for NGG to reconsider this aspect of the revision methodology following its implementation. NGG has an obligation to review the substitution and revision methodology at least once a year and to do so in consultation with relevant shippers, GDN operators and interested parties. We believe that the requirement for such a review will provide appropriate scrutiny of the way that substitution and revision has been conducted and does not preclude further examination of any aspect of the methodology, including the exchange rate cap, the capacity release date with substitution, and as highlighted here, the conditions under which the revision methodology will be utilised. The detailed scope for such a review is not set out in detail in the licence but we believe that the consultative nature of such a review should ensure that all relevant aspects are examined.

Impact on consumers

4.47. We assume that the savings in capital expenditure that have been identified will be passed through to consumers from the date of the incremental capacity release. Although it has previously been suggested that the overall benefit to consumers will be negligible relative to the transportation costs which typically constitute 2% of the final energy bill charged to consumers, our focus is on the net benefits that the methodology can deliver. In this context, we consider the savings from substitution to be worthwhile. Therefore, we consider that a methodology that facilitates the delivery of these consumer benefits would have a positive contribution.

Impact on competition

4.48. New demands for capacity which can be met through substitution guarantees that incremental capacity will be delivered on time because there is no need to lay any pipeline or build additional compressor stations or other related facilities. Users requesting incremental exit capacity at new NTS exit points, such as to support CCGT developments, may value this certainty which may be to the benefit of competition in the energy sector.

Impact on Sustainable Development

Security of Supply

4.49. Concerns have been raised about the impact of substitution on security of supply. We address these concerns in detail in chapter one, but we do not consider that the implementation of the methodology will have an appreciable impact on security of supply. In our view the arrangements in place for NTS users booking exit capacity ensure that NGG receives the long term capacity signals necessary to protect GB security of supply.

Environment

4.50. We consider the environmental impact of the methodology within the qualitative benefits section of this chapter.

Impact on health and safety

4.51. To the extent that the methodology results in a reduction in new construction works, we consider that the methodology will have a potentially positive impact on health and safety. We have not identified any aspect of the methodology which will impact on health and safety directly.

Risks and unintended consequences

4.52. We have not identified risks or unintended consequences. We seek industry views on this area. We note that any substitution or revision proposal submitted by NGG under its substitution and revision methodology will be subject to a final decision by the Authority. We consider that this should provide an adequate safeguard against the risks or unintended consequences of an inappropriate substitution proposal.

Other Impacts

Distributional effects

4.53. At an aggregate level, substitution is likely to lower exit capacity charges as more capacity is being paid for absent additional investment costs. However, exit capacity baseline levels revised as a consequence of exit substitution may impact on exit capacity charges at the donor and recipient NTS exit points affected by the substitution. In view of the forecasts of incremental exit capacity investment submitted to the Authority by NGG as part of its FBPQ response to the TPCR4 adapted rollover, we might expect these effects to be more apparent in the south west, south east or in the north west, but in reality they will be dependent on the location of the proposed substitution. The data modelled by NGG in respect of the south east exit substitution scenario demonstrates that the effect is likely to be very marginal, and at exit points where capacity has been substituted away, exit capacity charges are likely to be lower. We present this data in more detail in Appendix 2.

4.54. Following implementation of the methodology, as part of submitting a specific exit substitution proposal, we would expect NGG to model any charging impacts on the NTS exit points affected by the substitution. Consistent with our comments in respect of risks and unintended consequences, we note that the Authority would reserve the right to veto any substitution proposal submitted in the event that we considered it to have an inappropriate effect.

Impact on small businesses

4.55. We do not expect the proposed introduction of gas transmission exit capacity substitution to have any direct impact on small businesses beyond those benefits identified for consumers more widely.

Conclusions

4.56. From our assessment of the benefits, costs and risks we believe that the methodology submitted to us will have a net positive benefit. Based on the cost estimates of implementing and operating the methodology submitted to us by NGG, we consider the costs associated with the methodology will be relatively low, and, where additional costs are incurred associated with a more complex substitution analysis, are likely to be proportionate with the benefits. We have not forecast a specific quantitative benefit associated with the proposal, but based on NGG's forecasts of incremental exit capacity investment, and its analysis of potential substitution possibilities, we consider that quantitative benefits are likely, and that where they are realised, would be of an order of magnitude which would justify the forecast costs associated with the methodology. We are minded to approve NGG's proposed methodology, subject to consideration of the responses to this consultation and without fettering the discretion of the Authority.

