National Grid Transco – Potential sale of gas distribution network businesses

Final Impact Assessment

November 2004 255/04a

Summary

This document sets out Ofgem's Final Impact Assessment (IA) on the possible sale by National Grid Transco plc (NGT) of one or more of its gas distribution networks (DNs). Together with responses to this consultation (and other information which may be considered to be relevant), it is intended to assist the Gas and Electricity Markets Authority (the Authority) in deciding whether to provide its consent to Transco plc (Transco) to allow it to dispose of one or more of its gas DNs. Under the terms of its licence, Transco would not be permitted to proceed with the transaction without this consent from the Authority.

In making its decision on DN sales, the Authority will have regard to its statutory objective and duties. The Authority will provide its consent if it believes that the interests of existing and future customers will be protected. Key to the Authority's decision will therefore be an assessment of the benefits that might accrue to customers were the proposed transaction to proceed compared to the costs that might be incurred by customers. This document describes Ofgem's assessment of the potential benefits and the potential costs, and sets out Ofgem's base case estimate that net benefits[1] to customers could potentially be in the order of £225 million in present value terms were the proposed sale of DNs to proceed.

This Final IA is the culmination of almost 18 months of consultation by Ofgem that was initiated in May 2003 when NGT announced that it would consider the sale of one or more DNs if it were to maximise shareholder value. This consultation process has included two preliminary Regulatory Impact Assessments (RIAs) on the likely overall costs and benefits, four RIAs on the proposed regulatory, commercial and operational framework, and an extensive programme of discussion and consultation with the gas industry, customers and other interested parties via workgroups.

In issuing this Final IA and describing the proposed regulatory, commercial and operational framework (and the associated estimates of potential costs and benefits for customers), it is important to make clear that there can be no expectation on the part of NGT, Transco, potential DN purchasers, shippers, suppliers, independent gas transporters (IGTs) 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,

[1] The net benefits were calculated in net present value terms over the period between 2008/09 and 2022/23.

commercial and operational framework which may be implemented if the Authority consents to the proposed transaction.

The information and the details of the proposed regulatory, commercial and operational framework (and the associated estimates of potential costs and benefits for customers) contained in this document should not be treated as 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 statement made in this document. Furthermore, the estimates of potential costs and benefits presented in this document represent Ofgem's views as to their likely outturn. Actual costs and benefits might be higher or lower than those envisaged in this document.

Changes to the industry and commercial framework

The proposed sale of DNs by NGT would fundamentally change the structure of the gas industry in Great Britain were it to proceed. NGT would continue to own the national transmission system (NTS) that transports gas at high pressure from the entry terminals to the DNs (and to 64 very large consumers which are directly connected to the NTS). It would, however, no longer own up to four of the eight DNs that transport gas at lower pressures from the NTS for final consumption at some 21 million locations around Great Britain.

Therefore, were the proposed sale to proceed, parties using the GB gas network would need to interact with multiple network owners rather than only NGT as is largely the case at the moment. As such, significant changes would be required to the way in which the GB gas market operates. The regulatory, commercial and operational framework would need to be adjusted to allow separate network owners to interact with each other. For these reasons, it has been necessary to review the regulatory, commercial and operational framework to assess how the industry would continue to operate in an environment of multiple owners of gas distribution networks.

Therefore, as well as providing an analysis of the potential costs and benefits that could accrue to customers, this document also sets out the proposed regulatory, commercial and operational framework which has been developed through an extensive consultation process with the gas industry, customers and other interested parties, that would need to be implemented were the proposed sale of DNs to proceed.

The document sets out two options for the regulatory, commercial and operational framework:

- a **no sale** option which describes the current arrangements that would continue to apply were the proposed transaction not to proceed; and
- a **sale** option that describes the arrangements that would be required to be put into place were the proposed transaction to proceed.

The major changes to the regulatory, commercial and operational framework under the sale option are in three key areas:

- the roles and responsibilities of network owners;
- the offtake and interruptions arrangements under the new regime; and
- the arrangements for a central service provider for a range of DN and NTS services (the "agency" arrangements).

Each of these areas has been the subject of an RIA and we briefly describe each in turn.

Roles and responsibilities of network owners

Under the sale option, the roles and responsibilities of network owners would, as far as is possible, reflect the current arrangements that are internalised within NGT. Therefore, independent DNs (IDNs) and DNs retained by NGT (retained DNs, or "RDNs") would have responsibility for:

- investing in their distribution networks and the planning of that investment;
- maintaining their networks and the planning of that maintenance; and
- operating their networks on a day-to-day to basis. This would include managing the impact of congestion that might arise on their networks in certain demand conditions. One tool to manage such congestion is the interruption of gas flow to customers connected to their networks (in accordance with the terms of interruptible contracts). Therefore, DNs would be responsible for arranging for sites on their networks to be interrupted at certain times.

NGT, as owner of the NTS, would retain its responsibility for maintenance, investment and operation of the NTS. Also, as operator of the NTS, it would be responsible for

ensuring that the inputs and offtakes of gas across the entirety of the GB network are, in aggregate, approximately in balance and therefore that the pressure limits of the NTS are within predefined safety limits. It would do this by buying and selling gas through the on-the-day commodity market (OCM), as it does at present. This, together with the continuation of the national arrangements for cash out of imbalances between inputs onto and offtakes from the overall GB network, would ensure that the commercial wholesale gas market arrangements would continue on a national basis.

Offtake and interruption arrangements

The divestment of one or more DNs by NGT means that there will be an external interface between the newly separated DNs and NGT that previously was internalised within NGT. Therefore, a key part of the consultation process has been to develop a set of regulatory, commercial and operational arrangements to manage the interface between the various networks. The key features of the proposed new arrangements are:

- equality of treatment. DNs and the 64 large sites connected directly to the NTS will purchase the right to offtake gas from the NTS at their point of connection to the NTS network on the same basis (with NTS direct connect customers obtaining their rights to offtake from the NTS through shippers). This is expected to ensure that users of the NTS network, namely IDNs, RDNs and other large users all have equal access to the NTS network;

- unconstrained in the long run. The volume of this "NTS exit capacity" available for purchase by users of the NTS network will be unlimited over the long run. That is, so long as users are willing to pay for transmission capacity in the timescales that allow the NTS owner time to invest to satisfy that demand, then users of the NTS will be guaranteed access to the NTS at that point (or receive compensation from NGT should that capacity not be available). Further, the price of that capacity is proposed to be at a regulated price. This is expected to ensure that the NTS receives accurate and financially backed investment signals and that all parties have adequate and equal opportunities to gain access to the network; and

- constrained in the short run. The volume of NTS exit capacity available to users of the NTS network in the short run will, however, be limited to that which is available given the network's capabilities. Therefore, where NTS exit capacity is scarce, users of the NTS network without

capacity rights will need to compete to gain access to the NTS network. This is expected to ensure that capacity is allocated to users of the NTS network in a non-unduly discriminatory fashion.

As well as NTS exit capacity, Ofgem has also examined how the flexibility inherent within the NTS will be allocated to users of the NTS network. This is important as, to varying extents, the flexibility of the NTS can be used as a substitute to costly investment by a DN. Therefore, given its potential value to users, it is crucial to try to ensure that this flexibility is allocated without undue discrimination. The proposed arrangements outlined in this document seek to establish a level playing field for access to the NTS's offtake flexibility for IDNs, RDNs and other NTS users on a commercial basis.

A further feature that has been much discussed in the consultation process are the arrangements for sites that are willing to have their flow of gas interrupted by the relevant network operator in return for reduced charges for use of that network. The final proposals under the sale option are that:

- sites connected to the NTS may opt to purchase interruptible capacity from NGT prior to the day of use. This would provide NGT with the option, but not the obligation, to provide NTS exit capacity at that offtake point. Also NGT may contract to buy back capacity from users holding exit capacity if it believes it is economic to do so; and

- for sites connected to the DNs, the interruptible arrangements would not change from the current arrangements were DN sales to proceed. i.e. for the sale and no sale option the interruption arrangements at the DN level are effectively identical.

Agency arrangements

Shippers, who are the entities that enter into arrangements with NGT for the introduction, conveyance and offtake of gas across NGT's gas network, currently interface solely with NGT. Therefore, shippers interface with a single Supply Point Administration (SPA) system (that manages the customer transfer process under retail competition), a single settlement and operational system, receive a single set of transportation invoices in relation to their use of the NTS and DN networks, and have a single set of credit arrangements with NGT.

Under the sale option, these activities would become the responsibility of each DN. Therefore, there exists the possibility that the proposed sale of the DNs would increase

the number of interfaces faced by shippers. In turn, this would increase shippers' costs that would, ultimately, feed through to customers.

To mitigate this risk, the sale option envisages the creation of a central service provider (the "agency") that would act as a single interface between shippers and DNs. The agency would discharge collectively a number of DN (and NTS) activities and act as a single interface between shippers and DNs. These activities include the management of the SPA system, the production of transportation invoices for shippers for their use of the NTS and DN networks and the operation of the central nomination and settlement systems.

Two important features of the proposed agency arrangements are:

- to prevent inappropriate fragmentation of the arrangements at some future point, DNs would not be able to "opt out" of the agency arrangements (unless the Authority were to approve otherwise); and

- that the agency will be owned collectively by NTS and DN Gas Transporters (GTs). The responsibility for delivery of these activities will remain with the DNs. The DNs will discharge these responsibilities through the agency.

A further feature of the sale option is the proposed creation of a governance entity. Currently, NGT is responsible for changes to the Network Code, which is the multilateral agreement between shippers and NGT that codifies the gas market and transportation arrangements. The sale option envisages that an independent governance entity will be created, that will resourced by the NTS and the DNs, and it will be responsible for administering modifications to the Uniform Network Code (UNC), which is the proposed code that will govern the new commercial regime. This is intended to ensure that modifications to the Network Code are conducted on an impartial basis. This proposed governance entity will be created as an un-incorporated joint venture (hence will not be designed as a separate legal entity).

Competitive impact

If the proposed sale of DNs were to proceed, competition could potentially be affected in three areas:

- the gas distribution sector. As already noted, the sale of DNs will create a number of independently owned gas distribution entities that should

provide Ofgem with information regarding the appropriate level of costs that an efficiently run regulated gas distribution business should incur. In turn, it is expected that this information will allow Ofgem to use comparative analysis to compare the relative efficiency of the DNs. Therefore, whilst DN sales will not generate direct competition, the creation of gas DN comparators could generate incentives for each gas distribution company to out-perform relative to its peers;

- the wholesale gas market. The fragmentation of the ownership of the GB gas network could potentially undermine wholesale gas market competition. This might occur, for instance, if each shipper was required to balance its inputs and offtakes for each separately owned network. Therefore, central to the establishment of the regulatory, commercial and operational framework described above is the retention of a single unified wholesale gas market in which NGT, as owner of the NTS, acts as the residual balancer for the gas market. In turn this means that cash out prices will continue to be set on a national basis; and

- the retail market. There is a risk that retail competition could be undermined by the proposed sale of the DNs. This might occur, for instance, were a gas transporter to develop separate change of supplier processes and protocols that would increase the costs of a customer changing supplier. This risk is proposed to be mitigated by the creation of the agency which will act as a single centre for all of the SPA arrangements.

Risks and unintended consequences

Some of the envisaged risks and potential unintended consequences should the Authority provide its consent to allow NGT to dispose of its DNs and the transaction proceeds are detailed in this document. Ofgem considers that there are two principal risks for the Authority to consider:

- that the potential customer benefits estimated by Ofgem are not realised in full; and

- that the costs that could potentially be incurred by customers if the sale of DNs proceeds are higher than estimated.

These risks are reflected in the costs benefit analysis. For instance, Ofgem has adopted conservative assumptions and has modelled a range of scenarios.

A further risk is that the proposed sale of DNs is a commercial transaction led by NGT, and as such, consent by the Authority does not guarantee that the transaction will be completed. However, it is for NGT, and not Ofgem or the Authority, to mitigate such risks.

Potential benefits to customers as a result of DN sales

The sale of DNs would create a number of similar, but independently owned DN businesses. Relative to the current situation in which NGT owns all of the networks, this should allow Ofgem to compare the performance of independently owned distribution networks. In turn, this would give Ofgem the opportunity to set the revenues that distribution networks are allowed to recover from customers through charges on the basis of the costs of the most efficient network, should it believe this was the most appropriate approach.

Hence, it is the presence of comparator information of similar network businesses that is expected to allow regulation to mimic, to some extent, the effects of competition through the regulatory process. Therefore, with the sale of DNs, charges to customers for use of the distribution networks are likely to be lower than would be the case if independent comparators did not exist. Indeed, there is significant evidence from other regulated network industries and a body of academic literature to support this proposition.

Ofgem has estimated the level of potential benefits that might accrue to customers were DN sales to proceed. This assumes that the sale proceeds on the basis of NGT's recently announced plans of selling four networks to three purchasers. As well as a base case, it also presents a high case and a low case for this estimate. Ofgem's estimate of the potential benefits is provided below.

Estimated present value (PV) of gross potential benefits to customers of DN Sales (excluding costs)

£million (2004 prices)	High case	**Base case**	Low case
Benefits estimates	585	**325**	200

Note: PVs derived rounded to nearest £5m

Approximately 95 percent of the estimate of the potential benefits to customers that could arise from the proposed sale of DNs presented in the table above relates to Ofgem's assessment of the benefits of comparative regulation. The remaining 5 percent relates to additional potential benefits that could accrue to customers as a result of necessary changes to the commercial framework.

Potential costs to customers as a result of DN Sales

As already noted, the sale of the DNs by NGT would represent a fundamental restructuring of the gas industry. The biggest change would be that shippers would have to interface with a number of gas transporters rather than exclusively with NGT. The proposals for the agency and governance arrangements have been developed so that, as far as is appropriate, a single interface between shippers and transporters would be maintained.

However, under the proposed arrangements, a number of activities would not be undertaken by the agency which would mean that shippers would still need to interface with multiple GTs for a range of activities. Furthermore, some of the changes that are necessary because of changes to the offtake arrangements would also impact on systems and protocols of shippers and therefore impose cost on these shippers. Given that all shippers and suppliers would incur these costs as a result of DN sales, Ofgem considers that for DN sales to proceed, costs would need to be incurred by customers.

Ofgem has consulted extensively with shippers and suppliers in order to understand the level of costs that are likely to arise as a result of changes to systems and protocols that would be necessary were the proposed sale of DNs to proceed. Ofgem has analysed the data received from shippers and has estimated the level of potential costs to be as set out in the table below.

Estimated PV of gross potential costs to customers of DN Sales (excluding benefits)

£million (2004 prices)	High case	**Base case**	Low case
Cost estimates	117.8	**101.9**	82.2

As well as shippers' costs, this includes an estimate of additional regulatory costs that would arise because of DN sales plus those likely to be incurred by the Health and Safety Executive (HSE) in examining the safety issues associated with DN sales.

Assessment of overall benefits and costs

Ofgem has estimated that the proposed sale of DNs is expected to create potential net benefits to customers of approximately £225m (in net present value terms) on the assumption that four networks are sold to three separate purchasers. This represents Ofgem's base case and has been modelled using conservative assumptions. However, to reflect the intrinsic uncertainty of modelling Ofgem has also modelled a high case and a low case.

Estimated net present value (NPV) of the potential net benefits to customers

£million (2004 prices)	High case	**Base case**	Low case
Net benefits to customers	500	**225**	80

Note: Rounded to the nearest £5m.

These cases reflect NGT's intended sales scenario. Were, for instance, only one new comparator to emerge from the sales process, then the range of estimated potential net benefits to customers would be from -£16m to £210m (if this scenario were to arise, NGT has agreed to a customer "safety net" to protect the interests of customers.)

Table of contents

The Appendices to this Final IA are contained in a separate document published concurrently with this Final IA.

1. Introduction

Purpose of this document

1.1. The purpose of this document is to consult upon Ofgem's Final Impact Assessment (IA) on the possible sale by National Grid Transco plc (NGT)[2] of one or more of its local gas distribution networks (DNs).

1.2. This Final IA builds on two earlier Regulatory Impact Assessments (RIAs) published in July[3] and December[4] of 2003. These RIAs assessed, at a high level, the potential benefits that might accrue to customers were the Gas and Electricity Market Authority (the Authority) to give its consent to the proposed disposal of DNs, and NGT were to proceed with the transaction, as well as the likely level of potential costs that could be borne by customers as a result of changes which would be necessary to the industry regulatory, commercial and operational framework. Based on these high level RIAs, and the responses to them, the Authority considered that the disposal of DN businesses by NGT to new owners would allow Ofgem to undertake comparative regulation that had the potential to yield material benefits for customers. It also noted that these potential benefits might significantly outweigh the potential costs that customers would be likely to incur. These views led the Authority to conclude that a detailed examination by Ofgem of the costs and benefits case was warranted.

1.3. This Final IA is the culmination of this detailed examination. Together with responses to this consultation (and other information which may be considered to be relevant), it is intended to assist the Authority in its decision, scheduled for January 2005, of whether or not it should consent to the proposed disposal of DNs by NGT. Following this decision, Ofgem will publish a decision notice, providing details of the Authority's decision.

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[2] Transco plc is a wholly owned subsidiary of National Grid Transco plc.

[3] *National Grid Transco – Potential sale of network distribution businesses 77/03. A consultation document*. Ofgem, July 2003.

[4] *National Grid Transco – Potential sale of network distribution businesses 170/03. Next Steps*. Ofgem, December 2003.

1.4. An important aspect of assessing the benefits and costs case has been the development of an understanding of the regulatory, commercial and operational framework that would underpin the industry were a sale to proceed. To this end, Ofgem, NGT and other interested parties, including gas shippers/suppliers and customer groups, have been involved in a consultation and development process, which has included:

- the establishment of a number of industry workgroups that have made a major contribution to the development of proposals for the reforms; and
- the publication of a series of RIAs that considered specific aspects of the regulatory, commercial and operational arrangements that could be adopted if the proposed sales were to proceed.

1.5. This process, which is described in more detail in Chapter 2, has led to the development of a set of proposed reforms to the regulatory, commercial and operational framework that would be necessary to support a divested industry structure. Therefore, this Final IA sets out:

- a proposed alternative regulatory, commercial and operational framework to the status quo, which would be necessary were the sale of DNs to proceed. This framework builds upon each of the decisions set out in the previous RIAs; and
- Ofgem's analysis of the estimated potential costs and benefits that customers are likely to accrue were the proposed sale of the DNs to proceed.

1.6. In issuing this Final IA and describing the proposed regulatory, commercial and operational framework (and the associated estimates of potential costs and benefits for customers), it is important to make clear that there can be no expectation on the part of NGT, Transco, potential DN purchasers, shippers, suppliers, independent gas transporters (IGTs) 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, commercial and operational framework which may be implemented if the Authority consents to the proposed transaction.

1.7. The information and the details of the proposed regulatory, commercial and operational framework contained in this document should not be treated as binding on the Authority. Furthermore, the estimates of potential costs and benefits presented in this document represent Ofgem's views as to their likely outturn. Actual costs and benefits might be higher or lower than those envisaged in this document.

1.8. 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 statement made in this document.

Document outline

1.9. The document is structured as follows:

- Chapter 2 provides a background to the process that has led to the publication of this document;
- Chapter 3 sets out some of the key statutory objectives and duties that the Authority must consider when it decides whether or not to consent to the proposed disposal of one or more DNs;
- Chapter 4 sets out the key issues associated with the potential sale of DNs;
- Chapter 5 describes the alternative options in the event of DN sales and how this relates to the current status quo;
- Chapter 6 describes the potential competitive, environmental and social impact of the proposed arrangements in the event of DN sales;
- Chapter 7 describes envisaged risks and unintended consequences that may arise in the event of DN sales;
- Chapter 8 sets out an analysis of estimated potential benefits to customers were NGT to sell one or more of its DN businesses;
- Chapter 9 sets out an analysis of estimated potential costs to customers were NGT to sell one or more of its DN businesses;

- Chapter 10 presents some conclusions on the results of the cost benefit analysis; and

- Chapter 11 describes the way forward.

1.10. In addition, there are a number of appendices (which have been published as a separate document in conjunction with this Final IA), that provide further detail in relation to the cost benefit analysis.

- Appendix 1 includes an overview of previous studies of the benefits case that have been undertaken;

- Appendix 2 contains a list of the position papers and open letters that Ofgem has issued in relation to the DN sales process;

- Appendix 3 provides a list of the documents issued as part of the DN sales consultation process;

- Appendix 4 incorporates a list of the respondents to consultation documents;

- Appendix 5 provides a summary of the impact of the new arrangements on a cross-section of industry participants;

- Appendix 6 provides a review of the evidence of the estimated potential benefits of DN sales from studies that have previously been completed;

- Appendix 7 contains details of the way in which the calculation of the estimated potential benefits under Methodology 1 was completed;

- Appendix 8 provides an account of the way in which the calculation of the estimated potential benefits under Methodology 2 was carried out;

- Appendix 9 incorporates a calculation of estimated potential consequential benefits associated with the sale scenario which would arise;

- Appendix 10 includes an overview of the implication for merger policy that a potential DN sale would have;

- Appendix 11 provides an overview of the background to the costs chapter;
- Appendix 12 contains a copy of the shipper cost pro-forma that was distributed;
- Appendix 13 incorporates a copy of the Guidance document issued alongside the shipper cost pro-forma;
- Appendix 14 contains a copy of the NGT work plan for DN sales;
- Appendix 15 outlines issues relating to the potential legal separation of NGT's NTS and RDN businesses; and
- Appendix 16 presents a more detailed explanation of the proposals relating to NTS offtake flexibility (introduced in Chapter 5).

Views invited

1.11. Ofgem welcomes views on this IA, to be received by close of business on 16 December 2004. In particular, Ofgem would welcome respondents' views on the costs and benefits analysis contained within this document. Ofgem also asks respondents to include in their response to this document a summary of their views, explicitly stating whether or not they are in favour of the "sale" or "no sale" options presented for assessment. Respondents are also requested to provide views in a timely manner.

1.12. Once all responses to this IA have been received, Ofgem will compile summaries of each response, for the purposes of informing the Authority's final decision. Note that Ofgem proposes to check with each individual respondent that the summaries prepared for each response are a true and accurate reflection of the views received.

1.13. Responses should be addressed to:

Sonia Brown

Director, Transportation

Office of Gas and Electricity Markets

9 Millbank

London SW1P 3GE

(Telephone: 020 7901 7412)

1.14. Electronic responses may be sent to tracey.hunt@ofgem.gov.uk

1.15. Respondents are free to mark their reply as confidential, although we would prefer, as far as possible, open responses that can be placed in the Ofgem library. Ofgem would also prefer that non-confidential responses are sent electronically so that they can be placed on the Ofgem website.

1.16. If you wish to discuss any aspect of this paper, Jessica Hunt (telephone 020 7901 7431), Matteo Guarnerio (telephone 020 7901 7493) or Hannah Cook (telephone 020 7901 7444) would be pleased to help.

Related documents and workgroups

1.17. In issuing this Final IA, Ofgem considers it important to note that a number of documents relating to the DN sales process are still being developed, and that a number of DN sales related workgroups will continue to progress the detail of the proposed arrangements in the coming weeks (consistent with the principles proposed in this document). These include (but are not limited to):

- **Development and Implementation Steering Group (DISG)**. This open forum working group chaired by Ofgem will continue to meet over the coming weeks, developing numerous detailed elements of the proposed commercial, operational and regulatory framework;

- **Exit regime development forum**. In parallel to the DISG, NGT are chairing a series of open industry meetings in which the detail of the offtake arrangements will continue to be developed (following the

proposed "sale option" principles contained in this document). The output of this forum will be detailed business rules, that will be implemented in the event that DN sales proceeds;

- **Uniform Network Code (UNC) development forum**. NGT are also leading a forum to develop detail for the proposed new UNC, following a process that is specifically designed to mirror the steps in the current Network Code modification process (following a process of development, industry debate, consultation and final decision);

- **Licensing development**. Ofgem are currently preparing a consultation on licence changes that would be required in the event that the Authority consents to the disposal of one or more of NGT's DNs;

- **Consultation on exemption from the Gas Act**. As described in more detail in Chapter 2, the proposed offtake arrangements that are included in the "sale" option will require an exemption from section 5 (1) (c) of the Gas Act 1986. Earlier this month, the DTI and Ofgem issued a joint letter setting out the current position with regard to the request for an exemption. Following consultation within Government on this matter, and once policy clearance has been achieved, the Secretary of State will publish a draft proposed exemption order with an associated consultation document and partial regulatory impact assessment;

- **Security of supply assessment**. NGT are preparing a security of supply assessment, to be published and presented at a forthcoming DISG meeting. This assessment will cover all aspects (both short and long term) of security of supply on the gas network. It will also contain an assessment on the electricity market where appropriate; and

- **Consultation on incentives**. Ofgem will be consulting on the most appropriate form and content of incentive mechanisms for both the NTS and DNs, in the event that the Authority consents to the disposal of one or more of NGT's DNs.

2. Background

2.1. In May 2003, NGT announced that it would consider the sale of one or more of its DNs if such a transaction would maximise shareholder value. Any such sale would represent a fundamental change to the structure of the gas industry and would require the consent of the Authority under Amended Standard Condition 29[5] of Transco plc's existing Gas Transporter's (GT) licence, as well as consent from the Secretary of State for Trade and Industry. In addition, safety cases under the Gas Safety (Management) Regulations 1996 (GS(M)R) will need to be accepted by the Health and Safety Executive (HSE).

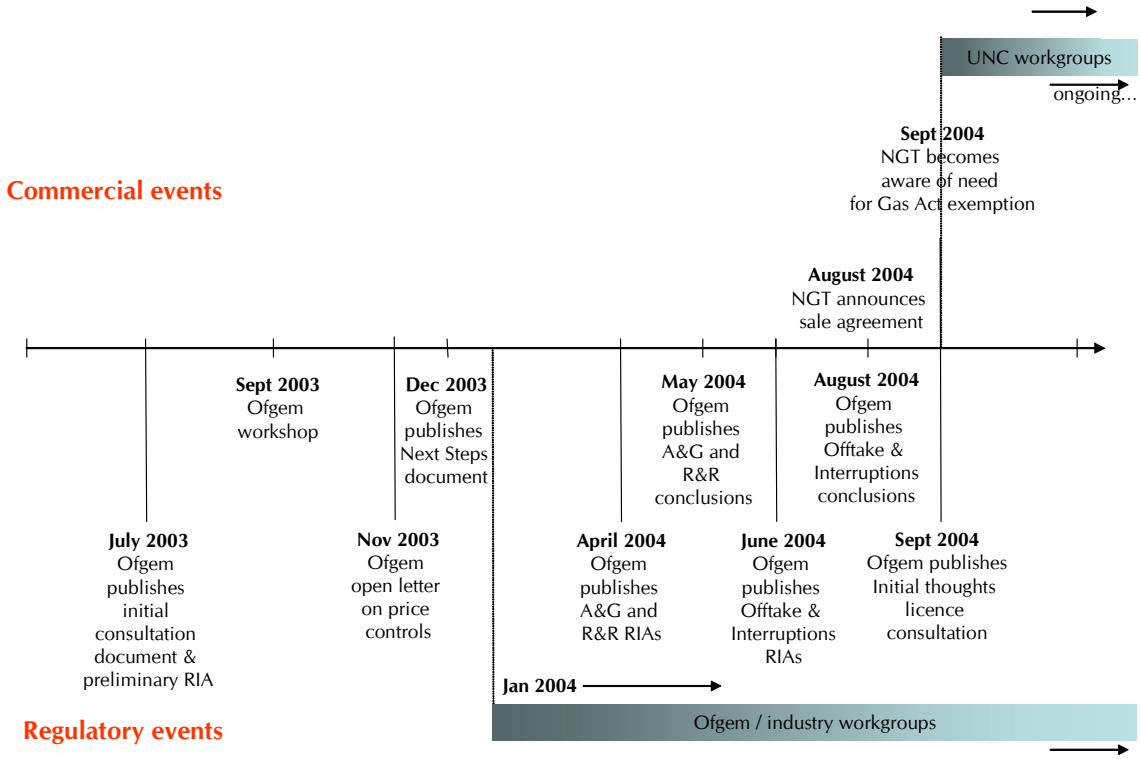
2.2. This chapter describes the process that Ofgem has undertaken to investigate and develop the proposed regulatory, commercial and operational arrangements that could potentially be implemented in connection with the sale of one or more of NGT's DNs and to assess the potential costs and benefits to existing and future customers.

2.3. Ofgem notes that the potential sale of the DNs is a commercial transaction led by NGT, and as such, consent by the Authority does not guarantee that the transaction will complete. However, it is for NGT, and not Ofgem or the Authority, to mitigate such risks.

