National Grid Transco – Potential sale of gas distribution network businesses

Interruptions arrangements

Conclusions document on framework

August 2004

Summary

In May 2003, Transco publicly announced that it would consider the sale of one or more of its DNs if it were to maximise shareholder value. Any such sale would require the consent of the Authority, the Health and Safety Executive (HSE) and the Secretary of State.

In June 2004, following extensive consultation in the workgroups, Ofgem issued a Regulatory Impact Assessment (the Interruptions RIA) for consultation on the interruptions arrangements for the National Transmission System (NTS) and the gas Distribution Networks (DNs) if National Grid Transco (Transco) were to sell one or more of its DNs[1]. This document outlined various options for interruptions arrangements, with both a quantitative and qualitative assessment of each.

This conclusion document outlines the views received from respondents on the options outlined in the Interruptions RIA and presents the Gas and Electricity Markets Authority's (the Authority's) conclusions.

In issuing this document and describing the proposed regulatory process to be followed, it is important to make clear that there can be no expectation on the part of National Grid Transco, Transco plc, potential DN purchasers, shippers or any other interested parties either as to what the Authority's final decision in relation to the proposed transaction may be, or as to the regulatory framework which may be implemented if the Authority consents to the proposed transaction. The information contained in this document is not binding on the Authority. Nothing in this document is to be construed as granting any rights or imposing any obligations on the Authority. The Authority's discretion in this matter will not be fettered by any statements made in this document and all references to the proposed timetable or decisions by Authority are qualified by this statement.

Objectives

The Authority's principal objective as set out in the Gas Act 1986, as amended, is to protect the interests of customers in relation to gas conveyed through pipes, wherever appropriate by promoting effective competition between persons engaged in, or in

[1] Note that by DNs, we mean both those networks potentially sold through the DN sales process (the Independent gas Distribution Networks) and those retained by Transco (the Retained gas Distribution Networks).

commercial activities connected with, the shipping, transportation or supply of gas. Therefore, when deciding whether to consent to the proposed disposal of one or more DNs, the Authority will consider whether the interests of present and future customers are protected.

It is also essential that the post-sale industry structure is:

- consistent with the Authority's general duties; and
- permits each network owner to fulfil its own statutory and licence obligations.

Key issues

The key issues considered by Ofgem within the Interruptions RIA were:

- **Promotion of economy and efficiency.** This has five key aspects:
  - **Undue discrimination between shippers / customers.** Consistent with the statutory duty on gas transporters, Ofgem considers that interruptions arrangements should ensure that network owners do not enter into unduly discriminatory arrangements with shippers or customers.
  - **Freedom to contract on market based terms.** It is important to consider the extent to which shippers are able to signal the terms on which they are willing to provide interruptible services. It is also important to consider the ability of network owners to accept or reject these terms based on their network requirements and incentives and in accordance with their statutory and licence obligations. As such, network owners should not be required to offer interruption services that they do not need. Furthermore, individual shippers should not be placed on interruptible terms that they have not signalled or offered to the network owner.
  - **Efficiency of investment signals.** It is important to consider the extent to which the interruptions arrangements and options for reform provide network owners with efficient signals regarding the value of capacity and interruption on their networks. Ofgem considers that network owners should be able to respond to these signals thereby making efficient trade-offs between investment in pipeline capacity, the use of interruption and

local storage. In addition, efficient signals of the value of interruption and capacity should assist end users when making plant siting decisions.

- **Efficiency of operating decisions.** It is important to consider whether the interruptions arrangements ensure efficient system operation decisions. In particular it is necessary to determine whether the arrangements and options for reform provide signals to the network owner so that it can interrupt the site that incurs the least cost as a result of being interrupted. If the interruptions regime enables sites to signal the costs associated with interruption, then the system operator will be able to make more efficient decisions regarding which site to interrupt.

- **The level of implementation and administrative costs.** It is important to consider the costs associated with the various options for reform of the interruptions regime. This could include both one-off costs associated with developing and implementing the systems required to operate the reformed interruptions regime, and ongoing administrative costs to network owners, shippers and customers associated with purchasing capacity and entering into interruptible contracts. Similarly it is important to consider the potential barriers to entry that may arise from complex arrangements.

- **Security of Supply.** Since interruption is an important form of network constraint management, the interruptions regime has potentially significant implications for security of supply. Any reform of the interruptions regime should ensure that a safe and secure pipeline system is maintained both through efficient long-term investment and, in the short-term, through efficient system operation. In the long-term, Ofgem considers that a regime which provides signals regarding the value of interruption and capacity, supplemented by incentives on network owners to respond to these signals should facilitate security of supply on the gas network. Furthermore, Ofgem considers that interruptions arrangements should promote competition and availability in the provision of interruption services to network owners which should facilitate the efficient and secure operation of the pipeline system.

- **Impact on customers.** Reform of the interruptions arrangements could potentially have an impact on the level of choice available to sites wishing to enter into interruptible arrangements. It could also affect the administrative costs

that shippers and customers incur in order to enter into an interruptible contract. Finally, interruptions reform may have distributional effects on different classes of customer with implications for fuel poverty.

- **Impact on competition.** It is important to consider the impact of the interruptions arrangements and options for reform on: competition in the provision of interruptible services to network owners, competition between gas –fired generators in the electricity sector and on retail competition in the gas sector.

Initial RIA

In the Interruptions RIA, Ofgem outlined the following options for consideration:

Option 1	**Status quo (base case)**
Option 2	**Unconstrained allocation of the firm capacity product**
Option 2A	Pure matrix
Option 2B	Tenders for interruption
Option 2C	Tenders plus matrix
Option 3	**Constrained allocation of the firm capacity product**
Option 3A	Pure matrix
Option 3B	Tenders for interruption
Option 3C	Tenders plus matrix

A key aspect of the interruptions arrangements is how capacity rights are allocated. Consistent with the Offtake RIA[2], the Interruptions RIA considered two options for the allocation of exit capacity:

- **unconstrained allocation -** network owners provide capacity to all users of the network, both existing and any new users, as requested by those users; and

- **constrained allocation -** the amount of capacity available to users is released in a manner that is consistent with the physical capacity of the network.

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[2] *National Grid Transco – Potential Sale of Gas Distribution Network Businesses, Offtake Arrangements Regulatory Impact Assessment*, Ofgem, June 2004, pg 40.

Within each of these overarching approaches to allocating firm capacity, the Interruptions RIA considered three different mechanisms for entering into interruptible contracts:

- **Pure matrix approach.** Network owners would develop and publish a matrix that sets out a menu of price/no. days combinations, where:
  - **price** is the amount that the network owner pays in order to make a supply point interruptible; and
  - **no. days** is the maximum number of days that a supply point may be interrupted in a given gas year.

  Shippers wishing to enter into interruptible contracts would submit applications nominating supply points to be subject to one or more price/no. days combinations. The RIA also considered a simplified version of the matrix approach that was developed and put forward by a number of the members of the Commercial Interfaces Working Group.

- **Tenders for interruption.** Network owners would hold annual tenders in order to enter into interruptible contracts. In practice, the tender approach would be a more sophisticated version of the matrix process. Shippers would apply to the network owner for interruptible status in respect of a particular supply point. The application would include an offer which sets out the terms on which the site is prepared to be interrupted. Network owners would select which supply points should be interruptible on the basis of the tenders received.

- **Tenders plus matrix.** This approach would combine tender and matrix approaches. Shippers supplying interruptible customers would be able to choose whether or not they wished to participate in the tender, and shippers that do not wish to participate in the tender would have the opportunity to enter into an interruptible contract under a matrix regime.

In each case, the network owner would consider all applications, and would accept those that meet its network's requirements on the most favourable terms. Successful applicants would enter into an interruptible contract, whilst unsuccessful applicants would be required to go firm.

The RIA also considered separately the costs and benefits associated with adopting transitional arrangements, which could be used to:

- offer certain customers relief if there is a change from the status quo interruptions arrangements; or
- deal with short-term abuse of market power at particular locations on the network.

Ofgem's initial assessment of each option is summarised in the table below. This assesses each option in both qualitative and quantitative terms, with Option 1 (the status quo) being used as the base case.

Summary of costs and benefits of each option relative to the base case

Key issue	2A	2A*	2B	2C	3
Promoting economy and efficiency					
♦ no undue discrimination	✓✓	✓	✓✓✓	✓✓✓	✓✓✓✓
♦ freedom to contract	✓✓	✓	✓✓✓	✓✓✓✓	✓✓✓✓
♦ efficient investment signals	✓✓	✓	✓✓	✓✓	✓✓✓✓
♦ efficient system operation decisions	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
♦ implementation & admin costs	××	××	××	×××	××××
Security of supply					
♦ long-term security of supply	✓	✓	✓✓	✓✓	✓✓✓✓
♦ short-term security of supply	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
Impact on customers					
♦ customer choice	✓✓	✓	✓✓✓	✓✓✓✓	✓✓✓✓
♦ complexity	××	×	×××	××	××××
♦ distributional effects & fuel poverty	✓✓	✓	✓✓✓	✓✓✓	✓✓✓✓
Effect on competition					
♦ retail gas competition	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
♦ competition in interruption services	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
♦ wholesale electricity competition	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
Total NPV relative to Option 1	**£12m**	**£-12m**	**£18m**	**£12m**	**£22m**

The options for the interruptions arrangements outlined in the Interruptions RIA, were high level and as such, more detailed work would be required to expand whichever option is chosen into a fully developed model. Consequently, the Interruptions RIA did not express a preference for any particular method of interruption. However, as a result of the analysis set out in the RIA, Ofgem formed the initial view that reform of the existing regime is necessary.

The RIA also considered the costs and benefits of potential transitional arrangements to address the distributional effects of changes to the interruptions regime, and the exploitation of locational market power by some sites.

In Ofgem's view, any transitional arrangements to address distributional effects by giving those sites currently on interruptible contracts a 'soft landing' when the arrangements changed would lead to the:

- persistence of identified short term inefficiencies at an estimated cost of over £1m per annum; and
- persistence of long term inefficiencies at an estimated cost of approximately £5m per annum.

Hence, were the period of transition to extend for five years, the costs incurred by customers on account of persistence in the identified inefficiencies could be approximately £24 million in present value terms.

The main approach suggested through the work groups to address the potential for an abuse of market power that might arise under an unconstrained allocation of capacity would be to cap the revenue that a site would be allowed to recover from the network owner in an interruptible contract. However, this may:

- encourage network over-investment where the costs of interruption exceed the cap yet are less than the costs of network replacement otherwise needed; and
- inhibit innovation in network development.

In the Interruptions RIA, Ofgem noted that as an alternative approach to price caps, it has concurrent powers to enforce the EU and UK competition rules under the Competition Act.

In the Interruptions RIA, Ofgem did not express a firm view on the need for either of the transitional arrangements described above.

Respondents' views

An overview of the respondents' views to the RIA consultation is set out in Chapter 4. In summary:

- Most respondents favoured Option 1 (status quo) for allocation of capacity rights;
- Transco distinguished between arrangements for the NTS and DNs, recognising NTS reform a gateway requirement for the DN sales to proceed, favouring an Option 3 (constrained) approach for NTS exit capacity, and an Option 1 approach for DN exit capacity; and
- A matrix approach (Option A) to contracting for interruption was most popular with respondents.

The Authority's conclusions

Following careful consideration of respondents' views in response to Interruptions RIA, Ofgem prepared a report and recommendation (together with supporting documents) on the way forward regarding this matter for consideration and decision by the Authority. This was considered at a duly convened meeting of the Authority where the Authority endorsed Ofgem's recommendations as described below:

- NTS capacity should be allocated on a constrained basis – as per Option 3, from day one of any potential DN sales. Both Option 2 and Option 3 offer significant advantages over the status quo, with respect to non-discrimination, freedom to contract, efficient system operation, customer choice and competition. Option 3 is superior over Option 2 in that it offers superior signals for investment. This conclusion is also consistent with the gateway concept introduced in the June 2003 document, requiring Transco to bring forward proposals for reform to the NTS exit and interruptions arrangements;
- buy-backs of NTS capacity should be on a tender basis – as per Option B, from day one of any potential DN sales;
- at the DN level, the status quo should persist in the near term (Option 1)
- there would be no transitional arrangements; and

- by April 2006, reform of the interruption arrangements at the DN level should be implemented on approach along the lines set out under Option 2A in the Interruptions RIA. This reform, however, is not linked to the timescales for DN Sales.

Having made these recommendations, the Authority instructed Ofgem to proceed on its behalf. It is important to note that this is one of a series of indicative decisions reached by the Authority before its November meeting at which it expects to definitively decide whether or not it is willing to consent to the proposed sale of one or more of Transco's DNs.

As noted above, Ofgem does not propose to adopt any transitional arrangements to address either distributional or market power concerns. Ofgem considers that transitional arrangements for distributional concerns would postpone the benefits of the arrangements, and that market power concerns will be mitigated by Ofgem's powers to enforce the EU and UK competition rules under the Competition Act.

Way forward

In combination with the conclusion on the Offtake RIA (published at the same time as this document), this document is a key step in developing the regulatory, commercial and operational framework to support a divested industry structure.

Further work is necessary to ensure that the interruptions arrangements are specified in sufficient detail, and as such the conclusions described in this document are conditional upon satisfactory solutions to these issues being developed through the workgroup process.

Ofgem will now proceed to develop a Final RIA, which will consolidate the conclusions outlined in the four conclusion documents. This document, to be issued at the end of September 2004, will compare the status quo (i.e. a no sale scenario) to a fully developed post DN Sales environment (i.e. a sale scenario). The Authority will invite respondents' views to this Final RIA. These views will form part of the Authority's consideration when taking its decision in November 2004 on whether DN Sales should proceed. The Authority's decision will be based on an assessment of whether the proposed sale of DNs will protect the interests of customers. As previously noted,

therefore, nothing in this document fetters the Authority's discretion in considering whether to consent to a disposal of DN assets in November 2004[3].

[3] Note that, as described earlier in this summary, the information provided in this document is done so on an informal basis and should not be treated as binding on the Authority.

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1. Introduction

Purpose of this document

1.1. In June 2004, Ofgem consulted upon a Regulatory Impact Assessment (RIA) on the interruptions arrangements (the Interruptions RIA) that would be required were National Grid Transco (Transco) to sell one or more of its gas Distribution Networks (DNs). Earlier in June, Ofgem also consulted upon an RIA on the Offtake Arrangements (the Offtake RIA). These documents were released following extensive workgroup discussions on these issues.

