

**Review of electricity and gas arrangements
for winter 2004/05**

Consultation Document

May 2004

104/04

Summary

Ofgem's duties

Ofgem¹ has important statutory duties relating to security of supply. Our principal objective is to protect the interests of electricity and gas consumers by promoting effective competition wherever appropriate. We also have a number of general duties, including the carrying out our functions in a manner which is best calculated to "...secure a diverse and viable long-term energy supply..." and to have regard to, under the Gas Act 1986 "...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" and to have regard to, under the Electricity Act 1989 "...the need to secure that all reasonable demands for electricity are met". In relation to wholesale markets, and in line with our statutory responsibilities, we can approve appropriate changes to the market rules and industry codes that improve security of supply.

Ofgem relies on a combination of competitive wholesale and retail markets, effective regulation of network businesses and market monitoring (and where necessary enforcement) to maintain security of supply.

NGT's Winter Outlook Report

Each year, Ofgem asks National Grid Transco (NGT)², in its role as System Operator (SO) of the gas and electricity networks, to produce an assessment, known as the Winter Outlook Report.³ This report sets out NGT's analysis of any operational issues in the coming winter, particularly during very extreme weather conditions. Transco and NGC's currently have different geographic responsibilities as respective SO for gas and electricity the report currently covers the issues relating to Great Britain as a whole for gas, but only issues relating to England and Wales for electricity.^{4,5}

¹ Ofgem is the Office of the Gas and Electricity Markets Authority (the Authority). Ofgem and the Authority are used interchangeably in this document.

² National Grid Transco plc owns and operates the high-voltage electricity transmission network in England and Wales, under National Grid Company's (NGC) transmission licence, and Britain's natural gas transportation system, under Transco's gas transporter's licence. In this suite of documents NGT and either NGC or Transco are used interchangeably as appropriate.

³ In previous years this report has been referred to as the Winter Operations Report.

⁴ On the introduction of the British Electricity Trading and Transmission Arrangements, scheduled for 1 April 2005, NGC will take on the role of electricity SO for the whole of Great Britain.

⁵ Scottish Power Transmission Limited and Scottish Hydro Electric Transmission Limited, the SOs in Scotland have not been asked to produce comparable Winter Outlook Reports.

Last autumn, when the report was published, NGT expressed concern about whether there was a sufficient margin of electricity generating capacity over NGT's forecast of peak demand in a severe winter to maintain security of supply. NGT also highlighted some changes that it believed could be made to the market rules that would improve the incentives on market participants to maintain security of supply.

Expectations of a tightening supply/demand balance, in part resulting from the publication of NGT's analysis, led to rising prices and the return of previously mothballed plant to the system. This is an example of how the market can respond to new information and issues highlighted by NGT and market signals. However, some of the rule changes identified by NGT were not implemented because in Ofgem's view, on balance, the changes would have been likely to be detrimental to the functioning of the trading arrangements and would therefore not have been consistent with Ofgem's principal objective and statutory duties.

This year, Ofgem has asked NGT to produce the report earlier in the year. This will have two benefits. It will give companies more time to respond to any issues highlighted by NGT. It will also allow more time for rule changes to be identified, assessed and implemented ahead of the winter. Ofgem therefore welcomes NGT's Preliminary Winter Outlook Report 2004/05, which is published with this document today. NGT is also intending to provide an update document with further analysis, drawing on the additional information available nearer to the start of winter.

NGT's preliminary winter forecast of supply and demand

In gas, NGT has assumed that maximum beach gas supplies for winter 2004/05 will be 29 mcm or 7.2 % lower than its previous forecast for winter 2004/05 published last year. NGT has also assumed that only 95% of this beach supply will be available, on average, over days of peak demand. NGT bases this assessment on an analysis of actual levels of supply seen last winter, new gas fields being developed and forecasts of the impact of the decline of existing gas fields on peak supply.

This potential reduction in available gas supplies has important implications for how the market would need to respond in very severe winter conditions. NGT has analysed the impact during a "1 in 50" severe winter – this is the weather conditions and the resulting patterns of gas demand that would only be expected to occur once every fifty years. NGT's analysis shows that under these very extreme, and very infrequent conditions, large industrial and/or power generation gas customers would be required to provide demand response to maintain security of supply. Under these conditions, existing

market arrangements would result in large customers being paid to reduce their gas demand on peak days. Information made available to Ofgem about contracts between gas shippers and large customers suggests that the market is able to deliver this type of response. Indeed, there is evidence that market participants are already contracting for some of this flexibility ahead of this winter.

In electricity, NGT's forecast margin of available electricity generation over forecast peak demand under severe weather conditions is 20.2%^{6,7}. This compares with a forecast plant margin of 16.2% at the same time last year.⁸ NGT also says that there is a further 1.7GW of mothballed plant that could potentially return to the system which would increase winter plant margin to 23.2%.

Ofgem's views

Ofgem considers that NGT's report raises a number of interesting preliminary conclusions and also highlights some areas of the existing market rules that could be assessed to improve the ability of the market to maintain security of supply.

Gas supply

Understanding the level and availability of gas supply is clearly very important. In electricity, both NGC and the market have robust information on the maximum generating capacity of all of the plant connected to its system. They also have accurate information on the historic reliability of that plant. In gas, Transco and the market do not have the same level of information on maximum beach supplies and historic reliability. Ofgem considers that further analysis is necessary on these assumptions and would welcome the views of companies who operate offshore gas fields on Transco's forecasts and assumptions. Ofgem also notes that Transco, the DTI and the UK Offshore Operators Association (UKOOA) have recently put in place voluntary agreements that should improve the quality and flow of information to Transco on offshore supply and availability.

⁶NGC's 2004 Seven Year Statement (March Update).

⁷ As noted previously, NGT's report does not consider the supply-demand position in Scotland. However, the plant margin currently stands at around 40%

⁸ NGC's 2003 Seven Year Statement (March Update). This was subsequently increased to 21.6% as mothballed plant returned

Gas demand side response

On the issue of demand side response, Ofgem considers that the market would, if required, be able to deliver the level of response required. Even if suppliers do not have the rights to interrupt customers under their current contracts, they would be able to negotiate such arrangements, with potentially significant payments to customers agreeing to them, if they were necessary. Ofgem has some information to suggest that such contracts have been entered into at very short notice. We would welcome the views of customers and suppliers on the ability of the demand side to respond to periods of high prices.

NGT's report does, however, highlight potential changes to the existing rules that may make it easier for suppliers and customers to provide this sort of response. These changes could, for example, allow large customers (including gas-fired generators) to take gas for part of the day. This would allow gas-fired generators to provide significant demand side response in gas without threatening security of supply in electricity because they would continue to be available to generate during periods of peak electricity demand.

Electricity plant margin

In electricity, Ofgem remains confident that the existing market framework, together with NGC's obligations and incentives to maintain operational reserve, provide an efficient mechanism to deliver an appropriate margin of generation over forecast peak demands. Ofgem considers that experience last winter, where mothballed generation was returned to the system in response to rising wholesale electricity prices and NGC tendered for additional reserve, demonstrates this.

Developing the arrangements

In its report, NGT sets out a number of possible developments to the gas and electricity trading arrangements that, in its view, would improve the incentives to maintain security of supply for this winter. Ofgem welcomes the chance to undertake a dialogue with industry and other interested parties on these and potentially other changes. In this document Ofgem has set out its views on the key issues and areas of the rules that should be considered. This should help the industry and customer groups understand Ofgem's views on priorities for this winter.

Two areas of the rules are, in our view, particularly important - cash out; and top up arrangements. Ofgem has therefore published two documents today that start a review of these areas of the rules.

The first of these additional documents discusses the cash out or imbalance pricing rules in gas and electricity. These rules determine the payments that suppliers, gas producers and electricity generators must make if they do not balance the energy they deliver and the energy their customers take from the system. The rules provide the commercial incentives on companies to maintain security of supply. They ensure that suppliers contract with generators, producers and storage operators to supply them to meet their customers' demands, including at peak times. They also ensure that suppliers, producers and generators have enough spare capacity to manage the risks of breakdowns and other unplanned losses of generation/production. A number of companies, including NGT, have highlighted concerns about whether the current rules provide appropriate commercial incentives on companies to maintain security of supply.

The second of these documents relates to the top up rules in the gas market. These rules place obligations on Transco to assess the levels of storage necessary to maintain security of supply during extreme weather conditions. They also place obligations on Transco to take actions if the market does not appear to be delivering the levels of storage that Transco assesses is necessary. NGT has highlighted a number of concerns about the current arrangements.