2.4. An overview of the commercial and regulatory events that have taken place with respect to a potential DN sale are illustrated in Figure 2.1:

[5] Note that throughout this document, references are made to conditions within the current licence of Transco plc. A separate workstream, as part of the proposed DN sales process, is considering the changes which would be necessary to this licence. Whilst this will involve restructuring the licence, and hence renumbering the conditions within the licence, the key licence obligations referred to within Transco plc's existing licence by this document will remain, albeit under a potentially different number.

Figure 2.1: DN sales timeline



2.5. This chapter describes in more detail the processes outlined in Figure 2.1 and therefore provides an overview of each of the processes in turn including:

- the initial stages of the project;
- the December 2003 Next Steps document;
- the workgroup processes that have formed part of the industry consultation from the beginning of 2004;
- the four RIAs on potential post industry framework published in the first half of 2004;
- the open letters and position papers published by Ofgem since the beginning of the project;
- the conditional agreements between NGT and purchasers signed in August 2004; and
- recent developments.

Initial stages of project

2.6. As illustrated by Figure 2.1, in July 2003 Ofgem published a consultation document outlining the proposals put forward by NGT in relation to the potential sale of one or more of its DNs[6]. This document set out an initial review of the potential impact of a sale of DNs in terms of regulatory, commercial and operational modifications required. It also proposed options to support the operation of the industry in a post-DN sales environment.

2.7. The July 2003 consultation document identified a number of 'gateway issues' that would need to be resolved for the Authority to consent to any disposal. Ofgem's primary gateway requirement was that changes to the regulatory architecture must be completed prior to any consent being given to a disposal of DN assets. Ofgem identified three further gateway issues:

- the development of arrangements with respect to exit capacity;
- the development of arrangements with respect to gas balancing; and
- the development of arrangements with respect to supply point administration.

2.8. Chapter 5 sets out how each issue has been addressed as part of the development of a high level industry framework to support DN sales.

2.9. Ofgem also included a preliminary RIA within the July 2003 consultation document. In addition to the anticipated costs, this also examined the anticipated benefits that could arise from the sale of DNs on account of the fact that the separate ownership of the DNs would allow Ofgem to undertake comparative regulation of the DNs. Compared to the current situation, in which NGT owns all of the DNs, the paper estimated the potential for benefits of between £150m and £330m to be delivered to customers through comparative price regulation of separately owned DNs. Compared to its initial estimate of costs to shippers in the order of tens of millions of pounds, Ofgem reached the initial view that the potential estimated benefits to customers resulting from the

sale of DNs could outweigh the potential estimated costs to customers of implementation. In turn, this justified development of more detailed proposals.

2.10. As Figure 2.1 illustrates, in the second half of 2003 Ofgem engaged in a process of consultation with the industry and other interested parties in relation to DN sales. To facilitate this, in September 2003, Ofgem organised an industry workshop to inform interested parties of the anticipated impact that a potential sale could have and, as a follow-up activity, undertook a series of meetings with industry participants and other interested parties to understand their views.

2.11. During this process a number of industry participants and other interested parties informed Ofgem that, prior to giving an indication of their support for the DN sales process, they would require more detail regarding the arrangements proposed to be implemented and the benefits that may potentially be achieved by consumers. They also expressed concern regarding the implications of market fragmentation, the potential for an increase in the complexity of processes and achievement within the proposed timetable.

December Next Steps document

2.12. In December 2003, following consultation with the industry and other industry parties, Ofgem published a "Next Steps" document[7] that detailed the approach Ofgem intended to adopt in taking the proposed DN sales project forward. The publication of this document is highlighted in Figure 2.1. This document set out:

- an overview of the key issues identified in relation to the proposed DN sales project;
- a summary of the responses received in relation to the July consultation document;

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[6] *National Grid Transco – Potential sale of network distribution businesses 77/03. A consultation document*. Ofgem, July 2003.
[7] *National Grid Transco – Potential sale of network distribution businesses 170/03. Next Steps*. Ofgem, December 2003.

- an update of Ofgem's views regarding the potential sale of one or more of NGT's DNs, including an update on Ofgem's views in relation to the resolution of gateway issues; and

- details of the industry consultation process in relation to the potential sale of the DNs.

2.13. In addition, the Next Steps document also provided analysis regarding a number of studies considering the estimated potential costs and benefits to customers of a potential DN sale. This included:

- a study by Ilex that was commissioned by Ofgem. This concluded that the sale of four DNs by NGT to four independent entities could potentially yield net customer benefits of between £223m and £318m. If only one DN were sold, Ilex estimated that the potential net benefit to customers would, however, be significantly reduced – to between £-9m to £117m (i.e. that there was the possibility for costs to exceed benefits);

- a study by NGT. This study estimated that the sale of between two and four DNs would generate net benefits for gas customers between £365m and £558m; and

- a study by OXERA (commissioned by British Gas Trading Ltd), that identified potential gross benefits (i.e. not including costs) arising from the comparative regulation of a number of independently owned DNs of between £7m and £218m.

2.14. These studies are described in more detail in Chapter 8. Further analysis is provided in Appendix 1.

2.15. Based on this analysis, the Authority concluded that it was appropriate for Ofgem to continue its assessment of the likely costs and benefits of DN sales and to develop a possible framework for a divested industry structure. This included the initiation of consultation processes to allow the development of the changes to the regulatory, commercial and operational framework that would be required in the event that the sale of DNs was to proceed and, therefore, necessary to protect the interests of existing and future customers.

2.16. In this document, Ofgem also stated, for the first time, its intention that the gas transmission and distribution price controls would not be re-opened as the result of DN sales.

Workgroup processes

2.17. In January 2004 Ofgem established a number of workgroups as part of the consultation process for DN sales. These included a Development and Implementation Steering Group (DISG), a Commercial Interfaces Workgroup, a Regulatory Architecture Workgroup and an Agency Workgroup.

2.18. These groups, which have been chaired by Ofgem and conducted on a non-binding informal basis without in any way fettering the Authority's discretion, were composed of a diverse representation of interested parties including shippers, customers, potential buyers and NGT. As illustrated in Figure 2.1, the groups commenced work in January 2004 and have made considerable progress in clarifying the way in which a divested industry model could operate.

2.19. In the first half of 2004, these workgroups focused upon the following key issues:

- the allocation of roles and responsibilities between NGT, as owner of the NTS, and each of the DNs (both retained and independent);
- the development of appropriate governance and agency arrangements for shipper (and customer) interfaces, particularly focusing on the supply point administration framework;
- the details of arrangements to offtake gas from the GB network in a divested industry framework; and
- the details of the interruptions arrangements which should accompany this capacity allocation.

2.20. Workgroup discussions have highlighted the importance of these issues to the development of the regulatory, commercial and operational framework. As

such, consistent with the Authority's obligations[8], Ofgem decided that it would be appropriate to develop, for consultation, separate RIAs on these issues.

RIAs on potential post-sales industry framework

2.21. As Figure 2.1 illustrates, between April and June 2004 Ofgem consulted upon a series of RIAs. These RIAs focused upon establishing a more accurate picture of the framework of regulatory, commercial and operational arrangements that would be necessary in the event of a divested industry structure if the proposed sale of DNs were to proceed, rather than considering the merits of the proposed sale of DNs per se. During this period, Ofgem issued the following RIAs:

- Agency and Governance Arrangements RIA, published in April 2004;
- Allocation of Roles and Responsibilities between Transmission and Distribution Networks RIA, published in April 2004;
- Offtake Arrangements RIA, published in June 2004; and
- Interruptions Arrangements RIA, published in June 2004.

2.22. These RIAs provided industry participants and other interested parties with the opportunity to respond with their views. Following consideration of these responses and the issues raised in these responses, conclusions documents detailing Authority indicative decisions with respect to these issues were published. The conclusions regarding the "Agency and Governance" and "Roles and Responsibilities" RIAs were issued in May 2004[9], and for the Interruptions and Offtake arrangements in August 2004[10]. It was made clear that in reaching these conclusions, there could be no expectation on the part of any interested party either as to what the Authority's final decision in relation to the proposed

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[8] These obligations are contained in the Utilities Act, as amended by the Sustainable Energy Act 2002.

[9] *National Grid Transco – Potential sale of gas distribution network businesses, Allocation of roles and responsibilities between transmission and distribution networks,* Ofgem, May 2004, 119/04 and *National Grid Transco – Potential sale of gas network distribution businesses, Agency and governance arrangements*, Ofgem, May 2004 120/04

[10] *National Grid Transco – Potential sale of gas distribution network businesses, Offtake Arrangements, Conclusions document on framework*, Ofgem, August 2004, 199/04 and *National Grid Transco – Potential*

transaction may be, or as to the regulatory, commercial and operational framework which may be implemented if the Authority consents to the proposed transaction.

2.23. The completion of this process has allowed Ofgem, in consultation with interested parties, to develop a proposed high-level industry framework that could be implemented in the event that the sale of one or more of NGT's DNs takes place. This proposed framework is discussed further in Chapter 5.

Open letters and preliminary position papers

2.24. Ofgem has also published a number of (non-binding) open letters and preliminary position papers relating to aspects of the proposed regulatory arrangements. Some of these documents have been published in response to questions raised by potential purchasers, and others have arisen through the workgroup process.

2.25. It was made clear in these letters and papers that there could be no expectation on the part of any interested party either as to what the Authority's final decision in relation to the proposed transaction may be or as to the regulatory, commercial and operational framework which may be implemented if the Authority consents to the proposed transaction.

2.26. In particular, Ofgem has published an open letter regarding its proposed treatment of NGT's current distribution price control which we discuss briefly before detailing the other areas in which Ofgem has published a position.

Open letter on gas distribution price controls

2.27. In November 2003 Ofgem issued an open letter to the industry regarding the proposed timetables for implementation of price control reviews for transmission and distribution networks within both gas and electricity[11]. As part of this letter, Ofgem invited industry views regarding the proposal to extend the period of the current gas distribution price control for a further year.

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sale of gas network distribution businesses, Interruptions Arrangements, Conclusions document on framework, Ofgem, August 2004 198/04

[11] This paper is available on the Monopoly Price Controls page of Ofgem's website.

2.28. The intention of this proposal was to delay implementation of the gas distribution price control to allow Ofgem to consider gas transmission and distribution issues separately and hence, create a more balanced workload in relation to the price control processes. A follow-up industry letter was issued by Ofgem in March 2004 which set out that respondents to the consultation were generally in favour of the proposal. Ofgem therefore intends to pursue this amendment and, as such, assumptions underlying the present price control will be extended or updated in a straightforward way to cover 2007/08.

Other position papers

2.29. During the course of the consultation process, Ofgem has also issued preliminary position papers relating to pensions, mergers, the duration of incentive schemes, Uniform Network Code (UNC) governance arrangements (including the establishment of a Joint Office), the business separation requirements to apply between distribution networks and the application of Ofgem's Asset Risk Management Survey.[12] A comprehensive list of these position papers is included within Appendix 2. These papers set out Ofgem's preliminary views and, as mentioned above, should not be regarded as binding on the Authority.

2.30. In addition, Appendix 3 also provides a full list of all documents issued as part of the DN sales consultation process. Finally, Appendix 4 includes a full list of all those parties who provided formal responses to Ofgem's consultation documents on DN sales.

Conditional agreements between NGT and purchasers

2.31. As illustrated by Figure 2.1, on 31 August 2004 NGT announced that it had reached agreement on the sale of four DNs[13]. Specifically:

- a consortium led by Cheung Kong Infrastructure Holdings Ltd and including United Utilities plc had agreed to purchase the North of England gas distribution network;

[12] These papers are available on the Gas Distribution Network Sales page of Ofgem's website.

- a consortium led by the Macquarie European Infrastructure Fund had agreed to purchase the Wales & West gas distribution network; and

- a consortium comprising Scottish and Southern Energy plc, Borealis Infrastructure Management Inc and Ontario Teachers Pension Plan had agreed to purchase the South of England and Scotland gas distribution networks.

2.32. In its statement, NGT indicated that these transactions were subject to certain regulatory consents and approvals including from the Authority, the Secretary of State of Trade and Industry (Secretary of State) and the Health and Safety Executive (HSE). In addition, the statement highlighted that the proposed transactions were worth £5.8 billion to NGT.

Recent developments

2.33. The release of the Authority's indicative decisions in relation to the offtake arrangements RIA and the interruptions arrangements RIA signalled the completion of work to develop a high level proposed framework which could be implemented in the event that DN sales proceeds. Since then, NGT, Ofgem and other interested parties have started to address the detail of the proposed reforms. Among other things, this phase of the work programme has involved:

- the release of a document which sets out Ofgem's initial thoughts on the restructuring of Transco plc's existing GT licence and five additional GT licences which have been granted to Transco as part of the proposed sale of its DNs; and

- the establishment of a Uniform Network Code Workgroup (chaired by NGT), which is considering potential changes to Transco's Network Code.

[13] National Grid Transco statement, *Sale of four gas distribution networks and proposed £2 billion one off return of capital to shareholders,* 31 August 2004.

2.34. This work is ongoing. The proposed way forward for the DN sales work programme, and the implications of a negative Authority decision in January, are described in Chapter 11.

2.35. Furthermore, in September 2004, NGT became aware that all of the options for the proposed offtake arrangements considered, with the exception of a shipper booking model, would require an exemption from section 5 (1) (c) of the Gas Act 1986, as illustrated in Figure 2.1.

2.36. The Gas Act requires gas transporters and gas shippers to have, respectively, a gas transporter and a gas shipper licence. However, the Act also prohibits any one company from having both types of licence. The exemption, if granted, would allow the NTS and the DNs to enter into arrangements with each other for gas to be introduced into or taken out of their respective pipeline systems without requiring a shipper licence.

2.37. The Secretary of State is currently minded to grant this exemption[14]. Earlier this month, the DTI and Ofgem issued a joint letter setting out the current position with regard to the request for an exemption. Following consultation within Government on this matter, and once policy clearance has been achieved, the Secretary of State will publish an exemption order with an associated consultation document and partial regulatory impact assessment.

Summary

2.38. This Impact Assessment builds on the extensive consultation process that Ofgem has conducted over the previous 18 months. The process undertaken so far began with a consultation document published in July 2003, and has included:

- publication of the December 2003 Next Steps document;
- various workgroup processes that have formed part of the industry consultation from the beginning of 2004;

[14] Joint Ofgem and DTI letter. Sale of NGT's local gas distribution networks (DNs): Issue of an exemption from a shipper's licence.

- publication of the four RIAs on potential post industry framework (in the first half of 2004);
- publication of the September 2004 "initial thoughts" document on the restructuring of Transco plc's Gas Transporter Licences;
- publication by Ofgem of a variety of open letters and position papers; and
- bilateral meetings with interested parties.

3. Objectives

3.1. This chapter provides an outline of some of the key statutory duties and objectives that guide Ofgem and the Authority, and describes some of the key factors that the Authority will take into account when reaching its decision on whether to consent to NGT's proposed disposal. This chapter is divided into four sections in which we:

- outline the consents required by NGT to allow it to proceed with its proposed transaction;
- consider some of the key factors that the Authority will need to pay due regard to in reaching its decision on whether to consent to NGT's proposed disposal of its gas DNs, including the Authority's statutory duties and the statutory and licence obligations of each GT;
- explain who is likely to be affected by NGT's proposed sale of its gas DNs, should the necessary consents be granted, and the sales proceed as NGT has planned; and
- provide a brief summary to this chapter.

Consents required (including DTI and HSE)

3.2. NGT's proposed sale of its DNs would represent a fundamental change to the structure of the gas industry and would require the consent of:

- the Authority; and
- the Secretary of State.

3.3. In addition, safety cases under the Gas Safety (Management) Regulations 1996 (GS(M)R) will need to be accepted by the HSE, as discussed below.

3.4. We briefly describe each in turn below.

Authority consent

3.5. In order to dispose of any gas transportation assets, including a gas DN, NGT requires the consent of the Authority under Amended Standard Condition 29 of Transco plc's existing GT licence. In determining whether to grant any such consent, the key factors which the Authority will have regard to are:

- its statutory objectives and duties as set out in the Gas Act 1986 and its public law duties; and
- the statutory and licence obligations of GTs.

3.6. It is the grant of this consent that the Authority will decide upon in January 2005. Its decision will be based upon, amongst other things, the analysis presented in this Final IA and respondents' views on this document.

3.7. Even if the Authority chooses to consent to disposal of DN assets in January 2005, this consent may remain contingent on specified conditions being met. Ofgem's recommendation of the conditions to consent, should the Authority decide to consent to the disposal of DN assets, is discussed in Chapter 11, which describes the current way forward.

3.8. Furthermore, the proposed transaction will require the consent of the Authority to the transfer of licences pursuant to section 8AA of the Gas Act.

Secretary of State consent

3.9. The Secretary of State is also required to consent to NGT's proposed disposal of its gas DNs under Amended Standard Condition 29 of Transco plc's existing GT licence[15]. It is currently envisaged that this consent will also be considered in January 2005. As with the Authority, the Secretary of State may choose to impose conditions on its consent, if granted.

[15] The consent of the Secretary of State will also be required under Amended Standard Condition 29 to the disposal of any independent systems.

3.10. Furthermore, consent of the Secretary of State will be required to the transfer of licences which will be necessitated by DN sales under the section 8AA process, as stated in Special Condition 25A of Transco plc's existing GT licence[16].

HSE consent

3.11. The HSE will also be required to accept the gas safety cases of each GT before DN sales can proceed. Section 3 of the Gas Safety (Management) Regulations 1996 states that "no person shall convey gas in a network unless... he has prepared a safety case...and that safety case has been accepted by the Executive". HSE is already assessing proposed changes to safety, and will consider the final changes to safety cases upon transfer of GT licences from Transco to wholly owned Transco subsidiary companies, expected to take place in April 2005 under the current commercial timetable.

Authority objectives regarding consent

3.12. This section describes the Authority's principal objective, outlines its other Gas Act obligations, and describes the statutory and licence obligations of the GTs.

The Authority's principal objective

3.13. In carrying out its functions, the Authority must have regard to its principal objective, as set out in Section 4AA of the Gas Act, "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". Consumers for these purposes includes both existing and future consumers.

3.14. Consistent with its principal objective "to protect the interests of consumers", the Authority will decide whether to consent to the disposal of DN assets by considering (amongst other things) the scenarios under which the expected potential costs to customers could outweigh the expected potential benefits to

[16] Note that Transco will also need the Authority's consent to the transfer of licences necessitated by DN

customers and the actions that may be necessary to protect customers' interests. Furthermore, the Authority will consider the scale of potential net benefits and / or to customers (both domestic and industrial) that may be generated by other DN sale options. As such, this Final IA has adopted a customer (i.e. both existing and future) focused approach in its assessment of the likely costs and benefits of DN sales.

Other Gas Act obligations

3.15. In addition to the Authority's principal objective, the Gas Act requires that in carrying out its functions under the Gas Act in a manner which is best calculated to further the principal objective, the Authority is required to have regard to the following:

- 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)); and
- the need to secure that licence holders are able to finance their activities (section 4AA(2)(b)).

3.16. In carrying out its duties, the authority must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas, as well as customers generally (section 4AA(3)).

3.17. In carrying out its duties, the authority may have regard to the interests of customers in relation to electricity distribution, telecommunications services, or water or sewerage services (section 4AA(4)).

3.18. The authority must carry out its functions in the manner it considers to be calculated:

- 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));

- to protect the public from dangers arising from the conveyance of gas through pipes or the use of such gas (section 4AA(5)(b));
- to contribute to the achievement of sustainable development (section 4AA(5)(a)); and
- to secure a diverse and viable long-term energy supply (section 4AA(5)(c)).

3.19. In carrying out its functions in accordance with the above the Authority must, among other things, have regard to:

- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed (section 5A(a)); and
- any other principles appearing to the Authority to represent the best regulatory practice (section 5A(b)).

3.20. In addition, the Authority must in carrying out its functions, have regard to any guidance issued by the Secretary of State about the making by the Authority of a contribution towards the attainment of any social or environmental policies set out or referred to in the guidance.

3.21. The Authority is also required to bear in mind when developing policy proposals that any such proposals should be consistent with European Union gas legislation on, amongst other things, conditions of access to gas transmission networks.

The statutory and licence obligations of GTs

3.22. In addition to meeting the Authority's statutory duties, the post-sale industry structure must establish a relationship between the NTS and DNs that permits each network owner to fulfil its own statutory and licence obligations.

3.23. These include the duty of each GT:

- to develop and maintain an efficient and economical pipeline system (section 9(1)(a));

- to facilitate competition in the supply of gas (Section 9(1)(A));
- to avoid any undue preference or undue discrimination in the terms on which it undertakes to convey gas (sub-section 9(2)(b));
- 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 (Standard Condition 4D of the GT licence); and
- to use a charging methodology that reflects the true costs incurred by the licensee in its transportation business (Paragraph (5)(a) of Standard Condition 4A of the GT licence).

3.24. Furthermore, Special Condition 27 of Transco plc's GT licence requires Transco to operate the NTS in an efficient, economic and co-ordinated manner.

Impact of NGT's proposed sale

3.25. In considering the potential grant of consent to NGT in relation to its proposed DN sale, the Authority, the Secretary of State and the HSE would have to remain mindful of the impact that such a sale would have on various industry participants and any other interested parties.

3.26. NGT believes that DN sales would create shareholder value. However, if NGT receives the necessary consents and the proposed disposals proceed as planned, a number of parties that have will not have been directly involved in the commercial transaction associated with DN sales, could nonetheless be affected, both directly and indirectly.

3.27. One group who will be most significantly affected will be the shippers within the GB gas industry as the nature of their role requires them to interface with GTs, who will increase in number as a result of DN sales, should they proceed. Furthermore, it should be noted that, to the extent to which the costs incurred by shippers are expected to increase as a result of DN sales, these costs are likely to be passed through to the customers served by these shippers. The expected

impact of DN sales on gas shippers is discussed in further detail in Chapters 4, 5 and 7.

3.28. In addition to shippers, who would be directly affected by DN sales, should they proceed, a number of other parties will be indirectly affected. These include:

- all parties connected directly to the NTS, including interconnectors, storage facilities, a number of independent gas transporters (IGTs) and other direct connectees such as power plants or industrial sites. The likely impact on these parties is described in detail in Appendix 5; and
- all parties connected to the DNs, including some IGTs and all GB gas customers, who if the DNs become more efficient as a result of DN sales, are expected to benefit from gas bills that should be lower than would otherwise have been the case.

3.29. Given that the Authority's principal objective, as outlined above, requires the Authority to protect the interests of existing and future customers, the primary focus of this IA is to assess the potential impact of DN sales on GB gas customers, both in terms of likely costs (as passed through to customers, for example by shippers) and likely benefits which may be achieved through potential improvements to DN efficiency following the sale, which are likely to be passed through to customers.

Summary

3.30. NGT's proposed sale of one or more of its gas DNs requires the consent of a number of parties including the Authority, the Secretary of State, and the HSE.

3.31. In considering whether to consent to NGT's proposed gas DN sales, the Authority will need to pay due regard to its principal objective to protect the interests of customers, as well as to any other statutory and public law obligations of the Authority or licensees.

3.32. A number of parties would be directly or indirectly affected by NGT's proposed sale of its gas DNs, and in this Final IA, Ofgem has considered the likely impact of NGT's proposals on such affected parties. However, given the Authority's

principal objective, the primary focus of this IA is assessment of the potential costs and benefits to existing and future GB gas customers.

4. Key issues

4.1. This chapter outlines some of the key issues regarding the potential sale of one or more DNs. Given the Authority's objectives as outlined in Chapter 3, in assessing whether to allow the DN sales process to proceed, it will be necessary for the Authority to consider the:

- potential benefits to existing and future customers likely to arise from the sale of DNs by NGT
- potential costs to existing and future customers likely to arise from the sale of DNs by NGT including the quantitative costs to customers; and
- the potential impact on security of supply.

4.2. This chapter considers each of these key issues in turn, provides a summary and invites views on the issues raised.

Potential benefits

4.3. A key issue to be considered in the context of the proposed sale of DNs by NGT is the extent to which new opportunities to achieve efficiency savings will be created. Such efficiency savings are likely to be the primary factor in generating benefits to customers through the DN sales process. Ofgem considers that there are likely to be four main opportunities for increased efficiency savings. These are through:

- comparative regulation;
- the introduction of new management teams;
- the promotion of economic and efficient operation of networks; and
- the promotion of competition.

Comparative regulation

4.4. The creation of separately owned, managed and operated gas DNs that would arise as a result of the sale of DNs should allow Ofgem to regulate the network businesses on a comparative basis. Such comparative regulation could:

- reduce information asymmetries between the regulated distribution networks and Ofgem by providing Ofgem with valuable comparative information on the appropriate level of costs that an efficiently run regulated gas DN business should incur; and
- generate greater incentives for improvement amongst gas DNs, as they will be obliged to catch up with the benchmark efficiency level or else face shortfalls in their allowed revenue compared to their actual costs.

4.5. The presence of comparators would allow Ofgem to compare the costs of each regulated entity against their intrinsic characteristics or output and therefore establish an expected relationship between costs incurred and these observed characteristics. The comparators with costs that are lower than expected would therefore be considered efficient and could be used to derive a benchmark, or "efficiency frontier" against which other comparators could be compared. Customers should benefit from this process of comparative regulation as the allowed revenue of the regulated businesses should be informed by the performance of the more efficient comparators, and thus the level of charges to customers are expected to be lower than they would have otherwise been had there been no comparators.

4.6. In formulating this Final IA, Ofgem has considered the experience of other utility industries. Whilst Ofgem notes that comparisons with other utility industries are not always appropriate, in the case of comparative regulation, it should be noted that this has already been successfully deployed in both the GB electricity distribution industry and the water industry in England and Wales.

Introduction of new management

4.7. The proposed sale of one or more gas DNs is also likely to result in the introduction of new management. This has the potential to increase efficiency savings by:

- generating greater innovation within the industry;
- facilitating the transfer of best practice; and
- allowing economies of scope to be captured with other utility networks owned by the same corporate groups.

4.8. As such, not only is Ofgem expected to be able to establish the efficiency frontier, but the efficiency frontier would be expected to shift at a faster rate as a result of the introduction of new management.

4.9. The benefits of DN sales, including the potential for increased efficiency savings, are considered in detail in Chapter 6 and its associated Appendices.

Economic and efficient operation of networks

4.10. GTs have a statutory duty to develop and maintain their networks in an economic and efficient manner. This duty is important in relation to both long term investment decisions and day-to-day network operations. When developing the proposed framework of arrangements, Ofgem has taken care to ensure that the economy and efficiency of the GB network as a whole is preserved. As part of this, the proposed changes to the offtake and interruption arrangements that would be necessary to allow the sale of the DNs to proceed, seek to promote greater levels of economy and efficiency in network operation as a result of improvements in investment signals from users of the NTS, namely DNs and large sites connected directly to the NTS.

Promotion of competition

4.11. The sale of DNs could potentially impact upon both wholesale and retail competition. A key issue that has been considered in developing the alternative industry framework is to ensure that the proposed framework of arrangements

does not have adverse implications for the competitiveness of markets. The actions taken to mitigate such potential costs are discussed further in the following section.

4.12. However, it is noted that certain aspects of the proposed arrangements may have a positive impact on wholesale and retail competition:

- establishing a governance entity could have a positive impact if it leads to improved change management and governance arrangements;
- a clear set of offtake arrangements may enable more transparent pricing, and therefore promote wholesale gas competition; and
- competition in the retail gas market may be positively affected by the creation of an agency with a number of owners. Ofgem considers that new owners may provide additional impetus to the creation of innovative solutions to retail market issues.

Potential costs

4.13. Should DN sales proceed then the implied industry restructuring means that it will not be possible for the status quo to remain. As such, Ofgem has considered the framework of arrangements that will need to be put in place to mitigate some of the potential costs that could otherwise occur in the event of DN sales. In this section, we:

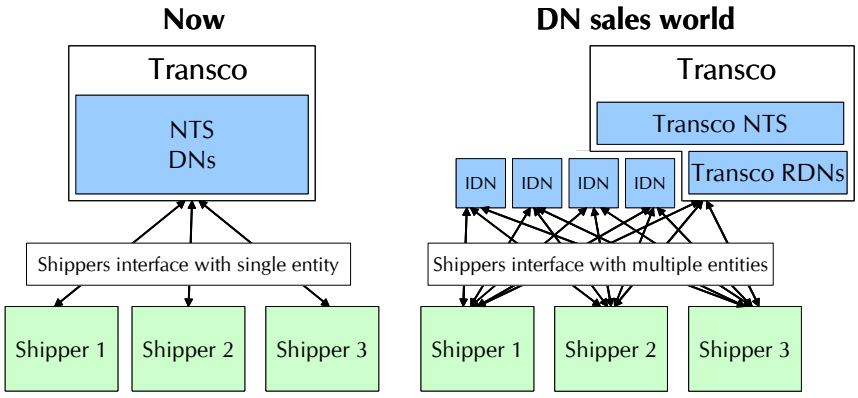
- describe the potential for DN sales to impose costs on gas shippers by increasing the number of interfaces they would have with GTs;
- describe the potential for DN sales to impose costs with respect to the fragmentation of decision making;
- explain how DN sales could have a potentially adverse impact on competition; and
- explain the measures Ofgem would seek to put in place to ensure that security of supply is not adversely affected by DN sales.