1.2. These RIAs were intended to contribute to the development of a possible operational, commercial and regulatory framework that could support a divested industry structure. This framework will form the basis of an alternative to the present Transco owned and operated transmission and distribution arrangements.

1.3. The purpose of this document is to outline the views received from respondents on the options included in the RIA and to set out the Gas and Electricity market Authority' s (the Authority's) conclusions. These will contribute to a broader RIA that will be issued when the Authority considers whether to give its consent to the proposed disposal of one or more DN. This Final RIA, which will compare the status quo to the post DN sales scenario, will be consulted upon in September 2004.

1.4. In issuing this document and describing the proposed regulatory process to be followed, it is important to make clear that there can be no expectation on the part of National Grid Transco, Transco plc, potential DN purchasers, shippers or any other interested parties either as to what the Authority's final decision in relation to the proposed transaction may be, or as to the regulatory framework which may be implemented if the Authority consents to the proposed transaction. The information contained in this document is not binding on the Authority. Nothing in this document is to be construed as granting any rights or imposing any obligations on the Authority. The Authority's discretion in this matter will not be fettered by any statements made in this document and all

references to the proposed timetable or decisions by Authority are qualified by this statement.

Background

1.5. Ofgem and its predecessor, Ofgas, have been calling for reform of the interruptions regime since the 1990s[4]. The current debate commenced in March 2001 when Ofgem released a document that explored the issues in detail and proposed reform.[5]

1.6. Following consultation on the March 2001 document, the Authority's decision on Transco's price control and system operator (SO) incentives provided Transco with financial incentives to trade off the costs of interruptions with the costs of investment in the pipeline network. In addition, Ofgem imposed a licence requirement on Transco to use reasonable endeavours to introduce the universal firm registration of exit capacity rights on the National Transmission System (NTS) with effect from April 2002. The universal firm licence condition required Transco to implement universal firm registration of NTS exit capacity by 1 April 2004 or as soon as practicable thereafter. Since the Authority's SO incentives decision[6], the industry, together with Ofgem, has discussed with Transco the arrangements that should be introduced for it to comply with its universal firm registration licence obligation.

1.7. In May 2003, Transco publicly announced that it would consider the sale of one or more of its DNs if it were to maximise shareholder value. Any such sale would require the consent of the Authority, the Health and Safety Executive (HSE) and the Secretary of State for Trade and Industry.

1.8. Following Transco's announcement, Ofgem consulted upon future exit capacity arrangements across the NTS and DNs in its July 2003 DN sales proposals consultation document[7] and further commented on exit reform in its December

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[4] See, for instance, *The gas interruptions regime for winter 1997/98*, Ofgas, December 1997.
[5] *The new gas trading arrangements: review of Transco's exit capacity, interruption and liquefied natural gas arrangements* Ofgem, March 2001.
[6] *Transco's National Transmission System – System Operator incentives 2002-7, Final Proposals* Ofgem, December 2001.
[7] *National Grid Transco – Potential sale of network distribution businesses, A Consultation Document*. Ofgem, July 2003.

2003 Next Steps document[8]. In the July 2003 document, Ofgem introduced the gateway concept, that were issues that will need to resolved for Ofgem to consent to any sale. One gateway concept was the exit capacity gateway that meant that Transco would need to develop and gain Ofgem's approval as to:

- the contractual arrangements for interruption at NTS/DN interface; and
- the pricing of exit capacity and interruption.

Workgroup processes

1.9. Since the release of the December 2003 document, Ofgem has established several workgroups including a Development and Implementation Steering Group (DISG), a Commercial Interfaces Workgroup (CIWG), a Regulatory Architecture Workgroup (RAWG) and an Agency Workgroup to progress the proposed DN sales consultation process.

1.10. Consideration of various options for the reform of the exit regime has formed a key part of the process of consultation on DN sales. Over a number of months, the CIWG considered a number of options for the gas interruptions regime. These discussions led Ofgem to form the view that it would be appropriate and consistent with its obligations under the Utilities Act 2000[9] to issue an RIA on the options for interruptions reform[10]. As a result, in June 2004, Ofgem consulted upon the Interruptions RIA.

1.11. This followed the release, in April 2004, of two RIAs relating to the potential sale of one or more DNs. These assessed different options for both agency and governance arrangements, and the appropriate allocation of roles and responsibilities between the NTS, the RDNs and the IDNs, following the sale of one or more DNs. In May 2004, following a period of consultation, Ofgem released conclusion documents in respect of both of these issues[11]. The options,

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[8] *National Grid Transco – Potential sale of network distribution businesses, Next Steps* Ofgem, December 2003.

[9] This obligation is contained in section 5A of the Utilities Act 2000, as amended by the Sustainable Energy Act 2002.

[10] *Way forward on options for exit capacity reform*, Ofgem, April 2004

[11] *National Grid Transco – Potential sale of gas distribution network businesses, Allocation of roles and responsibilities between transmission and distribution networks* Ofgem, May 2004 and *National Grid Transco – Potential sale of gas distribution network businesses, Agency and Governance Arrangements* Ofgem, May 2004.

and recommendations outlined in this RIA have therefore been developed specifically to be consistent with the conclusions reached as outlined in the two conclusion documents.

Interaction with Offtake RIA conclusion

1.12. The issues discussed within the Interruptions RIA are intrinsically linked to those covered by the Offtake RIA. As such, Ofgem has considered the responses received to both consultations in parallel. As a consequence, the conclusion document on the Offtake RIA has been issued at this same time as this document. We therefore recommend that this document is read in combination with the Offtake RIA conclusions.

Structure of this document

1.13. This document is structured as follows:

- Chapter 2 sets out the objectives that need to be considered in determining an appropriate set of interruptions arrangements;
- Chapter 3 sets out the key issues considered in the assessment and summarises the options for the offtake arrangements contained in the RIA;
- Chapter 4 describes the views received from respondents to the consultation on the Interruptions RIA;
- Chapter 5 sets out the Authority's conclusions; and
- Chapter 6 outlines a way forward.

Way forward

1.14. This document is an important step in developing the regulatory, commercial and operational framework to support a divested industry structure. However, further work is required to ensure that the interruptions arrangements are specified in sufficient detail. Subsequent, more detailed, proposals will be subject to further consultation.

1.15. The workgroup process will be taken forward to develop the detail of the Authority's conclusion. It is important to note, therefore, that Ofgem encourages all interested parties to attend workgroup meetings so as to contribute fully to the development of these arrangements. The proposals for both the NTS and DNs will be developed through a combination of modifications to industry codes, pricing consultations and proposed amendments to the Gas Transporter Licence.

1.16. Ofgem is now in the process of developing a Final RIA, which will consolidate the conclusions outlined in the four conclusions documents. This document, to be issued at the end of September 2004, will compare the status quo (i.e. a no sale scenario) to a fully developed post DN Sales environment (i.e. a sale scenario). The Authority will invite respondents' views to this Final RIA. These views will form part of the Authority's consideration when taking its decision in November 2004 on whether DN Sales should proceed. The Authority's decision will be based on an assessment of whether the proposed sale of DNs will protect the interests of customers. As previously noted, therefore, nothing in this document fetters the Authority's discretion in making that decision in November decision.

1.17. If you wish to discuss any aspect of this paper, Mark Feather (telephone 020 7901 7437) or Jessica Hunt (telephone 020 7901 7431) would be pleased to help.

2. Objectives

2.1. This Chapter sets out the objectives that the Authority must fulfil when it decides whether to consent to the DN sales process. It also sets out Ofgem's objectives with respect to the reform of the interruptions regime.

Regulatory approval process

2.2. In order to dispose of a DN asset, Transco will require the consent of the Authority in accordance with amended standard condition 29 of Transco's Gas Transporter's (GT) licence[12]. In deciding whether to give consent, the Authority must act in accordance with its statutory objectives and duties as set out in the Gas Act 1986 (the Gas Act) as well as other public law duties.

2.3. The principal objective set out in section 4AA of the Gas Act provides that the Authority is 'to protect the interests of consumers in relation to gas conveyed through pipes, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas'.

2.4. Having regard to these objectives and duties, when deciding whether to consent to the disposal of one or more DNs, the Authority will assess, on the basis of the evidence available, whether the interests of present and future customers are protected.

Objectives of the interruptions arrangements

2.5. When forming a view on the interruptions arrangements, Ofgem has considered its principal objective as set out above, as well as its general duties. Ofgem considers that a number of these general duties have particular relevance to the interruptions arrangements as part of the DN sales process. These include:

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[12] This condition also provides the Secretary of State with a power of veto over any proposal on the part of Transco to dispose of a transportation asset to the extent that it comprises a significant part of the gas conveyance system in Great Britain.

- 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 (section 4AA(2)(a));

- the need to promote efficiency and economy on the part of licence holders to carry on any activity and the efficient use of gas conveyed through pipes (section 4AA(5)(a)); and

- the need to secure a diverse and viable long-term energy supply (section 4AA(5)(c)).

2.6. In addition to meeting Ofgem's statutory duties, the interruptions arrangements must permit the NTS and DNs to fulfil their own statutory and licence obligations. These include:

- the duty of each GT to develop and maintain an efficient and economical pipeline system (section 9(1)(a) of the Gas Act);

- the need for the NTS operator to operate the NTS in an efficient, economic and co-ordinated manner (special licence condition 27(1));

- the duty of each GT to avoid any undue preference or undue discrimination in the terms on which it undertakes to convey gas (section 9(2)(b));

- the duty of each GT to establish arrangements that secure effective competition between shippers and suppliers (amended standard licence condition 9(1)(c)); and

- the duty of each GT to develop a charging methodology that results in charges which reflect the costs incurred by the licensee in its transportation business (amended standard licence condition 4A(5)(a)).

2.7. Furthermore, as set out in amended standard condition 4D of the GT licence, each GT has an obligation to ensure that it conducts its transportation business in a manner best calculated to secure that neither it nor its affiliates and related undertakings obtain any unfair commercial advantage, including, in particular, any advantage from a preferential or discriminatory arrangement.

2.8. Finally, it is desirable to ensure that any proposals for interruptions reform are consistent with the draft European Union Gas Regulation on conditions of access to gas transmission networks.

2.9. Ofgem considered each of these obligations and duties, as well as any issues raised as through the consultation process, in assessing the costs and benefits of each of the options for interruptions reform and reaching its conclusion on the way forward. This cost benefit assessment was described in the Interruptions RIA, and is summarised in Chapter 3 of this document.

3. Summary of the Interruptions RIA

3.1. This Chapter provides a summary of the key issues addressed in the Interruptions RIA. It sets out Ofgem's initial recommendations with respect to interruptions arrangements and the implementation of transitional measures. This chapter outlines, in turn:

- key issues for consideration;
- options for interruptions arrangements; and
- Ofgem assessment of different interruption options.

Key issues for consideration

3.2. Ofgem's Interruptions RIA described four key issues that need to be addressed when allocating roles and responsibilities between the NTS and DNs in the event of a potential DN sale. These issues, which we consider in turn below, are:

- promoting economy and efficiency;
- security of supply;
- impact on customers; and
- impact on competition.

Promoting economy and efficiency

3.3. A key issue for consideration is the extent to which reform of the interruptions arrangements would promote economic and efficient investment and system operation decisions by network owners. Ofgem considers that an economic and efficient interruptions regime would have the following features:

- it is not unduly discriminatory;
- it enables shippers and Transco to contract for interruption on market based terms;

- it provides efficient investment signals for both the network owner and users of the network;
- it permits the system operator to take economic and efficient operating decisions; and
- it has reasonable and proportionate implementation costs (both one-off and ongoing).

3.4. Each of these features is discussed below.

No undue discrimination

3.5. Consistent with the statutory and licence obligations on gas transporters it is important that network owners do not enter into unduly discriminatory arrangements with shippers. In the context of this document, it is important that any arrangements for interruption do not lead to undue discrimination between firm and interruptible sites and between different types of interruptible sites.

3.6. Ofgem considers that unduly discriminatory arrangements are inefficient because they distort economic signals, competition and decision making by favouring certain market participants over others in a manner that is inconsistent with the underlying economics of interruption services provided by those participants.

3.7. When considering whether a set of arrangements avoids undue discrimination, it is first important to determine whether shippers are being charged or paid similar prices for similar services. In circumstances where different shippers are paid or charged different prices, then the arrangements may not be unduly discriminatory if the prices are for different service levels and reflect the costs to users associated with providing those different service levels.

3.8. Conversely, in circumstances where different shippers are paid uniform discounts or charged uniform prices, the arrangements may be unduly discriminatory if the shippers are providing or receiving different levels of services and the costs to shippers associated with providing those different service levels are not reflected in the price they pay or receive.

Freedom to contract for interruption on market based terms

3.9. Ofgem considers that it is important that shippers are able to signal the terms on which they are willing to provide interruptible services and that the respective network owners accept or reject these terms based on their network requirements and incentives and in accordance with their statutory and licence obligations. As such, network owners should not be required to offer interruption services that they do not need. Furthermore, individual shippers should not be placed on interruptible terms that they have not signalled or offered to the network owner.

3.10. In this sense, it is important that a two-sided contracting regime is established for interruption services between market participants and network owners that have financial incentives to invest and to operate efficiently. This differs from the current arrangements where the network owner has no ability to determine the number of participants to whom it offers interruptible services.

Efficient investment signals

3.11. Ofgem considers that the interruptions regime should provide signals for efficient investment to both network owners and end users.

3.12. A reformed interruptions regime should provide network owners with efficient long-term, market based signals for investment on the network supplemented by regulatory incentives to respond to these signals. In response to appropriate signals, network owners should make trade-offs between investment in pipeline capacity and the use of interruption and local storage, selecting whichever option is the most economic. Furthermore, appropriate signals of the value of capacity and interruption should be supplemented by effective regulatory incentives that ensure an efficient response by the network owner.

3.13. Ofgem considers that market based signals of the value of capacity from users are more reliable and accurate than the information received through current centralised planning processes alone as they are based upon firm financial commitments by market participants. In this context, market based investment signals should reduce the risks that pipeline investments undertaken by network owners are stranded as investments will only be undertaken in response to firm commitments by users of the network.