Way forward

Ofgem is keen to seek the views of industry participants and other interested parties both in relation to NGT's report, this document, and the documents on cash out and top up.

If appropriate, Ofgem will publish a further document to assist in the progress of this review ahead of the winter. However, Ofgem expects that any changes that are felt necessary as a result of this review will be taken forward by industry participants by way of raising modification proposals to the relevant industry codes. All modification proposals will be considered on their own merit consistent on whether they fulfil the relevant objectives, in the relevant codes, that are in place for the gas and electricity markets. Given the imminent position regarding the introduction of BETTA, as appropriate, any electricity changes will need to be considered in a Great Britain context. Any proposed revisions to companies' licences will be taken forward by

Ofgem if appropriate. Ofgem expects to publish further documents as part of the cash out and top up reviews.

Ofgem and the DTI will also shortly be publishing the latest Joint Energy and Security of Supply (JESS) report, which will primarily focus on the medium and long term outlook for security of supply rather than this winter.

NGT will also be publishing its final Winter Outlook Report 2004/5 in the autumn.

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1. Introduction

- 1.1. This document provides Ofgem's response to National Grid Transco's (NGT) Preliminary Winter Outlook Report 2004/5.
- 1.2. In each of the previous three years Ofgem has requested from NGC and Transco that they provide a report⁹, published in the autumn of each year, setting out the likely operational issues facing the electricity and gas systems for the coming winter particularly in the event of very extreme weather conditions when gas and electricity demand could be expected to be very high. This year Ofgem has requested from NGT that it produce two reports: a Preliminary Winter Outlook Report 2004/5 (the Report) to be published in May and a Final Winter Outlook Report 2004/5 to follow in the autumn.
- 1.3. The purpose of this document is to set out Ofgem's views in respect of the assessment of the potential risks to security of supply for this winter presented by NGT in the Report. Ofgem has considered in some detail the preliminary outlook for this winter presented by NGT and, in particular, the assumptions that NGT has made in forming its view. These primarily relate to the likely levels of gas and electricity supply and demand this winter. Given the inherent uncertainty in making forecasts, Ofgem considers it is important that any analysis should be based on plausible assumptions and should present a range of possible scenarios in respect of the security of gas and electricity supplies.
- 1.4. In addition to its preliminary view of the level of security of supply for this winter, the report contains an assessment by NGT of current and potential future developments to the trading arrangements that, in its view, would reduce further any risks to security of supply for this winter. Ofgem considers it appropriate to set out its initial views on these issues.
- 1.5. A number of specific rule changes were raised and rejected by Ofgem last year that related to the electricity cash out arrangements and the gas top up arrangements. During discussion of these proposals, a number of concerns were highlighted by companies about the current arrangements. These areas of the rules are important in setting the commercial incentives on companies to

⁹ The Winter Operations Report.

maintain security of supply. Given their importance and some companies' ongoing concerns, this document contains a detailed review of the gas and electricity cash out arrangements and the gas top up regime as well as considering elements of the wider trading arrangements.

- 1.6. Ofgem's basis for requesting that NGT produces a Preliminary Winter Outlook Report earlier in the year is to alert the market to any issues and make sure that they would have sufficient opportunity to consider and respond to NGT's assessment of the security of supply situation for this winter. By publishing NGT's forecasts of the likely levels of supply and demand early, it should allow the market to respond appropriately. It should also ensure that any potential developments to the trading arrangements can be considered by the market as a whole at an early stage.

Related issues

- 1.7. There are two related areas of the gas and electricity trading arrangements which, in our view, are particularly important and therefore we are publishing separate documents that discuss the issues in these areas.
- 1.8. The first of these is the cash out or imbalance pricing rules in gas and electricity. These rules determine the payments that suppliers, gas producers and electricity generators must make if they do not balance the energy they deliver and the energy their customers take from the system. The rules should provide the commercial incentives on companies to maintain security of supply. A number of companies, including NGT, have highlighted concerns about whether the current rules provide appropriate commercial incentives on companies to maintain security of supply. Ofgem is today also publishing a document that contains a detailed review of the electricity and gas cash out arrangements and sets out a number of areas which could be subject to reform.
- 1.9. The second of these issues relates to the top up rules in the gas market. These rules place obligations on Transco to assess the levels of storage necessary to maintain security of supply during extreme weather conditions. They also place obligations on Transco to take actions if the market does not appear to be delivering the levels of storage that NGT considers is necessary. NGT has highlighted a number of concerns about the arrangements. Ofgem has also

today published a document that contains a detailed review of the top up arrangements and, as with the cash out review, sets out a number of areas which could be subject to reform.

Way forward

1.10. Ofgem is keen to seek the views of industry participants and other interested parties both in relation to NGT's Report, this document and the documents on cash out and top up.

1.11. Responses should be submitted either electronically to becky.neale@ofgem.gov.uk or by post, addressed to:

Kyran Hanks
Director, Wholesale Markets
Office of Gas and Electricity Markets
9 Millbank
London
SW1P 3GE

1.12. Ideally responses should be received before 9 June 2004.

1.13. If you wish to discuss any aspect of this document, please contact Chris Hemsley who will be pleased to help. Chris can be contacted as follows:

- ◆ telephone number: 020 7901 7340, fax number: 020 7901 7452, email: chris.hemsley@ofgem.gov.uk.

1.14. If appropriate, Ofgem will publish a further document to assist in the progress of this review, however, Ofgem expects that any changes that are felt necessary as a result of this review will be taken forward by industry participants by way of raising changes to the relevant industry codes. Any proposed revisions to companies' licences will be taken forward by Ofgem. In addition, Ofgem expects to publish further documents in relation to cash out and top up reviews.

Outline of this document

- 1.15. Chapter 2 of this document summarises NGT's forecast for winter 2003/04, industry's response to that forecast and compares it with the actual outturn for the winter. It then summarises NGT's forecast for winter 2004/05. Chapter 3 discusses a number of issues that have been raised by NGT and other market participants that relate specifically to security of supply and which are not covered in the separate cash out and top up documents.

2. Background

- 2.1. This chapter highlights that the gas and electricity trading arrangements provide an effective way to deliver secure energy supplies. NGT's analysis and issues raised by market participants have highlighted a number of incremental reforms that would potentially increase the robustness of the arrangements under a number of scenarios, including extreme weather conditions. NGT's report is an important part of informing the market of the impact of low probability events, enabling NGC, Transco and market participants to bring forward proposals for incremental improvements to the arrangements via changes to the relevant industry codes.
- 2.2. The following sections provide a background to NGT's 2004/2005 winter outlook report and highlight the ways in which NGC, Transco and industry participants responded to last year's report.

NGT's winter outlook report

- 2.3. As transmission system operator for the gas markets in Great Britain and the electricity market in England and Wales, Transco and NGC undertake a number of forecasts and produce a range of analysis of both the demand and supply sides of the gas and electricity markets.
- 2.4. For the gas market, NGT forecasts and analyses the level of demand (which is highly seasonal as it is correlated with temperature), the availability of beach gas supplies, the role of the Bacton to Zeebrugge interconnector, potential market response and the use of gas storage.
- 2.5. For the electricity market, NGT considers the availability of generation and forecasts and analyses the level of demand (which is also highly weather related), European market effects on the direction of flow of the French interconnector, and levels of gas interruption and availability of alternative fuels at Combined Cycle Gas Turbine (CCGT) stations.
- 2.6. Different assumptions about each of these variables lead to a wide range of scenarios under which assessments can be made of the level of security of electricity and gas supplies. NGT is therefore able to model the potential

effects of a range of winter conditions across both energy transmission networks.

- 2.7. As part of this forecasting process, NGT publishes a Winter Outlook Report. Ofgem has published today NGT's Preliminary Report which provides a review of the previous winter and a preliminary overview of the coming winter, covering both electricity and gas transmission systems. NGT will also produce an update of the report in the autumn. Publishing these two reports will have two benefits. It will give companies more time to respond to any issues highlighted by NGT. It will also allow more time for rule changes to be identified, assessed and implemented ahead of the winter.
- 2.8. In the next section we provide a high level summary of NGT's report for winter 2003/04¹⁰, describe the reaction to it in terms of the changes to the trading arrangements that were put forward, and summarise what actually happened. We then provide a summary of NGT's preliminary report for winter 2004/05 and a summary of Ofgem's initial thoughts.