Industry fragmentation and the impact on shipper interfaces

4.14. The proposed sale of one or more gas DNs would result in a number of independently owned gas DN businesses. Therefore, shippers will need to arrange to convey gas across a number of networks rather than only the network owned by NGT. Thus it follows that the proposed sale of DNs could result in an increase in the number of interfaces between shippers and gas transporters.

4.15. This increase in the number of interfaces is likely to be one of the main potential drivers of costs in the event that the sale proceeds. The potential increase in the number of interfaces for a shipper is illustrated below in Figure 4.1.

Figure 4.1: The potential impact of DN sales on shipper interfaces

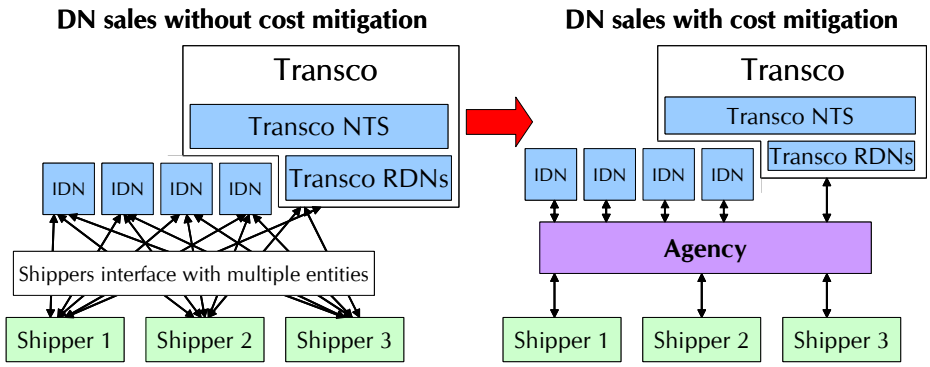


4.16. As this figure shows, under the current industry structure shippers are largely subject to a single gas transporter interface and therefore, for example, interface with a single Supply Point Administration process and a single settlement and operational system, receive single invoices, and have a single set of gas transporter credit arrangements.

4.17. However, in the event of DN sales, responsibilities will need to be clearly assigned to the NTS and DN businesses. There will potentially be a number of activities that are currently provided by a single entity – NGT - that would, in the event of DN sales, be the responsibility of a number of DN businesses. This therefore has the potential to introduce a certain amount of duplication and increase the number of interfaces faced by shippers. This fragmentation of shipper interfaces has the potential to result in increased upfront and ongoing costs to shippers.

4.18. As a result, NGT is proposing to establish a central service provider (agency) that could discharge many of the functions and services that are currently provided by NGT and hence mitigate a number of the costs that would be incurred if industry fragmentation was permitted to occur. This is discussed in detail in Chapter 5, and illustrated at a high level in Figure 4.2 below.

Figure 4.2: Mitigation of shipper costs under DN sales



4.19. Figure 4.2 illustrates how formation of an agency could potentially mitigate many of the costs of duplication that would otherwise be incurred under DN sales. However, it should be noted that there will be some activities that will fall outside the scope of the agency and, therefore, some costs will still be incurred.

4.20. The quantification of these costs, and other costs expected to be imposed upon shippers and other parties as a result of DN sales is discussed in detail in Chapter 7.

Industry fragmentation and the impact on decision making

4.21. The industry fragmentation associated with DN sales and the creation of independent commercial entities with individual commercial interests have the potential to have an adverse impact upon GT decision making, by:

- limiting incentives upon GTs to operate the GB network as a whole in an optimal and co-ordinated manner; and
- creating potential incentives for GTs to discriminate between other networks and between networks and other users.

4.22. We consider each in turn below.

Economic and efficient operation of the national network

4.23. When making internal decisions NGT (as a single integrated entity) currently has an incentive to make economic trade-offs in a way that promotes the efficient investment in and operation of the national network as a whole. Following DN sales, unless appropriate regulatory and commercial arrangements are in place, individual network operators may find it more cost effective to behave in a manner that might, in aggregate, give rise to increased costs across the entirety of the national network. For example, an owner of a DN may take a decision to invest in its network that might not be appropriate given other investment decisions on the NTS.

4.24. For this reason, the proposed introduction of a price based regime at the NTS/DN interface is intended to ensure that network operators have regard to the impact that their investment and operational decisions have on their own and connected networks.

No undue discrimination between networks and other users

4.25. The retention of the NTS and some DN businesses within the NGT group, together with the separate ownership of a number of other DN businesses may create incentives for the NTS:

- to favour the retained DNs (RDNs) at the expense of independent DNs (IDNs); and
- to discriminate between DNs and other NTS connectees (power stations, storage facilities, interconnectors, and those IGTs connected to the NTS).

4.26. However, in developing a possible framework of arrangements, the Authority has sought to address these potential (undue) discrimination issues through:

- Its indicative decision on roles and responsibilities that would establish a transparent interface between the NTS and DNs which would make undue discrimination visible and the Authority's indicative decision on business separation would require targeted structural separation between NGT's gas transmission and distribution businesses; and

- its indicative decisions on the offtake and interruptions arrangements would introduce transparent principles for the allocation of network capacity for all users of the NTS.

Competition

4.27. The sale of DNs could potentially impact upon both wholesale and retail competition. A key issue that has been considered in developing the alternative industry framework is to ensure that the proposed framework of arrangements does not have adverse implications for the competitiveness of markets.

4.28. Ofgem considers it important that suppliers should not have to engage with significantly different processes in order to transfer customers situated on different networks. The agency is intended to prevent these negative impacts on retail competition by preserving a single uniform interface for the SPA register and other systems. For example, this would prevent fragmented switching arrangements, which might increase the change of supplier failure rate, as suppliers interact with a range of different systems and process and impact adversely on customer switching rates.

4.29. In addition, by allocating the role of residual energy balancer to the NTS, National Balancing Point (NBP) arrangements would be retained, and wholesale competition would be preserved.

Security of supply

4.30. Ofgem notes that the safety case of each DN will need to be accepted by the HSE before the proposed sale can proceed. However, in considering the framework of arrangements that would be put in place in the event of DN sales, the Authority has had regard to issues of security of supply and taken full account of HSE submissions on preventing supply emergencies. Ofgem considers that a clear allocation of roles and responsibilities between GTs is a key factor in promoting security of supply. The Authority's indicative decision on this matter was in favour of the model that sets out clear accountabilities between the NTS and DNs. Similarly, establishing a framework which allows network users to signal their long term requirements should enhance GTs' ability to plan effectively and to invest to ensure that future demand is met. In this

regard, security of supply was an important consideration in relation to the Authority's indicative decisions on the offtake arrangements and the interruptions arrangements.

Summary

4.31. In considering whether to consent to NGT's proposed disposal of one or more of its gas DNs, it will be necessary for the Authority to consider (amongst other things):

- the potential benefits to existing and future customers as a result of DN sales (i.e. the potential for efficiency savings), and beneficial effects on investment signals and competition;
- the potential costs to existing and future customers as a result of DN sales relating to:
  - an increased number of interfaces that shippers are required to interface with;
  - fragmentation of decision making;
  - an adverse impact on competition; and
  - the potential impact of DN sales on security of supply.

4.32. It is anticipated that the industry restructuring associated with DN sales may yield significant customer benefits through the implementation of comparative regulation and the introduction of new management into the GB gas sector, as well as improving investment signals on the NTS and facilitating competition. However, in considering these potential benefits, it is also necessary to consider the related potential costs and ensure that customers' interests are protected.

4.33. The potential costs that could be incurred as a result of DN sales relate to the implementation of a new framework of arrangements that would be necessary given the industry restructuring which would be associated with the sale of DNs. Ofgem has worked to seek to ensure that the framework of arrangements proposed mitigates the potential costs which could be incurred as a result of DN

sales, where possible. Furthermore, the security of supply of the GB gas transportation system remains a key area of consideration for the Authority, and the HSE has been involved at all stages of the regulatory process to date.

Views invited on key issues

4.34. Ofgem welcomes views on all aspects of this Final IA. However, Ofgem would particularly welcome comments in relation to the following:

- the key issues arising in relation to the potential benefits of DN sales, including:
  - the introduction of comparative regulation;
  - the introduction of independent management teams;
  - the potential for improvements in the economic and efficient operation of networks; and
  - the potential for DN sales to promote competition in wholesale and retail markets.
- the key issues arising in relation to the potential costs of DN sales, including:
  - the risk of inefficient fragmentation of shipper interfaces;
  - the risk of inefficient fragmentation of decision making;
  - the potential for DN sales to have a detrimental impact on competition in wholesale and retail markets
- the potential impact of DN sales on security of supply; and
- whether there are any other key issues that Ofgem has not considered.

5. Options

5.1. This purpose of this Final IA (along with other information which may be considered to be relevant) is to assist the Authority in forming a view on whether to consent to NGT's proposed disposal of gas DNs. It provides an overall cost benefit analysis which considers the relative merits of the potential sale of one or more DNs when compared to the industry structure and arrangements currently in place. In doing this, two alternative options are assessed:

1. The **no sale option** represents the status quo and would continue if the Authority declines to consent to the proposed gas DN sales.[17] In this case, NGT would not dispose of its assets and the associated reforms would not occur. For the purposes of the Final IA, the no sale option represents the baseline against which proposals for change are assessed.

2. The **sale option** would arise if the Authority consents to the proposed gas DN sales.[18] The sale of the DNs would necessitate a number of significant changes to industry arrangements, which have already been considered in the four RIAs issued earlier this year.[19] In performing the cost benefit analysis, Ofgem has assumed that the regulatory, commercial and operational framework accompanying the sale of one or more DNs would be consistent with the conclusions reached within the four conclusions documents issued[20].

In this chapter, we describe the no sale option and the sale option in turn. In the case of the no sale option (which represents the status quo), the arrangements currently in place are described. In the case of the sale option, the proposed framework of arrangements (consistent with the RIA decision documents issued to date) is described[21]. Where relevant, these conclusions are supplemented

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[17] The no sale option would also arise if the transaction fails for some other reason prior to the hive-down of the DN assets from Transco to wholly owned Transco subsidiary companies.
[18] DN sales is also contingent upon the consent of the Secretary of State and the Health and Safety Executive.
[19] See paragraph 2.21.
[20] See paragraph 2.22.
[21] This paper does not provide a detailed discussion of the other options considered as part of the RIA process or the reasons for selecting each of the options chosen. Instead, in each section, we note the chosen option's label as used within the relevant RIA (e.g. Option 1, Option 2, Option 3 etc.) in order to

with additional information that has been developed after the decision documents were released.

5.2. Both the no sale option and sale option sections are structured around the four areas covered by each RIA, which are roles and responsibilities, offtake arrangements, interruptions arrangements and agency and governance.

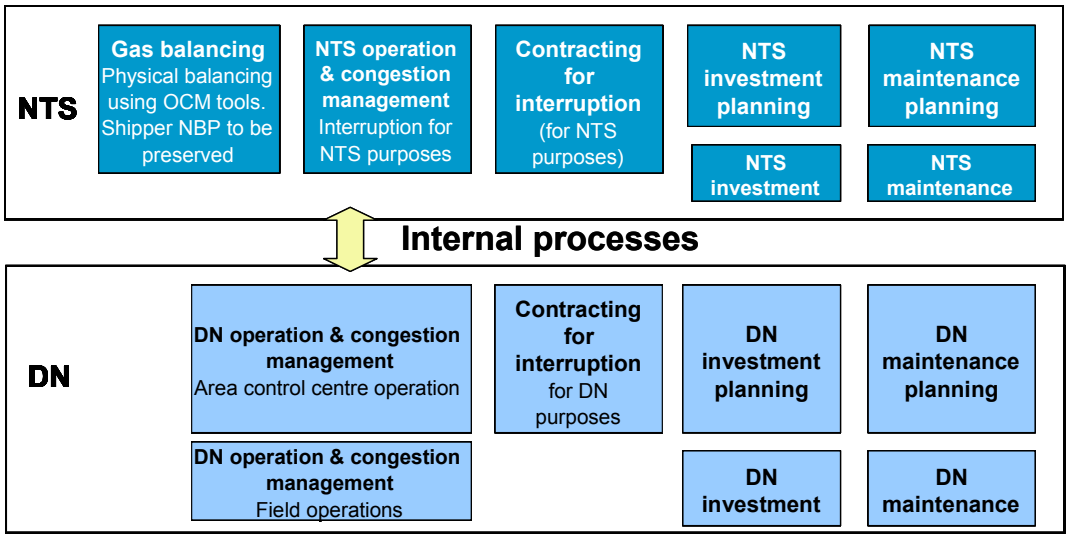
No sale option

5.3. As discussed in Chapter 4, if the proposed disposal of DN assets does not proceed due to a lack of consent from the Authority, then true comparative regulation will not be possible and new management will not be introduced into parts of the GB gas transportation industry. Furthermore, under the no sale option, the current framework of arrangements will persist. This framework of arrangements is described in the sections that follow.

Allocation of roles and responsibilities

5.4. At present, the allocation of roles and responsibilities between the NTS and DNs is an internal matter for NGT, as all such activities are conducted within NGT. The current, internal allocation of roles and responsibilities within NGT is illustrated in Figure 5.1 below.

Figure 5.1: The current, internal allocation of roles and responsibilities within NGT



5.5. NGT has indicated that its business is structured such that the following activities are carried out by the NTS:

- **Gas balancing**. This includes residual gas balancing on the NTS, ensuring that NTS pressures remain within safe parameters by trading at the on-the-day-commodity-market (OCM) and by managing stock changes and flows to the DNs;

- **NTS operation and congestion management**. Responsibilities here include operating the NTS through a central control centre with responsibility for the scheduling of gas flows on the system given expected gas flows onto and out of the NTS, and managing congestion and constraints through physical and commercial tools such as compression, storage, entry capacity buy back auctions and interruption;

- **Contracting for interruption**. At present NGT may call interruption under Network Code arrangements on the NTS or DNs to address NTS constraints or manage high system demand conditions;

- **NTS investment planning and NTS investment**. In order to meet its planning and development obligations, NGT's NTS planning engineers undertake an annual planning process[22] over a ten year timescale, which involves industry consultation and is informed by the signals it receives from long term auctions of system entry capacity; and

- **NTS maintenance planning and NTS maintenance**. NGT is currently required under section L of the Network Code to prepare and publish maintenance programmes each year outlining planned maintenance of the NTS, specifying both terms of duration and anticipated impact.

5.6. NGT has also indicated that the following activities are carried out by the DNs:

- **DN operation and congestion management**. This includes:

  - operational management activities undertaken by the Area Control Centres (ACCs) which remotely operate pipeline and

plant associated with the higher pressure tiers of the distribution system. The role of the ACCs includes the control and management of the NTS offtakes into the DNs, operation of most of local gas storage, and notification of interruption requirements to any relevant shippers when there is insufficient local transportation capacity[23]; and

- operation of the lower pressure tiers of the DNs by field staff, which includes setting network pressures at local governors depending on expected demand, pipeline maintenance and construction activity and provision of emergency cover.

- **DN investment planning and DN investment**. At present DN investment planning is carried out as part of a co-ordinated process to deliver the requisite NTS and DN capacity; and

- **DN maintenance planning and DN maintenance.** As with the NTS, DN maintenance planning is carried out in accordance with section L of the Network Code.

Offtake arrangements

5.7. At present, when making internal decisions NGT (as a single integrated entity) has an incentive to make economic trade-offs in a way that promotes the efficient operation of the national network as a whole.

5.8. This section describes the current arrangements for NTS exit capacity, diurnal storage and operational flows, business separation and offtake governance under the no sale option.

NTS exit capacity

5.9. At present, arrangements relating to the offtake of gas from the NTS by the DNs reflect NGT's current internal processes and procedures. Under these arrangements, NGT has a licence obligation to meet the peak aggregate daily

[22] This process is co-ordinated with, but conducted separately to, the DN annual planning process.
[23] Currently NGT arranges interruptible contracts with DN connected sites in conjunction with the NTS.

demand for gas to be conveyed to premises that is likely to be exceeded on one or more days in only one year in every 20 years (the 1-in-20 obligation). NGT is obliged, in the determination of this demand, to have regard to its expectations regarding the number of premises to which gas conveyed by it will be supplied, the consumption of gas at those premises and the extent to which such supplies might be contractually interrupted.

5.10. Physical NTS exit capacity is provided by the NTS to both:

- **DN offtake points.** These offtake points connect the high pressure NTS with the DNs' lower pressure Local Transmission System (LTS) for onward transportation to customers; and

- **NTS direct connect offtake points**. At these points, gas exits the NTS and is either consumed at the offtake point by customers such as power stations or large industrial and commercial loads, or enters another system (such as the interconnector which carries a load of equivalent size to a DN).

DN offtake points

5.11. At present, physical capacity that is allocated at NTS/DN offtake points is defined in NGT's internal processes in terms of a Maximum Daily Quantity (MDQ). The level of MDQ allocated to NTS/DN offtake points is determined by these internal NGT processes and designed to ensure that the capacity at NTS/DN offtake points is consistent with NGT's 1-in-20 obligation.

5.12. Given that DNs and the NTS currently have common ownership, there are no commercial arrangements that apply to the provision of capacity at these NTS offtake points. Rather, charges to shippers for NTS exit capacity are determined by the NTS "exit zone" in which a customer is sited, which represents a group of NTS/DN offtakes. The charges for these zones are set based on NGT's estimate of the long run marginal costs of providing NTS capacity to these zones.

5.13. The amount of NTS exit capacity held by a shipper at an exit zone is determined by the shipper's supply point portfolio within the DN. A shipper's exit capacity for a given exit zone is set at a level equal to the aggregate of supply point capacities for the shipper's supply points associated with that zone. There is,

therefore, no discretion for shippers to book different amounts of NTS exit capacity and LDZ supply point capacity. In respect of DM supply points, gas flow against capacity entitlement is measured and overrun charges and capacity ratchets are applied at the supply point level.

5.14. Currently, the right of offtake (supply point capacity) from the DN system is specified by shipper supply point in the case of daily metered (DM) sites, and is calculated from the Annual Quantities (AQ) for non-daily metered (NDM) sites. Shippers have some scope for appeal against the eventual allocation of capacity to a particular NDM site.

Other NTS direct connect offtake points

5.15. NTS offtake capacity for direct connects (other than DNs) is also specified in terms of a maximum daily offtake quantity – the supply point capacity. Typically, an NTS direct connect constitutes a single NTS exit zone for the purposes of calculating the level of the NTS capacity charges. The Network Code requires that the maximum hourly rate of offtake, for direct connects is 1/24th of the registered supply point capacity.

5.16. As described above, NGT has an obligation to develop and maintain a system that can meet peak demands (defined in terms of the gas day). It also has a duty to provide for all reasonable demands for gas. In the event that direct connect suppliers require additional exit capacity from the NTS, they may request capacity through a process defined in NGT's Network Code. This is through amendments to Supply Offtake Quantity (SOQ) requests made directly to the NTS, i.e. the maximum daily consumption for a supply point.

Diurnal storage and operational flows

5.17. As diurnal storage and operational flows are a comparatively technical aspect of the proposed reforms, this section provides an introduction before setting out the arrangements that apply under the no sale option.

Diurnal storage

5.18. NTS design criteria assume that NTS connectees offtake gas from the network at a constant rate throughout the day (known as a constant "1/24" rate). In

practice, however, more scope to vary the rate of offtake exists at NTS offtake points than implied by the design criteria. The existence of this flexibility arises from spare capacity in transmission pipes (and the physical ability of exit points to accept gas at varying pressures during the day).

5.19. In turn, this enables the NTS to allow NTS connectees an amount of flexibility in their offtake of gas during the day. In general terms, therefore, diurnal storage can be considered as being flexibility in the rate of offtake from the NTS, subject to the constraint that gas offtake over the day is less than or equal to a specified MDQ.

5.20. This flexibility of NTS offtake is of importance to DNs and NTS direct connects who both value the ability to offtake gas from the NTS on a flexible basis through the day. DNs require NTS offtake flexibility, as they supply gas to non-daily metered (NDM) customers, whose offtake varies significantly during the day. This variable offtake from the DN creates a requirement for "diurnal storage", enabling relatively high rates of offtake at periods of high consumer demand rates during the daytime and relatively low rates of offtake during the night. This requirement is met through a combination of storage facilities within the DNs, high pressure storage bullets and low pressure gas holders. However, to the extent that the NTS can provide variable flows to a DN (without prejudicing its capability to meet transmission requirements or investing expressly for the purpose of diurnal storage provision), the NTS can, in effect, supplement the DN's diurnal storage capability. In turn, this may allow investment in diurnal storage within the DN to be deferred or avoided.

5.21. NTS direct connect customers also value flexibility in offtake from the NTS. Flexible gas-fired generation, for example, require offtake of gas to vary through the day in line with generation output profiles (that in turn vary in response to changes in the electricity market).

5.22. Note that the development of arrangements relating to the treatment of linepack (i.e. the ability to store gas in pipelines) was identified as a gateway requirement in the July consultation document.[24]

Operational flows

5.23. The NTS is remotely operated from the Gas National Control Centre (GNCC). The flows from the NTS to the DNs at the NTS/DN offtakes are controlled by four Area Control Centres (ACCs). These ACCs are responsible for the control operation in respect of that part of the LDZs that can be monitored and controlled remotely.

5.24. Approximately 18 hours ahead of each gas flow day, the ACCs plan operations for the following gas flow day, determining for each LDZ:

- the demand forecast;
- the required stock change over the day (if any);
- the amount of gas required from the NTS to meet the demand and stock change;
- the capability to take safely more or less gas from the NTS;
- the amount of diurnal storage required from the NTS; and
- the amounts to be taken from the NTS at each NTS/DN offtake point (within the parameters established through the planning process).

5.25. The ACCs then notify these requirements to the GNCC to enable NTS operational plans to be established. Subject to the change process described below, gas then flows in accordance with the ACC operational plan.

5.26. There are no system-wide limits on the ramp rate (rate of change of offtake rate). For certain sensitive offtakes (e.g. those close to compressor stations) ramp rate limitations are included in the ACC operating procedures (and are defined in

[24] Ofgem, *National Grid Transco - Potential sale of network distribution businesses, a consultation document 77/03,* July 2003, pg.44.

order to protect offtake facility assets). In general, any required ramp rate limitations are agreed on the day in conversations between the GNCC and the ACCs.

5.27. The ACC can request to make changes that would take the rates outside the operational rules. The GNCC will agree to these deviations provided the operation of the NTS is not compromised. Similarly, the GNCC can request that the ACC changes its rates of offtake to the LDZ. The ACC will agree to this request if the change can be accommodated.

5.28. The process of review and update of the operational plan in respect of a particular gas flow day continues until the day ends.

Arrangements for diurnal storage and operational flows

5.29. The allocation of available NTS offtake flexibility is currently managed through NGT's internal processes and procedures. Those DNs that require further flexibility of offtake from the NTS (to supplement flexibility that is already provided from within DNs) take additional flexibility from the NTS according to internal NGT Operating Rules (which are agreed as part of the annual planning cycle). These Operating Rules include:

- the profile of flexibility usage;
- the quantity of flexibility to be provided as a function of demand;
- the extent to which DNs may deviate from Operating Rules (if NTS and DN both agree a deviation); and
- physical characteristics of flexibility usage (e.g. notice period).

5.30. NGT does not have a specific obligation to make additional flexibility available to NTS direct connect customers. Indeed, NGT may limit the rights of large (firm) customers to vary their offtakes within day through the imposition of ramp rates specified within Network Exit Agreements (NExAs), which are ancillary documents to Transco's Network Code. An implication of this is that, for example, the operator of a gas generation plant may want the flexibility to be

able to vary its use of gas within day (ramp up or down) and may be willing to pay the additional costs associated with providing this flexibility.

Business separation

5.31. Under the no sale option, the operation of the NTS and the operation of the DNs both take place within the internal business structure of NGT. Whilst NGT may choose to operate their NTS and DN businesses separately, there is no regulatory requirement to do so, other than in relation to the production of separate regulatory accounts. NGT's existing internal structure is described above in the context of the allocation of roles and responsibilities between the NTS and DNs.

5.32. As a single integrated business, the issue of undue discrimination between RDN and IDN does not arise and consequently there is no regulatory imperative for requiring business separation.

Governance of the offtake arrangements

5.33. At present, the arrangements at NTS-DN offtake points are an internal matter for NGT and are not subject to any formal governance. Where customers are directly connected to the NTS, the offtake arrangements are governed by the Network Code and its ancillary documents, such as NExAs, storage connection agreements and interconnector agreements.

Interruptions arrangements

5.34. At present, all customers connected to NGT's networks require either firm transportation or interruptible transportation rights. Broadly, firm transportation arrangements apply to supply points which need to be able to offtake gas at any time. Interruptible transportation arrangements apply to supply points which meet certain criteria (such as being of a certain minimum size) and that are willing to have their supply of gas restricted in certain circumstances. NGT may call an interruption in the event of network capacity constraints, supply / demand balancing on high demand days, in an emergency or for testing purposes. It is possible for a single supply point to have a mixture of firm and interruptible transportation arrangements.

5.35. Shippers supplying firm supply points which are connected to the NTS pay entry capacity charges, exit capacity charges and commodity charges. Shippers supplying interruptible supply points which are connected to the NTS do not pay NTS exit capacity charges.

5.36. Shippers supplying firm supply points connected to the DNs pay NTS capacity charges for a quantity that reflects their DN exit capacity quantity. In addition, they pay distribution transportation charges and customer charges. Shippers supplying interruptible supply points that are connected to the DNs are at present exempt from both the capacity component of the distribution use of system charge and the NTS exit capacity charge, which roughly equates to a 50 percent discount compared to the charges paid by firm supply points (excluding consideration of customer charges).

5.37. Further, where NGT nominates a supply point to be interrupted for more than 15 days in a particular year (up to the maximum permitted which is usually 45 days), there is a transportation charge credit.[25]

5.38. The market for interruptions is one-sided because NGT is obliged to confer interruptible status on certain supply points on request, even if NGT does not require the supply point to be interruptible, as long as that supply point consumes more than 5,860 MWh per annum and can, given sufficient notice, cease offtake of gas within the five hour contractual notice period.

5.39. NGT currently uses what is referred to as the "equitability algorithm" to determine which sites have their gas supply interrupted when an interruption is deemed necessary. The equitability algorithm applies in circumstances where NGT can choose between two or more interruptible sites in order to resolve a particular constraint on the network. It seeks to treat all gas consumers on an equal basis when selecting which consumer(s) to interrupt.

[25] The credit is equivalent to 1/15 of the annual distribution standard capacity charge and the annual NTS exit capacity charge and is payable to the shipper by NGT for each day of interruption over the 15 day threshold.

Agency and governance

5.40. Under the current industry structure, shippers are subject to a single gas transporter interface. As a consequence, shippers interface with a single Supply Point Administration process and a single settlement and operational system, receive single invoices, and have a single set of gas transporter credit arrangements.

5.41. Similarly, governance of the key industry document, Transco's Network Code, is carried out using a single modification process which is set out in the Network Code Modification Rules. This process is administered by NGT, who is responsible for:

- arranging and chairing Network Code workstreams;
- writing draft and final modification reports; and
- making recommendations to the Authority.

5.42. Some industry participants have stated that they perceive that this process gives NGT excessive influence in relation to proposed modifications to the Network Code.

Sale option

5.43. As discussed in Chapter 4, should DN sales proceed, it is anticipated that true comparative regulation between gas distribution networks will be possible and that new management will be introduced into the GB gas industry with potential consequent efficiency benefits. Furthermore, under the sale option, the current framework of commercial and regulatory arrangements will need to change to allow the gas industry to operate with fragmented ownership of the gas distribution networks, whilst ensuring that existing and future customers' interests are protected. The proposed framework of regulatory and commercial arrangements is described in the subsections that follow. Specifically, the following section outlines proposals for:

- allocation of roles and responsibilities;

- offtake arrangements;
- interruptions arrangements;
- short term allocation of rights; and
- agency and governance.

5.44. Further details on the implications of the sale option on a range of participants is included in Appendix 5, "A Day in the Life". Note that this appendix represents how Ofgem envisages the proposed arrangements will affect certain participants, but is not intended to be conclusive. Ofgem would welcome the views of respondents on this appendix.