3.14. End users should also receive signals regarding the costs associated with receiving network capacity at a particular location. Cost reflective long-term and short-term capacity contracts could encourage end users to consider the cost and scarcity of capacity when making siting decisions, encouraging a more efficient pattern of development among major gas users.

Efficient system operation decisions

3.15. As regards interruption, Ofgem considers that economic and efficient system operation can be achieved by ensuring that the system operator contracts for interruption on terms that reflect the underlying costs of interruption incurred by the sites providing the service. In particular, where interruption contracts are necessary at a particular locational point on the pipeline system, the system operator should contract for interruption with those sites for which the cost of being interrupted is lowest given the locational constraints. As such, if the interruptions regime enables shippers to signal the costs associated with the interruption of a particular site, then the system operator will be able to make more efficient decisions regarding which site to interrupt.

Implementation costs

3.16. It is also important to consider the implementation costs associated with the various options. This could include both one-off costs associated with developing and implementing the systems and processes required to operate the reformed interruptions regime, and ongoing administrative costs to network owners and shippers associated with entering into contracts for interruptions or contracts for the purchase of capacity (where the release of capacity is 'constrained').

Security of supply

3.17. Any reforms of the interruptions regime should ensure that a safe and secure pipeline system is maintained. Since interruption is an important part of network constraint management and supply-demand balancing, the interruptions regime has potentially significant implications for security of supply.

3.18. In this respect, Ofgem considers that, where possible, the introduction of market based arrangements for interruptions should provide the best mechanism for

ensuring security of supply on the gas and electricity networks. In the Interruptions RIA, Ofgem described five potential issues relating to security of supply:

- long term security of supply;
- short term security of supply;
- impact of interruptions arrangements on the gas balancing regime;
- impact of the gas interruption regime on the electricity sector; and
- quantity of interruptible capacity.

3.19. We summarise the points raised in the Interruptions RIA below.

Long-term security of supply

3.20. In the long-term, security of supply will be facilitated by ensuring that investment is provided in a timely manner and in response to the needs of customers. Ofgem considers that interruptions arrangements, based on market signals, should provide network owners with reliable additional information with which to determine an efficient investment plan and thereby facilitate security of supply.

Short-term security of supply

3.21. The interruptions arrangements can also affect short-term security of supply. As with long-term investment, Ofgem considers that markets provide the best mechanism for ensuring the short-term security of a network. In particular, liquid and transparent markets for network interruption, with cost reflective charges and readily available market information, should assist a network owner in efficiently managing local network constraints.

Impact of interruptions arrangements on the gas balancing regime

3.22. The present gas interruptions arrangements may impact upon security of supply in other areas such as gas balancing to the extent that a single interruption product is used by Transco, as SO, for gas balancing and constraint reasons. In particular, as a result of this, the price of interruption used for gas balancing

services is not reflected in cash-out prices, potentially leading to distortions in these prices. Whilst this issue is considered important, it was not addressed further in the June Interruptions RIA.

Impact of the gas interruptions regime on the electricity sector

3.23. The interruptions regime may also have knock-on effects on long and short-term security of supply in the electricity sector by:

- sending locational signals to generation developers and therefore influencing generation investment decisions in the long-term; and
- impacting on the ability of NGC to manage constraints on the electricity network where gas-fired electricity generators enter into interruptible contracts with Transco.

3.24. As with the previous subsection, whilst an important issue, it was not addressed further in the Interruptions RIA.

Quantity of interruptible capacity

3.25. Some workgroup participants have argued that any reform which results in a reduction in the level of interruptible capacity available to network owners will have negative consequences for security of supply. However, Ofgem's view is that a reduction in the level of interruptible capacity will not have an impact on security of supply if that interruption is not required. Furthermore, as suggested above, it is possible that an interruptions regime which reveals more accurate information regarding end user preferences is likely to have a positive impact on both long and short-term security of supply.

3.26. It is important in this context to ensure that the Health and Safety Executive is content with our proposals for change and that there is no decrease in the ability of Transco to resolve a network constraint.

Impact on customers

3.27. The interruptions arrangements have a fundamental impact on the manner in which customers gain access to gas networks. When assessing options for interruptions reform, it is important to consider its impact on customers. The

interruptions regime could potentially have an impact on the level of customer choice, the level of complexity faced by customers, the contracting parties and the distribution of income across customers. These areas are discussed below.

Customer choice

3.28. Customers have suggested that the range of interruptible contracts offered by Transco is overly limited. In particular, customers have expressed concern that the existing arrangements and the standard 45 day interruptible contract present them with little or no choice or flexibility. Both firm and interruptible customers have indicated that they would prefer to be able to sign interruptible contracts of varying length, depending on their own particular circumstances.

Complexity for customers

3.29. As well as shippers and network owners, customers may be required to incur additional administrative costs if a complex regime is adopted. These costs would arise during the contracting process, for instance, if customers were required to make detailed calculations regarding the costs of interruption. For many customers, DN capacity costs are a relatively insignificant aspect of their day-to-day operating costs. Consequently, some customers group have expressed a preference for a simple interruptions regime, as they do not want to have to devote time and resource towards consideration of their contractual arrangements for firm and/or interruptible exit capacity.

3.30. Ofgem considers that a key issue in terms of complexity and administrative costs is whether any new exit arrangements create barriers to entry in the wholesale and/or retail gas sector.

Contracting directly with customers

3.31. Ofgem believes that it is appropriate for network owners to contract directly with customers for interruptions. Some industry participants, in particular Transco, have raised questions as to whether the Gas Act permits customers to contract with Transco for the provision of interruption services. Ofgem notes that this is an ongoing issue and a potential barrier to progressing the ability of customers to contract with system operators.

3.32. It is noted that customers who do not wish to contract directly with network owners could elect to have their shipper/supplier act on their behalf as at present. Even if customers choose to enter into direct contracts, shippers are likely to have an important role advising customers in their dealings with network owners.

Distributional effects

3.33. In undertaking an RIA it is necessary to consider the changes in the relative welfare of different customer groups associated with any reform proposals. In this respect, Ofgem notes that reform of the interruptions regime could have a significant distributional impact on gas customers to the extent that they result in an unwinding of distortions between firm and interruptible customers and between different interruptible customers.

3.34. In particular, interruptible customers who currently enjoy relief from exit capacity charges, even though their interruptible services are not required, may find that they are required to pay higher transportation charges. Conversely, some interruptible customers may find that their transportation charges fall as they receive a greater discount from firm charges.

3.35. In contrast, firm customers may benefit from interruptions reform on the basis that they will no longer be required to bear a proportion of Transco's exit capacity costs that are more correctly attributed to existing interruptible customers. Firm customers may also benefit from offering interruption services to the network owner that they were previously unwilling to offer due to the inflexible terms and conditions for such contracts.

Impact on competition

3.36. The reform of the interruptions arrangements is likely to impact upon competition in the provision of interruption services, wholesale gas competition, retail gas competition and competition in the wholesale electricity sector. These potential impacts are discussed below.

Competition in the provision of interruption services

3.37. It is important that shippers have access to sufficient information and can choose between a range of flexible interruption products that enable them to compete to provide interruption services to network owners that they may not be willing to offer under more restrictive arrangements.

3.38. Some members of the workgroups have argued that in the short-term the reform of the interruptible arrangements may confer market power on individual shippers supplying to certain constrained points on the gas transportation system. Members of the workgroups have argued that an absence of liquidity in some locational areas may lead to an abuse of market power in the provision of interruptible services and increase costs to customers.

Wholesale gas competition

3.39. The reform of the interruptions arrangements has a number of potential impacts on competition in the wholesale gas market. As discussed above, the interruptions arrangements potentially distort the efficiency of the gas balancing regime if the costs of interruption for gas balancing purposes are not reflected in cash-out prices. This may lead to inefficient balancing decisions on the part of shippers and distort competition in the wholesale gas market. Furthermore, it may reduce the extent to which shippers are willing to compete to sell gas to Transco as residual gas balancer. This issue was not addressed further in the Interruptions RIA.

Retail gas competition

3.40. The present interruptions arrangements have the potential to distort retail competition. Shippers whose portfolio includes customers that benefit from the current arrangements (i.e. certain types of interruptible customers) might receive a commercial advantage that they can use to offer relatively advantageous terms to other customers. This commercial advantage could enable the shipper/supplier to win customers even in the presence of more efficient competitors. An arrangement which treats different classes of customers in a non-discriminatory manner would be likely to remove this distortion.

3.41. Conversely, if an option for interruptions reform is adopted that involves complex arrangements for allocating capacity and contracts for interruption, the additional costs associated with these arrangements could constitute a barrier to entry to the retail market.

Interactions between gas and electricity markets

3.42. Any reformed interruptions arrangements should promote efficient interactions between gas and electricity markets. A key issue in this respect is whether the present administered arrangements for the pricing of interruption on Transco's gas system potentially distort competition in the wholesale electricity market.

3.43. In particular, the present interruptions arrangements may unduly discriminate between interruptible generators, if generators provide different levels of interruption services to Transco but receive the same discount from their transportation charges. This could undermine competition in the wholesale electricity sector.

Options for interruptions arrangements

3.44. In this section we summarise the high level options proposed in the Interruptions RIA for the key elements of the interruptions arrangements. In the Interruptions RIA, we set out options for:

- **Release of network capacity -** the process through which the network releases capacity to its users;
- **Transportation interruption -** how networks will interrupt users to manage congestion on the gas networks and additionally as an alternative to additional investment; and
- **Transitional arrangements** – mechanisms designed to offer certain customers relief if there is a change from the status quo interruptions arrangements and any transitional mechanisms to deal with short-term abuse of market power at particular locations on the network.

Release of network capacity

3.45. In June 2004, Ofgem issued its RIA on the offtake arrangements from the NTS for consultation. This document set out Ofgem's initial views concerning the appropriate commercial arrangements for Transco to release exit capacity on the NTS.

3.46. The Offtake RIA stated that, in the long-term, users of the system should provide NTS owner and operator with signals as to their requirements for NTS capacity. This should be charged to users on a cost reflective basis. Transco would satisfy demand for network capacity through a combination of investment in pipelines and storage or alternatively through entering into interruptions arrangements. However, in the short-term, investment lead times of up to three years mean that Transco is unable to invest in network capacity to meet increased demand for that capacity.

3.47. Hence, the Offtake RIA explained that in the short-term there exists the possibility that users of the network will require a level of capacity that physically cannot be provided by the network owner because of the lead times associated with pipeline investment. This requirement might arise because a new user wishes to connect to the network or that an existing connected user requires additional offtake capacity. In these cases, Ofgem considers that there are two ways in which rights to use the network may be allocated (consistent with the principle of no undue discrimination)[13]. These are:

- **unconstrained capacity allocation**. Under this approach network owners would provide capacity to all users of the network, both existing and any new users, as requested by those users. Users would pay the regulated charge for the amount of capacity they request. At some locations, the capacity purchased by users might exceed the physical capacity of the network. In these cases, the network owner would enter into interruptions arrangements to buy back capacity rights to ensure that the rights held and used by network users would not, in aggregate,

[13] NGC also recognise, in the context of transition arrangements of Generator Access to the Transmission system under BETTA, that only these two approaches are consistent with the principle of no undue discrimination. This is set out in *'National Grid Company Consultation on options for allocating GB transmission access rights under BETTA'*, 21 May 2004.

exceed the capacity of the network. The costs of these buy-backs would be recovered from network users, although, typically, the network owner would be subject to an incentive scheme to encourage it to buy back capacity from network users in an efficient and economic manner; and

- **constrained capacity allocation**. Under this approach, in the short-term the amount of capacity available to users would be released in a manner that is consistent with the physical capacity of the network (e.g. the maximum physical capacity). Hence, network users, both existing and new, would be able to acquire capacity to use the network to the extent that it is available. In cases where demand for network capacity exceeds supply, it would be necessary to consider a method of allocating the scarce network capacity in a non-discriminatory manner. Under the constrained allocation approach, consideration would also be needed as to whether anti-hoarding measures (such as use it or lose it provisions) are necessary.

3.48. Consistent with the Offtake RIA, the Interruptions RIA considered interruptions arrangements with both an unconstrained and constrained firm product.

Interruptions arrangements

3.49. This section summarises the options for interruptions arrangements considered in the Interruptions RIA. Consistent with the RIA, we do not consider the arrangements for Transco as residual balancer to enter into contracts for supply/demand balancing purposes.

3.50. Following the Authority's decision on the allocation of roles and responsibilities between the NTS and DNs, two options exist for contracting for interruption:[14]

- restrict the rights to enter into interruptions arrangements in respect of a given supply point to the operator of the system to which the supply point is connected; and

[14] Ofgem's July consultation document suggested three options for the contractual arrangements for interruption see *National Grid Transco – Potential sale of network distribution businesses, Consultation document*, Ofgem, July 2003, Chapter 5.

- both Transco and the DNs as system operators could contract with sites (including customers) directly on either system for the purposes of interruption management on their own system.

3.51. At the time of the Interruptions RIA, Ofgem had not reached a decision on whether Transco as NTS SO should be precluded from contracting with shippers and customers at individual DN sites for the purposes of managing constraints on the NTS or whether the NTS must contract with the DNs for these purposes.

3.52. The remainder of this section summarises the high-level options for interruptions arrangements as described in the Interruptions RIA, namely:

Option 1	**Status quo (base case)**
Option 2	**Unconstrained allocation of the firm capacity product**
Option 2A	Pure matrix
Option 2B	Tenders for interruption
Option 2C	Tenders plus matrix
Option 3	**Constrained allocation of the firm capacity product**
Option 3A	Pure matrix
Option 3B	Tenders for interruption
Option 3C	Tenders plus matrix

Option 1 Status quo

3.53. This option would retain, as far as is consistent with a divested industry structure, the existing regime as described in detail in the Interruptions RIA.

3.54. The key features of this option can be summarised as follows:

- customers elect whether to be on firm transportation terms or interruptible transportation terms;

- Transco may call interruption in the event of network capacity constraints, high system demand conditions, in an emergency or for testing purposes;

- there is one type of interruptible product. This requires that sites must be prepared to be interrupted more than 15 days per annum (up to a maximum of 45 days per annum) for a transportation charge credit; and

- once a customer is interruptible, Transco (as the operator of both the NTS and DNs) can elect for certain sites to become Network Sensitive Loads (NSLs).