NGT's Report for winter 2003-04

Summary of NGT's forecast

- 2.9. The key conclusions to NGT's forecast for winter 2003/04 are summarised below:
- ◆ NGT stated that the Transco and National Grid networks had the capacity to meet the published transportation requirements of cold winters;
 - ◆ at the start of the winter NGT stated that there was sufficient gas forecast to be available at the beach, through the interconnector from Belgium and in storage to meet 1 in 50 severe winter demands;
 - ◆ NGT's analysis of the electricity market suggested that in order for NGC to secure its full operating margin requirement in an extreme scenario, there was the need for mothballed plant to return to the system. A key

¹⁰ National Grid Transco Winter Operations Report 2003/2004, NGT, October 2003.
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Office of Gas and Electricity Markets

consideration in this scenario was the extent of interruptions of gas supplies to CCGTs; and

- ◆ NGT noted that under most scenarios, network security could be maintained without any interruption of firm gas supplies or electricity demand, although voltage reduction (which they would not expect to be discernible to customers) may have been required to cover any significant generator failure had a number of low probability events coincided.

2.10. Based on these conclusions, NGC considered that a number of changes to the electricity trading arrangements would be desirable, including:

- ◆ strengthening of the electricity market imbalance price. NGC subsequently submitted a BSC modification proposal to achieve this aim; and
- ◆ changing the statements produced under condition AA4 of NGC's transmission licence to allow it to introduce a new Maximum Generation Service¹¹ for the winter. NGC subsequently proposed such a change.

2.11. Transco, based on NGT's forecast summary, considered that a number of changes to the gas trading arrangements would be desirable, including:

- ◆ increasing the level of gas security provided by top up by adjusting the monitor levels¹² to reflect more realistic beach availability assumptions;
- ◆ introducing a new process that would enable trading of interruptible rights, allowing shippers to substitute interruption sites with other shippers; and
- ◆ developing a new service which would enable partial interruption of gas to CCGTs (by both shippers and Transco).

¹¹ As part of the AA4 consultation in September 2003, NGC proposed an interim Maximum Generation Service which would allow generators to generate beyond their normal operating range under emergency circumstances.

¹² The Network Code requires Transco to monitor the relationship between available supply and what remains of the 1 in 50 curve throughout the winter. Transco undertakes this assessment process by setting 'monitor' levels for different categories of storage site that define the amount of gas that it considers would need to be held in store on each day throughout a given winter in order to ensure that (what remains of) a 1 in 50 winter could be met.

Reaction to NGT's Report

- 2.12. A number of changes to industry documents have been proposed over the past year, by NGC, Transco and industry participants, which reflected the issues that NGT raised. These, together with Ofgem's decisions on whether to approve them, are summarised in Appendix One.

Outturn winter 2003/04

- 2.13. The key points of the outturn for winter 2003/04 were:

Gas Market

- ◆ the winter was generally mild, outturning at around '1 in 7 warm';
- ◆ UK daily gas demand peaked at 4,840 GWh (444 mcm) on 28 January 2004, which represents 83% of the forecast "undiversified" 1 in 20 peak day of 5,821 GWh (535 mcm). This was 1.4% lower than the 2002/03 peak demand of 4,910 GWh (451mcm);
- ◆ Transco observed an increase in the number of reported supply reductions, with a number of material offshore outages reported. Of particular significance were the loss of withdrawal capability from Rough between 22 and 26 January 2004 and a combination of beach supply losses on 28 and 29 January 2004; and
- ◆ the electricity market reacted to the supply problems in late January, with gas-fired power stations responding to high day ahead and on-the-day gas prices by reducing gas demand. The electricity market was able to provide this relief as electricity demand was relatively low, plant availability was high, electricity prices were relatively benign, and there appeared to be sufficient stocks of back-up fuels to allow gas-fired generation to continue to generate whilst not taking gas from the NTS.

Electricity Market

- ◆ the mild winter kept demand relatively low. Peak demands were also relatively low due to the timing of the relatively cold spells. The highest electricity demand over the winter reached 52,965 MW for the half-hour

ending 17:30 hrs on 8 December 2003. This compares to winter 2002/03 when demand reached 54,430 MW on 10 December 2002, the highest ever recorded;

- ◆ NGT's preliminary review of demand indicated a greater demand downturn and increased embedded generation over the peak half-hours than in previous years. Over the peak winter demands there was some 800 MW of easily observable customer demand management; and
- ◆ NGT's figures show that there was adequate generation plant available in real time to meet the level of peak demands and operating margin. The available generation for the winter increased as mothballed plant returned to service. A total of 3 GW of mothballed plant was returned to service by generators from the 16.5% Plant Margin reported in the July 2003 Update of NGC's Seven Year Statement.

NGT's Report for Winter 2004-05

Summary of NGT's Forecast

2.14. The key components of NGT's preliminary forecast for winter 2004/05 are:

- ◆ under all credible scenarios, security of gas supply can be maintained without any NGT interruption of firm gas supplies, on the basis of appropriate beach supplies, use of storage, and where necessary increased demand-side response;
- ◆ based on evidence from winter 2003/04, NGT states that it appears that the decline of UK Continental Shelf (UKCS) gas supplies is occurring quicker than previously forecast, and so NGT has reduced its forecast of maximum beach supply for the coming winter by 29 mcm/d to 375 mcm/d;
- ◆ NGT is of the view that there has been a recent reduction in suppliers' rights to interrupt LDZ interruptible customers, with the great majority now only interruptible at the instruction of Transco. However, NGT states that its rights to interrupt are limited, with the primary focus of

Transco interruption being related to transportation capacity management, as opposed to supply-demand management;

- ◆ Ofgem's analysis of NGT's preliminary figures shows that, on the peak day of NGT's severe scenario, there is a potential 137mcm of demand-side response from both industrial customers and power stations;
- ◆ based on these supply-side and demand-side factors, Ofgem's analysis of NGT's preliminary figures indicates, on the peak day, that 1 in 50 winter security in 2004/05 depends on the availability of a demand-side responsiveness equal to 65 mcm (which is 47 per cent of the total population of sites that can physically respond);
- ◆ NGT has confirmed that the transportation system will have the capability to provide sufficient capacity for the 1 in 20 peak day in 2004/05; and
- ◆ NGT currently believes that under all credible scenarios, including Average Cold Spell (ACS) conditions, security can be maintained without any interruption of firm gas supplies or electricity demand. Subject to the return of both the mothballed plant and the currently declared unavailable plant, there should be sufficient generation to meet ACS demands. However, NGT believes that if there were significant generation failures in a cold winter (near ACS conditions), voltage reductions may be required to maintain the security of the network.

Ofgem's initial thoughts on NGT's forecast

- 2.15. Ofgem considers that NGT's report raises a number of interesting conclusions and also highlights some areas of the existing market rules that could be changed to improve the ability of the market to maintain security of supply.

Gas supply availability

- 2.16. Understanding the level and availability of gas supply is clearly very important. In electricity, both NGC and the market have robust information on the maximum generating capacity of all of the plant connected to its system. They also have accurate information on the historic reliability of that plant. In gas, Transco and the market do not have the same level of information on

maximum beach supplies and historic reliability. Ofgem considers that further analysis is necessary on these assumptions and would welcome the views of companies who operate offshore gas fields on Transco's forecasts and assumptions. Ofgem also notes that Transco, the DTI and the UK Offshore Operators Association (UKOOA) have recently put in place voluntary agreements that should improve the quality and flow of information to Transco on offshore supply and availability.

Demand side response in gas

- 2.17. On the issue of demand side response, Ofgem considers that the market would deliver the level of response required. Ofgem notes the concerns that NGT raises about changes in the way that suppliers and customers contract to allow for customer interruption. However, Ofgem also notes the findings of NERA's 2002 study¹³ for Transco which suggested the potential for significant reductions in gas demand for large users at peak prices, and also the ability of almost half the customers surveyed to switch to alternative fuels. Even if suppliers do not have the rights, under current contractual arrangements, to interrupt customers, they would be able to negotiate such arrangements, with potentially significant payments to customers agreeing to them, if they were necessary. These arrangements could potentially be agreed at very short notice. We would welcome the views of customers and suppliers on the ability of the demand side to physically respond to periods of high prices.
- 2.18. NGT's report does, however, highlight potential changes to the existing rules that may make it easier for suppliers and customers to provide this sort of response. These changes could, for example, allow large customers (including gas-fired generators) to take gas for part of the day. This could improve security of supply in gas without threatening security of supply in electricity. Electricity demand varies significantly within the day, with demand typically peaking in the morning and late in the afternoon. Gas fired generators could continue to take gas and generate during periods of peak demand and then not generate (and significantly reduce their gas demand) during off-peak periods.