Allocation of roles and responsibilities

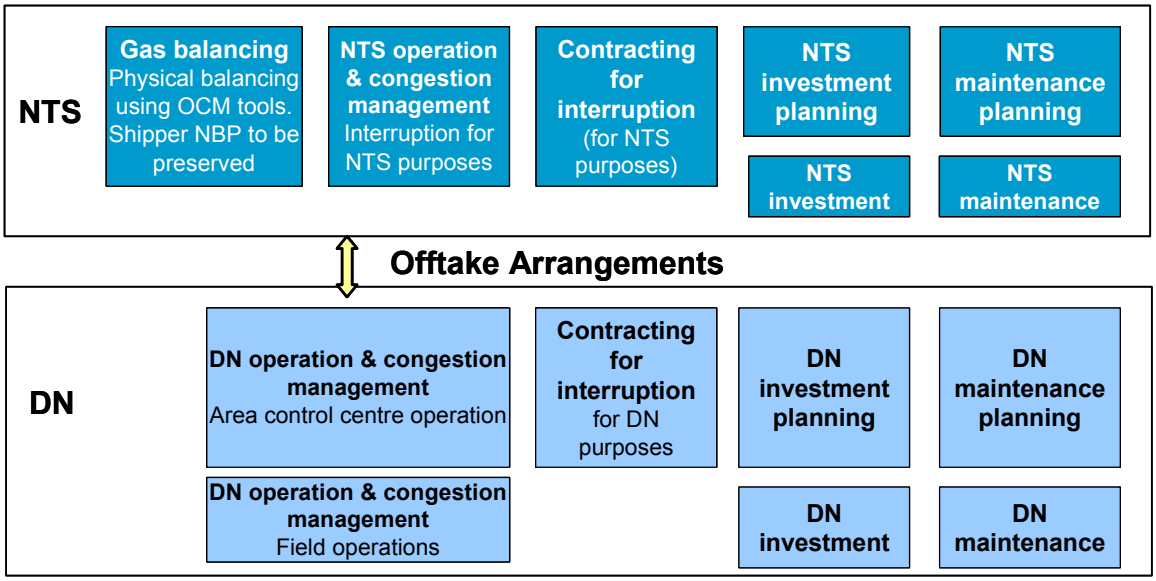
5.45. Historically, both NTS and DN functions have been provided by a single entity. The proposed DN sales make it necessary to consider how the activities currently carried out by NGT should be unbundled between the NTS and DN businesses. Therefore, this section describes the sale option with respect to the allocation of roles and responsibilities between the NTS and DNs.

5.46. In the Roles and Responsibilities conclusions document, the Authority opted for the option that established a role for each DN owner that is most consistent with the current allocation of roles and responsibilities within NGT. The Authority considered that this option is likely:

- to protect the interests of existing and future customers by providing benefits to customers from comparative regulation greater than other options for the allocation of roles and responsibilities;
- to ensure that each transporter could meet its statutory duties; and
- to ensure the clear definition of accountabilities and creates a clear interface as all operational and planning functions for each network are undertaken within the one organisation.

5.47. In the event of the sale of one or more DN networks, it is anticipated that the allocation of roles and responsibilities would be as presented in Figure 5.2.

Figure 5.2: Allocation of roles and responsibilities



5.48. This illustrates that, under the sale option, it is proposed that the NTS would remain responsible for:

- gas balancing[26];
- NTS operation and congestion management;
- contracting for interruption for NTS purposes;
- NTS investment planning and investment; and
- NTS maintenance planning and maintenance.

5.49. Furthermore, under the sale option it is proposed that each DN would be responsible for[27]:

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[26] Gas balancing was identified as a "gateway issue" within the July 2003 consultation document on the regulatory, commercial and operational changes that would be required to facilitate the sale of one or more DN. *National Grid NGT – potential sale of network distribution businesses, A Consultation Document*. Ofgem, July 2003.

[27] It is the responsibility for these activities that will lie with the DNs. The DNs may choose to discharge these responsibilities in a number of ways (subject to safety case approval). Ofgem understands that, for an interim period, the IDNs will enter into system operator managed services agreements (SOMSAs) with NGT. The effect of these contracts will mean that NGT will undertake some of the system operation activities that are the responsibility of the IDNs and will receive compensation from the IDNs under the terms of the contract for these services it provides. Nonetheless, the responsibility for the discharge of these activities will remain with the IDNs. The regulation of these agreements has been considered at the DISG and in the

- planning and conducting investment and maintenance on its own network;
- determining the level of available capacity and congestion management on their networks[28];
- contracting for interruptions to manage congestion for DN purposes; and
- DN system operation (both control centre activity and field activity).

5.50. It is proposed that regulated offtake arrangements would be established to define and govern the operational and commercial relationship between the NTS and each DN, including DNs which are not sold by NGT. The proposed offtake arrangements are described later in this chapter.

Offtake arrangements

5.51. The proposed offtake arrangements, which set out how the NTS will interface with NTS direct connectees in the event that DN sales goes ahead, are a key component of the package of reforms required to ensure that the interests of present and future customers are protected. These proposed arrangements would be required to ensure that the previously internalised interface between the NTS and the DNs is externalised in a manner consistent with GT statutory duties and licence obligations, including to provide access to all network users on a basis which is not unduly discriminatory. As an example of this, given that the UK-Continent interconnector has an approximately equivalent volume of offtake to a DN, the NTS would be required to provide access to the NTS to both DNs and the UK-Continent interconnector on a basis which is not unduly discriminatory.

5.52. Ofgem has consulted on the following issues:

- NTS exit capacity;

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initial thoughts informal consultation document published in September 2004, in which Ofgem has set out its "minded to" position not to regulate the contracts.

[28] Each DN owner would have its own set of system operator incentives and its own 1-in-20 investment and planning obligations.

- diurnal storage and operational flows;
- business separation; and
- governance of the offtake arrangements.

5.53. This section describes the sale option in respect of each of these issues.

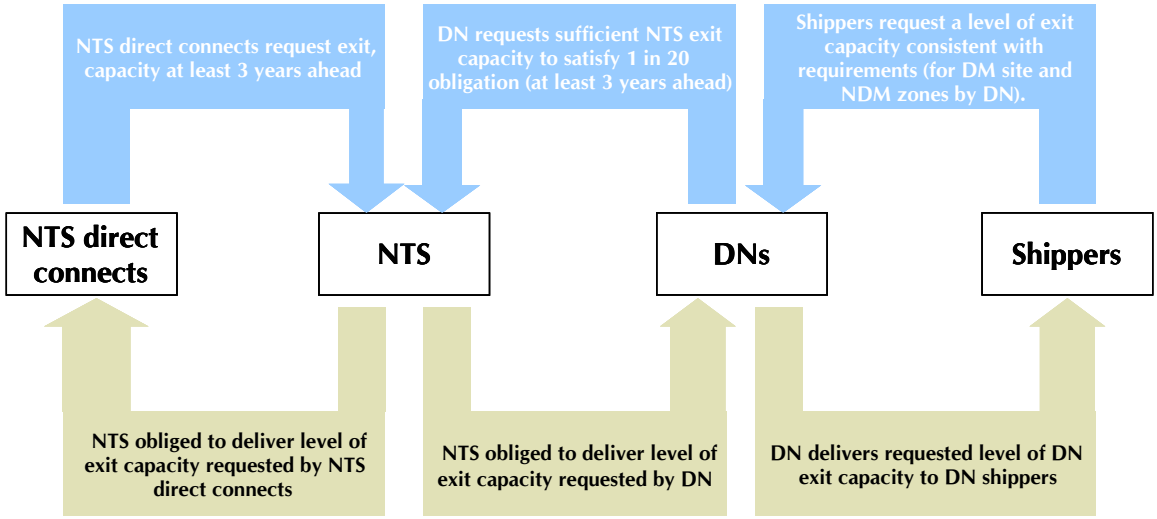
5.54. As well as explaining the outcomes of the consultation on the offtake arrangements RIA, it provides further information regarding more detailed aspects of the proposed arrangements, particularly in relation to:

- the locational scope of the NTS exit capacity products;
- the definition of the duration of NTS exit capacity products; and
- the diurnal storage / NTS offtake flexibility product.

NTS exit capacity

5.55. In the Offtake RIA and subsequent conclusions document, Ofgem considered a number of alternative options for the allocation of NTS exit capacity. The Authority considered that Option 2 (depicted in Figure 5.3 below) was the most appropriate option to manage the interface between the NTS and parties connected to the NTS.

Figure 5.3: Overview of "Option 2"



5.56. In reaching the conclusion that Option 2 was the most appropriate form for the proposed NTS exit capacity offtake arrangements, the Authority considered the following:

- **respondents' views**. This option was favoured by the most respondents relative to the other options outlined in the Offtake RIA. Respondents to the RIA believed that it would not require such a major change as that implied by the, other, shipper-led options. The Authority also noted that some respondents felt that, under the initial option proposed by NGT, an incentive would exit for DNs to "over-request" NTS exit capacity. The Authority also considered that the extra level of change required in implementing the preferred option relative to other options would be justified by the likely reduction in the potential for undue discrimination by the NTS;

- **role of incentive schemes**. Although the preferred option will require the design of NTS and DN incentive schemes, the Authority considered that NGT's initial approach was likely to produce less reliable information relative to the preferred option for regulatory purposes in assessing investments through the price control process.

- **consideration of shipper-led options**. The Authority noted the concerns raised by respondents regarding Options 3 and 4 (that set out arrangements under which shippers conveying gas to customers connected at the DN level would request NTS capacity), with respect to security of supply and the potential for these options to deliver poor investment signals.

- **cost-benefit analysis**. Finally, the Authority noted the cost benefit analysis provided in the Offtake RIA when preferring Option 2 (whilst noting that a number of shippers had concerns over the accuracy of the some of the costs and benefits included in the original analysis).

5.57. The key features of the Authority's favoured approach to the NTS exit capacity booking process for inclusion under the proposed arrangements are as follows:

- DNs estimate the level of NTS exit capacity they believe necessary to meet their (DN specific) 1 in 20 obligation at each NTS/DN offtake point;
- shippers serving NTS direct connects (i.e. sites connected to the NTS other than DNs) estimate the level of NTS exit capacity they require at NTS offtake points of the customers to whom they convey gas;
- DNs and shippers serving other NTS direct connects use these estimates as the basis for the NTS exit capacity requests they submit to the NTS;
- NTS exit capacity requests, by both DNs and shippers of other NTS direct connects, are submitted to the NTS in investment planning timescales (i.e. relating to three years ahead and beyond);
- the NTS is required to deliver the level of NTS exit capacity requested at each NTS offtake point by DNs and NTS direct connect shippers[29];
- shippers that have customers connected to DNs submit DN Exit Capacity requests to DNs (by daily metered site and non daily metered zone), similar to the current arrangements at the DN level; and
- DNs deliver the level of DN exit capacity requested by DN shippers.

5.58. In terms of payment flows, Ofgem considers that an Option 2A approach, as described under the Offtake Arrangements RIA (and outlined in more detail below), is most appropriate. This is because, under this model, payment flows are relatively simple, minimising number of payment interfaces between shippers and network owners.

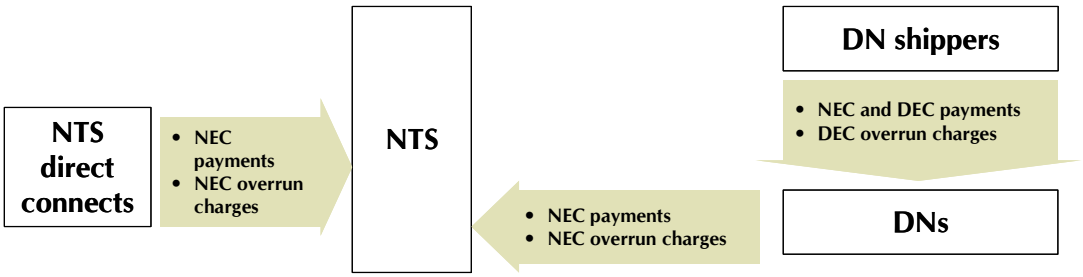
5.59. Under this approach, DNs have a central role in the payments process, effectively acting as an intermediary for all NTS-related payments from DN shippers who convey gas to customers offtaking from the DNs. The key features of this are:

[29]As these requests will be provided in investment timescales, NTS may meet these rights through a combination of both new investment and buy-back of firm NTS exit capacity rights (depending upon which approach is most cost-effective).

- both DNs and shippers of other NTS direct connects pay the NTS directly for their requested level of NTS exit capacity;
- to the extent that NTS exit capacity offtake through the NTS/DN interface exceed the level of NTS exit capacity allocated to the DN, overrun payments are charged;
- the DN recovers NTS exit capacity charges from shippers (maintaining the locational element of NTS charges levied on DN shippers); and
- shippers do not make any payments directly to the NTS.

5.60. This model of payment flows is illustrated in Figure 5.4 below.

Figure 5.4: Option 2A payment flows



5.61. There are two other issues that are key elements of the definition of the NTS exit capacity product. These are:

- the locational scope of exit capacity rights; and
- the duration of rights made available by NGT in the primary allocation.

Locational scope

5.62. A key element of the definition of exit capacity rights under the new arrangements is the definition of the locational area for which the capacity rights are valid. Following discussion of this issue at industry workgroup meetings, it is proposed that NTS exit capacity rights will be defined by individual offtake point (i.e. follow a "nodal" approach). This approach was favoured by the workgroup over an approach that groups together NTS offtake points into zones and that

would allow the holder of a zonal offtake right the right to offtake gas at any offtake point in that zone.

5.63. Following this approach, it is proposed that participants will purchase rights of offtake that provide the owner the right to offtake gas at that particular exit point of the NTS. DNs and shippers representing the connectee will therefore be able to request rights of offtake from the NTS at their relevant offtake points. Rights to offtake will not be freely interchangeable between users of other offtake points. Instead, trading of exit rights between participants will only be possible if facilitated by the NTS (through the definition of "exchange rates" between different NTS offtake points).

Duration of rights

5.64. At the most disaggregated level, NTS exit capacity rights are a daily right to offtake a purchased quantity of gas from an NTS offtake point (or group of offtake points) on that day. The question of the most appropriate duration for NTS exit capacity rights therefore concerns the extent to which these daily rights are "bundled" into larger time periods for the purposes of the initial allocation.

5.65. It is proposed that capacity rights at the initial allocation are grouped by year (rather than, for example, in monthly or quarterly bundles). It is anticipated that by bundling rights by year, the initial allocation of rights will deliver investment signals to the NTS regarding the level of peak offtake users require in a year. Furthermore, bundling the capacity into annual "strips" is expected to make the initial allocation process more simple and transparent than less aggregated product "bundles".

Diurnal storage and operational flows

5.66. In the August conclusions document on the Offtake RIA, the Authority set out that it was (in the event of DN sales proceeding), in principle, in favour of establishing a commercial regime for the allocation of the NTS's offtake flexibility and for operational flows. It accepted however, that more work was required to develop the detail of the regime and it would be consulted upon further through this document.

5.67. This approach has been proposed to be adopted for diurnal storage and operational flows under the "sale option" so that:

- NTS offtake flexibility will be capable of potentially being valued according to the location on the network to which it is delivered (and when it is scarce, allocated to those that value it most);
- shippers representing DN connectees would not be required to participate in the arrangements; and
- NTS offtake flexibility will potentially be allocated to DNs and shippers of NTS direct customers on a basis that is not unduly discriminatory.

5.68. Since then, NGT, Ofgem and the workgroups have worked together to establish an approach to the treatment of diurnal storage and operational flows that is consistent with the Authority's indicative decision. We set out in the following subsections the proposed approach for both, which we invite views on.

Diurnal storage

5.69. It is proposed that diurnal storage (also termed NTS offtake flexibility) under the offtake arrangements will be allocated on a commercial basis, and be a product sold by the NTS to DNs and shippers on behalf of NTS connectees (i.e. NTS directly connected customers, interconnectors and storage sites).

5.70. NTS offtake flexibility usage under the proposed arrangements is defined as being where connectees offtake gas from the NTS at anything other than a flat offtake profile throughout the day (i.e. higher than the "end of day quantity"/24 rate). This means that NTS offtake flexibility is defined independently of the basic NTS exit capacity product, and is used irrespective of whether connectees offtake in excess of their MDQ/24 hourly offtake rate at any time during the gas day.

5.71. Under the proposed offtake arrangements, NTS connectees will be required to purchase a level of NTS offtake flexibility equal to their net impact on the system at 10 p.m. (i.e. the impact of their usage of flexibility on the system at the time at which the NTS is typically under most stress). More details on the definition of NTS offtake flexibility can be found in Appendix 16.

5.72. Therefore, under this product definition, NTS offtake flexibility is:

- defined in terms of usage over the period 06:00 to 22:00;
- is independent of holding of MDQ; and
- is defined as being used whenever offtake of gas deviates from a flat 1/24th profile over the day.

5.73. NGT will present to the DISG during this consultation period on the cost implications of retaining the diurnal storage product bundled within the NTS capacity product.

Operational flows

5.74. Under the proposed new arrangements, operational flow requirements will be managed through the purchase and sale of the NTS exit capacity and NTS offtake flexibility products. Through their respective incentives schemes, the NTS will be incentivised to release additional NTS offtake flexibility, and DNs will be incentivised to purchase an efficient level of NTS offtake flexibility consistent with satisfying their security of supply obligations.

5.75. As such, the NTS will be required to buy back NTS offtake flexibility rights if it wishes to curtail offtake flexibility in the course of operating its network. This will ensure that there will be no undue discrimination either in the nomination of operational flows, or in the allocation of NTS offtake flexibility (for example, by the NTS providing RDNs relatively more NTS offtake flexibility that the IDNs).

Business separation

5.76. If DN sales proceed, NGT will own the NTS and some, but not all, DNs. Therefore there is a potential risk that NGT's NTS could favour RDNs over IDNs (potentially leading to distortions in both the level and allocation of costs that would be borne by end customers across the national network). Business separation measures could limit opportunities and incentives for undue discrimination by imposing restrictions on the relationship between NGT's NTS and RDN businesses.

5.77. The offtake arrangement conclusions document set out the Authority's position that it was minded to require Transco to undertake legal separation and targeted structural separation.

5.78. Under targeted structural separation, it is proposed that each business would have a statement in place describing the practices, procedures and systems it has adopted to ensure no undue discrimination. In particular, the statement would set out how each business would maintain information, operational and physical separation between the NTS and RDN businesses so as to prevent any breach of the requirement for no undue discrimination[30].

5.79. As stated in the offtake arrangements conclusions document, the Authority's decision was conditional on ensuring that a number of detailed implementation issues could be resolved satisfactorily[31]. Since the publication of the document, Ofgem has worked with NGT to investigate in more depth implementation issues that would need to be addressed should legal separation be pursued. In the course of this investigation, it has become apparent that pursuing full legal separation of the NTS and the RDNs is likely to be problematic. This is because:

- moving NGT's NTS business into a new legal entity would create two low probability risks that could, were either to materialise, create significant costs to customers. These risks, which are discussed in Appendix 15, are that:
  - third party contracts that reference Transco's Network Code might need to be adjusted; and
  - the wholesale gas market might fragment into a number of individual Network Codes with separate market arrangements in each.
- moving NGT's RDN business into a new legal entity is likely to create disproportionate costs for NGT associated with debt restructuring.

[30] Ofgem's proposals for targeted structural separation are described in more detail on pg 47 of Ofgem's Offtake Arrangements Conclusions on Framework.
[31] Ofgem NGT - Potential sale of network distribution businesses, Offtake Arrangements Conclusions document on framework, August 2004, pg 48

5.80. Accordingly, the Authority has concluded that it would not be appropriate to require legal separation of the RDNs and the NTS as part of the DN sales process. Appendix 15 sets out more information on the detailed implementation issues that were investigated with regard to legal separation, and describes a proposed set of licence conditions that could be introduced which would seek to mimic the effect of legal separation.

5.81. For the avoidance of doubt, Ofgem intends to retain the requirements associated with targeted structural separation between the RDNs and NTS.

Governance of offtake arrangements

5.82. Ofgem has carefully considered where the proposed commercial arrangements that would govern the interface between the NTS, shippers (acting on behalf of direct connects) and DNs should sit – either in the UNC or in a separate "offtake code". Ofgem has consulted on this issue both in the Offtake RIA and in its informal consultation of the proposed licence conditions which would be introduced in the event that the sale of DNs proceeds. Overall, Ofgem has reached the conclusion that the commercial arrangements should not be contained within a separate offtake code but rather in the UNC.

5.83. This is expected to give all relevant interested parties (both shippers and DNs) transparency, avoids cross governance issues associated with stand alone codes and should ensure appropriate governance arrangements concerning commercial offtakes. In the light of the decision to implement Option 2A, NGT now also considers that developing the offtake arrangements within the UNC is its preferred option. With regard to the technical aspects of the operator to operator interface, it is proposed that this aspect of the offtake arrangements will be covered in an ancillary document to the UNC.

Allocation of NTS exit rights

5.84. The principles by which exit capacity on the network was proposed to be allocated was outlined in the August 2004 conclusions documents for interruptions arrangements. These principles are that:

- NTS exit capacity would be allocated following an unconstrained approach in the long term, and following a constrained approach for the medium and short term; and

- DN exit capacity would continue to be allocated according to current procedures in the near term. In the longer term, reform of allocation of exit capacity at DN level would be addressed, though not in the context of DN sales.

5.85. As such, it is proposed that the allocation of NTS exit capacity under the offtake arrangements will be as follows:

- **NTS exit capacity will be allocated on an unconstrained basis in the long run**. Under this approach, any existing (or new) connectee to NGT's NTS would be able to purchase firm capacity rights to exit capacity for three years ahead (and beyond). This capacity would be purchased through a non-discriminatory allocation against a schedule of administered prices determined by NGT NTS's charging methodology[32]. The prices would reflect costs and would be published in NGT NTS charging statement. Demand for exit capacity through this process would provide NGT NTS with signals from its customers about the need for additional capacity and the need to invest in the NTS to deliver this capacity.

- **In the medium and short terms, available NTS exit capacity will be allocated on a constrained basis.** Over these timescales, the quantity of NTS exit capacity released by NGT NTS to users of the NTS should, as far as 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.

[32] Note that the charging methodology used by the NTS would continue to be subject to Ofgem approval.

- **Additional NTS exit capacity will be made available on a constrained basis in the very short term**. At the day-ahead stage, any unsold firm capacity will be made available, again on a non-discriminatory basis, under a constrained approach.

5.86. The Authority considered that this would be appropriate because:

- it is expected to reduce the potential for undue discrimination between users (both current and future) of the NTS in both the long run when capacity would be available at regulated prices to all and in the short run when the capacity available would be limited to the maximum capacity of the network would be available to all on a non-discriminatory basis;

- it is anticipated to provide for long term financial backed investment signals for NTS exit capacity, thereby reducing the risk of stranded NTS assets and thus promoting efficiency in NTS investment and security of supply; and

- it would provide consistency with the current entry arrangements for the NTS.

Interruptions arrangements

5.87. The June 2003 consultation document identified exit and interruptions reform as a gateway issue requiring agreement on a way forward before DN sales could proceed. The August 2004 conclusions documents for interruptions arrangements described a number of principles under which arrangements for interruption would be implemented in the event of DN sales proceeding.

5.88. The proposals for interruptions arrangements are that:

- **Current arrangements for interruption for NTS direct connectees will be reformed**. The NTS will no longer be obliged to offer interruptible terms to NTS direct connectees on demand. Instead, the NTS will contract for demand management contracts (and organise "buy backs" of firm capacity), on market based terms;

- **NGT has indicated that it intends to offer an interruptible product for sale at the day-ahead basis**. This will enable holders to offtake gas from the NTS at a lower price than the cost of firm capacity. In return for this alternative access to the NTS, holders of the interruptible product will need to bear the risk that they may be interrupted (as the NTS will effectively have an "option" to interrupt the flow of gas to that holder of the interruptible right whenever it requires a reduction in offtake at a given offtake point); and

- **Interruptions arrangements at the DN level will not be reformed as part of the DN sales process.** The August conclusions documents stated that, although DN reform is not being pursued as part of the DN sales process, in the longer term work should progress on developing new arrangements for the allocation of DN exit capacity. This reform will be subject to its own impact assessment.

Short term arrangements

5.89. NGT plans to hold the initial long term (unconstrained) allocation of NTS offtake rights in Summer 2005. It is planned that this auction will sell offtake rights for 2008/09 onwards (this date being determined by investment lead times)[33]. It is anticipated that these rights will be sold for three years up to fifteen years ahead.

5.90. As such, it is proposed that the "enduring arrangements" for the allocation of offtake rights will not apply to the period from 2005 up to 2008. In these timescales, it will not be possible for the NTS to invest to increase the available level of offtake rights. During this period, NGT will need to satisfy Ofgem that it does not unduly discriminate between users in the allocation of existing capacity.

5.91. NGT has proposed that:

- any NTS connectee wanting NTS offtake rights for this period can request to purchase them at a regulated price. Ofgem will monitor all requests

[33] The length of investment lead times may be reconsidered by Ofgem before or during the NGT price control review, and may evolve over time.

and ensure that NGT properly assesses each request (in light of its statutory and licence obligations); and

- the current interruptions arrangements will be maintained in a modified form (with all interruptible customers having the ability to apply to become firm should they so wish). As noted above, Ofgem will monitor all requests for firm NTS exit capacity from current interruptible customers, and ensure that NGT properly assesses each request (in light of its statutory and licence obligations).

5.92. With respect to the way in which DNs pass on the charges for NTS offtake rights to shippers using DN, two options are being considered. These are:

- to allocate these rights to the DN but continue a similar algorithm to now which apportions this capacity to DN Shippers who then pay for the capacity at a regulated price; or

- to make the DN book and pay for the capacity at the regulated price and then charge the costs through to the shippers via the DN charging methodology.

5.93. The costs and benefits of these two options are still being assessed by Ofgem, NGT and the workgroup.

5.94. Consistent with the principles outlined above, it is proposed that the arrangements for the provision of capacity to DN connectees will not be reformed through the DN sales process.

Agency and governance

5.95. This section sets out for the sale option, the proposed arrangements for:

- the provision of key interfaces between GTs and shippers, including supply point administration services; and

- the governance of key industry agreements, including the Uniform Network Code (the UNC).

Agency arrangements

5.96. The agency is a key aspect of the proposed industry framework. By enabling shippers to interface with NTS and DN GTs on an integrated basis, it is anticipated that the agency would mitigate the costs associated with inefficient industry fragmentation. As such, the agreement of agency arrangements was identified as one of the "gateway" issues in the July 2003 consultation document.

5.97. As described earlier in this chapter, in the event of DN sales there would be a number of activities that are currently provided by NGT that would become the responsibility of a number of DN businesses. This has the potential to introduce a certain amount of duplication and increase the number of interfaces faced by shippers. For example, DN sales could imply that shippers have to:

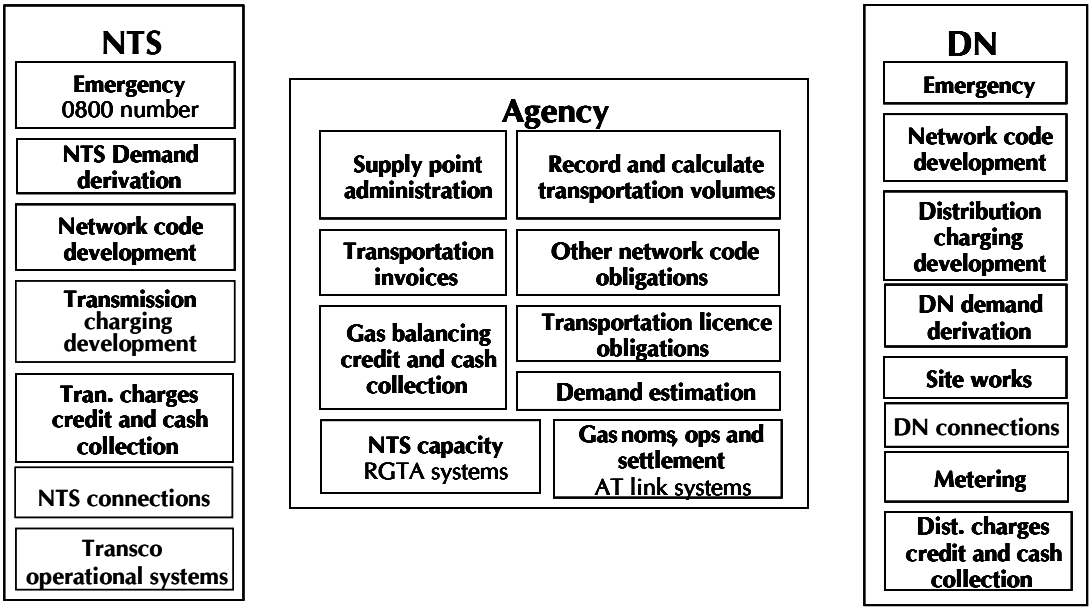
- interface with multiple Supply Point Administration (SPA) processes with different transfer protocols;
- create new interfaces to deal with multiple settlement and operational system fragmentation;
- process multiple invoices from each DN business, which may be based on different charging methodologies and change at different times; and
- institute credit arrangements with each DN business with which it does business and manage separate payment flows to each network owner.