3.55. Even under the status quo option, it is likely that certain amendments to the interruptions regime would be required to accommodate the separation of the NTS and DN into two separate entities. This includes for example, the contractual arrangements by which interruption is managed across the NTS and DN networks.

Option 2 Unconstrained allocation of the firm capacity product

3.56. Where the release of firm capacity is unconstrained and unlimited, all shippers receive the capacity they request. Under both Option 2 and Option 3, firm capacity release is unconstrained in the long-term as this is consistent with network investment lead times. However, under Option 2, firm capacity release is also assumed to be unconstrained in the short-term (i.e. within 3 years). This unconstrained, or 'universal firm', approach with Options 2A, 2B and 2C has certain underlying principles in common. These are set out below:

- network owners would offer long and short-term firm capacity products in response to signals of customers' demands;

- all firm capacity – both long-term and short-term - would be sold at administrated prices;

- all shippers would pay NTS exit capacity charges and all shippers supplying to DN supply points would pay firm capacity charges on the relevant DN;

- there would be greater customer choice over the terms to offer network owners for interruption;

- to enter into an interruptible contract, sites would need to have entered into a contract for capacity for a duration that is at least as long as the proposed interruptible contract;

- network owners would strike contracts with selected sites to become interruptible on the basis of no undue discrimination; and

- interruptible sites would receive payments from the network owner to be interruptible. These payments could be more or less than the current firm exit capacity charge, and could take the form of an option and exercise fee or some other form, such as a discount on capacity charges.

3.57. Industry discussion has focused on establishing the process by which network owners enter into interruptible contracts. The two main models which have been developed in consultation with the industry involve the network owner entering into contracts for interruptions using either a tender process or a matrix process. The Interruptions RIA considered both of these models as well as an approach which combines the two models.

Option 2A Pure matrix

3.58. Under Option 2A, each network owner would develop and publish a matrix, and customers wishing to enter into interruptible contracts would choose between a set of standardised interruptible products.

3.59. The form of the matrix would be determined via the network owner's transportation charging methodology or its procurement guidelines and invoked through the system management principles statement.[15] Network owners may develop different matrices to apply to different locations within their network, depending on whether the network is constrained. It is envisaged that each matrix would set out different price/no. days combinations, where:

[15] It is noted that Transco as NTS system operator is currently required under special condition 27 of its Gas Transporter's licence to prepare Procurement Guidelines for system management services and a System Management Principles Statement setting out how it intends to use the services it has procured. Without fettering the Authority's discretion it is possible that these requirements could be extended to the DNs.

Price Is the amount that the network owner pays in order to make a supply point interruptible. This price could potentially take the form of an option and exercise fee, or a discount on firm capacity charges.

no. days Is the maximum number of days that a supply point may be interrupted in a given gas year (or years).

3.60. Appendix 2 in the Interruptions RIA provided some examples of matrices that could be developed by network owners.

3.61. Customers would indicate their preferred price/no. days combination, or a series of combinations if they considered more than one combination to be acceptable. The network owner would consider all applications, and would accept those that meet its network's requirements on the most favourable terms. Successful applicants would enter into an interruptible contract, whilst unsuccessful applicants would be required to pay firm capacity charges.[16]

Option 2A* Simplified pure matrix approach

3.62. A further variation on the pure matrix approach was developed and put forward by a subset of Commercial Interfaces Workgroup (CIWG) members.[17] This model was developed as an attempt to simplify the matrix approach to make it easier for shippers and customers to participate in the application process. Appendix 2 in the Interruptions RIA set out an example of a simplified matrix.

3.63. Under Option 2A*, customers would submit to the network owner an application that indicates their preferred number of days of interruption. By entering into the matrix application process, customers would implicitly agree to accept a number of days that are equal to or less than their preferred duration, but not more than their preferred duration. If the network owner accepts their application, then they receive reimbursement that corresponds to the matrix.

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16 There is a separate issue relating to transitional arrangements which will need to be considered in respect of each of the options described in this chapter. The costs and benefits of transitional arrangements are discussed in Chapter 6.

17 A joint industry paper which outlines the proposed approach was tabled at CIWG 5 and is available on Ofgem's website.

3.64. The key difference between Options 2A and 2A* is that there is only one band of prices. Under Option 2A*, customers that are interrupted relatively frequently would receive a higher discount than customers who are not interrupted frequently. However, network owners would not receive a signal regarding the value of interruption between different classes of customers for a given number of days.

Option 2B Tenders for interruption

3.65. Under Option 2B, shippers would apply to the network owner for interruptible status in respect of a particular supply point. The network owner would select which supply points should be interruptible on the basis of ensuring no undue discrimination.

3.66. Whilst the form of the applications would be determined via the network owner's charging methodology or Procurement Guidelines, Ofgem envisages that tender participants could nominate the following terms:

- the number of days of interruption;
- an option price (this could be in the form of a discount on capacity charges); and/or
- an exercise fee.

3.67. The option price is a fixed payment that the network owner must make in order to have access to the customer's interruption services and the exercise fee is a sum that the customer receives for each day that they are interrupted. If they wanted to, tender participants could choose to submit a bid comprising a relatively large option price and a zero exercise fee, or alternatively, a large exercise fee and a zero option price.

3.68. For each supply point, the network owner would consider the applications in order of price and, taking account any local network conditions, accept applications until its interruptions requirements have been fulfilled. Sites for which the network owner does not accept an application for interruptible capacity would be required to pay firm capacity charges.

Option 2C Tenders plus matrix

3.69. This approach would combine Option 2A and Option 2B. Interruptible customers would be able to choose whether they wished to participate in the tender or enter into an interruptible contract under a matrix regime.

3.70. A consequence of adopting a dual approach to interruptions contracting is that the presence of a matrix process could potentially distort bidding behaviour in the tenders. One mechanism for reducing this risk under Option 2C could be to use tenders to allocate long-term interruptible rights and the matrix approach to allocate one-year interruptible rights.

Option 3 Constrained allocation of the firm capacity product

3.71. Under Option 3, whilst the long-term release of capacity more than three years out is unconstrained, the short-term release of capacity is assumed to be constrained. This constrained approach with Options 3A, 3B and 3C has certain underlying principles in common. These are set out below:

- network owners would be required to sell a 'baseline' level of exit capacity as capacity rights in particular exit zones or at particular offtake points (either NTS only or NTS and DNs);
- participants would have the opportunity to purchase firm exit capacity rights against a schedule of prices from the network owner in a non-discriminatory allocation for each exit zone. These exit capacity rights would, potentially, be tradable with other users of the network located in the zone;
- network owners would be provided with incentives to release incremental firm capacity rights in response to the signals received from the long-term allocation;
- the network owner would also release short-term tradable firm capacity rights to the extent that there are unsold firm rights from the long-term allocation;

- short-term firm and interruptible capacity rights could be released on an annual, monthly and daily basis and allocated on a non-discriminatory basis;

- an effective use-it-or-lose-it mechanism would need to be established to prevent the hoarding of firm tradeable capacity rights; and

- network owners would be able to meet their obligations to provide firm baseline and firm incremental capacity by either investing in the network or choosing to buy back the capacity on the secondary capacity market.

3.72. The process through which the network owner could enter into interruptible contracts are the same under Option 3 as under Option 2, therefore the network owner would have the following options:

- **3A Pure matrix;** where the network owner and shippers would be restricted to standardised products;

- **3B Tenders;** where the network owner would be able to enter into bilateral contracts with sites for its interruption requirements; and

- **3C Tenders plus matrix**; where the network owner would offer both standard and non-standard terms to participants to meet its interruption requirements.

Transitional arrangements

3.73. The Interruptions RIA reported recommendations regarding transitional arrangements made by CIWG members to address the following:

- the distributional effects likely to be created through any change to the interruptions regime; and

- the potential threat of sites in particular locations abusing their market power.

3.74. Ofgem has considered whether any transitional arrangements are justified should reform be considered desirable and necessary.

Transitional arrangements to address distributional effects

3.75. It is widely expected that any movement away from the status quo will result in a number of sites being changed from interruptible to firm. Customers who currently benefit from the exemption from capacity charges, will have in the future to pay capacity charges if the network owner no longer requires their service. Consequently, a number of customer representatives support the adoption of transitional arrangements so that such customers receive a less severe adjustment to their transportation charges as a result of reform.

3.76. Some members of the CIWG felt that it was particularly important that some customers who were currently not being interrupted but entered into interruptible contracts with the expectation of being interrupted were protected in the event that they were no longer needed for interruption. For example, this could occur if:

- after entering into an interruptible contract with a customer, the network owner decides to upgrade the local network in order to meet a subsequent customer's request for firm capacity. As it is generally efficient for network owners to carry out investment in 'lumpy' increments, this later investment is sufficient to provide firm capacity rights to all customers connected in the area; and

- there are two similar sized loads in the same area, one firm and the other interruptible, and the firm site closes, then the network owner may have sufficient spare capacity to supply the interruptible site on a firm basis.

3.77. Such customers may have invested in standby fuel and equipment and could incur costs associated with stranded assets as a result of a network owner's decision to designate them as firm.

3.78. Some members of the CIWG therefore considered it was appropriate to distinguish between customers that have invested in standby fuel and equipment and customers that have not invested in standby fuel and equipment.

3.79. Transitional arrangements could take one of two forms:

- **Option A: grandfathering -** existing interruptible customers retain their interruptible status until their contract ends through 'grandfathered rights'

(under the current interruptions arrangements, capacity contracts continue indefinitely unless a customer seeks to end the contract or fails to pay their transportation charges).

- **Option B: glide path -** network owners could apply a glide path approach which phases in over a number of years the reduction in payments received by customers that the network owner wishes to make firm. This could either operate for a set number of years following the introduction of the new arrangements or alternatively apply for a set number of years following a network owner's decision that a particular site was no longer required for interruption services.

Transitional arrangements to address market power

3.80. Under the current network configuration, certain sites need to be interruptible to allow Transco to manage its constraints. In a presentation to the CIWG on 3 March 2004, Transco suggested that this occurs because:

- the site is located at the extremity of the network;
- loads in the same locality are on different pressure tiers;
- only one site in a locality has an appropriately sized load; or
- pipeline linkage across wide areas is limited.

3.81. Transco currently designates sites that it requires for network management purposes as network sensitive loads (NSLs). In these cases, the network owner will have limited or no flexibility when choosing between different customers' competing offers when it enters into contracts for interruption. Consequently, there is a risk that the interruptions arrangements under some options could lead to abuse of market power.

3.82. Industry workgroups have considered addressing the risks associated with market power by implementing transitional price caps (applying for the first three years of the reformed interruptions regime). However, price caps could introduce their own distortions. An alternative option would be for Ofgem to consider using its Competition Act 1998 powers (held concurrently with the

Office of Fair Trading (OFT)) to investigate any potential abuses of market power.

3.83. Ofgem notes that if network owners do not enter into long-term contracts for interruption, then the risks associated with misuse of market power (and the arguments supporting price caps) would become ongoing rather than transitional.

Ofgem assessment of different interruption options

3.84. In the Interruptions RIA of June 2004, Ofgem assessed each of the options described above qualitatively, and where possible, quantitatively.

3.85. Ofgem used the status quo (Option 1) as a base case for assessing the costs and benefits of different options for the interruptions arrangements against the key issues described earlier in this section. The performance of each option against each of these key issues is considered below, first in terms of the benefits of each of the options proposed relative to the status quo, and then in terms of the costs associated with the implementation of these options, both in terms of systems implementation and complexity faced by customers.

3.86. Whilst the relative merits of each of the variations of Option 2 are considered in detail, Option 3 in aggregate is considered relative to the status quo and Option 2 as the differences between constrained and unconstrained firm capacity overwhelm the nuances between the different interruptions contracting mechanisms.

Promoting economy & efficiency

No undue discrimination

3.87. Ofgem considers that there is potential for the status quo (i.e. Option 1) to have an unduly discriminatory effect between:

- different types of interruptible sites;
- firm and interruptible sites; and
- existing sites and new sites seeking to gain access to the network.

3.88. The potential for undue discrimination between different types of interruptible sites arises as a result of the one-sided nature of the current interruptions arrangements where any site can elect to become interruptible and Transco cannot signal the relative value of interruption to sites on its network. As a result, some interruptible sites are more likely to be interrupted than others yet all receive the same 100% discount from firm charges.

3.89. There is also potential for discrimination between existing sites and new sites seeking to gain access to the network. For example, to the extent that the network has locations where demand outstrips supply, existing users of the network are granted access ahead of new users, even though a new user may attribute a higher value to that capacity.

3.90. Under Options 2A, 2A*, 2B and 2C interruptible sites that are not required by the network owner for network management purposes must pay firm transportation charges. Furthermore, interruptible sites will receive a payment for being interruptible that is more likely to reflect the value of the service that they provide to the network owner. In addition, the potential for firm sites to incur non-cost reflective capacity charges should be reduced to the extent that it enables network owners to contract more efficiently for interruption. Furthermore, both new and existing shippers have access to an unlimited amount of firm capacity irrespective of the timing of their application for that capacity.

3.91. However, Options 2A, 2A*, 2B and 2C differ in the flexibility of the interruptions arrangements on offer. Option 2A* is less flexible than Option 2A, whilst Option 2B avoids the inflexibility of the standardised products associated with the matrix approaches of these options. It therefore performs better in terms of non-discrimination, as it ensures that the shippers' preferences and the actual price of interruption at each relevant supply point can be efficiently signalled. Option 2C, which combines the matrix and tender approaches yields similar benefits.

Freedom to contract for interruption on market based terms

3.92. Under the status quo, shippers can elect to become interruptible and receive the full benefits of an exemption from capacity charges. As a consequence, the

network owner is required to accept interruption services that it may not need and for which it may not be efficient to contract. Furthermore, Transco is able to designate certain supply points as NSLs such that it is possible for Transco to interrupt sites for greater than 45 days per year. As such, shippers have been placed on interruptible terms that they have not signalled or offered to the network owner.

3.93. Options 2 and 3 permit the network owner to decide whether a particular site should be interruptible, based on an assessment of its network's requirements. Shippers also have additional freedom to signal their preferences to the network owner and this increased flexibility in the terms of interruption provided should enable some firm sites to become interruptible thereby increasing the network owner's range of interruptible options.