Electricity generation capacity and demand side

- 2.19. In electricity, Ofgem remains confident that the existing market arrangements, together with NGC's obligations and incentives to maintain operational reserve, provide the framework to deliver an appropriate margin of generation over forecast peak demands. Ofgem considers that experience last winter, where mothballed generation was returned to the system in response to rising wholesale electricity prices and NGC tendering for additional reserve, demonstrates this.
- 2.20. Last year also provided evidence of the increasing role of the demand side, with NGC contracting for demand side standing reserve and with observed increases in demand side response.

Demand forecasts

- 2.21. Both Transco and NGC have a number of important obligations. In order to fulfil these obligations NGT has developed forecasts of 1 in 50 severe winters and ACS demands in electricity. Ofgem considers that it would be helpful to all market participants if the methodology used by NGT in undertaking these forecasts was made available to improve transparency and understanding of its forecasts. It may also help, through industry and customer discussion, to improve the methodologies and the accuracy of their forecasts. Ofgem has therefore asked NGT to publish the methodologies used to facilitate wider understanding and debate.
- 2.22. As part of our consideration of NGT's Winter Outlook Report and in preparation for the top up review, there are several areas of NGT's demand and supply forecasts where discussions with NGT are ongoing. These elements are identified in the top up review document.
- 2.23. In their report, NGT sets out a number of possible developments to the trading arrangements that, in its view, would improve the incentives to maintain security of supply for this winter. Ofgem welcomes the chance to undertake a dialogue with industry and other interested parties on these and potentially other changes.

¹³ Study to investigate the likelihood of firm load self-interruption in a severe winter: A final report for Transco plc: prepared by NERA 23 May 2002.

Way forward and points for consultation

- 2.24. Ofgem is requesting that NGT publish a detailed description of the methodology it applies to its forecasts of the 1 in 50 severe winter demand and ACS demand.
- 2.25. In addition, Ofgem would welcome views on:
- ◆ all aspects of the analysis presented by NGT; and
 - ◆ the extent of the potential for the demand side to physically respond to periods of high prices.

3. Development of the rules and issues for this winter

Introduction

- 3.1. Chapter 2 highlighted that the gas and electricity trading arrangements provide an effective way to deliver secure energy supplies. NGT's analysis and issues raised by market participants have highlighted a number of incremental reforms that would potentially increase the robustness of the arrangements under very severe scenarios.
- 3.2. This chapter describes areas of the wholesale gas and electricity trading arrangements which have been highlighted by NGT and market participants as possible areas for development for security of supply purposes ahead of winter 2004/05. In some of the areas, modification proposals are already being taken forward. The areas discussed can be broken down into broadly three categories; generator availability, gas availability and commercial incentives on market participants.
- 3.3. Ofgem considers that, where there are potential improvements to the rules that would increase security of supply, it is important for the industry to address these issues in a timely manner and, if any appropriate improvements are identified, for action to implement associated revisions to be progressed as quickly as possible.

Generator availability

Plant mothballing and return to service times (RTS)

- 3.4. There is a wide variety of information provided to market participants in the electricity market to enable them to take efficient decisions about the operation, maintenance, mothballing and construction of generating capacity.

Grid Code Modification L/03

- 3.5. This change seeks to extend the amount of information available to market participants in order to improve the operation of the current arrangements.

- 3.6. In its report in February 2003, the Joint Energy Security of Supply working group (JESS) identified that the following information that it considered necessary to assess the risk to the UK's future electricity and gas supplies was not currently available:
- ◆ estimated return to service times for generating units that are mothballed; and
 - ◆ the capability of gas-fired generating units to operate using alternative fuels.
- 3.7. In light of the work of JESS and the fact that the lack of this information was hindering an informed view of security of supply being made, Ofgem asked NGC to:
- ◆ collect this information from generators for winter 2003/4 and include aggregate information in the 2003/04 Winter Operations Report provided to Ofgem; and
 - ◆ review its Grid Code and consider if changes could be proposed that would enable NGC to collect this information from generators on a quarterly basis.
- 3.8. With the agreement of the Grid Code Review Panel, NGC established the Mothballed Plant and Alternative Fuels working group (MPAF Working Group) to consider Ofgem's request for a review of the Grid Code and develop proposed changes to the Grid Code.
- 3.9. NGC proposed changes to the Grid Code under consultation L/03 "Proposed Grid Code Modifications to Incorporate new Provisions Relating to the Flow of Information on Mothballed Plant and Alternative Fuels" to introduce new requirements for generators to provide NGC with information about the:
- ◆ estimated return to service times (from the time that a commercial decision to return the plant to service has been made) for mothballed generating plant; and
 - ◆ alternative fuels using which gas-fired generators can be operated and details about the changeover between types of fuels.

- 3.10. Following the consultation, NGC recommended that the Authority approve the changes to its Grid Code as set out in the consultation report. The Authority having regard to the licensee's objectives set out in condition 7(1)(b) of the Transmission Licence (the objectives) and its statutory duties, agreed on 6 May 2004 that the proposed changes to NGC's Grid Code should be made.
- 3.11. In particular, in reaching its decision the Authority considered that the proposed change met the objective of the Grid Code "to promote the security and efficiency of the electricity generation, transmission and distribution systems".
- 3.12. However, Ofgem acknowledged that a number of respondents to the consultation raised concerns about provisions to ensure the confidential treatment of the information that would need to be provided to NGC. Ofgem understands that the generators consider such data to be highly commercially sensitive and have concerns that NGC may use this information other than for the intended purposes. However, Ofgem considers that the proposed Grid Code changes provide sufficient clarity about the use that NGC can make of the data collected. Ofgem notes that NGC is obliged to treat Grid Code data in accordance with the relevant statutory and commercial framework and is satisfied with the explanations that NGC has provided to respondents to the consultation and more recently to Ofgem about the applicability of confidentiality provisions to data collected under the Grid Code.

Transmission Entry Capacity

- 3.13. Currently, a generator's Transmission Entry Capacity (TEC) determines the generator's annual payments for use of the transmission system, known as Transmission Network Use of System (TNUoS) payments. As a result of this, generators wishing to operate or return to the system for just part of a year face the full annual cost of TNUoS payments even though they intend to operate for a shorter period of time. Equally, if generators want to increase their TEC for part of the year, their TNUoS payment is based on the highest level of TEC held during the year, even if this is only relevant for a short period. Generators may face the cost of TNUoS charges (unless they are in transmission charging zone where charges are negative).

- 3.14. The present arrangements may lead to relatively high charges for the return of mothballed plant part way through a year or for short-term increases in TEC. Reducing these charges could, for example, aid the return of mothballed plant to the system in order to meet winter peak demand, thereby increasing the quantities of generation available and enhancing security of supply. It may not be economic to return a mothballed plant, particularly one in a relatively high TNUoS charging zone, for a short period of time if it had to pay a year's TNUoS. However, if it was required to pay only a proportion of the annual charge then its return may become economic, provided that this did not create significant additional costs for NGC or other system users.
- 3.15. However, such a change in charging must be consistent with NGC's charging methodology and the objectives for such methodology. The relevant objectives include that such charging methodology should result in charges which reflect the costs incurred by the transmission business and that they take account of the development of the transmission business. It therefore needs to be considered whether changes that result in a short term charge are consistent with such objectives.
- 3.16. A CUSC Amendment Proposal (CAP070: "Short Term Firm Access Service") was proposed on 19 January 2004 by NGC to introduce a short-term TEC product seeks to address this issue. CAP070 is currently being assessed by market participants, with the Working Group report having been issued on 15 April 2004. First Hydro has recently raised an alternative option to this draft amendment proposal, which would allow generators to apply for short notice (2 weeks), short term transmission entry capacity, available in 6 week blocks. The panel rejected this amendment with CAP070 being sent back to the Working Group for a further month. The group is due to report back to the May CUSC panel. Following this, it is expected that it will proceed to wider consultation.

Maximum generation service

- 3.17. As discussed in the previous chapter, NGC proposed an interim MaxGen solution to be used over winter 2003/04, with a view to developing an enduring solution for winter 2004/05. Ofgem agreed to the implementation of this interim solution despite having some concerns with it. Given these

concerns, Ofgem welcomed NGC's commitment not to use the interim service after April 2004 and its intention of developing a more enduring solution in time for winter 2004/05. Ofgem continues to consider that an appropriate MaxGen service has the potential to deliver security of supply benefits for winter 2004/05.