5.98. To ensure that inefficient business separation does not arise as a result of DN sales, NGT proposes to establish a central service provider (the "agency") that could discharge many of the functions and services that are currently provided by NGT. The scope of the agency has been considered by the workgroups and in the Agency and Governance RIA.

5.99. In the Agency and Governance RIA and associated conclusions document, Ofgem considered a number of alternative options (Options A – F), which considered the creation of different sized agencies with differing ranges of responsibilities. The Authority gave due consideration to the relative merits of

each of these options, and opted for Option C, the range of responsibilities of which are illustrated in Figure 5.5 below.

Figure 5.5: Agency & governance arrangements



5.100. Under these arrangements, it is proposed that the agency would be responsible for providing the following services on behalf of NGT and DN GTs:

- **Supply point administration**. This includes holding and maintaining a register of all supply points, supply meter points, and supply point premises, providing query management services, and recording and logging data as required under the network code;

- **Demand estimation**. This involves both estimating demand as an input into the non-daily metered load determination process and setting of NDM profiles for the determination of supply point capacities from Annual Quantities (AQs);

- **Recording and calculating transportation volumes**. This includes determining and amending the AQ and the Supply Offtake Quantity (SOQ) for each supply point, validating meter readings and subsequently calculating metered quantities for supply points;

- **Transportation invoicing**, including producing invoices to shippers for charges for use of the NTS and DN networks and energy balancing charges;

- **Gas balancing, credit and cash collection**. This encompasses the collection of energy balancing charges and revenues and their distribution to shippers, the management of credit arrangements for gas balancing, and the enforcement and recovery of revenues in the event of non-payment;

- **Other network code obligations**. These include managing user admission and termination, validating data at the interface with connected systems, managing NExA supply meter points, distributing must-read notifications, and generating meter point reference numbers;

- **Transportation licence obligations**. These activities include providing an enquiry service to customers in order that they can obtain details of their gas supply, notifying shippers where no meter inspection has occurred in two years, processing information where gas is illegally taken, providing supply point and standards of service information to the Authority, and providing operational reports and Meter Point Reference Number (MPRN) address details to shippers;

- **NTS capacity (and operation of RGTA[34] systems)**, including taking responsibility for the RGTA platform when Gemini release 2 (AT-LINK and RGTA successor) is implemented; and

- **Gas nominations, operation and settlement**, taking responsibility for the provision of the AT-link system or its successor.

5.101. Under this approach, each network owner would remain accountable for its own credit arrangements and cash collection with respect to transmission and distribution charges. In the Authority's view, this is likely to generate the strongest incentive to establish efficient and effective arrangements, as the party that receives the revenue flow would have responsibility for these arrangements.

[34] Reform of Gas Trading Arrangements

Furthermore, the Agency and Governance conclusions document stated that such arrangements would not impose material costs on shippers, partly because shippers frequently need to put arrangements in place with new counterparties.

5.102. It is proposed that site works, connections and metering would be the responsibility of the relevant DN. The Authority anticipated that this would promote accountability and avoid the potential for a negative impact on competition in metering and connections that may result from these activities being assigned to the agency.

5.103. A key purpose of the agency would also be to protect against inappropriate industry fragmentation and the associated increases in costs borne by customers. Consequently, the Authority did not believe that it would be appropriate for individual network operators to have the opportunity to 'opt out' of the agency. The scope of the agency should be appropriately defined going forward, and in the event that changes in this respect are necessary, these would need to be considered by the whole industry and subject to the approval of the Authority.

5.104. Following publication of the Authority's conclusions document, the SPA workgroup (SPAWG) was refocused on satisfying Ofgem's gateway of ensuring that SPA arrangements are not adversely affected by the DN sales process and that shippers are provided with sufficient safeguards. The workgroup has identified a set of risks and mitigating actions against a matrix of agency services, including ungoverned and governed services, and issued a report in this regard to the DISG. The report suggested that DN sales will not adversely affect SPA arrangements as long as the mitigating actions identified in the report are put in place. In December the SPAWG will provide a further update to DISG which will detail progress against the mitigating actions and if necessary include additional recommendations that the SPAWG may identify.

Governance arrangements

5.105. An important aspect of the DN sales process is to develop a set of governance arrangements that reflect the new industry structure envisaged, including the process by which changes to the UNC are proposed and accepted and to ensure that the interests of existing and future customers are thereby protected.

5.106. The Agency & Governance Arrangements indicative decision document set out the Authority's view that, in the event that the proposed sales proceed, a governance entity should be established in order to administer:

- the UNC modification process; and
- the process for introducing changes to network charging methodologies.

5.107. The governance entity is intended to increase transparency and visibility and reduce the potential for undue discrimination as proposed modifications would be administered in a consistent manner, regardless of the network operator concerned.

5.108. Since the publication of the Agency and Governance conclusions document, the DISG has sought to develop further the proposed governance arrangements. Ofgem has issued (non-binding) position papers to the DISG[35] outlining its proposals with respect to these issues, and associated licence change proposals are reflected in Ofgem's informal licence consultation[36]. The proposals relating to the role and constitution of the governance entity (in relation to both its UNC and network charging methodology roles) are summarised below.

Governance of the UNC

5.109. It is envisaged that the primary function of the governance entity would be to administer the UNC modification process. The governance entity's role would include:

- preparing draft and final Modification Reports;
- arranging and chairing Modification Panel meetings;
- managing UNC development workstreams;
- co-ordinating input from GT and shipper subject-matter experts;

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[35] Ofgem preliminary position on the Uniform Network Code modification process and the constitution of the governance entity, DISG 15, and Ofgem position paper on governance of charging methodologies, DISG 15.

[36] National Grid Transco – Potential sale of gas distribution network businesses, Initial thoughts on restructuring of Transco plc's Gas Transporter Licences, consultation document, September 2004 215/04

- where authorised by its board of directors, engaging consultants to contribute towards the development of modification proposals; and
- drafting the legal text associated with proposed amendments to the UNC.

5.110. The regulatory obligation to establish the governance entity would be introduced through a new licence condition applying to NTS and DN GTs. It would be a matter for NTS and DN GT licensees to decide how to carry out these functions in a manner which is consistent with their licence obligations.

5.111. Ofgem believes that NGT's proposal to develop a 'Joint Office Governance Agreement', which all NTS and DN GTs must be party to, is an appropriate vehicle for establishing the governance entity.[37] Among other things, the governance entity's governance arrangements should entrench its duty to act impartially in the exercise of its functions. The Joint Office should be funded by subscription fees in line with current DN and NTS price controls.

5.112. A further feature of the proposed governance arrangements is that the governance entity must exercise its functions independently and without undue regard to the interests of any particular party. Consequently, Ofgem believes that the Joint Office should be subject to structural separation from the GT licensees. This includes information separation, separate staff and separate offices (or offices with separate security access).

Governance of changes to network charging methodologies

5.113. A key function of the proposed governance entity would be to administer the process associated with changes to transmission and distribution charging methodologies. This would enable network users to monitor all proposed changes through a single interface, thereby promoting transparency and reducing the risk of inefficient changes to distribution charges.

5.114. In assessing whether to veto a particular methodology change proposal raised by a NTS or DN GT, Ofgem would consider the potential impact of divergences in charging methodologies on retail competition.

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[37] See Transco paper on the constitution and structure of the GT joint office, DISG 17.

5.115. In addition, Ofgem is considering whether to introduce requirements on NTS and DN GT licensees to use reasonable endeavours to limit changes to their charges to twice a year.[38] This requirement would limit the costs to shippers and suppliers associated with systems alterations.

Summary

5.116. In the context of potential DN sales, two alternative options are outlined; the "no sale" and "sale" options. Under the "no sale" option (in which the disposal of DN assets does not proceed) the current (internalised) arrangements will be retained between the NTS and the DNs.

5.117. In contrast, under the "sale" option, proposed new arrangements are defined for a number of areas. The key elements of these proposed arrangements are as follows:

- **Allocation of roles and responsibilities**. The proposed allocation under the sale option envisages relatively active DNs, undertaking a range of activities currently undertaken by NGT. These include DN investment and maintenance, determining the appropriate level of capacity and congestion management on the DN networks, contracting for interruption to manage congestion for DN purposes and DN system operation.

- **Offtake arrangements**. These set out how the NTS will interface with NTS direct connectees under the sale option. The main elements of these proposed arrangements are as follows:

  - **NTS exit capacity**. This will be booked by DNs and NTS direct connect customers (represented by shippers) on a not unduly discriminatory basis. NTS exit capacity rights will be defined on a nodal basis, and be initially allocated in annual bundles.

[38] See Ofgem position paper on governance of charging methodologies, DISG 15, and National Grid Transco – Potential sale of gas distribution network businesses, Initial thoughts on restructuring of Transco plc's Gas Transporter Licences, consultation document, September 2004 215/04.

- **Diurnal storage and operational flows**. Diurnal storage will be allocated on a commercial basis, and be allocated between NTS direct connectees on a basis which is not unduly discriminatory. Operational flows will be managed by the NTS through the buy back of defined NTS exit capacity and offtake flexibility.

- **Business separation**. NGT will be required to implement targeted structural separation (but not legal separation) of the NTS and RDNs under the sale option. The costs of separation will not be permitted to be passed back to customers.

- **Governance**. Governance of the commercial offtake arrangements will be within the UNC. It is proposed that the technical aspects of the operator to operator interface will be placed in an ancillary document to the UNC.

- **Allocation of NTS exit rights**. In the sale option, NTS exit rights and NTS offtake flexibility will be allocated in investment planning timescales on an unconstrained basis. In shorter timescales, the NTS will be incentivised to allocate any remaining available capacity on a constrained basis.

- **Interruptions arrangements.** NTS interruptions arrangements will be reformed in the sale option. In place of the current arrangements, the NTS will contract for demand management services in the long term, and sell an interruptible product at the day-ahead stage. DN interruptions arrangements will not be reformed as part of DN sales.

♦ **Short term arrangements.** Until the "enduring" arrangements begin, NGT will offer NTS exit capacity and offtake flexibility to NTS connectees on a not unduly discriminatory basis (and at the regulated price). To the extent that these rights are not available (due to the physical limitations of the network in these timescales), the NTS will undertake "buy backs" of capacity.

- **Agency and governance**. In the sale option, the agency will be created to enable shippers to interface with the NTS and DN GTs on an integrated basis. The scope of the proposed agency will include supply point administration, demand estimation, invoicing, gas balancing credit and cash collection, recording / calculating transportation volumes, gas nominations and operation of RGTA systems. It is also proposed that Joint Office Governance agreement, to which all NTS and DN GTs must be party, is developed.

Views invited

5.118. Ofgem welcomes views on all aspects of this Final IA. However, Ofgem would particularly welcome comments on the arrangements required under the "sale" scenario, including:

- **Allocation of roles and responsibilities**. The appropriateness of the division of responsibilities between the NTS and DNs;
- **Offtake arrangements**. Ofgem's proposed offtake arrangements under the sale option, and in particular:
  - the definition of NTS exit capacity, including proposed nodal and annual characteristics;
  - the definition of NTS offtake flexibility and proposed way of handling operational flows;
  - the extent of business separation proposed;
  - the proposed governance structure for the commercial and technical aspects of the offtake arrangements;
  - the allocation process for NTS exit capacity and NTS offtake flexibility;
  - the proposed reform of NTS (but not DN) interruptions arrangements, and sale of an interruptible product at the day-ahead stage;

- **Short term arrangements.** The proposal for interim arrangements to be put in place, in which NGT will offer NTS exit capacity and offtake flexibility to NTS connectees on a basis that is not unduly discriminatory; and

- **Agency and governance**. The proposed creation of an agency to allow the NTS and DN GTs to interface on an integrated basis, and the proposed governance arrangements for the UNC and network charging methodologies.

6. Potential competitive, environmental and social impact

6.1. In this chapter we consider the potential impact of DN sales, should the transaction be allowed to proceed, on:

- competition within sectors affected;
- small firms;
- the environment; and
- income distribution.

6.2. These are considered in turn below.

Impact on competition

6.3. If DN sales proceed, competition in a number of sectors would potentially be affected:

- the gas distribution sector;
- the gas wholesale market; and
- the gas retail market.

6.4. We discuss the potential impact of DN sales on each of these sectors in turn below.

Competitive forces and gas distribution

6.5. If DN sales proceed, the structure of the gas sector in Great Britain would change significantly. It is currently anticipated that four gas DNs would be sold as four legal entities (two of which will be owned by the same acquiring corporate group). As such, a national monopoly for gas transmission and distribution would become a national monopoly for gas transmission, and four regional gas distribution monopolies. Therefore, whilst gas distribution will

remain a monopoly business, the creation of a number of regional comparators will introduce competitive forces into the GB gas distribution sector for the first time.

6.6. As explained in Chapter 4, DN sales could generate potentially significant benefits by enabling comparative regulation to take place between independently owned entities, allowing:

- Ofgem to gain valuable comparative information as to the appropriate level of costs that an efficiently run regulated gas distribution business should incur; and
- the generation of greater incentives for improvement amongst DNs, as they would be obliged to catch up with the benchmark efficiency level or else face shortfalls in their allowed revenue compared to their actual costs.

6.7. Furthermore, in the event of DN sales, shareholders and financial analysts would have more information with which to infer the relative efficiency of each gas DN company, and this in itself may stimulate companies to make improvements.

6.8. Whilst DN sales would not generate direct competition, the creation of separate gas DN comparators could generate incentives for each gas distribution company to out-perform its peers in order that it is viewed favourably, in relative terms, by both regulators and shareholders.

Wholesale gas competition

6.9. In considering the appropriate framework of regulatory, operational and commercial arrangements in the event of DN sales, Ofgem has been very careful to ensure that the continuity of the current arrangements for wholesale competition and balancing would not be jeopardised. In reaching an indicative decision on the allocation of roles and responsibilities between transmission and distribution, the role of residual energy balancer was assigned to the NTS to ensure that National Balancing Point (NBP) arrangements would be retained.

6.10. As discussed in Chapter 4, industry fragmentation could increase shippers' costs if shippers are required to develop different system interfaces to deal with

different DNs. As such, Ofgem considers that inefficient fragmentation could discourage market entry and weaken wholesale competition. The proposed agency arrangements are intended to prevent these negative impacts on wholesale competition by preserving a single uniform interface between network operators and shippers.

6.11. Furthermore, it is noted that certain aspects of the proposed arrangements may have a positive impact on wholesale competition (for example, a clear set of offtake arrangements may enable more transparent pricing, and therefore promote wholesale gas competition).

Retail gas competition

6.12. A detrimental impact on wholesale competition would potentially have a knock-on impact on retail competition. It is therefore important to re-emphasise that in considering the appropriate framework of arrangements in the event of DN sales, Ofgem has been very careful to ensure that the continuity of the current arrangements for wholesale competition and balancing would not be jeopardised.

6.13. Ofgem acknowledges that an inappropriate framework of arrangements in the context of DN sales could present some potential risks to retail competition. However, in considering alternative options for the necessary arrangements, Ofgem has sought to address these risks.

6.14. Ofgem considers it important that suppliers should not have to engage with significantly different processes in order to transfer customers situated on different networks. The agency is intended to prevent these negative impacts on retail competition by preserving a single uniform interface for the SPA register and other systems. For example, this would prevent fragmented switching arrangements, which might increase the change of supplier failure rate, as suppliers interact with a range of different systems and processes, and impact adversely on customer switching rates.

6.15. Furthermore, it is noted that certain aspects of the proposed arrangements may have a positive impact on retail competition (for example, competition in the

retail gas market may be positively affected if the existence of more flexible and responsive DNs allows retailers to design more innovative products).

Impact on small firms

6.16. Should DN sales proceed, there will be an impact on small businesses in Great Britain:

- given the potential net customer benefits of DN sales, small businesses in Great Britain are expected to experience lower gas bills than if DN sales do not proceed; however
- a small number of gas shipper / supplier businesses (potentially no more than three) are small firms[39] and may be adversely affected by the costs of implementing the proposed framework of arrangements.

6.17. Therefore, whilst successful implementation of DN sales would be expected to benefit the majority of small businesses, a small number (potentially no more than three) may be adversely affected by these proposals.

Impact on the environment

6.18. The operation of the NTS and LDZ networks has an impact on the environment. Specifically, the gas networks are contributors to Great Britain's greenhouse gas emissions, due to the fact that:

- gas lost from pipelines consists mainly of methane (which is a potent greenhouse gas);
- combustion of gas used to power compression stations on the networks results in emission of carbon dioxide (CO_2), as well as air quality pollutants, especially oxides of nitrogen (NOx); and

[39] As defined in Better Policy Making: A guide to regulatory impact assessment, Cabinet Office, January 2003

- operation and maintenance of the network entails risks of discharges of pollutants to surface and groundwater and to land and generation of waste.

6.19. These environmental impacts are managed and regulated by a range of legislation and agencies, including the Environment Agency (in England and Wales) and the Scottish Environment Protection Agency. Incentives to minimise losses are also provided by the licensing system.

6.20. The current proposals do not involve any changes to the incentives applying to the minimisation of losses. They also are not expected to affect the regulation of the networks by other agencies.

6.21. Therefore Ofgem does not consider that there would be any environmental impacts associated with DN sales if they proceeded. However, Ofgem would welcome any views on this from respondents.

Impact on income distribution

6.22. Based on the 2001 English House Condition Survey data there are some 1.4m gas users in England who are "fuel poor" i.e. that have to spend at least 10 percent of their income on heating their home to an adequate level. Any measures that lead to a general reduction in gas bills to domestic gas customers will therefore benefit the fuel poor.

6.23. Should DN sales proceed, Ofgem anticipates that gas bills to domestic gas customers, including the fuel poor, have the potential to be lower than they would be in the absence of DN sales.

Summary

6.24. If DN sales proceed, it is anticipated that this would:

- introduce competitive forces into the GB gas distribution sector for the first time as well as having a potentially positive impact upon wholesale and retail gas competition. In considering the appropriate framework of arrangements in the event of DN sales, Ofgem has been very careful to ensure that the continuity of the current arrangements for wholesale competition and balancing would not be jeopardised.
- benefit the majority of small businesses. However, a small number (no more than three) may be adversely affected by these proposals;
- not have any significant environmental effects; and
- reduce gas bills to domestic gas customers, including the fuel poor, below the level that they would otherwise have reached.

Views invited

6.25. As noted previously, Ofgem welcomes views on all aspects of this Final IA. However, Ofgem would particularly welcome comments in relation to the potential impact of DN sales on:

- competition in the gas distribution, wholesale and retail markets;
- small firms;
- the environment; and
- income distribution.

7. Risks and unintended consequences

7.1. In this Chapter we identify some of the key risks envisaged and potential unintended consequences associated with DN sales. Given the Authority's principal objective to protect customers' interests, one of the key risks associated with the Authority's decision on whether to consent to the proposed disposal of DNs is that the net expected benefits to customers are not realised, i.e:

- that the estimated potential customer benefits envisaged by Ofgem in relation to comparative efficiency in the event of DN sales are not realised; or
- that the estimated potential customer costs envisaged by Ofgem in the event of DN sales are an under-statement of the costs actually incurred.

Risks associated with the benefits of DN sales

7.2. Should the Authority consent to DN sales, there are two key risks in relation to the realisation of the benefits forecast by Ofgem:

- that despite achieving Authority consent NGT's commercial transaction to dispose of a number of its DNs does not proceed due to some external factor; and
- that the customer benefits estimated by Ofgem are not realised in full, and customers' interests are not therefore protected.

7.3. Ofgem notes that the sale of the DNs is a commercial transaction led by NGT and, as such, consent by the Authority does not guarantee that the transaction will reach completion. However, it is of course for NGT, and not Ofgem or the Authority, to mitigate such risks.

7.4. As with any impact assessment, Ofgem's cost benefit analysis seeks to measure the potential impact of a set of proposed regulatory arrangements that do not actually exist. If the sale of the DNs proceeds, the actual outcomes could be better or worse than presented. However, given this uncertainty, and the Authority's principal objective to protect customers' interests, Ofgem has sought

to adopt a conservative approach to estimation of "base case" net potential benefits in informing the Authority's decision regarding whether to consent to the disposal of the DNs. This conservative approach reflects the possibility that the price control process will not be as effective in driving operating efficiencies within the DN companies as may be suggested by experience in other sectors. Furthermore, "high case" and "low case" estimates have also been considered to reflect the intrinsic uncertainty associated with impact assessments.

7.5. Even if the estimates of net potential benefits are robust, full realisation of these benefits will depend on an effective regulatory process that reduces informational asymmetries. Ofgem notes that informational asymmetries may limit the extent to which benefits can be captured within the first full price control period, and has reflected these regulatory realities in the profile of benefits assumed. Furthermore, Ofgem intends to commence information capture early in the process to ensure that the potential for customer benefits is realised and that customers' interests are thereby protected.

Risks associated with the costs of DN sales

7.6. As mentioned above, as with any impact assessment, Ofgem's cost benefit analysis seeks to measure the potential impact of a set of proposed regulatory arrangements that do not actually exist. If the sale of DNs proceeds, the actual outcomes could be better or worse than presented. However, given this uncertainty, and the Authority's principal objective to protect customers' interests, Ofgem has, in informing the Authority's decision regarding whether to consent to DN sales:

- considered shipper estimates of the costs that they are likely to incur;
- sought to adopt a conservative approach to estimation (and extrapolation) of "base case" costs; and
- considered "high case" and low case" estimates of costs.

7.7. However, there remains the risk that the framework proposed will not operate in the way envisaged by Ofgem in estimating the costs incurred. Some of the key areas of risk in this respect include:

- fragmentation of the wholesale market arrangements;
- fragmentation of the agency arrangements;
- the operation of the agency by GTs in a manner which is not in the interests of customers;
- undue discrimination in the modifications process; and
- undue discrimination in the offtake arrangements, either between IDNs and RDNs or between DNs and other NTS connectees.

7.8. We consider each of these areas in turn below.

Fragmentation of the wholesale market arrangements

7.9. If the sale of DNs were to lead to a fragmentation of the current wholesale market arrangements, so that, for instance, shippers were required to balance inputs and offtake on each separately owned network, then there would potentially be significant costs to customers. A related risk is that present gas contracts that reference the NBP are no longer applicable and would need to be adjusted, which would cause cost to be incurred in relation to contract renegotiation that would, most likely, feed through to customers. Furthermore the wholesale market arrangements would be significantly undermined.

7.10. Mitigation of these risks has been considered throughout the consultation process. The Authority's decision on the roles and responsibilities that the network owners should undertake to reduce this risk. Similarly, the Authority's ultimate decision on the issue of legal separation was influenced by these potential risks.

Fragmentation of the agency arrangements

7.11. Ofgem acknowledges that, in the event of DN sales, were the agency arrangements to collapse, or if DNs decided to opt out of the agency process, significant costs would be incurred by shippers. In order to mitigate this risk, Ofgem intends to place a licence condition on NTS and DN GTs to ensure that

they continue to have common agency arrangements[40]. Furthermore, it is proposed that any change in this position would require a full, stand-alone cost benefit analysis. As such, Ofgem would attach a low probability to GTs being able to opt out of the agency arrangements.

Operation of the agency against customer interests

7.12. Even if all GTs continue to interface with shippers through the agency, there is a risk that they may operate the agency in a manner which is not in the interests of customers. However, Ofgem would assign a low probability to this occurring (as in the event of any GT breaching a licence obligation or statutory duty the Authority would have power, under the Utilities Act, to impose a financial penalty on any GT of up to 10 percent of its revenue).

Undue discrimination in the modifications process

7.13. There is a risk that there may be undue discrimination in the operation of the modifications process such that proposed modifications which are in customers' interests are delayed or blocked. However, Ofgem would assign a low probability to this occurring given the proposed objectives and constitution of the Joint Office.

Undue discrimination in the offtake arrangements

7.14. There is a risk that the offtake arrangements needed in the event of DN sales may allow:

- undue discrimination by NGT, in operating the NTS, in favour of its RDN business at the expense of IDNs; and
- undue discrimination between DNs and shippers of other NTS direct connects in operating arrangements for offtake.

[40] This will be discussed further in Ofgem's forthcoming informal licence consultation document on the Section 8AA licence transfer process.

7.15. Either of these eventualities may undermine the potential benefits of DN sales to customers.

7.16. In order to mitigate these risks, the Authority has:

- decided that there should be targeted structural business separation between the NTS and the RDNs; and
- proposed transparent, commercial arrangements for NTS offtake that would not allow the consideration of requests for NTS exit capacity on a "first come first served" basis.

7.17. As such, Ofgem has assigned a low probability to these risks being realised.

Views invited

7.18. Views are invited on this chapter, and in particular the key risks are that:

- the estimated potential benefits in relation to comparative efficiency are not realised; and that
- the estimated potential costs (in the event of DN sales) are understated.

7.19. Respondents are also invited to comment on the other potential risks and possible unintended consequences detailed in this chapter such as:

- the risk that the sale of DNs undermines wholesale competition;
- the risks that the agency arrangements fragment or that the agency operates in a manner that is against customer interests; and
- the risk that the sale of DNs leads to arrangements that permit NGT to potentially exercise undue discrimination in the operation of those arrangements.

8. Analysis of benefits

8.1. Ofgem's base case estimate of the potential gross benefits that could accrue to customers through the sale option, as described in Chapter 5, relative to the no sale option is £325 million in present value terms (the majority of which results from an assumed increase in the efficiency of DNs resulting from more effective comparative regulation). Ofgem considers that the existence of the potential for increases in the efficiency of the DNs is indicated by the fact that potential purchasers have agreed a price for the DNs with NGT that represents a significant premium over the Regulatory Asset Value.

8.2. This chapter is divided into six parts:

- the first part provides an overview of where estimated potential benefits to customers are likely to arise because of NGT's proposal to sell one or more DN;
- the second part provides a brief overview of previous assessments of the estimated potential benefits of DN sales;
- the third part provides Ofgem's assessment of the likely level of estimated potential benefits expected to arise as a result of efficiency savings;
- the fourth part sets out Ofgem's assessment of the estimated potential consequential benefits that are expected to arise as a result of the reforms required to implement DN sales;
- the fifth part summarises the results of the benefits analysis; and
- in the final part, Ofgem invites views from respondents to this consultation regarding the benefits analysis performed.

8.3. Chapter 9 sets out Ofgem's analysis of the estimated potential costs associated with the sale option. In Chapter 10, the costs and benefits assessments are brought together to consider the overall case for DN sales.

How estimated benefits to customers are likely to arise

8.4. As described in Chapters 3 and 4, a key issue for the Authority in its decision as to whether to consent to NGT's proposed disposal of its DNs is the level of benefits that is likely to accrue to customers. As also set out in Chapter 4, these estimated potential benefits are likely to arise because the sale of the DNs should create a number of similar but independently owned DN businesses, as opposed to the current situation in which NGT owns all of the DN businesses. In turn, this should allow the revenues for these DN businesses to be set on a comparative basis.

8.5. Given the additional information which would be available, Ofgem would expect these allowed revenues to relatively lower (compared to the no sale option, in which the DNs remain under sole ownership). Therefore Ofgem considers that comparative regulation could reduce the overall costs of gas distribution relative to a scenario in which they continue to be solely owned by NGT. This implies that under the sale option, gas distribution charges paid by customers should be lower than under the no sale option.

8.6. Currently distribution charges constitute approximately 23 percent of a domestic gas customer's bill and approximately 17 percent of an industrial and commercial customer's bill[41]. Therefore, a reduction of these charges is expected to impact the overall gas bills of customers (an effect that would not materialise were DN sales not to proceed).

8.7. The main area of potential benefits to customers from DN sales is therefore expected to be through comparative regulation under which Ofgem envisages having better information regarding the efficient level of operating expenditure for a gas DN. The next sections of this chapter seek to quantify the level of this potential benefit.

[41] Based upon DTI data, from Q2 2004.

8.8. It should also be noted that in performing its benefits assessment, Ofgem has not quantified any capital expenditure savings that may be achieved (therefore adopting a conservative approach). Furthermore, none of the other studies performed to date (which are discussed in the next section) have considered the impact of comparative efficiency on capital expenditure. However, Ofgem would note that the comparative assessment of capital expenditure plans, for example by comparing them against a benchmark replacement profile and using benchmarked unit costs, is a very useful tool at price control reviews.