3.94. The size of the benefits in this area are therefore linked to the freedom that shippers have in choosing their method of contracting and signalling to the network owner the terms on which they would be willing to provide interruption services. Freedom to contract is the greatest under Option 'C' alternatives, as shippers can choose between the matrix or tender approach, with the benefits associated with the other alternatives declining in line with the flexibility of each option.

Efficient investment signals

3.95. Under the status quo, shippers are not able to provide network owners with long-term financially backed signals to guide investment decisions on the NTS or the DNs and to enable efficient trade offs between the costs of investment and the use of interruption contracts. Ofgem considers that the resulting reliance on central planning information reduces the likelihood that the correct level of investment will occur, increasing the risk of assets being stranded (either temporarily or permanently).

3.96. The status quo also provides limited information regarding the true value of capacity at offtake points potentially distorting decisions to site plant.

3.97. Whilst Option 2 theoretically allows shippers and customers to signal their long term requirements for capacity, Ofgem considers that, under an unconstrained approach, shippers will have limited incentives to book firm capacity and enter

into interruptible contracts with network owners for longer than one year as they will be guaranteed access to unlimited firm capacity on an annual basis.

3.98. The relative merits of the variations to Option 2 with respect to the efficiency of investment signals depend on the level of detail of pricing information available to network owners and end users. As such, investment signals are likely to be marginally better under Options 2B and 2C than under Options 2A and 2A*.

3.99. Under Option 3, shippers will need to determine their long and short-term capacity booking requirements within constraints and will therefore have greater incentives to book long term capacity, and therefore provide long term signals to network owners.

Efficient system operation decisions

3.100. Under the current regime there is no means for shippers and customers to signal the costs they associate with being interrupted and the network owner is therefore unable to select the lowest cost solution. Furthermore, Ofgem considers that the standard nature of the present Transco interruption product restricts its ability to access firm sites that may otherwise be willing to offer interruption services on different terms. With more flexible terms, Transco could potentially contract more efficiently for interruption from a broader range of sites.

3.101. Options 2A, 2B and 2C would provide network owners with more information on the cost of interruption and would therefore allow the cost of interruptions to be reduced. The more detailed the pricing information available, the more efficient operational decisions (in regard to which particular site to interrupt) and, as such, the tender approach embodied within Option 2B would yield the greatest benefits. To the extent that shippers choose to adopt the matrix approach, the benefits of Option 2C will be lower relative to the benefits provided by Option 2B as the information available on the cost of interruption will be reduced.

3.102. As the Option 2A* matrix only differentiates between sites on the basis of how many days of interruption the site is willing to accept it does not significantly improve the system operator's ability to make efficient operating decisions.

Security of supply

3.103. The existing interruptions arrangements create risks to long-term security of supply to the extent that they do not provide adequate signals of the need for long-term investment in the gas network. Furthermore, the inflexible nature of the standard interruption product may impact on the ability of the network owner to manage network constraints and may create a risk to security of supply.

3.104. Option 2 provides some benefits in terms of long-term security of supply to the extent that shippers elect to purchase long-term capacity and enter into long-term interruptible contracts with network owners. Option 2 may also provide benefits in terms of short-term security of supply by providing the network owner with access to a potentially broader base of interruptible sites.

3.105. The security of supply benefits of the Option 2 variations are therefore influenced by the extent of any constraints on the number of interruptible products available. As such, the long-term security of supply benefits associated with Option 2A* are likely to be lower than those associated with Option 2A given the simplified nature of the Option 2A* matrix. Following a similar logic, Ofgem considers that the security of supply benefits of Options 2B and 2C are likely to exceed those under Options 2A and 2A*, as network owners are likely to receive better investment signals under a tender approach to interruption and there would be a more liquid and transparent market for interruption at constrained points on the network. Indeed, short-term security of supply benefits may be greater under Option 2C as it would provide shippers with the opportunity to compete to provide interruption services to network owners on a broader range of terms.

3.106. Ofgem considers that Option 3 provides long-term security of supply benefits, over and above Option 2 as shippers will have greater incentives to book long term capacity enabling network owners to invest more efficiently to ensure future network security.

Impact on customer

Customer choice

3.107. The status quo offers limited choice for the terms of interruption. In particular, firm supply points unwilling to bear the risk of being interrupted for up to 45 days, but potentially willing to offer interruptible terms for fewer days a year, are unable to offer different terms to the network owner.

3.108. Option 2A provides more benefits in terms of choice than the status quo as a matrix approach will enable sites to choose between a range of price and days of interruption combinations. The extent of choice will be contingent upon the form of the matrix developed by network owners, consequently Option 2A* would offer less choice than Option 2A. Furthermore, the level of choice under a pure matrix approach is necessarily more limited than an approach which enables sites to form their own view on what terms to offer such as Option 2B. Option 2C further increases customer choice by allowing customers to choose the method by which they bid for interruptible capacity.

Distributional effects

3.109. A more market based, cost reflective regime should encourage network owners to make more efficient trade-offs between physical investment and the use of interruption. Furthermore, greater contractual flexibility could encourage some sites that previously were firm to enter into interruptible arrangements (for less than the current 45 days). As a result, Options 2A, 2A*, 2B and 2C would result in a lower overall cost in the provision of transportation services which, in turn, would reduce fuel poverty relative to the status quo. The benefits would be greater for the more cost-reflective approaches adopted under Options 2B and 2C, with the lowest benefits yielded by the most inflexible option – Option 2A*.

3.110. Ofgem considers that Option 3 is likely to have greater positive impacts in mitigating the effects of fuel poverty than Option 2. Option 3 should ensure that network owners make more efficient trade-offs between physical investment and the use of interruption, providing benefits to domestic customers.

Impact on competition

3.111. Ofgem considers that the inflexibility of the present interruptions arrangements and the use of the standard 45 day interruptible services have a negative impact on competition between shippers in the supply of interruption services to network owners and on the level of demand side response. The existing interruptions arrangements are also likely to have a negative impact on retail competition in the gas sector as shippers supplying pre-dominantly interruptible customers are likely to be able to provide gas on more commercially favourable terms than competitors with larger firm customer portfolios incurring potentially non-cost reflective capacity charges.

3.112. Ofgem considers that Option 2 provides more flexibility to shippers pricing interruption services and should have a positive impact on competition between shippers in the supply of interruption services to network owners. The Option 2 arrangements are also likely to have a positive impact on retail competition in the gas sector by increasing the cost reflectivity of charges. Furthermore, competition within the electricity sector amongst gas fired generators is also likely to increase as the potential for discrimination is reduced.

3.113. However, the relative competitive benefits of the Option 2 variations will be dependent on the extent to which they restrict the pricing of interruptions. As such, the more flexible tender approach embodied in Option 2B should increase competition by allowing shippers to price the services that they wish to provide, by facilitating cost reflective charging for firm sites and reducing the potential for undue discrimination which may hinder gas retail competition, and by reducing potential undue discrimination associated with the current arrangements.

3.114. To the extent that Option 2C permits shippers to choose a matrix approach, it should provide slightly fewer benefits relative to the status quo than Option 2B in terms of facilitating competition in the provision of interruption services to network owners and increasing the likely level of demand side response.

Costs and complexity

Implementation costs

3.115. Relative to the status quo, Ofgem considers that there will be costs to customers associated with the development of a long-term and short-term capacity booking mechanism (to enable shippers to obtain unlimited long and short-term capacity rights) as well as costs associated with the administration of this mechanism.

3.116. Both network owners and market participants may need to develop systems to support the matrix applications process embodied with Options 2A and 2A* and to support a long-term capacity booking process as proposed under an unconstrained firm allocation. In terms of booking interruption, Ofgem would, however, expect that the costs to customers are likely to be minimal given the relatively simplified nature of the matrix approaches outlined in Option 2A and 2A*. As Option 2A is more complex than Option 2A*, Ofgem considers that the costs associated with this option will be higher.

3.117. As well as the costs associated with developing long and short-term mechanisms to allow shippers to book capacity, Option 2B will require network owners to conduct, and shippers to participate in, a regular tender process for interruption services. Ofgem's estimates of the costs of implementation suggest that this approach is marginally less costly than Option 2A.

3.118. As Option 2C adopts both tender and matrix processes, network owners and potentially shippers would be obliged to establish IT systems that support both regimes. Network owners will need to incur the additional administrative costs associated with managing multiple processes. However, the cost to shippers would depend on whether they choose to participate in one or both of the tender and matrix processes.

3.119. Ofgem considers that there are likely to be certain costs associated with the development and implementation of the constrained allocation model in Option 3 including the development of different capacity products, short and long-term capacity allocations and use it or lose it mechanisms. In particular, both network owners and shippers will need to develop appropriate IT systems to manage and participate in capacity allocation processes. Furthermore, shippers will need to devote resources to determining their long and short-term capacity

requirements. These costs are likely to be higher relative to an Option 2 type approach.

3.120. The costs associated with the various Option 3 variations, namely Options 3A, 3B and 3C, are broadly equivalent to the costs outlined above with respect to Options 2A, 2B and 2C. As such, no further analysis is set out of these costs under the constrained allocation of the firm capacity product.

Complexity

3.121. A potential benefit of the status quo is that it is easy for shippers and customers to understand, involving a single uniform priced 45 day interruptible product. The status quo (Option 1) therefore performs well in terms of simplicity and implementation and costs.

3.122. Options 2A and 2A* may increase complexity for interruptible customers relative to the status quo, as some of these customers may need to devote more resources to valuing the interruption of their facilities than they currently do. However, the degree of complexity may be less under Option 2A* than 2A as customers are required to choose from a more limited range of matrix options.

3.123. Option 2B requires shippers and customers to form their own view on the value of interruption and devote resources to preparing a tender. In industry workgroups, customer representatives have indicated that some customers may find it difficult to evaluate how much it costs them to be interruptible. On this basis, Option 2B may be more complex than the status quo and Options 2A and 2A*. Equally, giving customers the choice of a matrix approach under Option 2C could potentially reduce complexity.

3.124. Option 3 is likely to increase complexity as shippers will need to form their own view of their long and short-term capacity requirements and seek to secure this capacity through long and short-term allocations across a large number of system offtake zones.

Quantification of costs and benefits

3.125. Table 3.1 below details the qualitative and quantitative assessment of options as set out in the Interruptions RIA, consistent with the assumptions laid out in Appendix 1 to the RIA.

3.126. However, it should be noted that in performing the quantitative cost benefit assessment it was only possible to quantify a sub-set of the benefits, in addition to the implementation costs. The benefits quantified were: the efficiency of investments signals, and the efficiency of system operation decisions. This is because some of the other benefits are impractical to quantify given the large number of highly subjective assumptions that would be required. For example, undue discrimination is dependent upon the inevitably uncertain evolution of the relevant market, including, in this case, network system conditions.

Table 3.1 Costs and benefits associated with each option relative to the base case

Key issue	2A	2A*	2B	2C	3
Promoting economy and efficiency					
♦ no undue discrimination	✓✓	✓	✓✓✓	✓✓✓	✓✓✓✓
♦ freedom to contract	✓✓	✓	✓✓✓	✓✓✓✓	✓✓✓✓
♦ efficient investment signals	✓✓	✓	✓✓	✓✓	✓✓✓✓
♦ efficient system operation decisions	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
♦ implementation & admin costs	××	××	××	×××	××××
Security of supply					
♦ long-term security of supply	✓	✓	✓✓	✓✓	✓✓✓✓
♦ short-term security of supply	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
Impact on customers					
♦ customer choice	✓✓	✓	✓✓✓	✓✓✓✓	✓✓✓✓
♦ complexity	××	×	×××	××	××××
♦ distributional effects & fuel poverty	✓✓	✓	✓✓✓	✓✓✓	✓✓✓✓
Effect on competition					
♦ retail gas competition	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
♦ competition in interruption services	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
♦ wholesale electricity competition	✓✓	✓	✓✓✓✓	✓✓✓	✓✓✓✓
Total NPV relative to Option 1	**£12m**	**£-12m**	**£18m**	**£12m**	**£22m**

3.127. The options for the interruptions arrangements are still high level and much detailed work is required to expand whichever option is chosen into a fully developed model. Consequently, the Interruptions RIA did not express a preference for any particular method of interruption. However, the analysis set out in this document and in the summary table below did lead Ofgem to form the initial view that reform of the existing regime is necessary.

Ofgem assessment of transitional arrangements

3.128. This section considers the costs and benefits of transitional arrangements and, where possible, seeks to quantify them, examining in turn:

- the costs and benefits of transitional arrangements to address distributional effects; and
- the costs and benefits of transitional arrangements to address the situation in which a site might be able to exploit a network owner's position as 'forced buyer' of interruptible services.

Transitional arrangements to address distributional effects

3.129. In this subsection we examine the costs and benefits of introducing transitional arrangements to allow for a 'soft landing' to the new arrangements for those sites whose interruptible status is not required following the introduction of reforms.

3.130. In Ofgem's view, transitional arrangements that address distributional effects have the potential to impact adversely upon the gas market in two ways. These relate to:

- persistence of identified short term inefficiencies. Under any set of new arrangements, some sites are likely to offer to remain at interruptible status at a price that implies a reduction from the exemption that those sites currently receive. Whilst dependent on the detailed design of the arrangements, the presence of transitional measures would therefore seem to encourage this set of sites to remain on their current interruptions arrangements throughout the period of transition. This would prevent those sites from indicating their cost of interruption,

hence, the inefficiencies of system operation that arise under the current arrangements would persist throughout the transition period.; and

- persistence of long term inefficiencies. The current long term inefficiencies stemming from the current regime, estimated to be approximately £5m per annum, would persist for as long as the transitional arrangements are in place.

Transitional arrangements to address the potential for abuse of market power

3.131. The main approach suggested through the work groups to address the potential for an abuse of market power that might arise under an unconstrained allocation of capacity would be to cap the revenue that a site would be allowed to recover from the network owner in an interruptible contract.

3.132. The main benefits of this type of approach are that it would prevent a site, that the network owner has no choice in the short-term but to contract with for interruption services, from extracting a rent potentially many multiples higher than the costs the site incurs in maintaining its interruptible status, at significant cost to the network owner and ultimately customers.