- 3.18. Following implementation of the interim solution, the Balancing Services Standing Group (BSSG) considered the development of the MaxGen service going forward. Powergen subsequently submitted a CUSC Amendment Proposal in relation to the MaxGen service (CAP071: "Development of a Maximum Generation Service"). This proposal was based upon MaxGen being called for generation beyond a unit's normal operating range. Potential concerns over the ability to game MaxGen were in part addressed by the introduction of a limiting factor to the MaxGen eligible volumes, to address concerns that generators might seek to abuse the arrangements by artificially lowering their declared maximum output (known as the maximum export limit), in order to gain higher MaxGen payments.
- 3.19. Following discussions on the original proposal, the BSSG, in its capacity as the CAP071 Working Group, developed an alternative proposal which addressed an issue with the original relating to the definition of the upper limit of normal generation. It was the view of the Working Group that whilst the original proposal would better facilitate achievement of the applicable CUSC objectives, the alternative was superior. The Working Group report will reflect this view and will be presented to the CUSC panel on 21 May 2004, and subject to panel acceptance, will proceed to wider consultation.

Scottish electricity interconnector capacity

- 3.20. Concerns have been raised that the Scotland to England and Wales interconnector is not being fully utilised, particularly on days of system stress. It has been suggested that the present Scottish interconnector arrangements do not provide sufficient incentive and/or ability for parties to trade capacity entitlements in the short-term. This can lead to available generation in Scotland being unable to offer electricity to the market in England and Wales because they cannot access interconnector capacity in the short term.

- 3.21. For example, on 10 December 2002 (when peak demand reached 54,430 MW (the highest ever recorded demand)), there were a number of exceptional generator failures in England and Wales at very short notice, leading to all available plant being brought onto the system. At this time an average of 350 MW of interconnector capacity was unused per period when there was spare generating capacity in Scotland. This could have been used to provide energy to the England and Wales system.
- 3.22. Similarly, on 10 March 2004, another day when NGC faced a tight demand/supply balance, NGC was able to source an additional 672 MW of generation capacity across the interconnector during the peak period, over and above declared availability. However, this capacity was only made available following contact between the respective companies. Such a process is clearly not the ideal way to address such a problem, and may not be performed within operational timescales, which may result in spare generation being unavailable to the England and Wales market. It would be preferable to have arrangements in place that ensure that generators with spare generating capacity can access spare capacity on the interconnector in a transparent and effective way.
- 3.23. Given that there is significant underutilisation of interconnector and generation capacity in Scotland, even on the highest demand days in England and Wales, it may be worthwhile considering whether the current interconnector arrangements could be revised. Any changes would need to be made to the Interconnector Agreement which sits under the British Grid Systems Agreement. Therefore, an existing transmission company would need to initiate any revisions.
- 3.24. One possible solution would be the introduction of use-it-or-lose-it (UIOLI) rules for interconnector access. Under such a rule, interruptible interconnector capacity could be offered on the day – this would also encourage parties to trade more of their unusable capacity rather than risk losing it after Gate Closure.
- 3.25. The introduction of the BETTA¹⁴ (scheduled for April 2005) will provide an enduring solution to the problem, as the interconnector will become an

¹⁴ the British Electricity Transmission and Trading Arrangements, the objective of which is to implement new trading and transmission arrangements that are designed to promote the creation of a single competitive Review of electricity and gas arrangements for winter security of supply
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integral part of a Great Britain wide transmission and trading system, and as such will no longer be subject to the current allocation arrangements.

Back up fuel

- 3.26. NGT believes that it would be beneficial if there was greater certainty that interruptible CCGTs would be able to reliably generate on alternative fuels for prolonged periods.
- 3.27. As discussed above, Grid Code Modification L/03 includes the provision of greater information to NGC in relation to the provision of back up fuels. The implementation of this proposal should result in increased information being available regarding continued generation by interruptible CCGTs and therefore enable NGT to assess the risk of such interruptions and the interactions between the gas and electricity markets.

Transco's interruption arrangements

- 3.28. When a customer signs an interruptible gas supply contract, it does so through its shipper. Such a contract normally has two distinct elements:
- ◆ the level of permitted shipper-nominated interruption; and
 - ◆ the rights that Transco has to interrupt a site's use of gas.
- 3.29. Once Transco identifies the need to call an interruption, it will inform the relevant shipper of the need to interrupt and give a minimum of five hours notice of the interruption. Wherever feasible, the shippers will be given the opportunity to choose which customers are affected.
- 3.30. Transco primarily uses interruptible contracts to help manage transportation constraints in the short term. In the long term, Transco can use interruptions to avoid the need for additional investment to alleviate a constraint, depending on the relative costs of investment, interruption and local storage.
- 3.31. Transco could also use interruption as a means of managing energy imbalances on the system. If the system is short of gas in aggregate, Transco could use its

interruptible contracts to reduce offtakes and bring the system back in balance, when demand is forecast to be above 85% of the maximum peak day demand. The 85% of system 1-in-20 peak day demand interruption trigger is to protect gas in storage such that potential future firm demand can be met (that is to avoid a top up monitor breach). Transco has not, to date, had to interrupt the system for supply and demand purposes. Interruption contracts do, however, provide Transco with an additional tool in its role as residual system balancer.

- 3.32. The “85% rule” only enables Transco interruption to manage unusually high levels of demand. However, an energy balancing requirement could be driven by unusually high levels of supply side failures. In such circumstances, Transco would be unable to call interruption for supply/demand balancing purposes. Whether the level of the current demand trigger is appropriate and whether a corresponding supply side trigger should be introduced should both be considered to assess whether or not such developments would offer any security of supply enhancements.
- 3.33. More generally, it may be appropriate to consider whether Transco should use transportation interruption contracts for supply-demand balancing, as Transco could separately contract for these services. Such developments would, however, require Transco’s SO incentives to be adjusted to ensure that efficient trade-offs are made. As such, this may not be an area which can be fully resolved prior to winter 2004/05, particularly in light of the proposed project to sell a number of distribution networks.
- 3.34. Transco is also able to partially interrupt a site. This service allows for the interruption to be delivered in agreed phases or tranches that goes some way to meeting the site’s consumption. Transco is intending to develop a proposal that would allow large customers to be able to be partially interrupted but still able to meet peak day demand (see below).

Flexible gas interruption service and trading of interruptible rights

- 3.35. Last winter two network code modification proposals (0657¹⁵ and 0658¹⁶) were raised to introduce market mechanisms to assist Transco's operations and system balancing. These proposals suggested:
- ◆ allowing partial interruption of a site where technically feasible to help Transco's operations and to use system flexibility more effectively; and
 - ◆ introducing a service to enable shippers to trade their interruptible rights, thus facilitating the use of shippers' within day flexibility.
- 3.36. However, both proposals were rejected as they required further development and there was insufficient time for implementation ahead of winter 2003/04. Modification 0657 also raised the issue of potential discrimination between different classes of customer. The proposal would have offered a valuable service, within day flexibility, without charge. Ofgem was concerned that this modification proposal would lead to costs being imposed upon other shippers and potential customers. Modification proposal 0658, raised the issue of the effectiveness of communications and the administrative processes associated with the transfer of interruption obligations.
- 3.37. Consequently, the issues raised in these modifications were not resolved ahead of last winter and potential security of supply enhancements were not delivered. It may be beneficial for more fully developed thinking on these issues to be undertaken going forward that address the concerns highlighted by Ofgem and shippers last year.
- 3.38. Ofgem would emphasize that we support the principle of selling within day flexibility to customers, trading interruption obligations and the development of a partial interruption scheme. These services would assist shippers in managing their gas and electricity requirements within the gas day. Under extreme weather conditions and with limited beach availability, demand side response and the level of flexibility on the system in the forthcoming winters

¹⁵ Network Code Modification 0567 "Partial Volume Interruption Service".

¹⁶ Network Code Modification 0658 "Interruption Transfer Service".

are both important. Enabling shippers to be able to trade their interruption rights could ease security of supply constraints by allowing end-users to meet peak day demands and still remain an interruptible customer.