5. Way forward

5.1. The Authority received NGG's proposed exit capacity substation and revision methodology on 4 January 2011. Since that time we have given notice to NGG of our intention to conduct an impact assessment under Special Condition C8E of the GT licence. This provides the Authority with three months to consult on and reach a decision on the proposed methodology.

5.2. This document provides four weeks for respondents to submit any comments. The aim is to have a substitution methodology in place for the annual exit capacity application window opening on 1 July 2011. Following close of this consultation and consideration of responses, it is our intention to publish a final decision on the methodology by 4 April 2011.

Appendices

Index

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 11 March 2011 and should be sent to:

Lewis Hodgart
Senior Manager, Gas Transmission Policy
Ofgem
107 West Regent Street
Glasgow
G2 2BA

Email responses should be sent to:
Lewis.hodgart@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. As noted above, this document and the responses received are intended to inform the Authority's decision making process. Any questions on this document should, in the first instance, be directed to Lewis Hodgart at the above address.

CHAPTER: Three

Question 1: Are there additional aspects of the methodology that should be highlighted?

Question 2: Are the scenarios analysed appropriate and relevant to system development? If not, why not?

CHAPTER: Four

Question 1: Do you agree with our assessment of the methodology (within the framework of the current licence).

Question 2: Are there any quantitative benefits that have not been included in our assessment?

Question 3: Are there any qualitative benefits that have not been included in our assessment?

Question 4: Are there any quantified costs that have not been included in our assessment?

Question 5: Are there any qualitative costs that have not been included in our assessment?

Appendix 2 – Charging Impacts

1.1. Following a request for an analysis of the charging impacts of exit substitution, NGG has modelled the charging impacts of the south east substitution example described in chapter three.

1.2. The example assumes a request is received in the 2010 July annual application window for 50GWh/day of incremental capacity for release from October 2013 at a new NTS exit point located between existing NTS Exit Points at Coryton power station and Barking power station (& the Horndon GDN offtake). As described in chapter three, NGG indicate that the incremental capacity request could be satisfied by substituting 32.46 GWh/d of unsold NTS baseline exit flat capacity at Tatsfield (the furthest downstream NTS Exit Point of the proposed new exit point) resulting in a capacity exchange rate of 0.649:1. As set out in chapter four, the assumed level of investment necessary to support the new load without substitution is £72m.

1.3. In its modelling analysis NGG has assumed the substitution to apply from October 2013 (y+4). NGG also indicate that assessment of the charging impacts has required a number of assumptions, eg revenue driver, allowed return on investment, new load fully booked, no other supply/demand changes. NGG therefore consider that the results should be considered indicative only, and although the principles should be consistent, different results may occur at different locations.

1.4. As described in chapter four, where NGG has to invest to meet incremental exit capacity requirements it receives funding for five years under its System Operator (SO) revenue driver arrangements. At the end of the five year period this investment is subject to an efficiency assessment and NGG is allowed a return on the depreciating asset value over a period of 45 years under its Asset Owner (TO) price control. To measure the charging impact of the substitution, NGG has compared the impact on charges of meeting the incremental capacity signal through investment with the impact of meeting the incremental capacity signal through substitution both over the period 2013/14 to 2017/18 when the incremental exit capacity will affect SO revenues, and in the period beyond 2017/18 when it will affect TO revenues.

2013/14 to 2017/18 charging impacts

1.5. Where NGG has to invest to meet the incremental capacity requirement, it would receive an increase in its allowed SO revenue over the period 2013/14 to 2017/18. In chapter four, we outlined that, assuming a revenue driver of £129,552/GWh/d/year, this would equate to £7,384,464 per year for a 50GWh/d increment.