3.133. There are two principal costs to an approach that caps the price at which sites can contract for interruption. They are:

- encourages network over-investment. Capping the overall revenue that a site can extract from an interruption contract will mean that all sites that incur a cost of maintaining interruptible status higher than the limit implied by the cap will not contract for interruption. Hence, the network owner will need to invest in pipeline capacity to meet those sites' firm offtake requirements, which may in some cases be significantly higher than the costs of interruption incurred by that customer; and

- inhibit innovation in network development. In some cases, NGC, the electricity market SO has only a very limited number of parties that are able to provide it with location-specific services and no price cap to reduce its exposure. As a result, NGC is occasionally forced to invest in network assets because it is unable to reach an agreement with

strategically located sites. Ofgem notes that exposure to these costs has encouraged NGC to develop innovative solutions to network investment problems and, in particular, investment lead times have been considerably shorter than originally anticipated. Hence, placing price caps on interruption contracts in the gas market may inhibit similar innovative development of the gas network.

3.134. As an alternative approach to price caps, it is worth noting that Ofgem has concurrent powers to enforce the EU and UK competition rules under the Competition Act 1998. Undertakings found to have breached the Act can be required to take remedial action and may face a fine of up to 10% of their worldwide turnover.

3.135. In the Interruptions RIA, Ofgem did not express a firm view on the need for either of the transitional arrangements described above.

4. Respondents' views

4.1. This chapter summarises the views received from respondents to the Interruptions RIA document in the following six sections[18]:

- allocation of exit capacity;
- interruption arrangements;
- transitional arrangements;
- security of supply;
- cost benefit analysis; and
- other comments.

Allocation of exit capacity – status quo, constrained, or unconstrained

4.2. Of the nineteen responses received, twelve favoured Option 1 (the status quo). Some respondents defended Option 1 by questioning the extent of cross-subsidies under current arrangements, particularly between firm and interruptible customers, if investment is conducted to meet firm peak day demand. One respondent said that shipper costs were not a relevant consideration. Two respondents also argued that the current regime provides a cross-subsidy to firm users because the current capacity / commodity split of transportation charges is not cost-reflective.

4.3. Many of the respondents stated that wholesale reform to the exit and interruptions regime is not required to facilitate DN sales and that Ofgem has provided insufficient evidence to justify the need for reform. Many of these respondents also expressed concerns regarding the ability to achieve wholesale reform within DN sales timescales. Further arguments against the fundamental reform associated with Options 2 and 3 included:

[18] All of the non-confidential responses are to be found on Ofgem's website - www.ofgem.gov.uk

- **Long-term investment signals.** Long-term investment signals would be limited by the short-term perspective taken by shippers / customers, and that network owners were best placed to plan required investment. One respondent commented that an unconstrained approach such as Option 2 would reduce long term investment and could lead to the network owner becoming a distressed buyer of interruption, leading to a resulting increase in costs. Three respondents argued that Option 3 would encourage risk aversion amongst shippers and hence over-contracting of capacity and over-investment.

- **Complexity / costs.** The introduction of additional complexity and costs may act as a barrier to entry and inhibit competition for interruptions. One participant noted that complexity would favour larger users.

- **Liquidity of the market.** Some respondents believed that a liquid market for an interruptible product would not emerge. Two noted the limited substitutability for interruption within DNs, with one noting the low cost of the product relative to transaction costs. Two others noted that limited competition in some areas may increase the costs incurred in fulfilling interruptions requirements, offsetting short-term operational benefits, and requiring greater investment.

- **Customer support.** Six respondents noted a lack of customer support for the proposed changes, and a perceived absence of a clamour for change. Several respondents expressed concern that customers' ability to choose interruptible status would be reduced. Two respondents stated that it was vital to ensure the full engagement of customers in the process, with all interruptible customers proactively informed and consulted, with a (published and audited) Ofgem summary of responses.

4.4. However, six of the respondents whose preferred approach was Option 1 acknowledged that Option 2 had its merits, for example with respect to customer choice, freedom to contract, efficiency of operating decisions and cost-reflective charging. Two respondents acknowledged that Option 2 (including Option 2A*) would generate a positive NPV relative to the base case. Another noted that Option 2 may have the same effect as the status quo if auctions clear at the reserve price as has largely been the case for entry.

4.5. One respondent's preferred option was Option 2. This respondent noted that Option 2 most closely resembled the consensus reached by the majority of the industry in recent discussions culminating in Ofgem's own Exit Reform Advisory Group. However, this respondent expressed significant concerns regarding the practicality of implementing Option 2 within the proposed timetable for the sale of the DNs.

4.6. Two respondents expressed opposition to Option 1 (although one stated that it was inappropriate to commit to a particular option at this stage). One respondent stated that there should be freedom to contract on market based terms, with no obligation for network owners to offer interruptible contracts that do not provide an operational benefit to the network and no obligation for customers to contract on an interruptible basis. The other respondent noted that the 'one size fits all' approach of the current regime was a major flaw and that the current regime was neither efficient nor effective.

4.7. Transco's response distinguished between reform to the NTS and DN exit capacity arrangements. For the NTS, Transco recognised that reform to the current arrangements was a gateway requirement for DN sales to proceed, and suggested that Option 3 (constrained allocation) would be the most appropriate approach if the RIA process concluded that reform was necessary. Under such an option, Transco envisaged the unconstrained allocation of NTS firm exit capacity more than three years out and the constrained allocation of NTS firm exit capacity less than three years out (including on-the-day and day-ahead allocations). In addition, Transco expressed a preference for the unconstrained allocation of a day-ahead interruption product (as, in its view, this would be consistent with the requirement under the draft European Gas Regulation to provide interruptible third party access rights) as well as the ability to contract for firm turn-down contracts with NTS connectees in both the long and short term.

4.8. For the DNs, however, Transco believed that the status quo was most appropriate. Transco believed that any reform of DN arrangements may affect retail gas competition, as the present arrangements enable capacity to be allocated to whichever shipper is registered as the holder of supply point capacity.

4.9. Other than Transco, no respondents expressed a preference for an Option 3 approach.

Interruption arrangements: matrix or tender

4.10. Eight respondents favoured the matrix approach to contracting for interruption. Of these respondents, five expressed a preference for Option A*, one expressed a preference for Option A, and two did not express a preference for either of the matrix approaches.

4.11. One of the respondents expressing a preference for Option A* welcomed a move away from a 'one size fits all' approach, but stated that matrices should be published, with cost-reflective charges, and customers should have the choice over whether to participate. Another respondent stressed that matrix options should be cost reflective.

4.12. Some respondents expressed concern that the complexity and lack of transparency associated with other non-matrix based approaches i.e. Option B and Option C, would increase costs, may inhibit participation and therefore threaten security of supply. Indeed some thought that Option C compounded the issues of complexity associated with Option B. One respondent argued that the value based nature of a tender approach would not be cost reflective. However, one of the respondents that stated a preference for Option A believed that if customers wanted to participate in a tender process, Option C could be considered.

4.13. One respondent stated that it saw benefits in both Option B (the tender approach) and Option C (the combined matrix / tender approach) as these options provided more information and operating choice. This respondent acknowledged that Option C may enable customers who would not be willing to take part in a tender process to participate.

4.14. In its response, Transco once more distinguished between the NTS and the DNs. Transco proposed a tender approach on the NTS, and noted that, whilst it was in favour of the status quo with respect to DN reform, a matrix approach (Option A) or matrix and tender approach (Option C) might be appropriate.

Transitional arrangements

4.15. Nine respondents commented on the proposed transitional arrangements, with five stating that transitional arrangements were necessary to avoid current interruptible customers being hit by unmanageable costs. Two respondents argued that transitional arrangements should ensure the recovery of investments in stand-by fuel and equipment.

4.16. Three respondents emphasised the importance of addressing the market power issue, and stated that a price cap merited consideration (despite Ofgem's Competition Act powers). One of these respondents stated that application of Competition Act powers would not be sufficient given the length of the process for detection and resolution which might expose the DN to commercial risks. An alternative to a price cap was proposed, namely the novation and possible extension of existing interruptions benefits to allow the DN to assess potential investment needs.

4.17. Two respondents expressed opposition to additional measures to address market power. One respondent noted that imposition of a price cap would be distortionary, whilst a second respondent noted that under Options 1 or 2A* shippers / customers would not have opportunities to abuse their market power.

Security of Supply

4.18. Many respondents noted the importance of security of supply as a consideration in option evaluation. Two respondents noted that separation of supply/demand interruptions from constraint management interruptions would allow the industry to consider security of supply issues more effectively.

4.19. One respondent argued that the future impact of the UK becoming a net importer of gas and the resultant changes in network dynamics, as well as a tightening of the supply/demand balance, should be considered in the context of future interruptions requirements and implications for security of supply. A number of participants argued that excessive complexity of proposed arrangements could inhibit participation and therefore threaten security of supply.

4.20. Transco noted the importance of HSE ratification of any significant changes. Transco further stated that reform should provide confidence in the ongoing provision of network capability to meet contracted demand consistent with the 1 in 20 requirement as well as an efficient means of giving access to demand management. Transco also expressed concern about the ability of shippers to make 'take it or leave it' offers without a satisfactory timeframe for response in terms of investment or re-tendering.

4.21. In its response, the HSE specifically addressed the issue raised in the consultation paper that reducing the total level of interruptible capacity may have a negative effect on security of supply. It stated that it would be concerned if the proposed regime led to a dramatic reduction in the ability to reduce gas consumption for supply emergency management. However, the HSE stated that if a level of interruptible capacity remains, they agree that a regime that improves the clarity of interruptible options would be welcome.

Cost benefit analysis

4.22. A large number of respondents expressed concerns in relation to Ofgem's assessment of the costs and benefits of the proposed options for reform. Some respondents stated that the benefits of fundamental reform, in particular Option 3, had been overstated.

4.23. Some respondents also stated that the costs associated with Option 3 (and to a lesser extent Option 2) were understated. In particular, one respondent stated that a lack of a quantitative assessment of the cost of Ofgem's proposals on customers, competition or security of supply was a significant omission, and that the qualitative assessment had under-estimated the potential adverse impact on these areas.

4.24. Others emphasised that many players would need to develop new skills and systems and that this option implied potential exposure to overruns, and shipper risk. One respondent also noted that, to its knowledge, users had not been asked to estimate the associated costs of each option. Another respondent expressed serious concerns that Ofgem had relied on Transco information to estimate shipper costs. Indeed Transco itself expressed concerns that there were additional systems costs that may need to be taken into account.

4.25. A number of respondents also questioned the efficiencies assumed, in particular the existence and size of long-term investment efficiencies and the assumptions underlying their calculation. Several respondents queried some of the assumptions underlying the estimation of short-term inefficiencies. One respondent stated that even taking the NPVs as stated within the RIA, these equate to a very small saving for each domestic customer.

4.26. A number of respondents noted the subjectivity of the assumptions made. Five respondents commented on the general methodology adopted, arguing that the probabilities of costs and benefits occurring, and the associated risks should be taken into account, with sensitivity analysis performed.

4.27. A number of respondents requested further information / analysis on cross-subsidies and Transco over-contracting. One respondent, whilst stating that the status quo was its preferred option, said that it did not believe that Option 2A* would lead to net costs relative to the status quo. Another stated that the costs for Option 2A* were overstated and should be lower than those for Option 2A.

Other comments

4.28. One respondent stated that the interactions with the offtake proposals were unclear, and another asked for Ofgem's views on who would be contracting with whom for interruptions. On this issue, another respondent expressed concern regarding the potential physical and financial implications for the DN if the NTS were able to contract directly with DN connects. This respondent argued that one potential solution would be for contracts to be between the NTS and DNs with some back-to-back arrangements between DNs and customers. Another respondent stated that network owners should primarily contract for interruptions with their own customers, but that under special circumstances, the NTS should be able to contract with DN connectees. Transco stated that it would want to be able to contract directly with its own customers, but would view operator to operator relationships as the best way of enabling the TSO to have access to DN connectees.

4.29. A further respondent stated that the entry capacity regime has demonstrated that a market based mechanism to determine transportation charges is incompatible with a price controlled allowed revenue. This was supported by three further

respondents who expressed concerns regarding revenue stability and ability to recover target revenue under a market based mechanism. A number of respondents also expressed concerns that the entry capacity regime had not provided meaningful long term investment signals.

4.30. One respondent expressed concern regarding whether the Gas Act permits customers to contract directly with Transco for the provision of interruption services. This respondent asked for a clearer explanation from Ofgem regarding what steps it will take to address this issue. Transco stated that, in its opinion, an exemption under Section 6A of the Gas Act would be required to enable contracting with customers (rather than with shippers).

4.31. Five respondents also expressed concerns regarding consistency with the European Union Gas Directive or the proposed European Gas Regulation. Two respondents indicated that Option 3 may be inconsistent with Article 4.2 of the Draft Gas Regulation which provides that transmission system operators should provide both firm and interruptible third party access. One respondent also raised concerns that Option 3 would not be compliant with Article 18.1 of the Gas Directive relating to the provision of third party access against pre-published tariffs. This respondent also raised concerns regarding compliance with Articles 3.1, 3.2, 4.1 or 4.2 of the proposed Gas Regulation relating to cost-reflectivity, convergence of tariff structures, non-discrimination and the provision of firm and interruptible third party access.

4.32. One respondent stated that it would be prudent to drop Transco's licence requirement for universal firm registration to allow for more permanent arrangements. Another respondent supported the removal of the universal firm obligation. Transco also noted that its proposed solution would require removal of the universal firm obligation from Special Condition 28 of the licence.

5. The Authority's conclusions

5.1. This Chapter sets out the Authority's conclusions for the issues covered in the Interruptions RIA, following careful consideration of the representations received during the consultation process from interested parties. The Authority thanks respondents for the comprehensive views they have submitted.

5.2. Following careful consideration of respondents' views in response to the Interruptions RIA, Ofgem prepared a report and recommendation (together with supporting documents) on the way forward regarding this matter for consideration and decision by the Authority. This was considered at a duly convened meeting of the Authority where the Authority endorsed Ofgem's recommendations, namely:

- NTS capacity should be allocated on a constrained basis – as per Option 3, from day one of any potential DN sales;
- buy-backs of NTS capacity should be on a tender basis – as per Option B, from day one of any potential DN sales;
- at the DN level, the status quo should persist in the near term (Option 1)
- there would be no transitional arrangements; and
- by April 2006, reform of the interruption arrangements at the DN level should be implemented through an approach along the lines set out under Option 2A in the Interruptions RIA. This reform, however, is not linked to the timescales for DN Sales.