- 3.39. Before last winter Transco's modification proposal 0658 was raised to put in place an interruption transfer service. The industry did not generally support the proposal as it was raised very close to the start of winter and shippers had already entered into interruptible contracts for the winter period. Any proposals this year need to be raised much earlier to give shippers sufficient time to enter into contracts with their interruptible sites. Transco will also need to assess thoroughly, the costs and benefits of any new modification proposals ensuring that the current arrangements will not become unduly complicated, which could lead to an increase in the number of sites failing to interrupt thereby potentially causing security of supply problems.
- 3.40. Transco has recently raised a modification proposal to enable partially interruptible customers to still run at maximum rate for part of the day when Transco interrupts for supply and demand purposes. The proposal would introduce a cumulative volume restriction that applies for each hour of the interruption period. Therefore an interruptible site could reduce its offtake of gas to zero for four hours say from 6 am to 9am, to enable it to ramp up its offtake to 100% for the following four hours, from 10 am to 1 pm. At present, a partial interruptible customer would have to operate at or below 50% of its normal gas offtake for the whole day, this modification proposal would allow industries to meet peak day demands. It must be noted that an interruptible site must be over interrupted before it can be under interrupted, to avoid detrimental linepack profiling.
- 3.41. It may be beneficial for Transco (or shippers) to be able to interrupt large users for only a proportion of the day or at shorter notice periods, to help with a sudden reduction in supply in extreme conditions. However, to ensure that any proposal is non-discriminatory, Transco may need to review all Network Exit Agreement (NExA) restrictions that are currently in place. If different users have different restrictions on placed on them via their NExAs they may effectively deny access to the partial interruption service being offered. Such constraints are also contained in the offtakes with respect to the

interconnectors, this may need to be revised to facilitate security of supply in the coming winters.

- 3.42. Response from the demand-side provides an effective substitute to investment in transmission capacity, storage and production/generation capacity. In order to maintain security in very extreme, low probability events, it is likely to be efficient that response comes from the demand-side avoiding the need for costly investment in infrequently used assets which will ultimately be paid for by all energy customers. Developments within the current interruption regimes will be beneficial. However Transco and the industry need to develop proposals that are consistent with Transco's obligations under the Gas Act and its licence, for example its obligation not to discriminate against different users. It is also important that any proposals are transparent. This could involve developing services that are available without charge, on the same basis, to all users. Alternatively, Transco could develop different levels of services with appropriate charges for the services if they cannot be offered to all customers.

Gas availability

Offshore information and beach availability

- 3.43. A lack of information in relation to offshore activities and beach availability creates a potential security of supply risk. This information shortage can prejudice the effectiveness of Transco's balancing actions and the ability for the market to respond. Appropriate measures to improve the level and quality of information in this respect could offer security of supply enhancements. Ofgem considers that the provision of more detailed and timely information on terminal and offshore outages could help resolve the supply deficits through the normal market mechanisms potentially reducing the market's reliance on Transco as gas balancer to deal with these events. Increasing the market's reliance on the residual gas balancer may increase balancing costs. In particular, Ofgem considers that the provision of forecast outage information could provide the market with early reliable signals of shortages allowing it to respond in a more efficient and timely, manner (by contracting for gas and using storage) thereby facilitating security of supply.

- 3.44. Currently, the Department of Trade and Industry (DTI) has undertaken work with UKOOA, Ofgem, National Grid Transco and terminal operators, to consider the information release between the offshore and onshore gas industries. On November 11 2003, a voluntary agreement was put in place on the first phase to improve and standardise information provided to Transco on gas flows, and planned and unplanned outages.
- 3.45. A possible agreement has now been reached with gas producers on phases two and three. Phase two seeks the disclosure of operational and planning information which Transco uses to produce its Transporting Britain's Energy (TBE) forecasts. UKOOA was concerned with phase two of the process because it considered that confidential information supplied to Transco could be made available to all market participants by virtue of condition 4E of Transco's GT licence. Ofgem at present has granted a temporary derogation to condition 4E of Transco's GT licence and is now consulting on possible amendments to licence condition 4E to deliver a long term solution to the problem identified.
- 3.46. Stage three proposes the disclosure of aggregated information to all market participants including customers. This information is:
- ◆ national and zonal near to real time flows onto the NTS;
 - ◆ national and zonal ahead of and during day forecast flows onto the NTS;
 - ◆ national and zonal forecast deliverability reflecting planned; maintenance; and
 - ◆ after the day flows into the NTS by sub terminal (this information is already available to gas shippers).

Storage information

- 3.47. In a similar manner to information about offshore availability, information about storage capabilities and inventory levels would improve the ability of market participants to efficiently manage supply and demand more efficiently.
- 3.48. Indeed, some shippers and customers have indicated that having access to storage information would allow them to react more effectively to market

changes, to make a better supply/demand assessment and to remove perceived advantages that storage customers enjoy, for example, in relation to information concerning overall facility, inventory levels and advance notice of force majeure situations. Transco has also indicated that it would be aided in assessing the within-winter impact on the various monitor levels of shipper storage nominations by having access to UK storage inventory levels (broken down in terms of long, medium and short duration facilities). As above, appropriate measures to improve the level and quality of information in this respect could offer security of supply enhancements.

- 3.49. Ofgem considers that higher levels of information release would improve the effectiveness of the gas market, delivering benefits in terms of security of supply. One potential route by which storage information could be made more widely available, is by making it a condition of the proposed Generic Storage Connection Agreement (Generic SCA).
- 3.50. At present, Ofgem is considering the Generic SCA, which Transco has sent to Ofgem for its approval. The Generic SCA was itself the subject of an industry consultation undertaken by Transco but does not at present include any provision for the release of storage information. However in the light of the issues raised in this document and the arguments put forward in relation to the potential benefits of the wider publication of storage information, there may be some merit in reconsidering whether Ofgem should make the release of storage information to Transco a condition of its approval of the Generic SCA.
- 3.51. Another potential route for the provision of storage information to Transco lies in the implementation of the Gas Directive. That is the release of storage information could be mandated as a condition of third party access to storage facilities. In any event it is likely that the release of storage information will be a condition attached to any application for exemption from the need to offer third party access. The DTI is currently consulting on the implementation of the Gas Directive.
- 3.52. Ofgem expects Transco and the storage operators to work with Ofgem to improve the degree of information release.
- 3.53. It should be highlighted that the storage sites for the coming winter are all fully booked.

Belgium interconnector

- 3.54. The interconnector was built to transport dry gas between Belgium and the UK. However, occasionally the gas contains solids and wet gas which cause water ingress in the interconnector and forces unplanned maintenance shut downs.
- 3.55. On 2 July 2002, the gas interconnector between Bacton and Zeebrugge ceased physical operation due to 'liquids carry-over' into the Bacton Terminal from the Delivery Facility Operator. The pipeline was closed down for cleaning purposes between 2 July and 23 August 2002 (although limited flows to the Continent commenced on 19 August 2002).
- 3.56. One possible resolution is for industry to consider this issue. In particular, whether investment is needed by IUK, producers, terminal operators or Transco or whether changes are needed to the commercial incentives on the NTS and/or the interconnector to reduce the risk of out of spec gas being flowed through the interconnector.
- 3.57. Another possible way to address this gas quality issue is through the interconnector licences that will be introduced under the Energy Bill. Ofgem will be the licensing authority and the DTI will be consulting on the licences shortly
- 3.58. A failure to address the risk of interconnector shut-down because of gas quality could raise security of supply concerns for winter 2004/05, although this would require the coincidence of a number of low probability events. Although primarily an issue when in forward flow (export mode) a repeat of these events in November (when the pipe could be exporting) could lead to a situation where it is unavailable for import later in the winter to import gas.

Commercial incentives on market participants

Cash out review

- 3.59. As discussed earlier, Ofgem rejected BSC Modification Proposals P136 and P137 in March 2004. However, in considering the issues we did believe that there was some evidence, particularly in the electricity market, that on days of

system stress that cash out prices may not be sending appropriate signals to companies.

- 3.60. As such, in assisting the industry in reaching a resolution to the debate on this matter and to recognise gas and electricity market interactions, particularly in relation to security of supply considerations ahead of Winter 2004/05, Ofgem outlined in its letter to interested parties on 1 March 2004 its intention to initiate a review of the cash out arrangements for gas and electricity.
- 3.61. In accordance with its commitment, Ofgem has today also published a cash out review document. Ofgem has also invited responses from market participants in relation to the issues raised in its cash out review document. Following consideration of responses received, Ofgem expects to publish a 'Further Thoughts' paper.