1.6. The additional SO allowed revenue would be recovered by NGG, firstly through the SO exit capacity charge paid by the recipient of the new capacity, and then, (the residual amount) through the SO entry commodity charge and the SO exit commodity charge on a 50:50 basis. NGG estimate that the SO exit capacity charges paid by the new exit point in respect of the 50GWh/d incremental capacity would be £1,989,250. This would leave an amount of £5,395,214 to be recovered through SO commodity charges. As a rule of thumb NGG consider that £2m of revenue equates to a charge of 0.0001p/kWh/d. On this basis they consider that SO entry commodity and SO exit commodity charges would both increase by 0.00027p/kWh/d to recover the shortfall. In practice this would

be rounded to 4 decimal places to 0.0003 p/kWh/d. A summary of the SO commodity charge impacts is presented in Table 1.

1.7. Where NGG is able to meet the incremental capacity requirement through substitution, it would not receive an increase in its allowed SO revenue over the period 2013/14 to 2017/18, but it would receive additional SO exit capacity charges paid by the new exit point in respect of the 50GWh/d incremental capacity. The revenue received in respect of the SO exit capacity charge would reduce the revenue NGG would have to recover from SO commodity charges. As a consequence NGG estimate that meeting the incremental capacity request from substitution would result in a decrease in SO entry and exit commodity charges of 0.0001p/kWh/d.

Table 1 – South east example impact on SO commodity charges 2013/14 to 2017/18

SO Commodity charges	**Incremental capacity with investment**	**Incremental capacity with substitution**
Additional SO allowed revenue	£7,384,464	£0
SO exit capacity charges at new exit point	£1,989,250	£2,007,500
Remaining SO allowed revenue	£5,395,214	- £2,007,500
Impact on SO exit commodity charge*	0.00027p/kWh/d	-0.0001p/kWh/d
Impact on SO entry commodity charge*	0.00027p/kWh/d	-0.0001p/kWh/d

*SO allowed revenues are recovered evenly between SO entry and exit commodity charges. On current modelling assumptions NGG estimate that 0.0001p/ kWh/d would result in a recovery of £2m of allowed revenue.

1.8. The charging impacts modelled by NGG indicate that the differential in the commodity charge between meeting the south east incremental capacity requirement through investment and meeting it through substitution, would be 0.0004 p/kWh/d (0.00027 p/kWh/d minus -0.0001 p/kWh/d, rounded to 4 decimal places). This is the combined effect of avoiding the increased revenue allowance associated with the revenue driver, and the reduction associated with providing increased capacity without investment. NGG state that this saving is equivalent to a 2% reduction in SO commodity charges.

1.9. Following the release of incremental capacity TO allowed revenue will remain unchanged between the period 2013/14 and 2017/18 regardless of whether the capacity

is released following substitution or investment. However, where substitution provides the incremental capacity, baseline quantities change, and there is a slight rebalancing of TO exit capacity charges. As the aggregate baseline decreases (in the example) there is a trend towards very slightly higher charges at all exit points other than the GDN exit zone SE1. The very small increase observed reaches a maximum of 0.0001p/ kWh, where the effect is sufficient to register when charges are rounded to four decimal places. The decrease in SE1 is also 0.0001p/ kWh. NGG explain the effect in SE1 as arising as a consequence of lower flows assumed in this area as a result of substitution meaning that flows can increasingly be supplied from the Isle of Grain which results in lower assumptions about the length of pipeline used.

Charging impacts beyond 2017/18

1.10. Where NGG has to invest to meet the incremental capacity requirement, the increased SO allowed revenue it receives under the SO revenue driver incentive comes to an end after five years. At this point the investment is subject to an efficiency assessment and NGG is allowed a return on the depreciating asset value over a period of 45 years under its Transmission Owner (TO) price control. In the south east example NGG has indicated it would invest £72m to provide 50GWh/d of incremental exit capacity without substitution. Assuming all of this investment is considered efficient it estimates that the return on this investment would result in an increased TO allowed revenue of £7,384,464 per annum from 2018/19 onwards.