5.3. Having made these recommendations, the Authority instructed Ofgem to proceed on its behalf. It is important to note that this is one of a series of indicative decisions reached by the Authority before its November meeting at which it expects to definitively decide on whether or not it is willing to consent to the proposed sale of one or more of Transco's DNs[19].

[19] Note that, as stated explicitly in paragraph 1.4, the Authority will not be fettered by any statements made in this document.

5.4. This matter will now be progressed by a combination of licence modification proposals, pricing consultations and network code modification proposals, all of which will be given full and appropriate consideration with each being judged, either by the Authority or by Ofgem under delegated authority, upon its own merits and against the applicable relevant objectives and the Authority's wider statutory duties.

5.5. We present the details of the Authority's conclusions in the following three areas:

- allocation of exit capacity;
- approach to interruptions; and
- transitional arrangements.

Allocation of exit capacity: Status quo, constrained or unconstrained

5.6. The Authority has considered carefully the views of all respondents to the Interruptions RIA. It notes Transco's response to the RIA in which it distinguished between the treatment of the rights of offtake at the NTS level from the rights of offtake at the DN level. In making this distinction, Transco considered that DN interruption reform is not directly linked to DN sales and should be addressed separately.

5.7. Many respondents also expressed concern about the timetable for the proposed DN Sales. These respondents considered that only changes that were necessary for the DN Sales process should be introduced within the timescales for this process. Given these views, particularly those of Transco, the Authority has decided that the proposed interruption and capacity allocation arrangements on the NTS and DNs should be considered separately.

5.8. This is reinforced by some of the scaling issues associated with the NTS and DNs. For example, the NTS has 180 offtake points whereas the DNs, in aggregate, have in excess of 20 million offtake points. The Authority additionally considers that it is particularly important that the interface between the NTS and DNs is considered as part of the DN Sales process whereas the

arrangements on a DN can develop over an extended period. The Authority view is that reformed interruptions arrangements need to be in place on the DNs for 2006 when it is envisaged that new owners of DNs will have to take decisions regarding investment on their networks and, therefore, will be in a position to trade off the costs of investing on its own network, the NTS or entering into interruption arrangements. The interruptions arrangements for the DNs are discussed in the section below.

5.9. To ensure that the new arrangements will be consistent with licensees' statutory duties the Authority has concluded that in respect of:

- the allocation of **NTS exit capacity,** Option 3 should be adopted from day one of any potential DN sales; and
- the allocation of exit capacity at the **DN level**, the existing arrangements should be retained in the near term. By 2006, the DNs should seek to develop these arrangements to allow the unconstrained allocation of capacity – potentially on the basis of an Option 2 model and approach, consistent with their legal obligations including obligations not to discriminate unduly.

5.10. The Authority has set out in more detail the reasons for these decisions in the following subsections.

NTS exit capacity

5.11. Having regard to its statutory duties, the Authority agrees with Transco that Option 3 for the allocation of exit capacity from the NTS should be adopted. The key features of Transco's response regarding Option 3 are that:

- NTS exit capacity should be unconstrained in the long run. Given that network investment lead times are, at present, typically three years in duration, it follows that any connectee to Transco's NTS should be able to signal its requirement for additional network access over that time horizon and beyond. Under this approach, any existing (or new) connectee to Transco's NTS would be able to purchase long term firm capacity rights to exit capacity. This capacity would be purchased through a non-discriminatory allocation against a schedule of

administered prices determined by Transco NTS's charging methodology. The prices would reflect costs and would be published in Transco NTS's charging statement. Demand for exit capacity through this process would provide Transco NTS with signals from its customers about the need for additional capacity at exit and investment in the NTS to deliver this capacity;

- in the medium and short term, pipeline investment lead times could mean that the network operator cannot make capacity physically available to all users. Over these timescales, the quantity of NTS exit capacity released by Transco NTS to users of the NTS should, as far as is possible, be consistent with the maximum physical capabilities of the NTS. As there is likely to be a finite quantity of network capacity available in these timescales, it follows that it should be made available and allocated to network users in an efficient and non-discriminatory manner; and

- in the very short term (i.e. at the day ahead stage), any unsold firm NTS exit capacity should be made available to network users, again on a non-discriminatory basis. In these timescales, Transco has proposed that Transco NTS will also make interruptible exit capacity available to users of the NTS. This gives the network operator the right, but not the obligation, to make network capacity available to the holder of these interruptible capacity rights.

5.12. In the following subsections we set out:

- the reasons for the Authority's decision to adopt an Option 3 approach on the NTS; and

- its consideration of respondent's views.

Rationale for Option 3 approach

5.13. Having regard to its statutory duties, the Authority concluded that Option 3 should be adopted at the NTS level because:

- it will encourage the development of investment signals on the NTS, backed by financial commitments from the users of the NTS. These signals will reduce the risk of stranded[20] NTS assets and promote efficient investment in the NTS and security of supply. Further, the signals derived from longer term allocations should assist the NTS in making efficient trade offs between the costs of investing in pipeline capacity, entering into interruptions contracts, and/or the use of local storage such as LNG;

- it is consistent with the approach the Authority has concluded should be adopted for the offtake arrangements. Under the Option 2 approach decided upon for offtake arrangements, the DNs (and NTS direct connects) will book exit capacity on the NTS. This will provide the DNs with commercial incentives to book an efficient and economic level of NTS exit capacity consistent with their licence and statutory obligations. Given this decision, the Authority also considers that the arrangements in place at the interface between the NTS and DNs should provide for efficient long and short term allocations of capacity that prevent any undue discrimination as between DNs (both IDNs and RDNs) and also as between NTS direct connects and DNs. The Authority considers that the Option 3 constrained allocation approach meets this objective as it ensures that capacity is released on a non-discriminatory basis; and

- it is consistent with the approach used for allocation of entry capacity onto the NTS and these arrangements at entry are currently delivering signals of future demand.

Consideration of respondent's views

5.14. Chapter 4 highlighted the concerns that respondents had about the adoption of Option 3 as an approach both for the DNs and the NTS. Many respondents questioned the need for reform of the current arrangements. The Authority has carefully considered these responses and its statutory duties and considers that

[20] We note that one respondent suggested that the incorporation of exit ARCAs to make commitments from potential new connectees financially binding could address asset stranding. However, Ofgem is concerned that ARCAs could potentially be discriminatory particularly between new and existing users of the network.

reform of the arrangements remains a DN sales gateway issue at the NTS level. The Authority considers that the proposed changes to the NTS arrangements are required to prevent any undue discrimination in the allocation of NTS exit capacity and in this respect this document complements the Offtake RIA conclusions document.

5.15. The Authority has, however, been persuaded by the views of respondents that, at the DN level, reform of the allocation of exit capacity is not necessary or appropriate within the timescales of the DN Sales process. However, in the Authority's view, it is necessary to consider and address the interfaces between the NTS and DNs as part of the DN Sales process. As such, the Authority is seeking to put in place robust, efficient and non-discriminatory arrangements in the event of a DN sale.

5.16. The Authority considered the views of respondents under the following headings:

- key reasons for reform;
- allocation of costs;
- investment signals;
- comparisons with the entry capacity regime;
- complexity and costs;
- development of secondary signals;
- customer support;
- draft European gas legislation; and
- cost benefit analysis comments.

Key reasons for reform

5.17. In responding to concerns from respondents that reform is not necessary, the Authority thinks it is important to reiterate why interruptions reform is important in the context of the potential sale of one or more DNs. As explained in its

earlier documents, the Authority considers that the arrangements must ensure that:

- there is no undue discrimination between users of the NTS following any sale of one or more DNs by Transco;
- that there is appropriate accountability regarding network investment decisions, in a divested industry structure. In this respect, we consider that it is important for the arrangements to set out clear accountabilities at the NTS/DN interface for failures in investment and system operation. This is particularly important, given the Authority's conclusions on the Offtake RIA; and
- licensees comply with their statutory and licence obligations and, therefore, are able to develop and operate their network in an economic and efficient manner. The increased flexibility of the proposed arrangements should allow the network owners to manage and develop their networks more efficiently – this should benefit customers ultimately as it should lead to network costs that are lower than they would be in the absence of reform.

Allocation of costs

5.18. One particularly strong theme from the responses was whether the current arrangements give rise to cross-subsidies from one class of customer to another class of customer. Given the seriousness of respondents' concerns on this issue, the Authority has set out further comments on this matter below.

5.19. If costs are paid for, through network charges, by customers or group of customers that do not cause those costs to be incurred, a cross subsidy will exist. Charging arrangements can also lead to a transfer of costs between groups of customers (network users). In the case of interruption, under the current arrangements interruptible users pay no capacity charges for their use of the network. To demonstrate that no cross subsidy exists, as some respondents have argued, it would need to be shown that none of the costs associated with providing exit capacity are caused by the presence of these interruptible customers.

5.20. Transco have indicated that all interruptible customers would be interrupted to meet the 1 in 20 peak day demand. If Transco's analysis is sound and investment in the network is driven purely by 1 in 20 peak day requirements and charged for on that basis, it follows that these customers should not pay for network capacity. However, in Transco's view, investment in the network is not entirely driven by the requirements for peak 1 in 20 day requirements. Transco's view has been supported by the recent experience of system conditions where in the summer period interruption of sites has been required. This would support the view that interruptible customers should not avoid all exit capacity charges.

5.21. The Interruptions RIA indicated that the methods which Transco utilises for contracting for interruption are potentially inefficient. The terms that Transco offers are inflexible, based on an annual standardised contracts. This inflexibility results in Transco not exploring whether other (currently firm) users would be prepared to receive 'discounts' from transportation charges for some level of interruptible service (albeit on a lower number of days of potential interruption per contractual period than the current interruptible contract of 45 days per year). A further feature of the current interruptible and firm product arrangements is that any user can opt to be interruptible within planning horizons. This has the effect that, at least in the short term, Transco could potentially 'purchase' too much interruption. We consider that these contractual inflexibilities both in the interruptible and firm exit capacity products could give rise to distortions in the appropriate level of charges to network users as Transco must recover its allowed revenues in any year.

Investment signals

5.22. A number of respondents argued that the short term perspective of shippers and customers would prevent the emergence of investment signals. We also note that some respondents have indicated that capacity will be overbooked. However, the Authority considers, combined with its decision on the offtake arrangements, that the proposed approach to the NTS should encourage the development of investment signals on the NTS.

5.23. Under the proposed arrangements, DNs will book NTS exit capacity consistent with their 1 in 20 obligation[21], and may choose to book capacity beyond the investment planning time horizon. Hence, the DNs, which account for 114 out of 180 NTS offtake points, will be able to signal their requirements for NTS exit capacity consistent with investment timescales and their 1 in 20 obligation. Under the proposed arrangements, other connectees to the NTS, or shippers acting as agents, may also book capacity into the long term. Conversely they may prefer to purchase in the short term any available firm or interruptible capacity but this exposes that site to the risk that capacity will not be available in the short term or only at a price reflecting its scarcity.

5.24. In this case, we consider that the absence of long term purchasing of capacity may be a valuable investment signal of itself. The NTS should not be developed to accommodate this set of users who are unwilling to commit to offtake gas from that location on the NTS over the investment time horizon.

5.25. As noted above, some respondents were concerned that capacity would be overbooked. It should be noted that those participants (DNs or shippers booking on behalf of NTS direct connects) that overbook their capacity may not necessarily be able to pass on the costs of any such over-bookings to their customers. Instead, we consider that effective competition in the wholesale and retail markets combined with effective incentives on DNs should encourage efficient capacity booking.

5.26. In contrast, one respondent noted that an Option 2 approach could increase costs as a potential lack of investment signals could require the network owner to be a distressed buyer of interruption. The Authority considers that appropriate commercial incentives on network owners should mitigate this risk.

Comparisons with entry capacity regime

5.27. A number of respondents have indicated that, in their view, it is not appropriate to adopt a constrained approach in view of the experience of the entry capacity regime. Some of these respondents raised concerns that the entry capacity

[21] Under Option 2 of the Offtake Arrangements both the NTS and each DN would have 1 in 20 planning obligations.

arrangements have contributed to pricing instability and have not provided long term investment signals.

5.28. We would note in response to these concerns that the long term entry capacity regime has only been recently introduced with three long term allocations having occurred since their introduction in January 2003, one of which, in February 2004, was restricted to the new entry points at Garton and Barton Stacey.

5.29. Nevertheless, there have been a number of purchases of long term entry capacity beyond 2015 - most notably at the St Fergus and Easington entry points. In the case of Easington, purchases of capacity have extended as far as 2019. There has not yet been sufficient long term demand at any of the existing entry points to lead to the release of incremental capacity at these terminals by Transco. However, a substantial volume of incremental capacity was released at the Garton new entry terminal in response to demand signalled in the February 2004 long term allocation.

5.30. It is important to note that the absence of any significant demand for long term incremental entry capacity at existing terminals following the initial allocations does not mean that the allocations are not providing investment signals. The initial long term allocations have involved the release of substantial levels of baseline entry capacity at the major existing beach terminals reflecting significant levels of funding for investment on the NTS that already exists within Transco's present NTS price control.

5.31. We consider that the long term entry capacity auctions represent a non-discriminatory allocation mechanism for entry capacity with a transparent pricing structure that provides efficient signals to Transco NTS which can contribute towards its investment decisions at both existing and new entry points.

Complexity and costs

5.32. The Authority recognises that the introduction of Option 3 reforms on the NTS is likely to impose some additional complexity and that this may give rise to additional costs both for network operators and for shippers, suppliers and (potentially) some very large customers. However, any set up and ongoing costs

need to be set against the potential benefits flowing in the longer term from more efficient investment and system operation. In the Authority's view, these benefits outweigh the costs identified.

5.33. It is considered that the complexity and costs of the regime on the NTS will be significantly lower than if Option 3 were to be extended to the DNs, and this view was informed by the views of the interested parties including Transco. Transco has estimated the central system costs for an NTS only approach to be approximately £2-3m (including the system development costs for the interruption arrangements). There will of course be DN and shipper costs in addition to these, however, given that the reforms are proposed to the NTS only these costs will not be as significant. Again, as stated above, in the Authority's view, the benefits of changes to the arrangements outweigh the costs identified.