Overview of previous assessments

8.9. A number of studies, commissioned by the industry, have sought to quantify the likely benefits of a potential DN sale. These include:

- a report commissioned by Ofgem and prepared by ILEX Energy Consulting Ltd;[42]
- an RIA prepared by NGT; [43]and
- work undertaken by OXERA on behalf of British Gas Trading Ltd.[44]

8.10. Table 8.1 below, sets out a summary of the three studies' evaluation of the benefits that the sale of four DNs may deliver to customers. As this table shows, NGT considered a benefits scenario whereby additional benefits, over and above those achieved from comparative efficiency, were assumed to be achievable as a result of merger synergies and economies of scope – their "merger benefits" scenario. The results presented for the other studies do not include such additional benefits.

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[42] This analysis forms an appendix to Ofgem's December document on DN sales. See *'National Grid Transco – Potential sale of network distribution businesses'*, Ofgem, December 2003, Appendix 2.
[43] *National Grid Transco - Potential Sale of Network Distribution Businesses Regulatory Impact Assessment*
[44] *Potential sales of National Grid Transco's distribution networks: Critical review of the preliminary regulatory impact Assessment* September 2003.

Table 8.1: Comparison of benefit estimates (sale of four DNs)[45]

Study		Estimated benefits (2000 prices)
Oxera[46]	Low Case	£102m
	High Case	£134m
NGT[47]	No merger benefits	£356m
	Merger benefits	£558m
ILEX	No merger benefits	£319m

8.11. It should be noted that each of these studies assumed that four DNs would be sold to four separate independent purchasers and hence created four separately owned DN comparators in addition to the NGT RDNs.

8.12. These studies are discussed further in Appendices 2 and 4.

Estimate of benefits likely to arise as a result of efficiency savings

8.13. Ofgem has built upon the analysis that it and other commentators have undertaken to assess the opportunities for potential efficiency savings for customers that would not otherwise arise. In this section, Ofgem:

- provides an overview of the methodologies applied and its view on the appropriate set of assumptions; and
- describes the analysis performed and summarises the results obtained.

8.14. The analysis set out in this section is supplemented by more detailed appendices:

[45] These estimates are provided in 2000 prices. However, the benefits estimates provided later in this chapter are stated in 2004 prices. As such, the numbers quoted for the OXERA / NGT / ILEX studies should be inflated before being compared to those derived within this document.
[46] In its analysis, OXERA made no estimate of additional merger benefits. Furthermore, the likely benefits stated in this table do not include OXERA's estimate of the impact of losses of economies of scale.
[47] The NGT benefits presented are assumed to be net of industry costs of £10m - £18m.

- Appendix 1 provides an overview of other studies assessing the case for DN sales;
- Appendix 6 reviews the evidence of the estimated potential benefits of DN sales;
- Appendix 7 provides a detailed description of the calculation of the estimated potential benefits under the first of two methodologies used by Ofgem to calculate the benefits (Methodology 1);
- Appendix 8 provides a detailed description of the calculation of the estimated potential benefits under a second methodology (Methodology 2);
- Appendix 9 provides details of the estimated potential consequential benefits of DN sales; and
- Appendix 10 sets outs some policy details on Ofgem's future approach to mergers or comparable transactions in the gas distribution sector.

Overview of methodologies and assumptions

8.15. Before discussing the assumptions that Ofgem has applied in quantifying the likely benefits associated with the sale option, we consider the alternative methodologies that could be applied to quantify such potential benefits. In this section, we therefore:

- first, provide a high level discussion of two alternative methodologies and the main methodology chosen by Ofgem;
- second, discuss the nature of the assumptions made in relation to the main methodology applied by Ofgem; and
- finally, set out the level of the assumptions used in Ofgem's modelling of benefits likely to accrue to customer and the rationale for their determination.

Overview of methodologies

8.16. Previous assessments of the benefits of DN sales have estimated the potential impact of DN sales on allowed operating expenditure and hence on customer charges. There are two alternative methodologies which could be applied to quantify the likely benefits of comparative regulation:

- **Methodology 1 – an exogenous approach.** This approach specifies the rate of change in all DNs' allowed controllable operating expenditure going forward, which is recovered through DN charges to customers, under both the sale option and the no sale option; and

- **Methodology 2 – an endogenous approach.** This specifies a range of input assumptions such as the starting level of inefficiency of each DN, the method of determining the efficiency frontier, the forecast *actual* rate of improvement in operating expenditure that will be achieved by the DNs, and the rate of catch up to the frontier required of laggard DNs. These input assumptions are then applied to determine the rate of change in allowed operating expenditure going forward that feeds into customer charges for each DN relative to the no sale option.

8.17. It follows that under Methodology 1 the annual improvement in DNs' allowed operating expenditure for each of the sale and no sale options is an exogenous pre-determined variable. Under Methodology 2, the annual improvement in allowed operating expenditure is endogenous to the model and therefore calculated as a function of the other variables specified.

8.18. If Methodology 2 is adopted, percentage improvements must relate to the reduction in the expected rate of *actual* operating costs incurred by the company rather than the reduction in the revenue *allowed* by the regulator for operating costs. To specify the reduction in allowed revenue for operating costs would over-specify the number of assumptions in the model and effectively determine exogenously (rather than endogenously) the outputs to the evaluation as well as the inputs.

8.19. Previous studies undertaken have lacked clarity with respect to:

- which of the methodologies described above has been applied;
- the importance of the assumptions specified, and the sensitivity of results to their variation; and / or
- the specification of the counterfactual applied.

8.20. In order to achieve simplicity and transparency in presenting the results of its review of the benefits analysis for the purpose of this Final IA, Ofgem has:

- focused on the application of Methodology 1 and the use of historical trends achieved in allowed operating expenditure to inform the assumptions applied; and
- clearly specified a counterfactual.

8.21. Ofgem presents the results from this approach to the calculation of benefits in this chapter. However, Ofgem has additionally applied the Methodology 2 approach. The results obtained from this additional analysis broadly confirm those derived using Methodology 1, and are presented in Appendix 8.

8.22. Ofgem invites views on the methodology adopted to assess the benefits that are likely to accrue to customers on account of the emergence of comparators through the DN sales process.

Nature of assumptions

8.23. In order to quantify the likely benefits to customers of the proposed sale of one or more of its DNs by NGT using a "Methodology 1" approach, it is necessary to develop an appropriate range of assumptions for cost savings under the sale option relative to the no sale option. These relate to:

- the rate of improvement in allowed controllable operating costs; and
- the profile of customer benefits over time.

8.24. We discuss each in turn before setting out the nature of the other assumptions required under Ofgem's approach to the modelling of the benefits. In the next

subsection we describe the level of the assumptions used in the modelling of the estimated potential benefits.

Allowed controllable operating costs

8.25. Given the choice of methodology, and historical evidence presented in Appendix 6, Ofgem has developed assumptions for the following key model inputs as part of the benefits assessment for the Final IA:

- **Sale option average rate of improvement in allowed controllable operating costs:** the rate of improvement in allowed controllable operating expenditure that would be set by Ofgem for all DNs in the event of DN sales; and

- **No sale option average rate of improvement in allowed controllable operating costs:** the rate of improvement in allowed controllable operating expenditure that would be set by Ofgem for all DNs in the absence of DN sales.

8.26. We briefly discuss each in turn below.

Sale option – allowed controllable costs

8.27. Under the sale option, Ofgem assumes that:

- the allowed operating expenditure targets applicable to both IDNs and RDNs would reduce at a faster rate, as a result of comparative regulation, than they would otherwise have done under the no sale option;

- the targeted rate of improvement is likely, on average, to be the same across all DNs and will not differentiate between IDNs and RDNs despite potential differences in actual underlying performance absent the appropriate incentives; and

- the targeted rate of DN improvement will vary in accordance with the number of additional comparators generated by DN sales. The creation of four additional comparators will generate a greater rate of improvement than the creation of three or fewer additional comparators, and so on.

No sale option – allowed controllable costs

8.28. Under the no sale option the targeted rate of improvement may be marginally tougher than has historically been the case for NGT as a result of the separation of price controls.

Profile of estimated potential benefits

8.29. Ofgem has also considered the profile of improvement that may be achieved by DNs in the event of DN sales and which will impact on any present values derived. Alternative profiles considered for the three regulatory periods analysed (2008/9 to 2022/23) included:

- constant rate of improvement: application of a constant rate of improvement throughout the period; and
- bell shaped improvement, with:
  - relatively low rates of improvement in the first full regulatory period; then
  - the greatest rate of improvement in the second full regulatory period, as Ofgem obtains more information regarding each DN's relative efficiency; and
  - the lowest rate of improvement in the third full regulatory period, to reflect the assumption that the largest efficiency gains driven by DN sales would have been exploited already.

8.30. Ofgem has received representations from industry participants in response to previous studies that to use a flat rate throughout the period of evaluation may not be realistic. These respondents argue that, because of the relatively short duration between the transaction and the end of the current price control, it is unlikely that many of the likely benefits of comparative regulation will be passed through to customers within the first full regulatory period i.e. that a bell shaped rate of improvement over the three regulatory periods of evaluation is most appropriate. Having regard to representations received, a bell shaped profile has been adopted by Ofgem in the modelling of the benefits case.

Other assumptions

8.31. The benefits analysis has been performed on the basis of the following additional high-level assumptions:

- as Ofgem is not proposing to re-open the current price control,[48] it is assumed that no benefits will be passed to consumers within the current price control period;
- under this approach to modelling it is not necessary to specify whether the sold networks are less or more efficient than those retained by NGT. Rather, under the sale scenario, the modelling assumes that efficiencies are accrued at a faster rate on all networks relative to the starting position[49];
- the next price control period will commence on 1 April 2008, with each subsequent regulatory period lasting for five years; and
- if DN sales proceed to the current commercial timetable, GT licences will be transferred from Transco plc to wholly owned Transco subsidiary companies at the end of April 2005. At this point, the HSE will then be able to assess the final changes to the DNs' safety cases. NGT will be able to proceed towards completion of the proposed sale if the safety cases have been accepted. The current commercial timetable envisages DN sales taking effect from the end of May 2005 onwards. The modelling works on a financial year basis, and as such, assumes that DN sales will take effect from 1 April 2005. Though this does not fully reflect the current commercial timetable, the impact on the cost benefits calculation is perceived to be negligible, and represents a conservative approach as costs are assumed to be incurred sooner whilst in either case, the first benefits are not realised until commencement of the next price control on 1 April 2008.

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[48] As stated in *National Grid Transco – Potential sale of network distribution businesses 170/03. Next Steps*. Ofgem, December 2003.

[49] The endogenous approach to modelling, Methodology 2 does require specification of this assumption. In Appendix 8, we present Ofgem's modelling of the benefits under this approach.

Level of assumptions

8.32. In order to inform the development of assumptions in relation to the rate of improvement of allowed operating expenditure, we have considered the historical performance achieved by companies in other GB regulated industries and reviewed productivity studies performed in the context of recent regulatory reviews in GB. Full details of this review are provided in Appendix 6. We provide an overview of the assumptions applied below, before discussing the rationale for each assumption in detail.

8.33. In quantifying the estimated potential benefits to customers of the proposed sale of one or more DNs, Ofgem has assumed that the four DNs agreed for sale will be sold to the parties with whom sale has been agreed. Therefore, it is assumed that the Scotland, North of England, South of England, and Wales & West networks will be sold to three parties, creating three additional comparators, in addition to Transco's RDN business.[50]

8.34. Furthermore, in order to acknowledge the uncertainty surrounding the determination of assumptions, Ofgem has developed three cases (a high case, a base case and a low case). The level of the assumptions used in Ofgem's modelling are presented in Table 8.2 below.

[50] Ofgem has treated the two networks sold to the consortium including Scottish & Southern Energy plc as a single comparator on the basis that in order to reap the full benefits of comparative regulation, each comparator should be independently owned.

Table 8.2: Assumptions applied in benefits quantification

		High case	Base case	Low case
No sale option average rate of improvement		3%	**3%**	3.25%
Sale option average rate of improvement in allowed controllable operating expenditure	4 additional comparators[51]	5.8%	4.3%	4%
	3 additional comparators[52]	5.40%	**4.13%**	3.91%
	2 additional comparators[53]	4.86%	3.87%	3.77%
	1 additional comparator[54]	4.09%	3.5%	3.55%
Profile for DNs		Bell-shaped	**Bell-shaped**	Bell-shaped

8.35. As Table 8.2 shows, the average rate of targeted improvement in controllable operating expenditure is assumed to vary, in each case, in accordance with the number of additional comparators assumed. The assumptions associated with the base case agreed sale scenario are highlighted in bold in the above table.

8.36. We discuss the derivation of each of these assumptions below. However, in considering the validity of these assumptions, Ofgem has also considered the validity of the resultant differential between the no sale option average rate of improvement, and that assumed for DNs in the event of DN sales.

No sale option rate of improvement

8.37. Current expectations for improvements in Transco plc's controllable operating expenditure are 2.5 percent per annum. As such, in Ofgem's view, 3 percent represents a conservative assumption for the no sale option rate of improvement in the absence of DN sales which:

- acknowledges that the equivalent percentage for the National Grid Company plc (NGC) is 3.5 percent per annum; and

[51] In addition to the Transco RDN business.
[52] See footnote above.
[53] See footnote above.
[54] See footnote above.

- reflects the fact that the introduction of separate DN price controls in 2003 may be expected to increase the rate of improvement in the absence of DN sales above historical trends by increasing the transparency of costs and allowing some limited comparisons to be made.

8.38. However, with respect to the impact of separate DN price controls, Ofgem notes that, in the absence of DN sales, such benefits would be limited by the common ownership of DN networks by NGT that could:

- disincentivise efficiency improvements by one network that could have an adverse effect on other networks; and

- maintain the overall information asymmetry between the regulated business and Ofgem allowing distortions to persist (this could, for instance, take the form of reallocation of costs across networks such that no individual network was seen to push out the frontier to the detriment of other networks).

8.39. Ofgem is therefore of the view that, whilst there may be some additional efficiency improvements as a result of the separation of DN price controls, such benefits are likely to be limited and could be substantially less than would be the case if DN sales were allowed to proceed.

8.40. However, to reflect the potential for the impact of the separation of DN price controls to be greater than assumed in the base case and high case, an annual rate of improvement of 3.25 percent has been assumed in the low case. As explained in paragraph 8.37, this assumption could be viewed as conservative.

8.41. Ofgem invites views on the no sale option assumptions made regarding the level of the rate of improvement.

Sale option rate of improvement

8.42. As noted earlier in this chapter, the fact that potential purchasers of the DNs are willing to pay a premium to the Regulatory Asset Value (RAV) supports a conclusion that there are potential customer benefits to be gained from increased efficiency of the DNs. The sale of four networks was conditionally agreed for a

20 percent premium to the March 2004 RAVs as determined by Ofgem, and a 14 percent premium to NGT's estimate of the Regulatory Asset Value for March 2005. As an illustration of the potential scale of benefits, it is noted that were these premia driven solely by expected savings in operating costs, the PV of likely benefits to buyers' shareholders associated with such savings would range from £700m to £1bn.[55] Given the regulatory process, these savings would be expected to be passed through to customers over a number of price controls and, moreover, could be expected to last for many years.

8.43. The regulatory literature reviewed in Appendix 6 also suggests that this potential for cost reduction in the event of DN sales may be significant:

- Ofwat concluded that the loss of value to customers (based on an assessment of both operating expenditure and capital expenditure) of losing a single comparator could be between £330m and £1.4bn, depending on the size of the comparator lost.[56] This analysis was based on an assessment of the loss of a very large local or medium regional company comparator (moving from 22 to 21 companies) and included the potential benefits accruing to allowances for capital expenditure as well as operating expenditure. Nonetheless, it is clear that on the basis of this analysis, the benefits of moving from a situation of a single independent entity to even a small number of comparators could potentially be significant;

- over the period 1991/2 to 2001/2, electricity network operators (DNOs) achieved an annual improvement in total real unit operating expenditure of 7.7 percent[57] (and therefore a higher percentage reduction in controllable costs); and

- relative to this electricity DNO improvement rate of 7.7 percent per annum, National Grid Company achieved an improvement of 4.9

[55] It is noted that this calculation is a simplification as a number of other factors, including buyers' assumptions on the regulatory treatment of any capex overspend or underspend associated with each network, will influence the premia to RAV.
[56] Vivendi Water UK plc and First aqua ltd, A report on the proposed merger, Competition Commission, November 2002.
[57] Productivity improvements in DNOs, Final Report, CEPA, November 2003 – discussed in further detail in Appendix 6.

percent over a similar period[58]. It could be argued that the resulting differential reflects the pressure of comparative regulation on electricity DNO performance. Were this differential to be applied to a status quo assumed rate of 3 percent, an annual improvement rate for gas DNs of 4.7 percent would result if a proportional approach were adopted i.e. if the premium of electricity DNO performance over NGC performance is applied to a rate of 3 percent[59].

8.44. Historical performance therefore appears to justify a rate of improvement of between 4.7 percent and 7.7 percent for gas DNs.

8.45. Ofgem is therefore of the view that the 4.3 percent assumption applied to allowed controllable costs within the preliminary RIA represents a realistic and conservative expectation of performance improvements for gas DNs in the event of DN sales. This rate was derived from an analysis of the electricity DNOs, being the compound average growth rate equivalent, in present value terms, of the forecast changes in controllable operating costs for the electricity DNOs over the period 1997/98 to 2004/05. This assumption has also been applied in the context of electricity distribution merger policy[60].

8.46. In response to Ofgem's assumption of a 4.3 percent rate of improvement in the event of DN sales within the preliminary RIA:

- BGT (and OXERA) argued that Ofgem's preliminary RIA *over-stated* the likely benefits of DN sales as the fragmentation of the industry may lead to some loss of economies of scale; and

- NGT in its assessment, argued that the preliminary RIA had *under-stated* the likely benefits of DN sales as the benefits associated with the achievement of merger savings through the introduction of new management and merger synergies achieved, for example, through economies of scope were not fully taken into account.

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[58] CEPA report (ibid.), Figure 15, for the period 1990/1 – 2001/2 – discussed in further detail in Appendix 6.
[59] This is derived assuming that the ratio between DNO and NGC annual percentage improvements equals the ratio between percentage improvements under a sale scenario and under the status quo. That is,
7.7 percent ÷ 4.9 percent = (sale scenario % improvement) ÷ 3 percent
[60] Ofgem, "Mergers in the Electricity Distribution Sector, Consultation document, November 2001.

8.47. In response to BGT / OXERA's arguments regarding the potential for loss of economies of scale, on a general level Ofgem notes that:

- The evidence regarding economies of scale is mixed. In particular, Ofgem is not persuaded that there will be significant losses in economies of scale as a result of NGT moving from an eight DN business to a four DN business for the following reasons:
  - as the review in Appendix 6 illustrates, academic studies have found as much evidence of diseconomies of scale as of economies of scale in equivalent utilities in relation to territorial expansion or an increase in customer numbers;
  - whilst diseconomies of scale may be likely at a single DN business level, under the proposed regulatory approach, such losses in economies of scale will not be passed through to customers as each IDN will be compared to NGT's larger RDN business. In assessing the impact of losses of economies of scale on the case for DN sales, it is therefore only necessary to consider the impact of moving from an eight DN business to a four DN business; and
  - given the lack of evidence for the presence of economies of scale in gas distribution at a national level, Ofgem believes that diseconomies of scale may currently exist in relation to the current eight DN business owned by NGT. As a result, moving to a four DN business, where three DNs are contiguous and overheads can be shared with the NTS, may actually improve efficiency; furthermore
- the proposed sale of DN networks could introduce the possibility of harnessing economies of scope that GB utilities have not had the opportunity of capturing to date. As such, historical experience may understate the potential for efficiency gains, as the shared management of gas and electricity distribution networks (or indeed gas, electricity and water) has not previously been possible.

8.48. Ofgem notes that there is academic evidence to support the existence of economies of scope within multi-utilities, indeed the fact that three of the four networks proposed to be sold will become part of multi-utility businesses would seem to support this argument. Furthermore, Ofgem notes that the consortium (including Scottish and Southern Energy plc) which plans to buy two networks, has not opted to purchase two contiguous gas distribution networks in order to maximise economies of scale, but has rather chosen gas distribution networks that overlap with the two electricity distribution networks it currently owns.

8.49. However, consistent with the approach adopted by ILEX, Ofgem has not explicitly made allowance for additional economies of scope over and above those reflected by historical experience within the base case as it would be difficult to disentangle these effects from the effect of new management and transfer of best practice. As such, any explicit attempt to include such benefits would run the risk of double-counting.

8.50. Therefore, within this Final IA, the base case assumption of 4.3 percent has been retained for a scenario of four additional comparators. However, lower rates of improvement are applied in the event that fewer than four additional comparators result from DN sales. This is because, a greater number of comparators will:

- increase the comparative information available to Ofgem, and therefore provide more confidence in the targets established;
- increase the incentives on DNs to improve their efficiency; and
- to the extent to which the additional comparator defines the efficiency frontier, enable the efficiency frontier to shift at a faster rate than it would otherwise have done.

8.51. In deriving the improvement rates for four or fewer additional comparators, it is assumed that there will be diminishing marginal returns with respect to the impact of each additional comparator. As such, the difference between the rate of improvement in relation to four additional comparators and three additional comparators is assumed to be 30 percent less than the difference between the

rate of improvement in relation to three additional comparators and two additional comparators, and so on.

8.52. Furthermore, in order to recognise the uncertainty in relation to the DN rate of improvement assumed, and having regard to arguments presented on both sides in relation to economies of scale and scope, Ofgem has modelled both high and low cases:

- in the high case, the DN rates of improvement applied generate a cost reduction over the period, consistent with a CAGR of 5.8 percent; and
- in the low case, the DN rates of improvement applied generate a cost reduction over the period, consistent with a CAGR of 4 percent.

8.53. The high case assumption acknowledges the strong evidence presented above in support of significant benefits from comparative regulation, and the potential for additional economies of scope.

8.54. The low case assumption acknowledges the theoretical potential for a loss of economies of scale, and the fact that some of the historical assessments of efficiency achieved may have included the impact of privatisation[61].

8.55. Ofgem invites views on its assumptions on the level of allowed controllable operating costs used in modelling the potential benefits for customers that would accrue were the sale of DNs to proceed.

Effect of profiling

8.56. With respect to profiling of the DN rate of improvement, for the reasons set out above, a bell-shaped profile has been adopted in all cases. In each of the three cases, the profiled rates have therefore been specified for the agreed sale option (i.e. for three additional comparators) as follows:

[61] Although, we note that in the case of DNOs, improvements post privatisation were less significant than those realised in more recent years. Furthermore, the improvement figure quoted for the water industry excluded the years before 1995/6.

- High case: 4.73 percent in the first full regulatory period, increasing to 8.19 percent in period 2 and reducing to 3.22 percent in the third and final regulatory period modelled;

- Base case: 4.12 percent in the first full regulatory period, increasing to 5.16 percent in period 2 and reducing to 3.09 percent in the third and final regulatory period modelled; and

- Low case: 3.9 percent in the first full regulatory period, increasing to 4.55 percent in period 2 and reducing to 3.29 percent in the third and final regulatory period modelled.

8.57. The improvement rates applied are assumed to be constant within each regulatory period, and only vary between regulatory periods. Ofgem notes that this assumption is conservative in nature because, in general, regulators front-load cost reduction requirements within a given regulatory period to capture benefits for customers at a faster rate and recognise any out-performance of targets in the previous regulatory period. Had such profiling been applied, Ofgem notes that the present value of the benefits estimated would increase.

8.58. The benefits that result from application of a constant rate are presented in Appendix 1.

8.59. Ofgem invites views from respondents on the profiling assumptions used in the modelling.

Results of analysis of likely benefits arising as a result of efficiency savings

8.60. In summary, Ofgem's key results in assessing the likely benefits to customers in the event of a sale of one or more of its DNs by NGT, have been derived using "Methodology 1" as defined.[62] Under this methodology, a relatively simple and transparent approach has been applied whereby:

[62] However, as described earlier in this document, broadly similar results have been derived under "Methodology 2".

- under the no sale option, all DNs are assumed to face improvements in allowed controllable operating costs, as specified in the preceding section i.e. at 3 percent under the base case; and

- under the sale option, all DNs are assumed to face improvements in allowed controllable operating costs, as specified in the preceding section i.e. at 4.13 percent under the base case agreed sale scenario i.e. with three additional comparators (in addition to NGT's RDN business).

8.61. In each case, controllable operating costs are defined to be consistent with the levels allowed upon separation of Transco's distribution price control[63] i.e. allowed operating expenditure net of network rates. For the purposes of this assessment, these costs have been inflated to 2004 prices, and a further adjustment has been made to net off the costs associated with the agency which would be implemented given the Authority's conclusions on the scope of the agency activities as set out in the May 2004 conclusions document.[64]

8.62. As discussed in Chapter 5, the agency is proposed to be established to mitigate some of the costs that would otherwise be incurred in the event of DN sales. However, creation of an agency in the event of DN sales will mean that a proportion of each DN's cost base will relate to the central provision of services by the agency. As a result, when quantifying the likely benefits of DN sales as a result of *comparative* regulation, these common costs have been netted off the estimates of controllable DN opex used. An estimate of the DN related agency costs, given Ofgem proposals, has been provided by NGT and Ofgem has netted these off the assumed controllable costs for the eight DN businesses on a pro-rated basis. Further details have been provided in Appendix 1.

8.63. In calculating present values (PVs) for the benefits case, the reduction in allowed controllable operating expenditure, assuming DN sales proceed, over and above the status quo are quantified. This additional reduction in allowed operating expenditure is assumed to pass directly through into customer charges and

[63] Separation of Transco's distribution price control, Final proposals, June 2003, Table 2.3.
[64] *'National Grid Transco – Potential sale of gas network distribution businesses – Agency and governance arrangements',* Ofgem, May 2004.

therefore represents a benefit to customers[65]. These benefits are assumed to occur during the period 2008/9 – 2022/23, and these benefits have been discounted back to 2004 using a discount rate of 6.25 percent. This is consistent with the regulatory cost of capital applied at the last price control.[66]

8.64. The resulting estimated potential benefits for the agreed "sale option" (i.e. with three additional comparators) are summarised below in Table 8.3.

Table 8.3: Estimated PV of benefits (2004 prices)

	Estimated PV
High case	£565m
Base case	**£310m**
Low case	£180m

Note: PVs derived rounded to nearest £5m

Estimate of consequential benefits

8.65. Chapter 5 described the proposed regulatory, commercial and operational framework that would be put in place in the event of DN sales in order to protect the interests of existing and future customers. This framework represents the set of options selected by the Authority following the release of four RIA documents which have considered different options for each of the key areas that would require change in the event of DN sales.

8.66. In this section we set out Ofgem's estimate of the level of additional benefits that are expected to arise as a result of the proposed framework. The potential benefits described in this section are therefore additional to those in relation to comparative regulation as described in the previous section.

8.67. Each of the four RIAs considered potential arrangements on the assumption that DN sales would proceed. As a result, the reference case applied was generally

[65] As stated before, it is assumed that no benefit will pass to customers in the current price control period.
[66] Ofgem notes that if Treasury guidelines are followed, and a social discount rate of 3.5 percent applied, the PV of benefits in the base case would increase to £435m (and for the high and low cases to £805m and £255m respectively).

the option that required the fewest changes to the current framework of arrangements.

8.68. As the RIAs demonstrated, if DN sales proceed, doing nothing is not, in general, a cost effective option. Each RIA therefore considered alternative arrangements that sought to mitigate the likely costs that would otherwise arise as a result of the formal NTS / DN interface and multiple shipper / DN interfaces implied by DN sales.

8.69. The expected benefits directly associated with the proposed framework of arrangements are not substantial when compared with the other expected benefits presented in this chapter. However, it is important to note that:

- as shown in the earlier sections of this chapter, DN sales are expected to yield significant benefits through comparative regulation and transfer of best practice;
- as demonstrated by the four RIAs published, the proposed framework of arrangements seeks to mitigate a number of the likely costs that would otherwise occur in the event of DN sales; and
- there are a number of expected benefits associated with the proposed framework of arrangements, which have not been quantified, particularly in relation to the proposals for the constrained allocation of NTS exit capacity.[67]

8.70. A detailed discussion of the expected consequential benefits associated with the sale option relative to the no sale option is provided in Appendix 9. However, a brief summary is provide for each area below:

- **Roles and responsibilities -** Under the sale option, each DN owner will take on an active role that is consistent with the current allocation of roles and responsibilities within NGT. As such there are not assumed to be any potential benefits relative to the no sale option. Rather, the option chosen serves to mitigate the loss of benefits (including those

[67] Non-quantifiable benefits are discussed in greater detail in Appendix 9.

relating to comparative efficiency) that would otherwise occur were alternative allocations of roles and responsibilities chosen. Ofgem's analysis of the comparative efficiency benefits that are expected to result from DN sales was presented in the preceding section, and in Ofgem's view does not need to be amended in the light of these roles and responsibilities proposals.