1.11. TO allowed revenue is recovered from both entry and exit charges on a 50:50 basis. Without substitution, beyond 2017/18 all TO exit capacity charges would increase. The increase would be offset by the increased revenue recovered from the new exit point, in this case assumed to be £2m. NGG calculate the aggregate impact on the total revenue recovered from TO exit capacity charges as follows:

(£7,384,464/2 - £2m) / (£652,000,000/2) * 100 = 0.52%;

In this example £652m is the current TO allowed revenue, and the division by 2 reflects the split between exit and entry capacity charges. NGG note that the increased exit capacity charges avoided through application of substitution should be the same, in absolute (not percentage) terms, but because the absolute increase in the example used is small, the effects of minimum pricing and rounding disguise the effect.

1.12. NGG further note that delivering the incremental exit capacity through substitution rather than investment will also result in an increase in entry charges being avoided. As the transportation charging methodology dictates that actual prices are based on long run marginal costs, which are unaffected by increased allowed revenue, the avoided increase from substitution will be an avoided TO entry commodity charge of approximately 0.0004p/kWh/d.

1.13. Thus, following substitution, for the years 2018/19 onwards, the benefits are observed in reduced aggregate exit capacity charges of 0.5% and reduced entry commodity charges of 0.0004p/kWh/d (equivalent to a 2% reduction).

Appendix 3 – Development of NGG's substitution and revision methodology during 2010

1.1. Consistent with the obligations set out in the Authority's February 2009 letter extending the timetable for implementation of the exit capacity substitution and revision methodology, NGG arranged a series of workshops (Exit Substitution Workshops 1 to 5) held between 27 January and 7 September 2010. The purpose of NGG's workshops was:

- to review the exit capacity substitution and revision obligations;
- to assess the potential benefits from substitution and revision to assist in developing methodologies of proportionate complexity;
- to identify potential issues;
- to identify potential options for the methodologies; and
- to provide worked examples showing the possible effects of exit capacity substitution on donor NTS Exit Points.

1.2. The following bullets provide a brief summary of the content of each meeting. Full detail on the workshop discussions, including workshop minutes and copies of the presentations, can be found on NGG's website.[38]

- Workshop 1 (27 January 2010): NGG reviewed the substitution and revision obligations and objectives as stated in the Licence and examined the scope for exit substitution and revision to deliver customer benefits. Reference was made to the drivers for entry substitution compared to exit and data was presented on the relative investment at entry and exit. The workshop concluded that the potential materiality of the benefits from exit substitution and revision are not as great as for entry. As a consequence there was general agreement at this workshop that the complexity of the proposed methodology should be proportionate to the potential benefits and that, where possible, a simpler methodology than the entry substitution methodology would be appropriate. NGG went on to analyse a number of potential issues. The most significant of these were:
    - User Commitment: consensus was that capacity should be available for substitution unless it was sold;
    - Interruptible ("off-peak") sites: it was concluded that exit capacity substitution would not affect the quantity of off-peak capacity available, because this quantity is not based on the baseline quantity. However, it was considered that there may be an increased risk that capacity curtailment would be needed. This is because capacity substitution may result in an overall increase in gas flows without investment to create a corresponding increase in system capability.
    - Exchange rate cap: it was suggested that as unsold capacity has no value a cap should not be applied. This issue was reconsidered in subsequent meetings.
    - Process timelines: National Grid outlined concerns regarding the precise

[38] http://www.nationalgrid.com/uk/Gas/Charges/statements/transportation/ExCapSubMS/

timing of exit substitution and revision analysis, its relationship to capacity release and substitution submissions to the Authority, the timing of their

approval or veto and the impact on available capacity.

- Special Sites: there was consensus that no special treatment should be given to specific classes of exit point (e.g. interruptible, DN offtakes). However, it was recognised that European legislation is being developed in respect of interconnectors. The majority view was that the principle of consistent treatment of all offtakes should apply, unless change was required as a result of new legislation.

- Workshop 2 (23 February 2010): Building on the high level discussion points considered at the first workshop NGG provided a theoretical assessment of the potential impact of exit capacity substitution for two typical new power station loads. At this workshop participants also sought further information on the level and location of spare capacity in the NTS. The reason for this being that some participants considered that, as spare capacity will be allocated before unsold baseline capacity it is necessary to quantify spare capacity so that the trigger point for substitution can be identified and that this can be stated in the methodology statement. NGG indicated its view that this information would be difficult to provide and would be of limited value given the contingency of the analysis.