5.34. The Authority also notes that if the current arrangements could potentially give rise to undue discrimination, then maintaining them is not an option as some reform is necessary. Given the Authority's concerns about the current arrangements, they are not, therefore, an appropriate base case when assessing the costs/complexity of reform. The appropriate analysis is to compare the relative costs and benefits of the different options for reform.

5.35. It is also important to note that Ofgem will shortly be issuing a detailed pro-forma questionnaire on the costs associated with a potential DN sale. As part of this process, Ofgem will be seeking further information from industry participants on the costs that they will face under an Option 3 model for the NTS. Any information provided by industry participants will then be considered by the Authority in the context of its assessment of the Final RIA and in reaching its decision in November on whether to give consent to the proposed DN sales.

The development of secondary markets

5.36. The Authority notes the concerns of respondents regarding the likely extent of any liquidity in any secondary exit capacity market, particularly in the secondary market for buy-backs under Option 3.

5.37. We consider that the extent of any liquidity in the secondary market for the trading of capacity rights (including buy-backs of capacity by Transco NTS) will be in part a function of the spatial and temporal definitions of the primary

product that is initially released by Transco NTS under an Option 3 approach. Consideration of these detailed design issues will be needed through the workgroups, and through the industry code development process. As part of these discussions, consideration could be given to the establishment of exchange rates for exit capacity in different areas of the network.

Customer support

5.38. The Authority notes that a large proportion of respondents, including customers, did not express support for changes to the arrangements. Having regard to these views, in reaching its conclusions on the framework on interruptions, and in responding to these concerns, the Authority has sought to establish a separate approach for interruptions reform with respect to the NTS and DNs. In particular, the Authority has responded to customer concerns by recognising that it is not appropriate to introduce more complex interruptions and capacity arrangements on the DNs as part of the DN sales process. Further, we have also recognised that it is not necessary to reform the DN interruptions arrangements other than to address the interface issues between the NTS and DNs from day one of any DN sale.

Draft European Gas Regulation

5.39. We note that some concerns have been raised that Option 3 may not be consistent with certain provisions of the Directive concerning common rules for the internal market in natural gas (the Gas Directive) [22] or the draft European Regulation on conditions for access to the gas transmission networks (the draft regulation)[23]. In responding to the concerns that have been raised by some respondents with respect to the regulation it is important to note that the details of this draft regulation are still being considered and may be subject to further changes. Nevertheless, the following comments are offered below.

5.40. With respect to the proposed draft Article 4.2, 'Third Party Access services', it is important to note that under Option 3, Transco NTS would have the ability to tender on market based terms to buy back capacity in the event that this was

[22] Directive 2003/55/EC of the European Parliament and of the Council concerning common rules for the internal market in natural gas and repealing Directive 98/30/EC.

necessary to address system constraints or congestion. These arrangements would allow Transco NTS to enter into 'option and exercise fee' based arrangements or enter into forwards contracts for buy-backs and for NTS direct connects and DNs to offer to provide these interruptible services. We consider that this would effectively discharge this obligation as the drafting currently stands. Further, as specified by the draft Article 4.2, such buy-back arrangements would ensure that that price of the interruptible capacity reflects the probability of interruption through any firm buy back contract agreed by Transco NTS with a DN or an NTS direct connect. It is also important to note that under the proposals described by Transco there would be a short term interruptible product at the NTS level. As such, NTS direct connects and DNs would be able to access this product, potentially close to the gas day. We also consider that this approach is consistent with the proposed draft regulation.

5.41. We also consider that the non-discriminatory allocation and interruption processes envisaged by Option 3 would also satisfy draft regulation Article 4.1 relating to the provision of transmission services to users on a non-discriminatory basis. It also worthwhile noting in this context that draft regulation Article 4.3 provides that transmission system operators shall offer to network users both long and short-term services. We consider that Option 3 would meet this objective.

5.42. Further, we consider that Option 3 also meets the requirements of Article 3 of the draft regulation. This provides that tariffs or methodologies used to calculate tariffs shall be transparent and reflect actual costs incurred whilst ensuring appropriate incentives for efficiency. As noted in the Interruptions RIA under an Option 3 approach, Transco NTS would release capacity against a schedule of administered prices in a non-discriminatory allocation for each exit zone. These prices would be reflective of the costs of providing capacity, including incremental capacity.

5.43. To the extent that Transco NTS released capacity through value based mechanisms such as auctions in the short term, the prices in these auctions would be reflective of opportunity costs. In any event, the draft regulation also

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[23] Draft Regulation of the European Parliament and of the Council on conditions for access to the gas transmission networks.

specifies that Member States may decide that tariffs may also be determined through market based arrangements, such as auctions, provided such arrangements and the revenues arising are approved by the regulatory authority.

5.44. It is also worth noting in this context that the draft regulation provides that transmission system operators shall implement and publish non-discriminatory and transparent capacity allocation mechanisms which shall provide economic signals for efficient use of capacity and which facilitate investment in new infrastructure. Further, the capacity allocation mechanisms must be capable of adapting to evolving market circumstances. As with the entry capacity regime, we consider that an Option 3 approach would meet these requirements. In particular, it would facilitate the provision of investment signals and it would introduce a capacity allocation mechanism that allows Transco NTS to respond to these investment signals according to the changing pattern of demand at exit over time.

5.45. We note that a concern has been raised that Option 3 would not meet the requirements of Article 3.2 of the draft regulation. This Article provides that transmission system operators should, in co-operation with relevant national authorities, pursue convergence of tariff structures and charging principles. We consider that the introduction of Option 3 arrangements would lead to greater transparency in capacity pricing, and more efficient investment in UK gas transmission which should promote trading across borders and market liquidity in a manner consistent with draft Article 3.2.

5.46. Lastly, we consider that Option 3 also meets Article 18 of the Gas Directive which provides that Member States shall ensure the implementation of a system of third party access to the transmission and distribution system based on published tariffs. The Article provides that Member States shall ensure that these tariffs, or the methodologies underlying their calculation, shall be approved prior to their entry into force by a regulatory authority and that the tariffs, and the methodologies, where only methodologies are approved, are published prior to their entry into force.

5.47. With respect to Option 3, as with entry capacity, Transco would need to develop changes to its charging methodology to implement a constrained allocation of NTS exit capacity. Ultimately, these changes would need to be considered by

the Authority. Further, we consider that an Option 3 approach would also require the publication of a schedule of administered prices for the release of NTS exit capacity on an unconstrained basis and reserve prices for the release of NTS exit capacity within investment lead times.

5.48. Ofgem will continue to monitor development of the draft regulation and work with the DTI on this matter. It is important to note that it may be necessary, subject to the outcome of the regulation, to revisit these issues. However, given the proposed date of the changes, we consider it is still appropriate to proceed with the reform programme as detailed in this document.

Cost benefit analysis comments

5.49. A large number of respondents expressed concerns in relation to Ofgem's assessment of the costs and benefits of the proposed options for reform. Many commented that the assumptions applied were subjective and questioned the level of costs and benefits assumed. Whilst some respondents noted that if no long term efficiencies were assumed, the resulting NPVs for Options 2 and 3 would be negative or proposed other NPV adjustments, no detailed reassessment and justification of the costs and benefits was provided by respondents. The Authority has considered the views expressed by respondents with respect to the cost benefit analysis, but the arguments presented by respondents have not changed its view of the high-level cost benefit assessment performed.

5.50. Ofgem will be circulating a pro forma questionnaire on the costs of the proposed framework as part of the process of developing the Final RIA. Following publication of the Final RIA, we will be inviting respondents' views on the costs and benefits of moving from the status quo to the proposed arrangements.

DN exit capacity

5.51. The Authority has considered the responses to the Interruptions RIA carefully, and considers that a constrained (Option 3) approach to the allocation of DN exit capacity is not appropriate. This is consistent with the views of all respondents, including Transco.

5.52. The Authority considers that, a 'no change' (Option 1) approach to the allocation of DN exit capacity should be retained until April 2006. In the event of one or more DNs being sold by Transco, the retention of current arrangements should help to reduce the level of disruption whilst the significant changes resulting from DN sales are implemented. However, as set out in the previous section the Authority considers that the interface between the NTS and DNs does need to be addressed as part of the DN Sales process.

5.53. The Authority also considers that the current DN exit capacity arrangements are not appropriate post April 2006, because of on-going concerns relating to the potential for them to give rise to undue discrimination. In particular, to the extent that the arrangements across the NTS and DNs differ, there is a risk that this could distort future decisions on where to locate new load as well as pipeline and storage investment decisions. Further there is a risk that, as a result of continued administered arrangements on the DN, Transco NTS may favour DNs over NTS direct connects in contracting for interruption.

5.54. For this reason, the Authority is of the opinion that work should progress on developing new arrangements for the allocation of DN exit capacity consistent with a potential Option 2 (unconstrained) approach, with a view to implementing these no later that April 2006. The DNs should ensure that the new arrangements are non-discriminatory including as between new and existing users.

Approach to interruptions: matrix or tender

5.55. The Authority considered the approach to interruptions in the context of its decision to separate the approaches to the allocation of the DN and of NTS exit capacity. Having regard to its statutory duties, the Authority concluded that:

- for the NTS, the network owner should tender for the right to interruption through capacity buy-backs from day one of any potential DN sales; and

- for the DNs, the status quo should persist for the short term and that, in the long term, a matrix approach should be developed for implementation from April 2006.

5.56. We believe a tender approach should be adopted on the NTS because:

- a tender approach on the NTS should facilitate more efficient operation and more efficient investment decisions by Transco NTS. It will provide better information on the value of interruption than matrix based approaches. Further, the flexibility of a tender approach should promote competition in the provision of interruptible services and should enable some firm NTS direct connects to offer such services to Transco NTS when this may not have otherwise occurred;

- a tender approach on the NTS should ensure that there is no potential for undue discrimination between DNs and the NTS and between IDNs and RDNs in the treatment of interruptions;

- the tender approach for interruption on the NTS would be the most cost effective approach (on the basis of information provided by Transco); and

- a tender approach should reduce the potential for undue discrimination between gas-fired generators on interruptible contracts to the extent that generators would be efficiently compensated for the levels of interruption they are providing. This should reduce any distortions of competition in the wholesale electricity market associated with the current interruption arrangements.

5.57. We consider that it is appropriate to retain the status quo on the DNs for interruptions in the short term prior to April 2006 given the decision to retain the status quo for the allocation of capacity at the DN level up to April 2006. We additionally consider it will give the industry more time to consider further these issues.

5.58. We believe that is appropriate to move towards a matrix approach for interruption on the DNs from April 2006 because:

- it is important that there is some degree of consistency introduced between the NTS and DN arrangements. This should ensure that sites make better decisions about where to locate. It will also reduce the risk that Transco NTS discriminates between DNs (IDNs and RDNs) and NTS direct connects in contracting for interruption on its network;

- as noted above, a matrix approach should promote more efficient operation and investment decisions on the DNs by providing better information to each network operator regarding the value of and demand for capacity;

- as noted above, a matrix approach should reduce the potential for undue discrimination on the DNs in contracting for interruption; and

- introduction of a matrix approach with respect to the DNs from April 2006 meets some of the concerns raised by respondents as it is less complex than a full tender based approach.

Transitional arrangements

5.59. Having considered respondent's views, the Authority does not consider that transitional arrangements are necessary either to address distributional effects or to address the potential for an abuse of market power on either the NTS or DNs. However, it should be noted that as interruptions reforms on the DNs would not be implemented until April 2006, some notice is being provided to industry participants of the potential for change.

Transitional arrangements to address distributional effects

5.60. The Authority remains of the view that transitional arrangements on the NTS and DNs to address distributional effects are likely to prolong the continuation of any existing inefficiencies in the interruptions regime, as any loads on transitional arrangements would not signal their true costs of interruption. As such, the presence of such arrangements may prevent efficient system operation in the short term and hinder the ability of the network operator to make efficient trade offs between contracting for interruption and investing in pipeline capacity.

Transitional arrangements to address the potential for abuse of market power

5.61. It is noted that the Interruptions RIA did not discuss the establishment of price caps for interruptions under an Option 3 constrained allocation approach. Such arrangements were only discussed in the context of an Option 2 unconstrained

approach. Nevertheless, under an Option 3 approach to the extent that Transco needs to buy back capacity on the NTS, the Authority considers that the use of price caps in the buy-back market would prevent the network operator from making efficient trade offs between the costs of investment and the use of interruption contracts, as well as efficient operating decisions. In addition, such price caps may also distort the signals received by the network through the capacity allocation process.

5.62. In terms of the DNs, we consider that the presence of price caps under an Option 2 type approach is likely to prevent network operators from making efficient trade offs between interruptions and investment in pipeline capacity potentially leading to over-investment. Further, the presence of price caps is also likely to remove incentives on network operators to develop innovative solutions in response to network investment problems as noted in the Interruptions RIA.

6. Way forward

6.1. The Authority's conclusion document on the appropriate form and content of the interruptions arrangements is a key step in creating a high level framework to support a divested industry structure[24]. Ofgem will discuss the Authority's conclusions on these issues at the DISG meeting to be held at Ofgem's offices on 17 August 2004.

6.2. The conclusions set out in this document open the way for further work to develop the regulatory, commercial and operational arrangements that could be implemented if Transco sells one or more of its DNs. In addition, Ofgem notes that a number of the conclusions outlined in this document will need to be reflected in industry licences and codes. To this end, Ofgem will be conducting an informal licence consultation in early September.

6.3. Ofgem will now proceed to develop a Final RIA, which will consolidate the conclusions outlined in the four conclusion documents. This document, to be issued at the end of September 2004, will compare the status quo (i.e. a no sale scenario) to a fully developed post DN Sales environment (i.e. a sale scenario). The Authority will invite respondents' views to this Final RIA. These views will form part of the Authority's consideration when taking its decision in November on whether DN Sales should proceed. The Authority's decision will be based on an assessment of whether the proposed sale of DNs will protect the interests of customers. As previously noted, therefore, nothing in this document fetters the Authority's discretion in considering whether to consent to a disposal of DN assets in November 2004.

[24] Note that, as stated more fully in paragraph 1.4, the Authority will not be fettered by any statements made in this document.