Top Up

- 3.62. In rejecting Network Code Modification Proposals 0659¹⁷ and 0660¹⁸, published on 1 December 2003, Ofgem stated that it would consider the possibility of reviewing the role that top up plays within the wider context of gas security of supply considerations.
- 3.63. Ofgem has today also published its initial thoughts document on this top up review. In reviewing the role of top up Ofgem considers it important to determine whether, given market and other developments since Ofgas' top up review in 1998, the arguments for removing the top up arrangements from Transco's Safety Case and the network code remain valid. Ofgem's initial assessment is that these arguments remain valid and that top up should be removed.
- 3.64. Removal of the top up arrangements would, however, require discussions and the approval of the Health Safety Executive, a process which is likely to take at least six months. It may not be possible, therefore, to remove the top up requirements ahead of this winter. Given this, the review also considers the potential for changes to be made to the top up rules set out in the Network

¹⁷ "Winter Injection Cost Allocation Based on User Daily Imbalances"

¹⁸ "Winter Injection Cost Allocation Based on User Daily Offtakes",

Code consistent with the requirements of the current arrangements. In carrying out this review, Ofgem's objective is to assess whether the existing rules could reduce the commercial incentives on companies to ensure security of supply and/or raise the costs to customers of delivering secure supplies.

Summary and way forward

- 3.65. If appropriate, Ofgem will publish a further document to assist in the progress of this review, however, Ofgem expects that any changes that are felt necessary as a result of this review will be taken forward by industry participants by way of raising changes to the relevant industry codes. Any proposed revisions to licences will be taken forward by Ofgem. In addition, Ofgem expects to publish further documents in relation to the cash out and top up reviews.
- 3.66. In this section, Ofgem has highlighted areas of work that we consider should be taken forward, as a priority, ahead of this winter:
- ◆ the development of short term Transmission Entry Capacity, which is being considered under CUSC Amendment Proposal 070 "Short Term Firm Access Service";
 - ◆ the development of an enduring MaxGen solution, which is being considered under CUSC Amendment Proposal 071 "Development of a Maximum Generation Service";
 - ◆ the under utilisation of the Scotland to England and Wales interconnector, particularly on days of system stress;
 - ◆ the development of Transco's interruption arrangements, in particular, the development of more flexible arrangements and the trading of interruptible rights;
 - ◆ the need for increased provision of offshore information and beach availability;
 - ◆ the need for increased gas storage information; and

- ◆ changes to the arrangements either on the NTS or the UK-Belgium interconnector to reduce the possibility of unplanned maintenance shut downs during winter because of gas quality issues.

3.67. The above list, alongside the issues raised in the cash out and top up documents, is not intended to be all inclusive, and Ofgem would welcome the development of any further issues that participants feel may be appropriate via the appropriate mechanisms and in a timely manner, such that the changes are available to assist in ensuring security of supply for winter 2004/05.

Next steps

3.68. Ofgem is keen to seek the views of industry participants and other interested parties both in relation to NGT's Report, this document and the documents on cash out and top up. Ofgem would welcome responses by 9 June 2004.

3.69. If appropriate, Ofgem will publish a further document to assist in the progress of this review, however, Ofgem expects that any changes that are felt necessary as a result of this review will be taken forward by industry participants by way of raising changes to the relevant industry codes, given the imminent position regarding the introduction of BETTA it is likely that such changes will need to be considered in a Great Britain context. Any proposed revisions to licences will be taken forward by Ofgem if appropriate. In addition, Ofgem expects to publish further documents in relation to cash out and top up, and an update document in relation to security of supply for winter 2004/05.

3.70. NGT will also be publishing its final Winter Outlook Report 2004/5 in the autumn.

Appendix 1

- 1.1 A number of changes to industry documents have been proposed over the past year, by NGC, Transco and industry participants, which reflected the issues that NGT raised. These, together with their outcomes, are summarised below.

BSC Modification Proposal P135

- 1.2 Modification Proposal P135: “Marginal System Buy Price During Periods of Demand Reduction” was raised by NGC on 1 August 2003 and was subsequently given urgent status. Modification Proposal P135 sought to amend the Energy Imbalance Price calculation such that the SBP, when the market is short, is calculated using a marginal methodology during periods of demand control (as defined in Grid Code OC6) when there is insufficient generation to meet demand.
- 1.3 The BSC Panel recommended to the Authority that Proposed Modification P135 should not be made, and the Authority rejected the Proposed Modification on 26 September 2003.
- 1.4 The Authority rejected Proposed Modification P135 on grounds that it would not better facilitate achievement of the Applicable BSC Objectives. This decision was reached for a number of reasons which included concerns that by having two regimes in place for the calculation of Energy Imbalance Prices there could be the scope for perverse incentives to exist. The Authority was also concerned that the Proposed Modification could increase the risk that cash out prices were set at levels that did not reflect NGC’s costs on the basis of a very small volume Offer.

BSC Modification Proposals P136 and P137

- 1.5 Modification Proposal P136: “Marginal Definition of the 'main' Energy Imbalance Price” was submitted on 1 August 2003 by NGC. Modification Proposal P137: “Revised Definition of the System Buy Price and System Sell Price” was submitted on 1 August 2003 by Barclays Bank Plc.
- 1.6 Each of Modification Proposals P136 and P137 sought to modify the BSC to introduce a marginal methodology for the calculation of the main cash out price.

Under each Modification Proposal the marginal price would be derived from the last eligible Electricity Balancing action remaining in the Net Imbalance Volume (NIV), i.e. the most expensive Offer Acceptance or electricity BSAD purchase when the system is short, and the least expensive Bid Acceptance or electricity BSAD sale when the system is long.

- 1.7 The BSC Panel recommended to the Authority separately that Proposed Modifications P136 and P137 should not be made, and the Authority rejected the Proposed Modifications.
- 1.8 The Authority rejected the Proposed Modifications as it did not consider that either of the Proposed Modifications would better facilitate achievement of the Applicable BSC Objectives for the following reasons. In Ofgem's view, neither of the Proposed Modifications would be economic or efficient on the basis that they would be likely to lead to non cost reflective pricing (with respect to the costs incurred by NGC as SO in balancing the system), particularly at times when the system is not under stress. On the basis that the Proposed Modifications would not be effective in targeting NGC's costs back on to BSC Parties, the Proposed Modifications would not better facilitate competition in that they would increase costs to, and risks on, market participants.

BSC Modification Proposal P138

- 1.9 Modification Proposal P138 "Contingency arrangements in relation to the implementation of Demand Control measures pursuant to Grid Code OC6" was raised by Innogy on 8 August 2003.
- 1.10 The BSC Panel (the Panel) has recommended to the Authority that Proposed Modification P138 should not be made.
- 1.11 The Modification Proposal seeks to modify the BSC such that the volume of demand reduced via Demand Control be treated as an Offer acceptance priced equal to the price of the marginal Offer taken by the SO in the first period in which Demand Control is instructed (this marginal Offer price would then persist throughout the duration of Demand Control period). For the purpose of imbalance cash out, the Modification Proposal seeks to treat the "Demand Control Offer" consistently with any other Offer taken in the BM. In addition, the Modification Proposal seeks to adjust Energy Account volumes to reflect lost

demand. Therefore affected supply Parties would be cashed-out at what their imbalance positions would have been if Demand Control had not occurred e.g. Suppliers who would have been long, but as a result of Demand Control were actually short, would, in effect, have their Demand Control “lost demand” added back in such that they were cashed-out at their original long position.

BSC Modification Proposal P144

- 1.12 Modification Proposal P144 “Removal of CADL from the BSC” was submitted by First Hydro Company on 10 October 2003 and was subsequently granted urgent status. The Modification Proposal sought to remove the concept of Continuous Acceptance Duration Limit (CADL) Tagging from BSC, such that the Energy Imbalance Price calculation was amended to remove the CADL Tagging undertaken as part of the derivation of the Energy Imbalance Prices.
- 1.13 The BSC Panel recommended to the Authority that Proposed Modification P144 should not be made. The Authority issued its decision letter to reject Proposed Modification P144 on 18 December 2003 on the grounds that it would not better facilitate achievement of the Applicable BSC Objectives.
- 1.14 This decision was reached on the basis that CADL tagging is an appropriate mechanism for identifying balancing actions taken to address within-half-hour effects (such as frequency control) and that this mechanism complements the NIV tagging mechanism in achieving the best differentiation between System Balancing and Electricity Balancing actions.
- 1.15 It should be noted that in its decisions on the above proposals the Authority made clear that it considered that, where there are potential improvements to be made in respect of the Energy Imbalance Price calculations, it is important for the industry to address these issues in the appropriate forum and, if any perceived defects are identified, for resolution of these defects to be progressed as quickly as possible.