- Workshop 3 (7 April 2010): The third workshop further developed the proposals discussed at the earlier workshops. NGG indicated its view that eligible donor exit points should be ranked according to their proximity to recipient exit points with the furthest downstream exit point on the same feeder to the recipient exit point ranked first. This approach was considered to deliver the most efficient capacity exchange rates. In this context, further discussion of substitution caps and collars also took place. A number of attendees expressed concern for avoidance of 'excessive' capacity destruction and proposed a transitional rule setting a cap at 3:1 in order to be consistent with the entry substitution methodology.

  On the basis of the methodology developed to date, NGG indicated its intention to conduct network analysis on the impact substitution could have on the need for investment at two potential new power station loads in the Easington and Isle of Grain regions and to present the results of the anlaysis at Workshop 4. In response to a request made in Workshop 2, NGG also presented further information on the availability of existing system capability ("spare" capacity) that was made available in 2009 before consideration of investment, and in a related point, advised the group how the existing exit capacity charging methodology model could be used to determine the potential for spare capacity in specific locations.

- Workshop 4 (25 May 2010): In response to a request from the previous workshop, NGG presented an analysis of the resetting of GDN exit capacity baselines undertaken in 2009 as part of the preparation for the implementation of the reformed exit arrangements. This showed that baseline capacity was reduced at 29 exit points to create additional baseline capacity at 33 exit points and in total 432 GWh/day of capacity was moved at an exchange rate of 1:1, i.e. 432 GWh/Day of incremental capacity investment was avoided.

  NGG also presented the results of the network analysis for the two theoretical new power station loads; in the south east where capacity is constrained, and in the north east where there is adequate network capability. The north east example

demonstrated that the new load would be accepted without the need for investment and hence substitution would not need to be considered. The south east example demonstrated the importance of reliable entry flows to create exit capacity. With a high Isle of Grain gas flow there would be no need for investment or substitution for a new load up to approximately 300 GWh/day. This is due to the high flows in the extreme south east relieving constraints to the north of the new load. If low flows, which NGG believes is more realistic, are assumed, then the new load would exacerbate the constraint. For a theoretical load of 50GWh/day approximately £100m of investment would be needed. Analysis showed that this could be avoided in full by substituting from downstream exit points (Tatsfield). The analysis resulted in a capacity exchange rate of 0.649:1.

Finally, NGG set out how the exit capacity revision methodology would work. NGG indicated that it proposed to utilise the revision methodology to evaluate whether incremental exit capacity could be released following release of incremental entry capacity, only when reliable entry flows had been established, and only if investment had taken place to provide the incremental entry capacity. Any incremental exit capacity created would be allocated to a notional exit point for consideration as primary donor substitutable capacity in the event that an incremental exit capacity signal was received.

- Workshop 5 (7 September 2011): On 30 June 2010 NGG published an informal consultation on its exit capacity substitution and revision methodology. NGG used Workshop 5 to provide a summary of respondents' views on the consultation. NGG indicated that a majority of respondents remained sceptical about the benefits of exit substitution and continued to harbour doubts about the impact of the methodology on security of supply. A number of issues were also raised concerning aspects of the proposed methodology. These issues were further debated in the workshop and were reflected in the formal consultation NGG published on its methodology proposals on 5 November 2010. A summary of NGG's formal and informal consultations are set out below.

NGG's 2010 consultations on its substitution and revision methodology

1.3. In June 2010 NGG published an informal consultation on its exit capacity substitution and revision methodology. The publication contained a first draft of a methodology statement, and a consultation paper seeking industry views on aspects of the methodology discussed in the workshops including, in respect of substitution:

- donor NTS exit point eligibility criteria;
- impact on GDN flow swapping;
- impact on interruptible sites;
- treatment of interconnectors;
- consideration of partial substitution;
- donor NTS exit point selection criteria;
- process timelines;
- exchange rate caps and collars;
- NGG/Ofgem discretion; and
- consideration of transitional substitution rules;

and, in respect of exit capacity revision:

- process timelines; and
- allocation of exit capacity to recipient NTS exit points.