- **Agency and governance -** in the event that DN sales proceeds, certain activities will become the responsibility of a number of separate DN entities and the number of interfaces faced by shippers will increase, with an associated risk of duplication. The creation of an agency is proposed to mitigate the likely increase in costs which would otherwise occur in the event of DN sales. As such, benefits relative to the status quo have not been assumed; rather the impact of the agency arrangements proposed is seen in the assessment of the costs of the proposed framework (which is considered in Chapter 9). It is noted that these costs are significantly lower than those which would be incurred were no agency created yet DN sales proceeded.

- **Offtake and interruptions arrangements**. Under the sale option, DNs and other NTS direct connects (who would interface with the NTS through their shippers) would receive equal treatment in the allocation of NTS exit capacity and diurnal storage; therefore likely benefits relative to the no sale option would include a reduced potential for undue discrimination between DNs and shippers of other NTS direct connects. Furthermore, the new arrangements are likely to improve the quality of investment signals received by the NTS, particularly from NTS direct connects, relative to the current arrangements. In turn, this should result in improved investment decisions by the NTS, with likely consequential benefits to customers in terms of more efficient investment in the NTS over the longer term. In addition, the more efficient allocation of NTS offtake flexibility to those NTS direct connects that value it most highly may result in benefits in related energy markets (e.g. with potentially more flexibility being offered into the electricity balancing mechanism and a consequent reduction in electricity balancing costs).

8.71. Table 8.4 below provides a summary of the expected benefits associated with the proposed framework of arrangements for offtake and interruptions arrangements relative to the status quo in the event of DN sales, as described in Chapter 5.

8.72. It has not been possible to quantify the majority of the likely qualitative benefits shown within Table 8.4.

8.73. However, in reaching its decision on the appropriate framework of arrangements, it has been necessary for the Authority to consider these qualitative benefits. In many cases, for example with respect to undue discrimination, the difficulty associated with quantification is that there is a significant degree of uncertainty with respect to the likely impact which, at the extreme, could have very significant system implications. Furthermore, the quantitative estimate shown below depends upon assumptions regarding system security. Were the system subject to unanticipated stress, the costs associated with undue discrimination may be higher. The quantitative and qualitative benefits are discussed in greater detail in Appendix 9.

Table 8.4: Additional expected benefits associated with sale option relative to the no sale option[68] for the offtake and interruption arrangements

Area of potential benefit	Offtake and interruptions arrangements
No undue discrimination	✓✓✓✓
Freedom to contract	✓✓✓
Efficient investment signals	✓✓✓
Efficient SO decisions	✓✓✓
Customer choice	✓✓✓
Effect on competition	✓✓✓
Quantified benefits relative to no sale option (£m, 2004 prices)	**17.4**

8.74. The additional expected costs associated with the sale option are considered in Chapter 9.

Summary of benefits analysis

8.75. In this section, we draw together the estimated potential benefits quantified with respect to the sale option relative to the no sale option.

8.76. Table 8.5 below sums the expected efficiency savings benefits stated in Table 8.3 and the expected consequential benefits associated with the sale option. As a high, base and low case was not specified for the expected consequential benefits associated with the sale option, the variation between the three cases shown below relates solely to the assessment of comparative regulation and the introduction of new management teams. The results presented below assume application of the agreed sale scenario i.e. the creation of three comparators in addition to NGT's RDN business (which is treated as a single comparator) as part of the DN sales process.

[68] The qualitative assessment set out in Table 8.4 is drawn from Ofgem's offtake arrangements and interruptions arrangements decision documents. Four ticks indicates very strong performance relative to the

Table 8.5: Estimated PV of total potential benefits (2004 prices)

	Estimated PV
High case	£585m
Base case	£325m
Low case	£200m

Note: PVs derived rounded to nearest £5m

8.77. As Table 8.5 shows, the base case estimate of potential benefits is £325m in present value terms. This is based on an assumed discount rate of 6.25 percent consistent with the regulatory cost of capital applied at the last price control. However, if Treasury guidelines are followed, and a social discount rate of 3.5 percent is applied, the PV of benefits in the base case would increase to £457m.[69] The use of the higher discount rate is consistent with Ofgem's conservative approach in estimating the net benefits.

8.78. It is important to note that these estimated benefits do not include any potential benefits for **future** customers that may result from any future disposals of DN networks. In addition, any future disposal of DN networks would arise at minimal or low cost to customers (given the arrangements and systems that will be established should the Authority consent to the disposal of four of NGT's DNs), hence increasing the potential net benefit to future customers of any future disposal. However, we believe that by excluding these potential future benefits from the cost benefit analysis, we are taking a conservative view of the potential customer benefits that may arise from the proposed transaction.

8.79. The implications of Ofgem's benefits analysis for the application of current merger policy are considered in Appendix 10.

base case, one tick indicates improved performance relative to the base case, and a dash indicates no change on performance relative to the base case.

[69] Ofgem notes that the Department of Trade and Industry applies a 3.5 percent discount rate when calculating the benefits of comparative regulation.

Views invited on benefits analysis

8.80. Ofgem welcomes views on all aspects of this Final IA. However, Ofgem would particularly welcome comments in relation to the following:

- Ofgem's assessment of the potential benefits expected to be achievable from comparative efficiency, and in particular:
  - the methodology applied;
  - the assumptions applied (for example, the level and profile of the rates of improvement assumed); and
  - the approach adopted by Ofgem with respect to economies of scale and scope;
- Ofgem's assessment of the potential benefits associated with the proposed framework of arrangements in the event of DN sales, and in particular:
  - whether there are any further benefits (quantitative or qualitative) associated with the proposed framework of arrangements that should be taken into account; and
  - the assumptions applied;
- whether there are any further expected benefits (to customers) of DN sales that should be taken into account; and
- Ofgem's statement of its proposed approach in relation to merger policy.

9. Analysis of costs

9.1. Ofgem's base case estimate of total potential costs to customers under the sale option relative to the no sale option is £102 million in present value terms. This chapter describes the analysis performed to derive this baseline estimate of the likely level of costs that customers could ultimately incur should DN sales proceed. To estimate these potential costs, Ofgem has considered the likely costs to shippers / suppliers[70], NTS direct connects, and regulatory costs incurred by Ofgem and the HSE.

9.2. This chapter is divided into six parts, which provide:

- an explanation of how potential costs are expected to arise should DN sales be allowed to proceed;
- a brief overview of previous assessments of the estimated potential costs of DN sales to shippers and suppliers;
- Ofgem's estimate of the likely level of costs that are expected to be incurred by shippers and suppliers in the event that the Authority allows the DN sales transaction to proceed. In the first instance these costs would fall upon shippers and suppliers, but Ofgem considers that, in the longer term, these costs are likely ultimately to be borne by customers;
- a description of the likely level of costs incurred by NTS direct connects, Ofgem and the HSE; and
- a summary of the results of Ofgem's analysis of costs; and a request for views from respondents to this consultation regarding the cost analysis performed.

[70] Where reference is made to a shipper this is intended to include costs or impacts affecting both shippers and suppliers.

How shippers are likely to be affected by the sale option

9.3. Should DN sales proceed then the industry restructuring implied means that it will not be possible for the status quo to remain. As such, Ofgem has considered the framework of regulatory, commercial and operational arrangements that will need to be put in place to mitigate some of the costs that would otherwise potentially occur in the event of DN sales (and thereby protect the interests of existing and future customers).

9.4. As explained in Chapter 5, the proposed framework of arrangements will have a number of elements, some of which will have a greater impact on shippers than others:

- the allocation of roles and responsibilities;
- proposals for agency and governance;
- the proposed offtake arrangements; and
- the proposed arrangements for interruption.

9.5. Each of these areas was considered by an RIA, which helped Ofgem to understand the potential impact of proposals on shippers. In this section we consider how the framework of arrangements proposed by the Authority, following consideration of the views of respondents to these RIAs, could affect shippers. Each of the areas listed above is considered in turn.

Roles & Responsibilities

9.6. Ofgem does not envisage that the allocation of roles and responsibilities between the NTS and DNs would have a material impact on shippers or their customers.

9.7. We note, however, that to the extent that certain activities are deemed to fall within the remit of DNs, there is the potential for shippers to face an increased number of interfaces in the event of DN sales. The impact of the proposed attribution of roles and responsibilities on shippers has therefore been

considered in conjunction with the governance and agency proposals, which seek to mitigate the impact on shippers in this area through the creation of a single agency.

Governance & Agency

9.8. As a result of the governance and agency proposals, an agency and a governance entity are proposed to be created such that, in many key areas, shippers will continue to face a single interface.

9.9. However, under the proposed arrangements, there are a number of activities that would not be the responsibility of the agency in the event of DN sales. Should DN sales proceed, shippers / suppliers may need to interface with a larger number of parties in the following areas:

- connections. Suppliers would need to contact the relevant DN or other connection service providers directly;
- metering. The responsibility for provision of metering activities of last resort would be with the DN;
- distribution charges and credit management. Credit management would remain with the DNs for distribution charging purposes and, as such, the number of credit counterparties for each shipper increase, although the total amount of credit required to be provided by a shipper would be likely to stay the same. In the governance and agency conclusions document, Ofgem noted that this was not likely to be a material cost, as shippers frequently need to put in place credit arrangements with new counterparties;
- site works interfaces. Site works would be the responsibility of the relevant network owners and therefore site works involving shippers would require interfaces to be established with each network owner involved. However, as site works are dealt with on a case-by-case basis, Ofgem does not anticipate a significant increase in shipper workloads; and

- capacity booking and interruption: a further implication of the roles and responsibilities and governance and agency proposals is that shippers would experience an increase in the number of network interfaces for capacity booking and interruptions contracting as a result of DN sales. However, the agency arrangements will ensure that shippers will continue to have a single operational interface for booking DN and NTS exit capacity.

Offtake arrangements

9.10. This section sets out how shippers are likely to be affected by the proposed offtake arrangements under the sale option with respect to NTS exit capacity, diurnal storage and operational flows, and business separation.

NTS exit capacity

9.11. As a result of the offtake arrangements proposals, for NTS direct connects, shippers would estimate the level of NTS exit capacity they require at their offtake points. Depending on the type of site, this capacity request may be for a longer time frame than the current annual request.

Diurnal storage and operational flows

9.12. Diurnal storage (also termed NTS offtake flexibility) would, under the sale option, be defined as a product sold by the NTS to NTS connectees (i.e. DNs and shippers of other NTS direct connects). All NTS connectees would have access to this flexibility product on a not unduly discriminatory basis. Note that, under these proposals, sites connected to DNs would not be able to purchase NTS offtake flexibility.

Business separation

9.13. As outlined in Chapter 5, it is proposed that NGT will be required to undertake targeted structural separation of the NTS and RDNs. Any implementation costs of separation incurred by NGT will not be passed on to customers. Instead, these costs are considered to be incurred as part of the DN sales transaction, and as such that will be borne by NGT.

9.14. Any increased operating expenditure as a result of business separation would only be passed on to customers if it represented efficiently incurred costs. Currently, Ofgem does not consider that such costs will arise as a result of separation.

9.15. For these reasons, we do not envisage that the costs of implementing business separation would be borne by shippers or their customers.

Interruption arrangements

9.16. As a result of the interruptions arrangements proposals, the relevant changes to shippers would be:

- where they act for NTS direct connects (other than DNs), the arrangements will require shippers who wish to guarantee access to the NTS by buying firm exit capacity to register their intention further ahead than the current arrangements. This may potentially cause slightly more costs to be incurred by shippers in their assessment of the appropriate level of capacity;
- where customers connected to the NTS wish to retain their interruptible status, shippers will need to book interruptible capacity on their behalf more frequently than the current arrangements, again potentially increasing the level of costs relative to the current arrangements; and
- in the case of the allocation of capacity at a DN level, whilst the arrangements themselves will not change, the number of DNs with which it would be necessary to interface may increase.

Overview of previous assessments

9.17. A number of studies have been carried out to estimate the costs that are likely to arise as a result of DN sales. In particular, external studies have been undertaken by:

- ILEX Energy Consulting Ltd, who produced an independent report commissioned by Ofgem[71]; and

- OXERA in May 2004, in a study commissioned by British Gas Trading Ltd.[72]

9.18. However, it should be noted that these studies were conducted at a relatively early stage in the DN sales process and as such did not fully take account of proposals with respect to offtake and interruptions arrangements, which have been more fully developed in recent months.

9.19. We compare the results obtained for these studies below and then discuss the methodology used in each assessment in turn. Full details of the surveys completed and the methodologies followed can be found in Appendix 11.

Table 9.1 Overview of previous shipper cost surveys

Survey	High level cost estimation (PV)
ILEX	£38 to £55 million
OXERA	£43 to £729.5 million

9.20. In addition to these studies, in March 2004, Ofgem issued a pro forma to gas shippers to obtain an improved understanding of the potential quantitative costs which could be incurred with respect to implementation of the proposed arrangements detailed in the Agency & Governance RIA. This is discussed further below.

Ofgem's Agency & Governance pro forma

9.21. To obtain an improved understanding of the potential quantitative costs which could be incurred with respect to implementation of the proposed arrangements detailed in the Agency & Governance RIA, Ofgem issued a pro forma to gas shippers in March 2004. The pro forma submissions allowed Ofgem to collate figures regarding the extent to which potential increases in the cost of services

[71] *National Grid Transco – Potential sale of network distribution businesses 170/3*. Next steps. Ofgem, December 2003, Appendix 2.

provided by DNs and NGT, as a result of the DN sales process, would be mitigated by the establishment of an agency responsible for the provision of these services.

9.22. The pro forma was sent to eleven gas shippers and responses were received from eight. The submissions highlighted that the creation of an agency would create significant cost savings for shippers and therefore consumers relative to a scenario in which full fragmentation of the industry arrangements occurred. Some shippers detailed that cost savings were most significant when the role of the agent was as broad as possible although, in contrast, others noted that the broad agency option would not ensure any material cost savings over and above the other options set out by Ofgem. The results of this study and details of the methodology followed were published in Ofgem's Agency & Governance RIA.

Estimate of likely costs to shippers and suppliers

9.23. In August 2004, Ofgem developed and distributed a further pro forma to all gas shippers requesting an estimate of the potential additional costs that they would expect to incur due to the implementation of the proposed framework of regulatory, commercial and operational arrangements in the event that a DN sale takes place. The data received from shippers on the costs they expect to incur forms an integral part of this Final IA.

9.24. The remainder of this chapter sets out the findings from the shipper survey and provides Ofgem's final assessment of the cost that are likely to be incurred by customers if the sale of four of NGT's DNs were to proceed. It provides in turn:

- an overview of the pro forma;
- a review of the responses received with presentation of the results obtained; and
- a detailed account of data issues including areas where the cost estimates provided by shippers may be overstated and ongoing concerns expressed by shippers.

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[72] What are the implications of different agency options for the sale of distribution networks? OXERA, 2004

Overview of shipper pro forma

9.25. The pro forma asked shippers to provide information regarding:

- the characteristics of their business, including the types and number of customers that they currently provide services to; and
- an assessment of the upfront implementation costs and ongoing annual costs that they would incur during and following the implementation of the sale option in the following three areas:
  - Agency & Governance and Roles & Responsibilities arrangements;
  - Offtake arrangements; and
  - Interruptions arrangements.

9.26. A full copy of the pro forma is provided in Appendix12.

9.27. In designing this pro forma, Ofgem consulted with various shippers to ascertain their views on the proposed structure and the extent to which they considered that it would ensure accurate data would be submitted. Furthermore, to assist shippers in the completion of the pro forma an assumptions document and a guidance document were issued in order to encourage consistency in responses. The assumptions document explained the indicative decisions already made by the Authority and detailed the areas in which Ofgem would anticipate that shippers may be exposed to additional costs under the sale option.

9.28. In the guidance document, shippers were specifically requested to estimate their expected costs on the basis of:

- the impact that the proposed sale would have on *their business alone*;
- the additional costs incurred *relative to the current arrangements,* rather than relative to any expectation a respondent might have of an evolved set of industry arrangements on account of changes instigated for reasons other than DN sales;

- a move to an industry framework as set out in the assumptions paper issued with the pro forma;
- *four* DNs being sold;
- the *most likely outcome* i.e. a base case scenario;
- the efficient and necessary introduction of new systems;
- the *lowest cost solution* where key decisions have yet to be made; and
- *mutually exclusive* costs.

9.29. The guidance document is contained in Appendix 13.

9.30. Ofgem also detailed that shippers should endeavour to provide sufficient detail, in the form of commentary, to allow Ofgem to understand the derivation of the high-level costs provided. In this respect, Ofgem requested details of relevant costs drivers, a break-down of costs into relevant categories with an accompanying explanation, and a specification of whether shippers considered that the costs would vary with the number of DNs sold. Details of the timescales assumed by shippers in relation to implementation of the amendments were also requested to gain an understanding of the profiling of costs and identify any timetable issues. In addition, Ofgem asked how the costs would vary in a high and low case scenario.

Overview of responses

9.31. Responses to the pro forma were requested by 27 August 2004. Ten submissions in total were received although one respondent did not return a pro forma but simply provided a letter estimating its overall costs. The respondents comprised six large domestic customer shippers and one large and three small industrial and commercial (I&C) customer shippers. Overall, shipper submissions accounted for approximately 21 million supply points which equates to over 99 percent of the market. This translates into:

- over 99 percent of the domestic market; and
- 81 percent of the I&C market.

9.32. Although respondents to the pro forma made up over 99 percent of the gas shipper market, Ofgem considered that some extrapolation of the figures obtained would be necessary in order to include an estimate of costs likely to be incurred by shippers that did not submit a response and therefore to present an appropriate estimation of the overall level of costs incurred by shippers.

9.33. This section presents two cases for the estimation of potential costs:

- a shipper case cost estimate that uses the information provided by shippers and presents a number of methods for extrapolation to account for the costs of non-respondents; and
- Ofgem's analysis of the submitted data in which some adjustments are made to the reported data to provide a more reflective estimate of the potential average costs that would be incurred.

Shipper estimates

9.34. Aggregation of the pro formas received from shippers provides an estimate of the costs likely to be incurred by shippers serving 99 percent of the market. This calculation results in an estimate of:

- total upfront costs likely to be incurred by shippers of £25m; and
- total ongoing potential costs of £7m per annum.

9.35. In present value terms, this equates to a PV of circa £95m using the same assumptions employed to calculate the benefits PV i.e. a discount rate of 6.25 percent, with prices discounted to 2004 over a timeframe of 18 years.

9.36. To calculate the costs that could potentially be incurred by the whole shipper market, two possible approaches to extrapolation could be employed. They are:

- Method A: to pro rate the average cost per supply point implied by the responses across the entirety of the market, consistent with the methodology employed by OXERA in its analysis of costs; or
- Method B: more conservatively, to assume some element of the costs incurred by a shipper would be invariant to the number of supply points

served by that shipper. To extrapolate on this basis we assumed that the costs incurred by the second lowest cost respondent are representative of the costs of a non–responding shipper. We assume further that that there were eight non-responding shippers above a *de minimis* size (of serving over 20 supply points).

9.37. We present the initial summation of the responding shipper costs in Table 9.2 below together with application of the two alternative extrapolation methodologies.

Table 9.2: Extrapolated shipper cost estimates[73]

£ million (2004 prices)	Up front costs	Ongoing costs	PV
Respondent totals	25.1	7.0	**94.1**
Method A: Pro rated extrapolation	25.2	7.1	**94.8**
Method B: Fixed cost extrapolation	27.6	8.8	**114.3**

9.38. Ofgem considers that the cost estimates in Table 9.2 above represent a highly conservative estimate of the cost that shippers are likely to incur. This is principally because clustering analysis of the data supplied by shippers shows, for each type of costs, a significant range of costs when expressed on a unit cost basis that cannot be explained by scale effects. Ofgem considers that cost submissions for some of the upper-end outliers may not be representative of costs that shippers are likely to incur and be able to pass through to customers. In the following section we present Ofgem's clustering analysis and demonstrate how removing the effects of outliers impacts upon the overall total cost estimate.

9.39. It is further noted that application of Method B for extrapolation of costs to estimate costs for the whole industry represents a conservative view of total industry costs. This is because it attributes a relatively large proportion of

[73] Responses submitted by shippers have been extrapolated to take account of costs incurred by non-responding shippers.

industry costs (circa 18 percent) to a very small proportion of the industry (representing less than one percent of supply points).[74]

Ofgem analysis of data

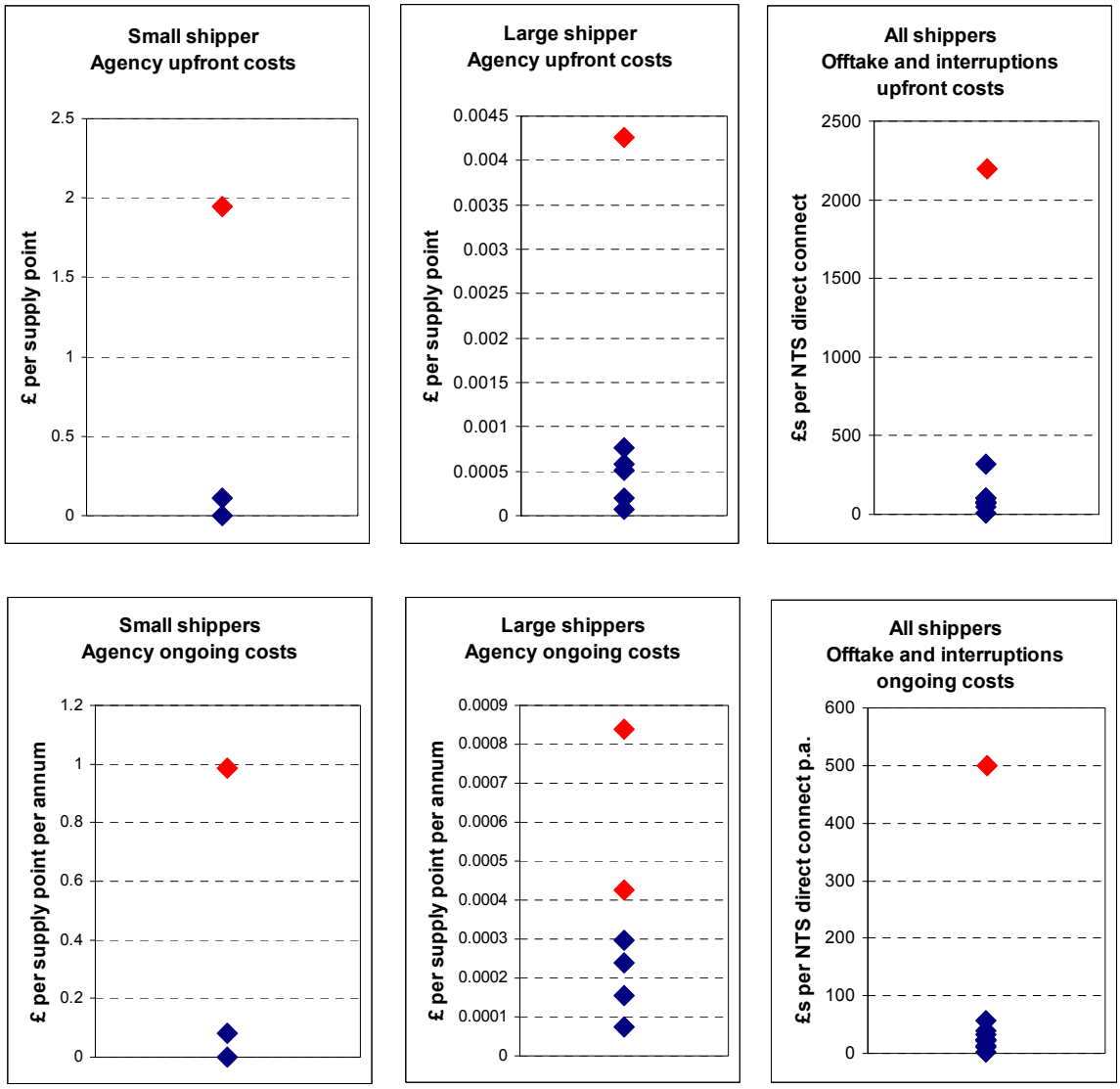
9.40. To analyse the data received from shippers, Ofgem undertook the following categorisation of the data:

- separation of the types of costs likely to be incurred into:
  - costs attributable to the proposed Agency and Governance and Roles and Responsibilities arrangements; and
  - costs attributable to support the proposed offtake and interruptions arrangements[75]; and
- for each category, separation of costs into upfront and ongoing costs.

9.41. To take account of the likely differences in shippers for the Agency and Governance costs, Ofgem disaggregated the shipper responses into those shippers that that serve a large number of supply points (more than 100,000), which consisted of 6 shippers, and those that served a small number of supply points, numbering three shippers[76]. This disaggregation was not repeated for the offtake and interruption costs as the key driver of these costs is the number of NTS direct connects, and the range of number of NTS direct connects per shipper (between one and eleven) was much less pronounced than the range with respect to total supply points (between 200 and 13 million). This analysis is presented in Figure 9.1 below.

[74] Ofgem notes that in its report for the Gas Forum, OXERA applied the less conservative, Method A approach.
[75] The cost submissions for offtake and interruptions were aggregated prior to analysis following discussion with a number of shippers. Indeed a number of shipper respondents provided their submissions, with figures aggregated across these two categories.
[76] As discussed above, one company returned only a letter stating their total costs. That company was not included in the clustering analysis.

Figure 9.1: Shipper cost estimates of DN sales



9.42. The figures above illustrate the range of cost estimates from each shipper when analysed on a per supply point or per NTS direct connect point basis. In Ofgem's view the red points represent outliers to the "cluster" of costs per supply point (indicated by the blue points) incurred by the majority of shipper respondents. In Ofgem's view this suggests that the costs submitted by the outlier shippers are unlikely to be representative of the costs that are passed through to customers because:

- the costs may not be accurately reported by that shipper and could include additional costs that are not directly associated with DN sales; and

- even if these costs are the actual costs that are likely to be incurred by that shipper it is unlikely, given the extent of the deviation from the other shippers' estimates, that it would be able to pass that level of costs through into the retail market which has been fully opened to competition. Rather, to sustain its position in the market place it would only be able to pass through the typical level of costs incurred by a shipper.

9.43. Hence, we have analysed cost data by removing the outliers, obtaining a "respondent" total by multiplying costs per supply point for the remaining cluster by the number of supply points for the whole group (including excluded respondents), and then repeating the extrapolation analysis that is presented in the previous section for non-respondent shippers.

Table 9.3: Clustered shipper cost estimates extrapolated to take account of costs likely to be incurred by non-responding shippers

£ million (2004 prices)	Up front costs	Ongoing costs	PV
Adjusted respondent totals	15.9	6.3	**78.1**
Method A: Pro rated extrapolation	16.0	6.4	**78.7**
Method B: Fixed cost extrapolation	18.5	8.1	**98.3**

9.44. Table 9.3 provides, in Ofgem's view, the appropriate costs to consider in the context of DN sales. It is noted that the adjusted present value total for respondents is £78.1m. In order to reflect the potential costs of those shippers that did not respond to the shipper pro forma, the two methods of extrapolation described above were considered. The adjusted respondent total number was therefore extrapolated on:

- a per supply point basis, generating a total cost estimate of £78.7m; and
- the assumption that the non-respondent shippers are likely to incur fixed costs equivalent to the second lowest of the responding shippers, generating a total cost estimate of £98.3m on a present value basis.

9.45. Meetings and discussions with shippers raised a number of issues with regards to the consistency of the numbers provided and the extent to which all of the costs estimated would be driven by DN sales alone. In the following section, we discuss these issues. However, it is noted that Ofgem has not used these concerns as a basis for any further adjustment of shipper cost numbers, and as such considers that the numbers presented in Table 9.3 above may over-state the true costs of DN sales.

Data issues and methodology

9.46. This subsection sets out the stages that Ofgem went through in analysing the data submitted in the pro formas and ensuring that the figures used to provide a final cost estimate were as reflective as possible of the potential costs that would be incurred by shippers within the industry. It provides:

- an account of the meetings held with shippers to clarify the assumptions that they had made in completing the pro forma;
- a breakdown of the data cleansing that was undertaken following the meetings with shippers; and
- the cost anomalies that, in Ofgem's view, remain within the data applied and, as discussed above, may lead to an over-statement of this cost data, which are included to emphasise the conservative nature of the shipper cost estimates applied.

9.47. At the end of this section, we outline the concerns raised by shippers in providing their responses, and the key areas of uncertainty that remain.