Supplemental Standing Reserve Tender

- 1.16 Following clarification from Ofgem as to its interpretation of NGC’s obligations and how those obligations relate to the way in which NGC procures short term reserve, NGC reconsidered whether its reserve contract holdings were sufficient to meet this clarified role. NGC’s new approach to procuring reserve gives

explicit consideration to the trade-off between the degree of certainty that it achieves in respect of securing its short-term reserve requirements in view of its wider licence obligations and the balancing costs that it incurs. For example, if NGC forecasts that there is a significant risk of there being insufficient plant available on the day, it can enter into forward contracts that might not otherwise appear to be economic, based on a narrow assessment such as that undertaken previously, in order to reduce the risk that it would not have sufficient short-term reserve available on the day. Therefore, under this approach, NGC procures short-term reserve over different timescales to balance the system in real-time consistent with its licence obligation to operate the system on an economic and efficient basis. NGC has been operating in accordance with this approach since November 2003 and is expected to continue to do so going forward.

- 1.17 This revised approach led NGC to issue a Supplemental Standing Reserve Tender for winter 2003/04 on 14 October 2003. The tender was conducted in a non-discriminatory manner, via competitive and transparent processes in accordance with special condition AA4 of NGC's transmission licence. The tender closed on 27 October 2003 and was in respect of reserve services to be provided between 17 November 2003 and 1 April 2004.
- 1.18 NGC received 22 tenders in total. NGC has stated that it gave consideration to the degree of certainty that could be achieved in respect of securing its total short-term reserve requirement from existing contracted standing reserve, the Supplemental Standing Reserve (SSR) tenders and reserve that may be available for purchase on the day (via Pre-Gate Closure Balancing Mechanism Unit Transactions (PGBTs) or in the Balancing Mechanism). Assessment of the SSR tenders led to 20 of the tenders proceeding to contract. The two unsuccessful tenders did not meet all of the technical requirements specified, and therefore did not proceed to contract.
- 1.19 The total volume associated with the successful tenders was 852MW , comprising:
- ◆ 667MW from Balancing Mechanism participants; and
 - ◆ 185MW from non Balancing Mechanism participants.

Demand Side Response

Demand Turndown Pilot Scheme

- 1.20 NGC has introduced a Demand Turndown pilot scheme for the provision of contingency reserve via the reduction of load by large demand users, aggregators of demand sites and suppliers. Small back-up generator sets may also contribute to create an aggregate amount of Demand Turndown. A trial run of the scheme started on 5 April 2004 and is planned to continue until 30 July 2004. The trial is intended to prove the viability of the service, to identify a potential alternative source of contingency reserve to warning generators and to increase liquidity in demand side providers
- 1.21 NGC has stated that it may develop an enduring balancing service if the summer trial proves that Demand Turndown is viable, secure and reliable. Such an enduring service would need to take account of issues that may arise during the trial.

Maximum Generation Service

- 1.22 As mentioned above, in its last winter operations report, NGT recommended the introduction of a Maximum Generation Service (MaxGen) as a means of obtaining additional energy at times of system stress. NGC proposed an interim solution to be used over winter 2003/04, the implementation of which required changes to the statements required under special condition AA4 of its transmission licence. The Authority approved the required changes on 14 November 2003, as it acknowledged that the service would lead to generation capability being offered to NGC that would not otherwise be available, and therefore would deliver benefits in terms of security of supply.
- 1.23 The Authority did, however, share the view of a number of market participants that the proposed service had a certain deficiencies which meant that it did not offer a robust and enduring set of arrangements for a Maximum Generation Service going forward and should only be considered as an interim solution for winter 2003/04. The Authority considered that the deficiencies primarily related to the potential for discrimination, gaming opportunities and information and transparency concerns, these are discussed further in the following chapter.

- 1.24 Details of the industry's attempts to develop an enduring solution which addresses the concerns raised by respondents and Ofgem in relation to the MaxGen Service described above are also discussed in the following chapter.

BSAD Methodology Statement changes - revisions to the treatment of standing reserve option fees

- 1.25 In September 2003, NGC proposed an amendment to the BSAD Methodology Statement to revise the way in which standing reserve option fees were reflected in cash out prices. Prior to September 2003, standing reserve option fees were allocated into all periods in which the service was available.
- 1.26 Ahead of winter 2003/04, NGC identified that this mechanism could be detrimental to the provision of accurate and timely price signals and issued a consultation seeking views on a range of mechanisms by which to revise the treatment of standing reserve option fees.
- 1.27 Having considered NGC's and market participants' views, the Authority decided to approve for implementation a mechanism which allocated the costs of standing reserve option fees into cash out prices according to an expected pattern of utilisation, based on historic profiles.

Network Code Modification Proposal 0657

- 1.28 Modification 0657 "Partial Volume Interruption Service" sought to extend the partial interruption arrangements so that supply points would be permitted to offtake at rates higher than those available under the present partial interruption service. In particular, it was proposed that Transco would be granted discretion to offer partial volume interruption services to shippers, whereby a partial interruption supply point is made subject to a daily offtake quantity limit rather than on hourly limit flows. Allowing supply points to vary their gas offtakes throughout the period in which they have been partially interrupted subject to a supply point maximum hourly rate as specified in the relevant interruption notice. It was proposed that the volume service would only be made available when system flexibility allowed. Transco believed that this modification proposal would enable CCGTs' to meet peak day demand.
- 1.29 Ofgem rejected this modification proposal on the basis that :

- ◆ it would create the potential for discrimination between different classes of customers
- ◆ Transco had not proposed publishing any criteria or systems information for establishing how it would allocate the proposed services to shippers.

Network Code Modification Proposal 0658

- 1.30 Modification proposal 0658 “Interruption Transfer Service”, sought to extend the existing interruption transfer arrangements to enable the trading and transfer of Transco’s interruption obligations between gas shippers. Under this proposal an interruptible shipper could have agreed with another shipper to take on its interruption obligations. In particular, the modification would have enabled CCGTs to transfer their interruption obligations if they were required to interrupt during a period of short supply in the electricity market.
- 1.31 Ofgem in its decision, acknowledged that in practice, it would be supportive of arrangements that would facilitate the trading of interruptible obligations, however this specific proposal was raised without sufficient notice for both customers and shippers, taking into account the significant level of customer concern. Ofgem also considered the concerns raised by Transco that this proposal could increase the level of interruptions should shipper communication processes fail.

Network Code Modification Proposals 0659 and 0660

- 1.32 Transco also proposed modification proposal 0659 “Winter Injection Cost Allocation Based on User Daily Imbalances” and modification proposal 0660 “Winter Injection Cost Allocation Based on User Daily Offtakes”.
- 1.33 Modification proposal 0659 proposed that in the event that on one or more days the top up manager determines a winter top up injection requirement and in consequence injects gas into storage, the associated costs that were incurred by the top up manager, including storage costs and net gas costs, would be recovered from users in accordance with the following principles:
- ◆ the net costs arising from winter injections would be established over the winter period

- ◆ a basis would be determined over which such costs would be recovered
- ◆ a unit charge would be derived from the Net Counter-Injection Costs and the Recovery Quantity
- ◆ revenues in future winters be attributed in cost proportions in order to identify net costs arising from pre-winter and within-winter top up procurement
- ◆ recovery quantity would be set to equal the sum of all users' negative daily imbalances on days where D-1 demand forecast exceeded a predetermined demand threshold
- ◆ this top up relevant days threshold would be set equal to the 95% of maximum daily supply, identified within Transco's annual top up statement
- ◆ counter-injection charge rate would be set as the net counter-injection costs divided by the recovery quantity.

1.34 Modification proposal 0660 put forward the same methodology as modification proposal 0659 but sets the recovery quantity equal to the sum of users' daily quantities offtaken, rather than users negative daily imbalances, on days where top up manager made winter injections.

1.35 Ofgem rejected both of these proposals stating that it considered the use of top up to be a potential source of inefficiency and could have a distortionary effect on shippers' purchases of storage. It was also noted by Ofgem that Transco had failed to take into consideration, the commercial framework that would lead shippers to recycle their storage bookings. At the beginning of December 2003, storage and LNG inventory levels remained extremely high even though gas withdrawals had already taken place earlier in the winter, thus providing evidence of storage stocks being recycled.

1.36 Furthermore Ofgem did not consider Transco's methodology to be sufficiently robust and therefore acknowledged that implementing either 0659 or 0660 could put in jeopardy the commercial basis on which shippers have already prepared for this winter.