1.4. In their responses to the questions asked, a majority of respondents indicated agreement with NGG's proposed broad definition of substitutable capacity as equating to unsold baseline capacity and that the user commitment principle should apply in order to protect capacity from substitution. A majority of respondents also considered that, notwithstanding the impact of European legislation concerning cross border capacity allocation arrangements, it would not be appropriate to exclude unsold exit capacity at special sites from substitution. On the grounds of security of supply and compliance with EU regulation 715/2009 a number of individual respondents did not share this view. They considered that it would be appropriate to exclude unsold capacity at interconnectors; storage sites or interruptible sites from substitution.

1.5. A majority of respondents agreed with NGG's view that substitution would not impact GDN flow swapping or the availability of interruptible capacity, and agreed with NGG's intention to include partial substitution within the methodology, however a number of respondents commented that it would not be appropriate for the availability of a revenue driver to delay the capacity allocation process in the case of partial substitution. A majority also agreed that it would be appropriate to exclude capacity under consideration of substitution from allocation in response to an ad-hoc or ARCA request for capacity, although one respondent considered that NTS users making ad-hoc requests for capacity should be presented with two capacity offers under these circumstances, based on whether or not the capacity they are seeking is substituted or not.

1.6. There was a mixed response to the idea of a phased approach to the introduction of substitution, but a majority of respondents agreed that it would be prudent to introduce an exchange rate cap of 3:1 at the implementation stage, albeit one respondent considered that an exchange rate of greater than 1:1 should not be permitted as it would lead to aggregate capacity destruction. A majority of respondents disagreed that it would be appropriate to introduce an exchange rate collar as this would potentially under-represent the extent of incremental capacity made available as a consequence of substitution.

1.7. A majority of respondents disagreed that it would be appropriate for NGG to have an element of unilateral discretion in its application of the methodology and considered that any discretion in respect of the application of the methodology should be reserved for the Authority or used with the Authority's consent. In respect of exit revision a number of respondents were concerned that NGG's proposal not to undertake exit capacity revision until two years after the confirmation of incremental entry flows was inflexible and overly cautious. Some respondents considered that it would be appropriate for NGG to manage its capacity position through the use of its capacity buy-back incentive, while others considered that NGG should be obliged to quantify the extent to which flows fail to materialise in respect of the release of incremental entry capacity. A majority of respondents agreed with NGG's proposal to allocate any incremental exit capacity created as a consequence of the release of incremental entry capacity, to a notional exit point in lieu of a subsequent incremental exit capacity signal.

NGG's formal consultation

1.8. On 5 November 2010 NGG published a formal consultation on its proposed exit capacity substitution and revision methodology. The publication contained an updated version of the methodology statement, and a consultation letter seeking industry views on specific aspects of the methodology which had arisen in the responses to the informalconsultation or which had arisen in discussion at Workshop 5, following the close of the informal consultation.

1.9. The changes NGG made to its proposed methodology statement at the formal consultation included the following:

- clarification that substitution would only apply in respect of the release of enduring annual exit capacity (ie capacity available from y+4);
- clarification that ad-hoc and ARCA requests for capacity covered by a financial commitment at the time of substitution analysis would be exlcuded from consideration as substitutable capacity;
- specification that where multiple incremental exit capacity requests had been received, the order of recipient exit points would be determined taking the exit point with the hightest revenue driver first
- removal of proposed capacity exchange rate collar;
- inclusion of partial substitution within the methodology subject to a suitable revenue driver being available;
- NGG discretion to unilaterally override methodology removed.

1.10. NGG sought respondents' views on each of the changes listed. The issue of capacity release dates was given particular prominence since it largely came to light in Workshop 5 and was therefore not subject to specific consideration in the June consultation. NGG provided more detail on the nature of this issue, and sought views on whether, following an ad-hoc or ARCA request for capacity, substitution should be used to facilitate the release of capacity in advance of y+4, inlcuding potentially as early as m+7. NGG also used the consultation to clarify respondents' views on its proposal not to exlcude unsold capacity at interconnectors from consideration for substitution. NGG received 10 responses to the formal consultation.