Shipper meetings

9.48. To clarify the assumptions made by shippers in providing their response to the pro forma and to gain an improved understanding of the factors contributing to the additional costs likely to be incurred, Ofgem arranged a series of meetings with various respondents to the shipper pro forma and spoke to other respondents by phone. These meetings assisted in clarifying Ofgem's understanding of the submissions received, in particular in understanding the assumptions that shippers used as a basis for their estimations, the cost drivers

behind the figures quoted and identifying any anomalous costs that had been included in the responses.

9.49. Following these meetings, some of the shippers resubmitted their pro formas with revised costs, having corrected any errors identified. The discussions also allowed Ofgem to identify any areas in which costs had been included which it considered to be out of the scope of the DN sales project. In this respect, the meetings allowed Ofgem to undertake some minor data cleansing to obtain a more accurate picture of the likely costs that would be incurred as a result of the potential sale of one or more of NGT's DNs.

9.50. The meetings held by Ofgem, following receipt of the pro forma submissions, helped to identify a number of areas in which shippers had attributed costs to DN sales where Ofgem considered that these costs would not arise as a direct result of the potential sale of one or more of NGT's DNs. A summary of these issues, and the subsequent adjustments agreed with shippers, are outlined below:

- one shipper detailed that, post-DN sales, it would be required to amend its credit management processes. The shipper detailed that it currently relies on the use of Standard and Poor's or Moody's credit ratings to establish credit cover and that it had assumed that it would be necessary to modify this process to reflect a system in which letters of credit were required. Whilst Ofgem acknowledges that the nature of credit arrangements is currently under review, this is not related to the DN sales process and, as such, the costs of changes to the nature of credit arrangements, rather than just the number of interfaces required for credit, have been excluded from our analysis;

- a number of shipper estimates included costs associated with reflecting the change in transportation arrangements and continuing to provide details of the relevant transporter on customer bills, in accordance with Standard Licence Condition 21 of the gas supplier's licence. However, on 20 August 2004, Ofgem issued an industry letter noting that "in principle Ofgem favours changing the obligations under Standard Licence Condition 21 to require printing a simple contact number on which customers can obtain the relevant gas transporter details". As

such, costs associated with Standard Licence Condition 21 compliance have been excluded from our analysis;

- two shippers included costs that may be incurred in the event of an agency collapse or if DNs decided to opt out of the agency process[77]. Ofgem intends to place a licence condition on NTS and DN GTs to ensure that they continue to have common agency arrangements. Therefore, GTs will not be able to opt out of the agency arrangements. Assuming that these licence modifications are implemented as part of the DN sales process, Ofgem considers that costs of this nature will not be incurred and, as such, we have excluded these from our analysis; and

- one shipper included additional industry integration testing costs to assess whether the recently implemented business processes and data flows to support a competitive gas metering environment were sufficiently robust to support the new processes which will underpin any DN sale. Ofgem considers it would inappropriate to make an allowance for such a specific activity on the basis that it is unclear why only one industry participant takes the view there is a requirement to re-test what are, in effect, industry-wide processes. In any event Ofgem is of the view that any such potential activity should be considered as part of normal system development to reflect changing market conditions. As such, Ofgem has not included these figures within the cost estimates.

Remaining cost anomalies

9.51. Following the meetings held regarding pro forma responses, Ofgem became aware that shippers had included additional costs in submissions which, in the light of recent developments, could be scaled down to reflect more accurately the market conditions that Ofgem anticipates will prevail in a post-DN sales environment. A number of areas were identified where additional manipulation of the figures may be appropriate. However, Ofgem notes that in order to make such adjustments in a robust way, more detailed discussions with shippers would have been required. Therefore, in this section we merely highlight the

[77] One of these respondents stated that the proposed (Option 1) allocation of Roles and Responsibilities

areas where costs may have been overstated in the pro forma submissions provided by shippers.

9.52. It should be noted that such additional downwards adjustments have not been reflected in any of the cost estimates provided in this paper.

9.53. In the guidance document, Ofgem detailed that, as an initial assumption shippers, should consider when completing the pro forma was that four DNs would be sold to four separate entities. However, it has since become apparent that, although NGT intends to sell four of its networks, it has committed to sell two of these to the same buyer.

9.54. Whilst this buyer has confirmed that it will structure these DNs as two separate legal entities, Ofgem considers that these two entities will, to a certain extent, adopt the same approach in a number of areas, as group management across these entities will be the same. In light of this, it may be possible to scale down some of the estimates provided in the pro formas, especially those compiled on the basis of the number of additional interfaces that shippers anticipated that they would be required to deal with. Whilst some shippers agreed that their cost estimates would not vary with the number of interfaces or DNs sold, a number of shippers acknowledged that the number of interfaces assumed had directly driven their estimates of ongoing agency related costs. Indeed, one shipper had based some of its upfront system cost estimates on a cost per additional flow which assumed the presence of five separate interfaces.

9.55. In a similar respect, a number of respondents estimated an escalation in ongoing costs with respect to invoice validation on the assumption not only that the number of invoices received would increase but also that the validation required per invoice would increase. In Ofgem's view, should validation costs per invoice increase, such an increase should not be sustained over time and, as such, some downward tapering of costs would be applied to reflect 'bedding in' of new systems and processes. A number of the respondents did acknowledge that this tapering-off of costs over time may be a possibility, but were reticent to make any sort of estimation of the magnitude of the reduction involved. As a

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increased the chance of fragmentation of the arrangements relative to an Option 3 approach.

result, the figures presented in this paper have not been modified downwards to reflect this profiling.

9.56. In a number of cases, figures submitted made provisions for the inclusion of contingency costs, allocated to the sale process in the event that any problems were experienced or further modifications would be required. Ofgem is aware that shippers may include such amounts in their estimations to provide comfort that where any additional costs arise they have sufficient funds in place to accommodate these. However, in issuing the pro forma, Ofgem requested figures regarding the costs incurred in the event that the sale option, developed through the consultation process and workgroup discussions, were implemented. Ofgem considers that estimations of contingency costs constitute costs over and above those necessary to implement the relevant provisions to support the proposed industry structure post DN-sales. However, such contingency estimates have **not** been removed for the purposes of our analysis.

9.57. Further concerns were raised by respondents regarding the degree to which the RGMA baseline operated by NGT (as reflected in NGT's Rainbow manual which governs its operation of the baseline) diverges from the RGMA baseline operated by the remainder of the industry. In pro forma submissions some shippers had therefore attributed costs to the additional resources required to accommodate the different interpretations that DNs would assume regarding the RGMA baseline and to deal with any subsequent problems that may arise.

9.58. Ofgem is aware of some degree of divergence between NGT's interpretation of the RGMA baseline and the interpretation of the remainder of the industry but considers that the materiality is already widely understood, through the various outputs of the RGMA project team as well as a recent Ofgem facilitated industry workshop. As such, work is already underway within the existing governance structures such as SPAA Ltd, Network Code Panel, UK Link and NGT's Contract Review Group to resolve these variations where required.

9.59. It is also important to note that through such work, the RGMA baseline will become increasingly refined to ensure that varied interpretations adopted by DNs become unlikely. In addition, the RGMA baseline is now subject to formal change by the industry, for the industry, through SPAA. As such, changes will require appropriate approval by SPAA signatories. Therefore, Ofgem considers

that, providing the DNs are required to become signatories to the Supply Point Administration Agreement (SPAA), this should ensure that the integrity of RGMA baseline is maintained. It is noted that Standard Condition 14 of Transco plc's current GT Licence requires the licensee to be a party to and comply with the relevant provisions of the SPAA. In the consultation on restructuring Transco's licence[78], Ofgem stated that it is minded to retain this condition, and as such, this condition would be applicable to all gas transporters including DNs.

9.60. In this respect, Ofgem considers that the estimations of additional costs arising from the need for system development, in the event that a DN sale takes place, to accommodate flows required by the RGMA baseline have been overstated. Ofgem is of the opinion that the degree of system modification required in this respect will not be comparable with the magnitude of changes anticipated by shippers in their pro forma responses. However, once again, such changes have **not** been reflected in our analysis but rather are cited here to emphasise the conservative nature of the shipper estimates applied.

Shipper concerns

9.61. During the follow-up pro forma meetings, and in the pro forma submissions themselves, shippers highlighted a number of areas of concern. The range of issues identified varied between shippers, although the volume of concerns expressed in some areas illustrated that certain outstanding issues will have a more wide-ranging impact than others. Ofgem has noted these concerns in formulating its cost estimation methodology. A summary of the key issues identified is outlined below, with Ofgem's view with regards to these issues.

- The degree of uncertainty surrounding the proposed arrangements implemented in the event that a DN sale takes place was a source of concern expressed by the majority of respondents. Shippers considered that it would be impossible to quantify accurately cost increases incurred until comprehensive proposals are developed with respect to the arrangements that will be implemented. The uncertainty was especially

[78] National Grid Transco – Potential sale of gas distribution network businesses, Initial thoughts on restructuring of Transco plc's Gas Transporter Licences, Consultation document, Ofgem, September 2004, 215/04.

acute with respect to the offtake and interruptions arrangements. A number of shippers requested that Ofgem apply an additional contingency allowance to all estimates to reflect the uncertainty that exists regarding the proposals. Ofgem notes the intrinsic uncertainty of such cost benefit analysis. Furthermore, it is acknowledged that there are a number of areas, particularly in relation to proposals for offtake and interruptions arrangements where the proposals for reform need further development. However, within this Final IA, Ofgem has quantified the potential costs of DN sales, given the information currently available and current proposals for the associated framework of arrangements to inform the Authority's decision with respect to DN sales, which is scheduled for January 2005. It is noted that shippers were asked for base case estimates of costs; furthermore, it is Ofgem's view that the explicit inclusion of an arbitrary contingency amount would undermine the validity of the base case estimates presented.

- Lack of clarity regarding the arrangements required to accommodate diurnal storage was an issue raised by a number of respondents. In two cases, no cost estimates for diurnal storage were provided. In other cases, the cost estimates were either provided with caveats or were relatively conservative given the outstanding uncertainty in this area. While Ofgem acknowledges that some uncertainty remains with respect to the proposals regarding diurnal storage, the principles underpinning arrangements in this area will be the same as those set out in the assumptions document issued to accompany the pro forma. In this respect, Ofgem intends that proposals in relation to diurnal storage will incorporate daily balancing mechanisms, a market based approach to allocation, and will apply only to NTS direct connects. As such Ofgem considers that estimates submitted by shippers should not require any significant amendment and that, in cases where estimates were not provided, any additional costs should not be substantial. The proposed (detailed) arrangements for diurnal storage / NTS offtake flexibility arrangements included in this document are consistent with the "hybrid" approach as described in the offtake arrangements conclusions document – namely that this would be a commercial approach, and ensure that

NTS offtake flexibility remains a service provided by the NTS to NTS connectees (i.e. DNs and shippers of NTS direct connects). NTS connectees that understand their requirements for NTS offtake flexibility in the long term, under the proposals outlined in this document, will be able to purchase sufficient flexibility to cover their needs for a number of years ahead. This should mitigate a number of concerns of shippers who stated that higher costs may result should they need to purchase significant volumes of NTS offtake flexibility in the short term.

- Two shippers raised concerns regarding the uncertainty that exists in relation to the timeframe under which they will be expected to implement the relevant processes to accommodate the potential sale of one or more of NGT's DNs. They detailed that the lack of clarity regarding implementation timescales could cause shippers to incur increased costs while tight timeframes may also create an escalation in the level of costs experienced. The proposals for implementation have been developed having regard to these concerns[79].

- An issue was highlighted by one shipper with respect to a potential condition of sale requiring DN exit reform to be undertaken. The shipper had concerns that if this were the case, costs associated with DN reform should be included in the overall cost estimation regarding the sale of one or more of NGT's DNs. In the assumptions paper provided with the pro forma information request, Ofgem stated that the longer term reform of the DN capacity booking and interruptions regime from April 2006 would not be considered within the Final IA. This is because such reform falls outside the scope of DN sales and the exact nature of such reforms is yet to be determined and will be the subject of its own impact assessment at the appropriate time.

[79] See, for example, Transco's presentation on "NTS Exit reform – interim overview" (DISG 25), available on Ofgem's website.

Estimate of costs likely to be incurred by other parties

9.62. In all cases, additional potential costs have been included to reflect the costs likely to be incurred by:

- NTS direct connects: each of the 64 NTS direct connects (other than DN connections) have been assumed to be likely to incur costs associated with the negotiation of contracts equal to £2,000 a year per NTS direct connect[80];
- Ofgem: up-front costs of £500,000 as well as on-going costs associated with two additional regulatory employees (at a cost of £80,000 per annum each) are assumed; and
- the HSE: up-front costs of £200,000, are assumed likely to be incurred by the HSE in approving the safety cases for the DNs.

9.63. In present value terms, this equates to a PV of circa £3.5m using the same assumptions employed to calculate the benefits PV i.e. a discount rate of 6.25 percent, with prices discounted to 2004 over a timeframe of 18 years.

9.64. Furthermore, Ofgem notes that no allowance has been made for the additional costs that will be incurred by NGT as a result of the potential sale of one or more of its DNs as these costs are the result of the NGT's commercial decision to sell some of its DNs, and as such will not be passed through to customers.

[80] In performing our analysis, we have assumed that were NTS direct connects to incur higher costs than those estimated above, that these would be offset by an equivalent reduction in shipper costs to avoid unnecessary duplication.

Summary of costs analysis

9.65. Given the estimation of the potential costs imposed on NTS direct connects, and regulatory costs as outlined above, total estimated potential costs (including shipper related costs as detailed in Table 9.2 and Table 9.3) are as shown in Table 9.4 below.

Table 9.4: Estimate of total potential costs to customers arising from sale of DNs

£ million (2004 prices)	Shipper estimates (not adjusted for cluster analysis)	Shipper estimates (adjusted for cluster analysis)
Respondent totals	97.6	81.6
Method A: Pro rated extrapolation	98.3	82.2
Method B: Fixed cost extrapolation	117.8	**101.9**

9.66. Ofgem's estimates of total costs that would be need to be incurred by customers for DN sales to proceed for a base case, low case, and high case are as follows:

- **Base case: estimate is £101.9m**, present value - this represents the application of the fixed cost extrapolation methodology (Method B) to Ofgem's analysis of costs following application of its clustering methodology.
- **Low case: estimate is £82.2m**, present value - this represents the application of the pro rated extrapolation methodology (Method A) to Ofgem's analysis of costs following application of its clustering methodology.
- **High case: estimate is £117.8m**, present value - this represents the application of the pro rated extrapolation methodology (Method A) to Ofgem's analysis of costs following consideration of shipper estimates.

9.67. As noted throughout this chapter, this estimate has been derived on the basis of conservative assumptions and analysis of data received from shippers. As Table

9.4 shows, the base case estimate of costs is £102m is in present value terms. This is based on an assumed discount rate of 6.25 percent consistent with the regulatory cost of capital applied at the last price control. However, if HM Treasury guidelines are followed, and a social discount rate of 3.5 percent applied, the PV of benefits in the base case would increase to £125m.

Views invited on costs analysis

9.68. Ofgem welcomes views on all aspects of this Final IA. However, Ofgem would particularly welcome comments in relation to the following:

- Ofgem's assessment of the costs likely to be incurred by **shippers**, and in particular:
  - the methodology applied; and
  - the assumptions applied;
- Ofgem's assessment of the costs likely to be incurred by **NTS direct connects**, and in particular the assumptions applied;
- Ofgem's assessment of the costs likely to be incurred by **Ofgem and the HSE**, and in particular the assumptions applied; and
- whether there are any further potential costs (to customers) of DN sales that should be taken into account.

10. Results of the cost benefit analysis

10.1. The purpose of this chapter is to draw together the analysis set out in previous chapters and to explain the implications of the results. To this end, this chapter:

- briefly summarises the outcomes of benefits and cost cases;
- sets out the overall results and provides some conclusions;
- explains what these results mean in the context of NGT's customer safety net; and
- invites views from respondents on the cost benefit analysis performed.

10.2. The results set out in this chapter, and feedback received in responses (together with other information which may be considered to be relevant), will assist the Authority when it decides whether to consent to NGT's proposed disposal of one or more of its DNs.

Summary of costs and benefits cases

10.3. Table 10.1 provides estimates of the potential (gross) benefits of DN sales under a high, base and low case.[81] Ofgem's analysis has focused on the actual agreed sale scenario as conditionally agreed between NGT and potential purchasers, i.e. an outcome where three additional comparators are created.

Table 10.1: Estimated PV of total potential benefits arising as a result of DN sales[82]

£m, 2004 prices	High case	Base case	Low case
Benefits estimates	585	325	200

Note: Rounded to the nearest £5m.

10.4. As shown in Table 10.1, if three additional comparators are created then Ofgem's analysis suggests that the estimated PV of gross potential benefits to

[81] The figures in Table 10.1 reproduce those in Table 8.5.

customers arising as a result of DN sales is between £200m and £585m. Under Ofgem's base case, the estimated gross potential benefit to customers is £325m in present value terms.

10.5. Table 10.2 details the high case, base case and low case cost estimates adopted by Ofgem as cost estimates in the event of DN sales.

Table 10.2: Total potential cost estimates for DN sales[83]

£ million (2004 prices)	High case	Base case	Low case
Cost estimates	117.8	101.9	82.2

10.6. The costs detailed above represent estimates of the costs likely to be incurred by shipper respondents and non-responding shippers, and then makes an additional allowance for the:

- additional negotiation costs of NTS direct connects; and
- additional regulatory costs.

10.7. Ofgem estimates that the PV of potential costs to customers associated with DN sales is within the range of £82.2m to £117.8m. Ofgem considers that the cluster analysis and the fixed cost method of extrapolation represent the most robust method of calculating the costs to customers associated with DN sales. This leads to a final potential cost estimate of £101.9m in the base case.

Results and conclusions

10.8. Given the expected gross benefits and total expected costs provided above for the agreed sales scenario (i.e. where three additional comparators are created), the net potential benefits to customers are as shown in Table 10.3 below.

[82] The total benefits were calculated in present value terms over the period between 2008/09 and 2022/23.
[83] Estimated NPV of total costs over the period between 2008/09 and 2022/23

Table 10.3: Estimated present value of the net potential benefits to customers (£m, 2004 prices) [84]

	High case	Base case	Low case
Net benefits to customers	500	225	80

Note: Rounded to the nearest £5m.

10.9. Based on the information available, Ofgem considers that £225m is a reasonable estimate of the potential net benefits to customers arising as a result of DN sales under the base case.

10.10. As stated above, the range of £80m to £500m shown in Table 10.3 above, reflects the fact that NGT intends to sell all four of its networks to three different buyers. Ofgem notes that under this agreed sale scenario, all previously published studies (with the exception of OXERA's "losses of economies of scale" scenario[85]) suggest that a net benefit will arise.

10.11. Ofgem notes that its agreed sale scenario leads to a higher set of estimated potential benefits than if only one or two new comparators were created. For instance, if only one new comparator is created as a result of DN sales, then Ofgem's range of estimated potential net benefits to customers would be -£16m and £210m. Further details of the results under assumptions of one, two or four additional comparators are provided in Appendix 7.

[84] Estimated NPV of net benefits over the period between 2008/09 and 2022/23.

[85] OXERA states that "were NGT to halve the distribution network businesses that it owns, the OXERA model suggests that the consumer benefit could be expected to be between £102 million and £134 million", which, when combined with Ofgem's base case cost estimate, would lead to net benefits of £0 - £32m. However, the maximum potential benefits under OXERA's "losses of economies of scale scenario" is £68 million, which means that net benefits are very unlikely to arise under this scenario given the cost information made available to date. OXERA, *Potential sales of NGT's Distribution Networks: Critical review of the preliminary regulatory impact assessment* September 2003, pg 11 and pg 20.

10.12. These results represent Ofgem's best efforts to develop a methodology and set of assumptions that reasonably reflect the potential outcomes associated with DN sales. As with any regulatory impact assessment, Ofgem's cost benefit analysis seeks to measure the impact of a set of proposed regulatory arrangements that do not actually exist. If DN sales goes ahead, the actual outcomes could be better or worse than presented. However, Ofgem considers that the analysis may understate the actual potential benefits, for the reasons set out below. In addition (and as discussed above), it is important to note that these estimated benefits do not include any potential benefits for future customers that may result from any future disposals of DN networks.

10.13. It should also be noted that in performing its benefits assessment, Ofgem has not quantified any capital expenditure savings that may be achieved. Furthermore, none of the other studies performed to date (and referenced earlier in this document) have considered the impact of comparative efficiency on capital expenditure. However, Ofgem would note that the comparative assessment of capital expenditure plans, for example by comparing them against a benchmark replacement profile and using benchmarked unit costs is a very useful tool at price control reviews. Furthermore, there is potential for new management teams to identify opportunities for efficiency savings in their capital expenditure programme, for instance, through changes to asset management and/or construction practices. As such, the approach adopted, which does not quantify such savings, is conservative.

10.14. Furthermore, three of the four networks being sold under this agreed sale scenario are being bought (indirectly) by companies with utility networks which share some of the same geographical locations:

- The South of England and Scotland distribution networks share common geographic areas with the two electricity distribution networks already owned by Scottish and Southern Energy plc; and
- The North of England distribution network shares common geographic areas with United Utilities plc's water and electricity distribution networks.

10.15. These potential purchasers will have the opportunity to cut costs by taking advantage of economies of scope not previously available in the GB utilities sector, which may occur in areas such as asset management and operations. Ofgem's analysis has not made specific allowance for potential benefits arising as a result of such economies of scope.

10.16. Finally, the fact that potential purchasers were willing to pay a premium to the Regulatory Asset Value (RAV) supports a conclusion that there are potential customer benefits. The sale of four networks was conditionally agreed for a 20 percent premium to the March 2004 RAVs as determined by Ofgem, and a 14 percent premium to NGT's estimate of the RAV for March 2005. As an illustration of the potential scale of benefits, it is noted that were these premia driven solely by expected savings in operating costs, the PV of benefits to buyers' shareholders associated with such savings would range from £700m to £1bn[86]. Given the regulatory process, these savings would be expected to be passed through to customers over a number of price controls and, moreover, could be expected to last for many years.

10.17. The base case estimate of potential net benefits (£225m) is based on an assumed discount rate of 6.25 percent consistent with the regulatory cost of capital applied at the last price control. However, if Treasury guidelines are followed, and a social discount rate of 3.5 percent applied, the expected net benefits in the base case would increase to £332m[87]. Ofgem considers that using the higher discount rate is consistent with the conservative approach to modelling adopted throughout this IA.

10.18. Some customer groups have expressed concerns that benefits achieved through reductions to distribution charges may not be passed through to customers by suppliers. Ofgem notes these concerns, but does not believe that this represents an argument against DN sales. Rather, Ofgem believes that, in a competitive retail market, changes in the level of transportation charges, either up or down, should be passed through to customers.

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[86] It is noted that this calculation is a simplification of reality as a number of other factors, including buyers' assumptions on the regulatory treatment of the capex overspend associated with each network, will influence the premia to RAV.

[87] This figure is quoted in the DTI's Partial RIA to its exemption consultation document, due for publication in November 2004.

Customer safety net

10.19. In April 2004, the Authority announced that it would impose a condition to any consent to the disposal of DN assets obliging NGT to agree to the payment of a compensation safety net in the event that the costs of DN sales outweigh the benefits.[88]

10.20. The safety net payment would represent a transfer of funds from NGT's shareholders to customers and, if necessary, would be implemented through an adjustment to the NTS's allowed revenues at the next gas transmission price control review.

10.21. In April, the Authority indicated that the payment of a customer safety net was likely to be required only if one DN was sold, or if all the DNs to be sold were bought by a single buyer. This view was based on analysis which suggested that the expected benefits of a DN sale outweighed the expected costs in all multiple buyer scenarios, even where conservative estimates of the likely benefits were used. However, using conservative estimates of the likely benefits, the expected costs to customers associated with the sale of DNs could outweigh the expected benefits in the case where only one DN is sold or the DNs are sold to one buyer only. The safety net would protect customers in these circumstances by NGT agreeing to pay the difference between the agreed costs and benefits.

10.22. One function of this Final IA is to provide estimates of the potential magnitude of any customer safety net, and some of the circumstances in which the payment of a customer safety net is likely to be required. Ofgem's analysis suggests that NGT would be required to agree to a customer safety net of £16.3m[89] in the case where only one network is sold or the networks are sold to only one buyer.

10.23. As set out in the April press release, this estimate is calculated using a conservative estimate of the likely benefits and costs.

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[88] Ofgem press release, *Ofgem's work on NGT's proposed gas network sale moves to next phase*, 16 April 2004.

[89] This is the value of potential net costs to customers in the low case scenario, in the event that only one additional comparator is introduced, as shown in Table A11 of Appendix 7.

10.24. However, if the transaction concludes with the sale of four DNs to three buyers (as is currently envisaged), then the Authority is unlikely to require the payment of a customer safety net.

Summary

10.25. Under Ofgem's base case, the estimated potential gross benefit to customers is £325m in present value terms. When combined with a total, base case, potential cost estimate of circa £100m in present value terms, the present value of net customer benefits under the base case is expected to be circa £225m.

10.26. This represents a conservative estimate as it reflects only the potential savings in operating expenditure that could result from comparative efficiency, and does not fully reflect the economies of scope that multi-utility businesses could capture. Furthermore, the premium to RAV within the agreed purchase price supports the view that DN sales would lead to efficiency savings amongst DNs.

10.27. In April 2004, the Authority announced that it would impose a condition to any consent to the disposal of DN assets obliging NGT to agree to the payment of a compensation safety net in the event that the expected costs of DN sales outweigh the expected benefits. Following analysis of the potential costs and benefits of DN sales, Ofgem anticipates that a safety net payment of £16.3m is only likely to be required in the case where only one network is sold or the networks are sold to only one buyer.

Views invited on costs and benefits analysis

10.28. Ofgem welcomes views on all aspects of this Final IA. However, Ofgem would particularly welcome comments in relation to the following:

- Ofgem's assessment of the potential costs that are likely to be incurred in the event of DN sales;
- Ofgem's assessment of the potential benefits to customers in the event of DN sales; and

- Ofgem's assessment of the circumstances under which a customer safety net is likely to be required, and the magnitude of the safety net estimated.

10.29. As noted in Chapter 1, Ofgem also asks respondents to include a summary of their views in their response, explicitly stating whether or not they are in favour of the "sale" or "no sale" options presented for assessment.

11. Way forward

11.1. As set out in Chapter 1, Ofgem welcomes views on this Final IA (complete with summaries explicitly stating whether respondents favour the "sale" or "no sale" options), to be received by close of business on 16 December 2004. Ofgem considers that a consultation period of four weeks on these issues is appropriate, given that the majority of issues on which views are invited have already been subject to previous RIAs. Ofgem also notes that the subject of this IA is a commercial transaction, and as such, there is a tangible time constraint by which the subjects raised in this IA need to be addressed.

11.2. In the event that responses to this document give rise to new information, the cost benefit analysis will be refined. Once all responses have been received, Ofgem will compile summaries of each response, for the purposes of informing the Authority's final decision. Ofgem also proposes to check with each individual respondent that the summaries prepared for each response are a true and accurate reflection of the views received.

11.3. The refined cost benefit analysis, as well as responses to the Final IA (and their respective summaries) and other relevant information, will inform the Authority's decision on whether to consent to the disposal of one or more DNs. It is expected that the Authority will decide on this matter in mid January 2005.

11.4. If the Authority consents to the disposal of DNs, it is likely to attach certain conditions to its consent to the disposal of DNs from Transco plc to wholly owned Transco subsidiary companies in order to ensure that the sale and associated reforms are implemented in a manner that is consistent with the Authority's statutory objectives and duties. For instance, considerable further work will be required in order to develop the detailed changes to the GT's licences and Network Code that would be required to support a divested industry structure. It will be important to ensure that the Authority is satisfied that the proposed changes are appropriate before the transaction is permitted to proceed. In addition, the Authority may wish to ensure that customers' interests

are protected through the application of a customer safety net.[90] Finally, it may be appropriate to impose conditions to consent that relate to potential purchasers.

11.5. Such conditions could include the imposition of a condition that requires NGT to obtain the consent of the Authority before it sells the shares in its newly created wholly owned DN companies.

11.6. If the Authority consents to the disposal of DNs from Transco plc to wholly owned Transco subsidiary companies, then work will continue to develop and implement the detailed regulatory, commercial and operational changes required to give effect to the sale.[91] If the Authority did not consent to the sale of DNs all work by Ofgem in this area would cease.

11.7. NGT has developed a timetable for the various aspects of the DN sales process, which is set out in Appendix 14.

[90] See Ofgem press release, *Ofgem's work on NGT's proposed gas network sale moves to next phase*, 16 April 2004.
[91] For DN sales to occur, Transco also requires the consent of the Secretary of State and the Health and Safety Executive.