1.11. A majority of respondents agreed that it would be appropriate for the substitution methodology to apply only in respect of the release of capacity from y+4. Those respondents considered that substitution was intended to avoid unnecessary investment and that incremental capacity released earlier than y+4 would, in a majority of cases, be capacity for which investment was not required. A majority of respondents also agreed with NGG's proposals in respect of ad-hoc and ARCA requests for capacity; capacity exchange rates; and partial substitution. In respect of interconnectors, respondents' views were mixed. NGG received significant representation in favour of excluding the Moffat interconnector from the methodology and against treating the Moffat interconnector as a standard NTS exit point in respect of the enduring exit capacity arrangements. NGG and other respondents considered that it would be potentially discriminatory to make special arrangements for interconnectors or any other NTS exit points.

Appendix 4 - The Authority's Powers and Duties

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

1.2. The Authority's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008 and 2010) as well as arising from directly effective European Community legislation.

1.3. References to the Gas Act and the Electricity Act in this appendix are to Part 1 of those Acts.[39] 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.[40]

1.4. The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them.

1.5. The Authority is generally required to carry out its functions in the manner it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition between persons engaged in, or commercial activities connected with,

- the shipping, transportation or supply of gas conveyed through pipes;
- the generation, transmission, distribution or supply of electricity;
- the provision or use of electricity interconnectors.

1.6. Before deciding to carry out its functions in a particular manner with a view to promoting competition, the Authority will have to consider the extent to which the interests of consumers would be protected by that manner of carrying out those functions and whether there is any other manner (whether or not it would promote competition) in which the Authority could carry out those functions which would better protect those interests.

1.7. In performing these duties, the Authority must 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;

[39] Entitled "Gas Supply" and "Electricity Supply" respectively.
[40] However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them[41]; and
- the need to contribute to the achievement of sustainable development.

1.8. In performing these duties, the Authority must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.[42]

1.9. 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[43] 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; and
- secure a diverse and viable long-term energy supply,

and shall, in carrying out those functions, have regard to the effect on the environment.

1.10. In carrying out these functions the Authority must also have regard to:

- 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.

1.11. The Authority may, in carrying out a function under the Gas Act and the Electricity Act, have regard to any interests of consumers in relation to communications services and electronic communications apparatus or to water or sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

1.12. 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[44] 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.

[41] 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 Acts in the case of Electricity Act functions.
[42] The Authority may have regard to other descriptions of consumers.
[43] Or persons authorised by exemptions to carry on any activity.
[44] Council Regulation (EC) 1/2003.

Appendix 5 - Glossary

A

Aggregate System Entry Point (ASEP)

A point where gas can enter the NTS.

Assured offtake pressure (AOP)

AOP is the pressure of the gas at exit point which NGG allocates to GDNs via the annual OCS booking process. AOPs impact on the diurnal storage that the GDN can obtain from within its own system and are a trade-off to requesting flexibility from the NTS.

The Authority (Ofgem)

Ofgem is the Office of 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.

B

Baseline

Baselines define the levels of capacity that the transmission licensee is obligated to release. Baselines also determine the levels above which incremental capacity is defined.

Baseline Capital Expenditure

Baseline capital expenditure is the total amount of capex required in association with the baseline. It includes both load related capex and non-load related capex.

C

Capital Expenditure (Capex)

Expenditure on investment in long-lived transmission assets, such as gas pipelines or electricity overhead lines.

D

Donor exit point

The NTS exit point which releases unsold baseline exit capacity to be used at another NTS exit point.

E

Exchange rate

The ratio of the capacity substituted from the donor NTS exit point to the recipientNTS exit point.

Exit capacity

Exit capacity is the capacity which gas shippers and GDNs need to book from NGG in order to take gas off the NTS at system exit points.

F

Forecast Business Plan Questionnaire (FBPQ)

FBPQs are submitted to Ofgem by network companies and provide operational and expenditure information used by Ofgem to determine price control allowances.

G

Gas Distribution Networks (GDNs)

Gas Distribution Networks, of which there are eight, four of which are owned by National Grid Gas plc, and four of which were sold by Transco plc (now National Grid Gas plc) to third party owners on 1 June 2005.

I

Incremental Exit Capacity

Exit capacity in addition to the baseline which NGG releases for allocation. Incremental obligated ExitCapacity is capacity which has been signalled to be released as a resultof user commitment made by an NTS user and is released as Enduring NTS Exit (Flat) Capacity. . The need for capacity can either be met by substitution or by the reinforcement of the NTS to create new capacity.

N

National Grid Gas (NGG)

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

National Transmission System (NTS)

The high pressure gas transmission system in Great Britain.

NTS Exit (flexibility) capacity

NTS Exit (flexibility) capacity is the capacity which GDNs require to book from NGG in order to vary the rate at which they exit gas from the NTS.

O

Ofgem

Ofgem is the Office of Gas and Electricity Markets, which supports the Gas and Electricity Markets Authority (the 'Authority').

'One in twenty' peak day capacity obligation

Subject to Section 9 of the Gas Act, Standard Special Condition A9 of the GT licence requires NGG and the GDNs to plan and develop their pipeline systems to enable them to meet '1 in 20' peak aggregate daily demand. '1 in 20' peak aggregate daily demand is defined as the peak aggregate demand level which, having regard to historical weather data derived from at least the previous 50 years, is likely to be exceeded (whether on one or more days) only in 1 year out of 20 years.

P

Practical Maximum Physical Capacity

An approach to determining the level of baselines which can be characterised by estimating the volume of maximum capacity available at each node on the network, according to a range of plausible flow scenarios whilst taking into account interactions with flows elsewhere on the network.

R

Revenue driver

A means of linking revenue allowances under a price control to specific measurable events which are considered to influence costs. Under the gas transmission price control framework NGG receives revenue drivers in order to provide incremental entry and exit capacity.

Recipient exit point

The NTS exit pointwhich receives unsoldbaseline capacity substituted from a donorexit point or exit points) to meet the demand for incremental exit capacity.

RIIO

'RIIO' is the abbreviated name for Ofgem's new price control framework and stands for Revenue = Incentives + Innovation + Outputs. The RIIO price control came from the conclusions of Ofgem's RPI-X@20 review. The RIIO price control framework will apply to the next transmission price control review (RIIO-T1) scheduled for implementation on 1 April 2013.

S

Substitution of Exit Capacity

As part of the TPCR 2007-2012 package, NGG is obliged to facilitate the permanent substitution of baseline capacity from one or more exitpoints to another exitpoint to meet the demand for incremental exitcapacity.

System Operator (SO)

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

T

Ten Year Statement (TYS)

Special Condition C2 (Long Term Development Statement) requires NGG NTS to annually publish a ten-year forecast of NTS usage and likely developments that can be used by companies, who are contemplating connecting to the NTS or entering into transport arrangements, to identify and evaluate opportunities.

Theoretical Maximum Physical Capacity

An approach to determining the level of baselines which can be characterised as the maximum amount of gas that can be taken through a particular entry or offtake point by reducing supplies at other nodes in order to balance the network but not taking into account interactions with flows elsewhere on the network.

Transmission Connected Customer (TCC)

A customer directly connected to the gas or electricity transmission system.

Transmission Owners (TO)

TO's are companies which hold transmission owner licences. NGG NTS is the gas TO.

Transmission Price Control Review (TPCR)

The TPCR is used to establish the price controls for the transmission licensees. The last price control, TPCR4, took effect on 1 April 2007. It was scheduled to end on 31 March 2012, but in 2009 Ofgem took the decision to extend it by one year to end on 31 March 2013. The next transmission price control, RIIO-T1, will take effect on 1 April 2013.

Transporting Britain's Energy (TBE)

Transporting Britain's Energy (TBE) is a consultation process organised by National Grid in which energy demand and supply forecasts are refined taking into account government energy policy and targets and views from the regulator, generators and consumers

U

Uniform Network Code (UNC)

As of 1 May 2005, the UNC replaced NGG NTS's network code as the contractual framework for the NTS, GDNs and system users.

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:

Andrew MacFaul
Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk