

**Security of supply**  
**October 2003 to March 2004**

**Six month retrospective report**  
September 2004

## Summary

Ofgem has important statutory duties relating to security of supply. These duties inform everything we do. In particular, Ofgem has a duty to carry out its functions in a manner which is best calculated to “...secure a diverse and viable long-term energy supply...” and “...to secure that, all reasonable demands are met.” All our major policies are assessed to see what impact they will have on security of supply.

This is the second six-monthly retrospective report on the performance of the electricity and gas markets in delivering security of gas and electricity supplies. Ofgem committed to produce such reports following the Government’s Energy White Paper “Our energy future – creating a low carbon economy”. The report details any issues that have given rise to security of supply concerns over the six-month period identifying, where necessary, any actions that have been taken or might be needed in future.

This report supplements the forward looking reports produced every six months by the Joint Energy Security of Supply Working Group (JESS) – a joint working group of Ofgem and the Department of Trade and Industry (DTI) – by providing an analysis and commentary on recent events. The main role of JESS is to develop indicators over a timescale of at least the next seven years to monitor at a strategic level security of Britain’s electricity and gas supplies.

### ***Market framework and response***

During the six-month period from October 2003 to March 2004 the existing market arrangements proved to be robust to a wide range of challenging events.

At the outset of the winter period market perceptions, as indicated for example in NGT’s Winter Operations Report 2003/04<sup>1</sup>, were that the balance of electricity supply over demand would be tight for winter 2003/04. These expectations of a tightening supply/demand balance led to rising wholesale prices and provided incentives for the return of previously mothballed generation to the system. These plants returned 1,142 MW of capacity back to the system, and increased the margin of ‘spare’ capacity to 19 per cent in the last quarter of 2003 and 22 per cent in the first quarter of 2004. The

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<sup>1</sup> Reference to publication  
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winter as a whole was relatively mild, and this resulted in a small reduction in prices over the period.<sup>2</sup>

Despite the mild weather, there were a handful of periods where the balance of available supply over demand was relatively small. Some issues were highlighted during these periods – such as 10 March 2004 when demand was relatively high for that time of year and there was lower than expected generation availability. One issue highlighted by these periods is that the Scotland to England and Wales interconnector does not appear to be fully utilised in all circumstances when there is spare generation capacity in Scotland. On the 10 March, NGC was able to buy an additional 672 MW of generation capacity across the interconnector but the arrangements prevailing on the interconnector appeared to have limited the ability of the market to deliver this additional capacity. Ofgem highlighted the need to review the current interconnector arrangements to improve the ability of the market to respond to relative price signals. The counterparties to the interconnector agreement have brought forward proposals that seek to achieve this aim for this winter. The introduction of BETTA from 1 April 2005 will provide an enduring solution to the problem by creating a single GB-wide electricity market that will improve security of supply in England and Wales and Scotland.

Compared to electricity, supply/demand conditions for the gas market were not generally anticipated to be as tight at the outset of the winter. In October and November, wholesale prices did increase significantly. This prompted Ofgem to launch a probe into prices because underlying market conditions could not provide a clear explanation for the significant price increases. Ofgem published an update on the findings of the probe in May and will shortly publish the probe's conclusions. For the remainder of the winter, prices appeared to track demand with occasional spikes, which appeared to be due to supply-outages or unexpected changes in demand. Prices<sup>3</sup> generally saw an upward trend for the duration of the last quarter of 2003 starting at around 12 p/th at the beginning of October and breaking 30p/th both in late November and December. After this, prices began to reduce, reflecting the relatively mild winter, to around 20 p/th by the end of the six-month period.

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<sup>2</sup> Prices based on day-ahead baseload 7-day average

<sup>3</sup> Based on System average price

Two unexpected events occurred that resulted in a significant short-term tightening of the supply-demand balance in the gas market. The first was an outage at the Rough storage facility on Thursday 22 January 2004, four days ahead of an anticipated cold period. The reduced availability of supply prompted a significant increase in prices for the following week, with contracts that had previously been trading at around 32 p/th before the outage trading at up to £1.00/th once the market became aware of the situation, prompting a response from the demand side and providing a strong signal as to the expected tight supply-demand balance. In the event, the availability of the facility was restored prior to the peak demand period and prices reduced significantly.

The second event occurred, on the morning of Thursday 29 January 2004, following a significant volume of offshore field failures that led to a reduction in the UK gas supply to the gas network. Transco entered the market, buying additional gas, prices increased and the demand side responded by reducing consumption.

On both occasions, the supply and demand sides of the market responded to the price signals. System operation was facilitated by the information available to Transco as a result of DTI/UKOOA initiatives to improve the flow of information from the offshore industry to Transco that occurred in November 2003. The current initiatives to increase the availability of information to the market as a whole will enable the market to anticipate and respond to offshore supply failures in a more effective and timely manner, benefiting security of supply.

## ***Transmission and distribution reliability***

In relation to the electricity transmission and distribution networks, the number of unplanned interruptions to supplies has been broadly consistent with previous periods.

The transmission failures that occurred resulted in significant levels of disruption, particularly a transmission failure in the Cheltenham and Gloucester area. Supplies were restored within two hours, which included the use of voltage reduction to return customers as promptly as possible.

Ofgem issued a Press Notice on 25 June 2004 in respect of the London and Birmingham blackouts that occurred in 2003, concluding that the events and mistakes that led to the blackouts were not sufficiently material to allow the Authority to find NGC in breach of its legal obligations. A proposed new incentive scheme would in future penalise NGC

in the event of any similar power failures. Ofgem also set up, in conjunction with the DTI, working groups to consider any lessons learnt from these and specific overseas events.

As part of the distribution price control review, Ofgem is aiming to further strengthen the incentives that companies have to restore supplies as quickly and efficiently as possible following severe weather events, and encourage companies to be more proactive in making compensation to consumers affected.

## ***Way forward***

This report highlights a number of areas where Ofgem continues to undertake work aimed at enhancing the ability of the market and the regulated networks to deliver secure energy supplies.

This year, Ofgem asked NGT to prepare a Preliminary Winter Outlook report, which was published in May 2004<sup>4</sup>. This presented the market with NGT's analysis of the outlook for this winter much earlier than in previous years. This provides the market with more time to respond to any emerging issues and to identify, assess and (if appropriate) implement rule changes ahead of the winter. NGT will publish an update on the Winter Outlook report in the autumn.

Ofgem has a range of ongoing work that will further improve the market arrangements over the longer term. This includes the extension of the England & Wales wholesale electricity trading arrangements into Scotland through BETTA; the review of the cash out (imbalance pricing) rules in gas and electricity; changes to the top up rules in gas; and improving the flow of information on offshore operations to the onshore gas market.

The Energy Act (which received Royal Assent in July 2004) contains measures to introduce special administration arrangements for transmission and distribution companies. This will reduce the risk that bankruptcy or administration of one of these companies could threaten security of supply and Ofgem therefore welcomes this development. In addition, the Energy Act places a duty on the Secretary of State to publish an annual report, jointly prepared by the DTI and Ofgem on short- and long-term security of supply, including an assessment of generation, transmission and

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<sup>4</sup> "NGT Preliminary Winter Outlook Report – 2004/05" May 2004.  
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distribution capacity, and lay that report before Parliament.

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# 1. Introduction

## ***Background***

- 1.1. As part of the Government's Energy White Paper - "Our energy future – creating a low carbon economy" - Ofgem undertook to produce a six monthly retrospective report into the performance of the electricity and gas industries in delivering security. Ofgem also agreed that this report should detail any issues which have given rise to security of supply concerns saying what, if any, actions have been taken or might be needed to address those issues in the future.
- 1.2. Ofgem has agreed to produce this report every six months, with reports being published each year in the Autumn (covering the six month period from October to March), and in the Winter (covering April to September) each of them following on from the publication of the Joint Energy Security of Supply working group (JESS) reports. The JESS group is chaired jointly by the Department of Trade and Industry (DTI) and Ofgem and brings together contributions from DTI, Ofgem, National Grid Transco (NGT) and the Foreign and Commonwealth Office (FCO) on medium to long-term energy security.

## ***What is security of supply?***

- 1.3. Most customers place value on being able to consume gas and electricity continuously, without interruption. Some customers, such as larger industrial and commercial customers can and do contract to have supplies that can be interrupted, and in these circumstances may either switch to alternative fuels to provide back-up supplies of energy or temporarily cease or postpone their consumption when prices get sufficiently high. However, limited demand-side substitutability for some customers, especially between time periods, and the limitations on economic storage, particularly in relation to electricity, results in value being placed on continuous supply of gas and electricity from the national networks.



1.4. The specific characteristics of supply and demand in electricity and gas, as well as the need to keep the gas and electricity networks operating within safe and efficient operational limits, gives rise to particular security of supply considerations. Three main dimensions to security of supply can be identified in energy markets:

- ◆ **Availability of supplies:** ensuring that there is adequate production<sup>5</sup> capacity to meet demand, taking into account the likely demand-side response over time;
- ◆ **Networks:** to provide the means of delivering supplies from producers to consumers through transmission and distribution infrastructure; and
- ◆ **System operation:** ensuring that given the available network and production capacity, any transmission constraints are managed, and demand and supply are balanced when and where required<sup>6</sup>;

1.5. In relation to network investment, it is important that transmission and distribution systems provide an efficient level of both capacity and reliability.<sup>7</sup> As these parts of the electricity and gas sector are regulated monopoly businesses, the levels of investment in these networks are determined by the transmission and distribution companies, in response to their licence obligations and incentives and are funded through the price control processes.

1.6. In relation to system operation, the regulatory regime is aimed at ensuring that system operators face incentives to manage efficiently relevant transmission constraints and to manage the consequences of any equipment failures. In addition, short-term imbalances in demand and supply need to be managed both to ensure continuity of supplies to relevant customers and to ensure the safe and efficient operation of the electricity and gas transmission systems.

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<sup>5</sup> Production in this context refers both to the supply of gas from offshore infrastructure, interconnectors and deliveries from storage and the generation of electricity.

<sup>6</sup> In electricity this translates to the need to keep frequency on the networks within certain parameters on a real-time basis, whereas in gas this translates to a need to keep system pressures within an acceptable range.

<sup>7</sup> Since privatisation, all interruptions to consumers have been associated with such network problems.

- 1.7. Within this context, an appropriate market framework is necessary to ensure that the right signals and incentives exist to enable competitive parts of electricity and gas markets to match their own supply and demand requirements. In the case of market imbalances, the framework also needs to provide the right signals and incentives for market participants to provide services to the system operator and other market participants, for example in terms of increased generation or by customers reducing their demand to enable the system operator resolve those imbalances.
- 1.8. In summary, security of supply has a number of dimensions including the availability of supplies, adequate availability of network infrastructure and efficient system management and operation. Improvements to security of supply may be achievable in this context, albeit at extra cost, for example by increasing generation capacity or investing additional resources to increase the levels of back-up transmission capacity. However, even where additional investment occurs, this can only amount to an expected improvement in security, as security of supply can never be fully guaranteed. Therefore, any assessment as to whether a set of arrangements delivers security of supply inevitably involves assessing risks and costs of mitigating those risks.

### ***Responses to previous report***

- 1.9. Ofgem received comments from four parties in respect of the previous report published in February this year. There was general support from parties with regard to the DTI/Ofgem initiatives on developments on the security of supply, including some areas of which are also covered by the Joint Energy Security of Supply Working Group (JESS). Respondents focussed, in particular, on improving upstream information. In this respect, Ofgem continues to work with the DTI and the offshore industry. This is further detailed in Chapter 4.

### ***Outline of this report***

- 1.10. Chapter 2 includes indicators assessing system security in terms of reliability, availability and quality of transmission, distribution and the interconnectors. It also provides further details on the transmission failure on 22 October 2003 in Cheltenham and Gloucester. Chapter 3 assesses the operation of the markets response during the six month period. It starts by presenting a summary of the

issues and conclusions drawn from NGT's Winter Operations Report 2003/04, highlighting the issues considered most important at the outset of winter period. The chapter then presents the main price and demand developments and market responses, and briefly considers any lessons from international security of supply incidents. Chapter 4 provides an overview of the work being undertaken by the industry with Ofgem to improve the ability of the gas and electricity industries to deliver secure energy supplies. Finally, chapter 5 outlines Ofgem conclusions and next steps.

### ***Views invited***

1.11. Views are invited in response to the issues raised in this document. We would welcome responses by the end of September 2004. All responses will normally be published on the Ofgem website and held electronically in the Research and Information Centre unless there are good reasons why they must remain confidential. Respondents should try to put any confidential material in appendices to their responses and clearly mark any confidential information. Ofgem prefers to receive responses in an electronic form so they can be placed easily on the Ofgem website.

1.12. Please send responses to:

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## 2. Network system reliability

- 2.1. This chapter includes a list of indicators assessing system security in relation to the availability and quality of transmission, distribution and the interconnectors. The chapter focuses on actual losses of supplies of gas and/or electricity to customers who have not previously entered into agreements enabling their supplies to be interrupted under contract.<sup>8</sup>
- 2.2. The chapter also comments specifically on a transmission related interruption to electricity supply that occurred in Cheltenham and in Gloucester in October 2003.

### *Electricity*

- 2.3. System reliability information is gathered from a range of sources. Under the Information and Incentives Project (IIP) all licensees who operate electricity transmission or distribution systems are required to report annually to Ofgem on their performance in maintaining supply security, availability and quality of service. Furthermore NGC is currently required by Special Condition AA2 of the Transmission Licence to report electricity transmission system performance in terms of availability, security and quality of supply.

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<sup>8</sup> Such supplies are referred to as being “firm” and, at present, all domestic customers have contracts with their suppliers for firm supplies of gas and electricity.

## ***England and Wales transmission system***

- 2.4. Table 2.1 reports for the England and Wales transmission system, the loss of supply incidents and the total energy unsupplied over the last three six month periods

**Table 2.1: Number of transmission supply interruptions and associated unsupplied energy in England and Wales**

	Oct 2002 to March 2003	April 2003 to Sept 2003	Oct 2003 to March 2004
No of Supply interruptions	5	5	5
Unsupplied Energy (MWh)	19.4	588.8	311.6
Total Supplied Energy (TWh)	164.6	138.9	167.9
Proportion of Energy Unsupplied (%)	0.000012%	0.000423%	0.000186%

- 2.5. The data in Table 2.1 presents two components of continuity of supply on which customers place value: the frequency and duration of interruptions as discussed in chapter 1.
- 2.6. Table 2.1 shows on the electricity transmission system in the six months to March 2004 there were five supply interruptions, which resulted in approximately 312 MWh of energy being unsupplied (which is equivalent to 0.0002 per cent of total 168 TWh supplied during the same period). The breakdown is as follows: Cheltenham and Gloucester 237 MWh, South Shields 23 MWh, Fourstones, (Northumberland) 3MWh and Tremorfa, (South Wales) 48 MWh.
- 2.7. Table 2.1 also shows that while number of supply interruptions has remained constant, the volume of energy unsupplied has increased. Most of this year-on-year increase relates to the Cheltenham and Gloucester incident in October 2003 which is discussed further below. The London and Birmingham incidents account for the high figure for the period April 2003 to September 2003.

## **Cheltenham and Gloucester Transmission failure**

- 2.8. At 08.04 on 22 October 2003, electricity supplies to 100,000 customers in the Cheltenham and Gloucester area were involuntarily interrupted following a fault at a substation.<sup>9</sup> All supplies were restored within two hours after the initial fault, and two stages of voltage reduction were implemented to increase the number of consumers that could be restored<sup>10</sup>.
- 2.9. Aquila Network Services PLC (Aquila) and National Grid Company (NGC) jointly operate the Gloucester substation site, and took several precautionary measures to safeguard the continuity of electricity supplies to customers in the area until the repairs at the substation were completed. Approximately 165MWh of load was lost, and both companies involved undertook to investigate the incident. A report from Aquila and NGT has now been sent to Ofgem. All supplies were restored to customers within 2 hours after the initial fault. Aquila worked with NGT to manage the distribution of electricity demand.

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<sup>9</sup> It was reported that the most likely cause of the fault occurred on a disconnector within the sub-station. This in-service failure was the first that had been reported for this design, even though it has been used on the system for over 40 years.

<sup>10</sup> Voltage reduction is a method of reducing customers' consumption of energy without interrupting their supply. The effects of voltage reduction can be relatively minor, such as dimming lights and reducing the output of electrical heaters.

## ***Scotland transmission system***

2.10. Tables 2.2 and 2.3 below report for the two Scottish transmission systems the loss of supply incidents and the total energy unsupplied over the last three six month periods.

### **Scottish Power transmission system**

**Table 2.2: Number of supply interruptions and associated unsupplied energy in the Scottish Power transmission system.**

	Oct 2002 to March 2003	April 2003 to Sept 2003	Oct 2003 to March 2004
No of Supply interruptions	3	6	3
Unsupplied Energy (MWh)	0.8	139.4	58.2
Total Supplied Energy (TWh)	18.7	14.3	17.3
Proportion of Energy Unsupplied (%)	0.000004	0.000975	0.000336

2.11. There were three incidents on the Scottish Power transmission system in the last six months which resulted in a loss of supply to customers. The total unsupplied energy was around 58 MWh, around 0.0003% of total supplied energy.

## Scottish Hydro transmission system

**Table 2.3: Number of supply interruptions and associated unsupplied energy in the Scottish Hydro transmission system**

	Oct 2002 to March 2003	April 2003 to Sept 2003	Oct 2003 to March 2004
No of Supply interruptions	3	5	3
Unsupplied Energy (MWh)	23.6	21.1	205.8
Total supplied Energy (TWh)	5.3	4.0	5.5
Proportion of Energy Unsupplied (%)	0.000445	0.000528	0.003742

2.12. There were three incidents on the Scottish Hydro transmission system in the last six months which resulted in a loss of supply to customers. The total unsupplied energy was around 206 MWh, which was around 0.004% of total supplied energy.

### ***Distribution networks***

2.13. Data was collected from all GB DNOs on the number of customer interruptions and the number of customer minutes lost, by incident type, on their network.<sup>11</sup> Figures 2.4 and 2.5 below show the total number of customer interruptions and the associated customer minutes lost aggregated across all DNO regions.

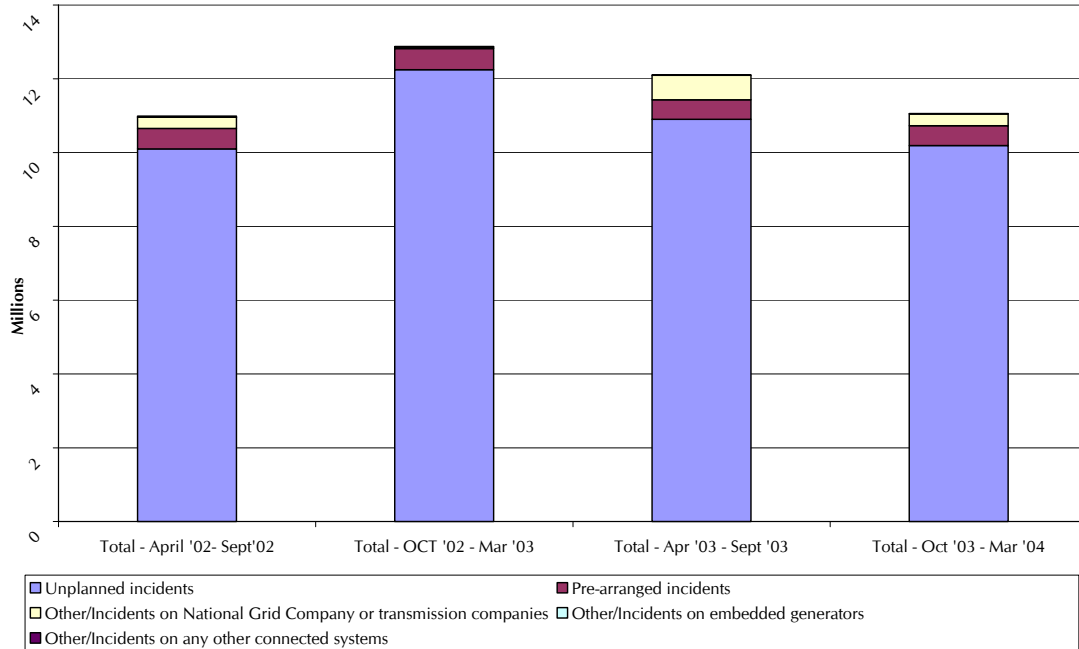
2.14. The data is based on the number of customers affected by interruptions lasting three minutes or longer. Where several outages occur affecting the same customer as part of the same fault, this is only counted as one distribution failure.

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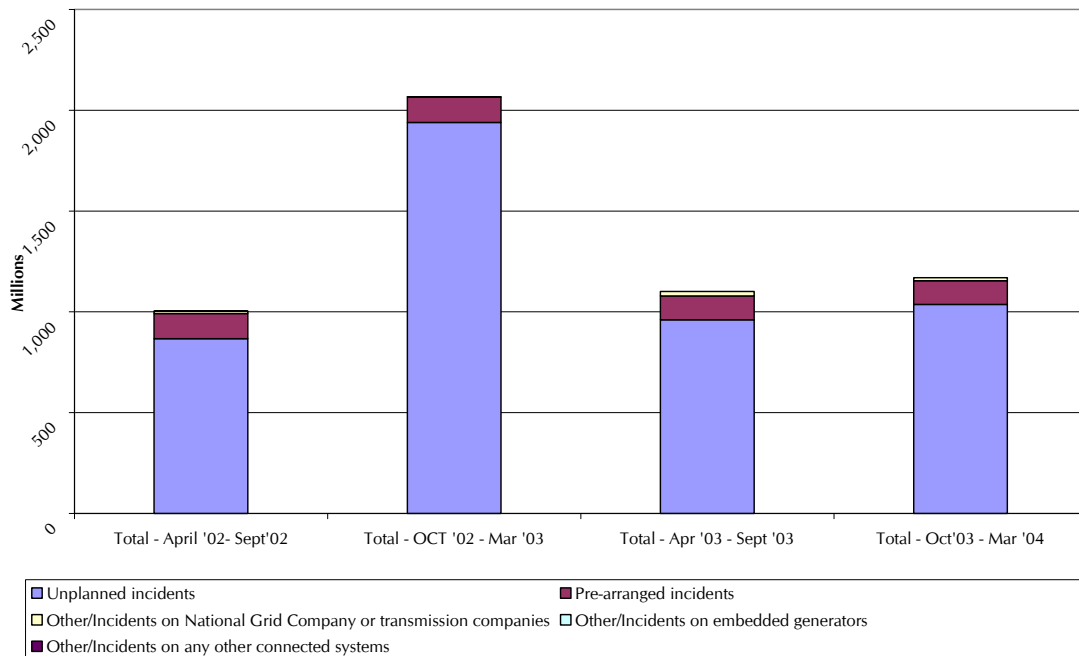
<sup>11</sup> The data for the three six month periods has not been audited or adjusted for exceptional events. It may therefore differ from information published in Ofgem's Quality of Supply Report. Security of supply October 2003 to March 2004 – Six month retrospective report  
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**Figure 2.4: Total number of customer interruptions**



**Figure 2.5: Total number of customer minutes lost**



2.15. During the period the total number of customer interruptions was just over 11million.<sup>12</sup> The total number of customer minutes lost was just over 1,168million. To put this in perspective, in October 2002 to March 2003 2,066million customer minutes were lost and in April 2003 to September 2003 1,101 million customer minutes were lost. The period October to March typically includes more severe weather than April to September and for 2002 the figures include the loss of supply following particularly severe winds in October 2002, where more than 2 million customers were interrupted.

### ***Electricity interconnectors***

2.16. Interconnectors contribute to system security by providing a further source of generation to GB and by providing a source of potential flexibility to both of the interconnected transmission systems. However, the contribution of interconnectors to GB security of supply is limited by their capacity; although this can be expanded by additional investment if economic given prevailing prices. In the short term the availability of capacity and the flexibility of trading arrangements across the interconnector can limit its contribution to security of supply. This section summarises the availability of interconnector capacity over the past six months.

### ***French interconnector capacity availability***

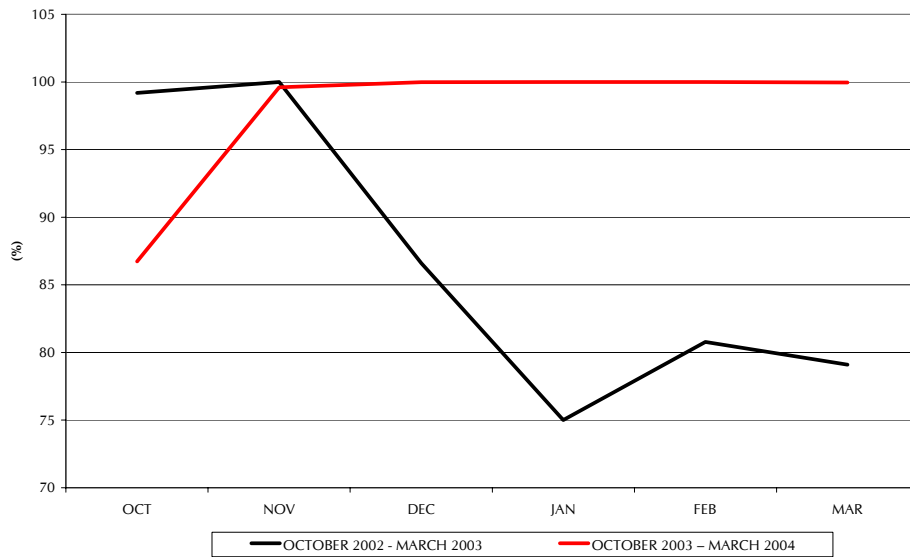
2.17. The England-France Interconnector has a maximum import capacity of 2000MW and the availability of this capacity may vary, for example due to planned outages. Availability is calculated by taking the number of hours the circuit or circuits are available in a given period divided by the sum of the number of circuits multiplied by the total hours in the period, the result is then multiplied by 100.<sup>13</sup>

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<sup>12</sup> Whilst the Distribution Network Operators (DNO's) are required to record 'Customers Interrupted' in relation to each incident, it should be noted that the same customer can be affected by more than one incident over time. When the number of 'Customers Interrupted' by each incident are aggregated over a time period it is more appropriate to refer to the summated total as 'Customer Interruptions' since the same customer can appear in the total more than once. Therefore these figures will include a number of customers who have been interrupted on more than one occasion and will thus be greater than the number of customers experiencing interruption of supplies.

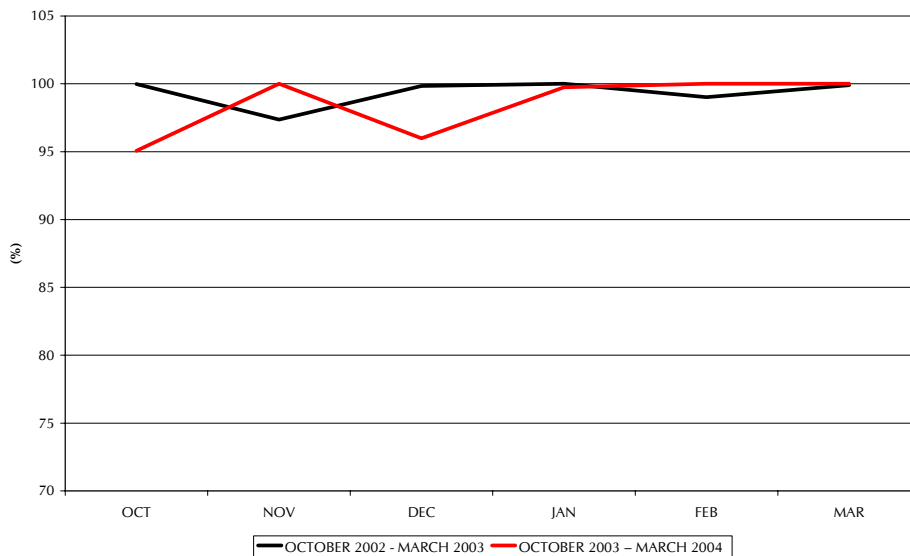
<sup>13</sup> French interconnector for July 2003 was  $642.15/744 \times 100 = 86.31$  per cent.  
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**Figure 2.6: French Interconnector Availability October 2002 to March 2004**



2.18. Figure 2.6, shows that at the start of the period available capacity was at 85 per cent of the maximum capacity. However, for the majority of the winter period available capacity was at its maximum and available capacity was far higher on average for the period as a whole than compared to the same period in 2002/03.

**Figure 2.7: Scottish Interconnector Availability October 2002 to March 2004**



2.19. Figure 2.7 shows that available capacity figures for the Scottish interconnector were either at or around the maximum for the duration of the six-month period. This is fairly similar performance to the same period in 2002/03. However, as discussed later in chapter 3, during the winter period an issue was identified concerning the contractual access to the capacity that was physically available, which may have reduced the efficiency of the trading across the interconnector.

## **Gas**

### ***Transportation***

2.20. On the gas National Transmission System (NTS), there were no non-contractual interruptions, no minutes lost and no gas not supplied in the period October 2003 to March 2004.<sup>14</sup>

### ***Distribution***

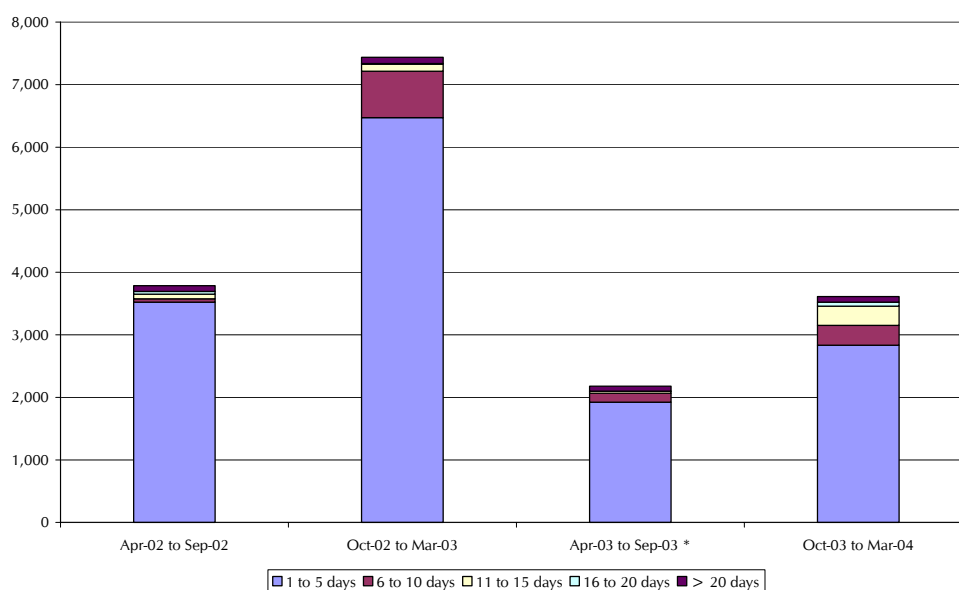
2.21. Due to availability of data, domestic and I&C non-contractual interruptions to supply are reported where the time taken to restore supplies is greater than 24 hours. On this measure there were 3,611 interruptions to supplies on Transco's distribution networks.<sup>15</sup>

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<sup>14</sup> This is interpreting non contractual as excluding any interruptions for maintenance on NEXA managed VLDMCs, which are deemed to be within the contract terms. It also excludes interruption of interruptible loads, which is contractual.

<sup>15</sup> This figure includes Third Party Damage and Water Ingress.

**Figure 2.8: A comparison of the number of non-contractual gas supplies interrupted by duration (where time taken to restore is greater than 24 hours)**



2.22. This compares to around a figure of 2,200 non-contractual supply interruptions for the period April 2003 to September 2003, and in comparison for the same period last year, the figure was around 7,400 non-contractual supply interruptions.

### ***Gas interconnectors***

2.23. The gas interconnector to continental Europe plays an important role in system security in making sure that supply is available and by providing flexibility to both interconnected markets. However, its contribution to GB security of supply is limited by its capacity. In context, the gas interconnector with Belgium can flow at a maximum rate in export of 611.3GW per day and 263.5 GW per day in import mode. St Fergus delivers onshore on average around 1,265 GW per day. However, the Bacton to Zeebrugge gas interconnector is to be upgraded with additional compression installed at the Belgium end to allow an import capacity of 23.5bn cubic meters of gas per annum by December 2006. The upgrade will match current export capacity which is roughly equivalent to 20 per cent of UK annual demand.

2.24. During winter 2003/04 the interconnector was fully available and delivered gas slightly in excess of its registered capacity on a number of days. The interconnector flows eventually responded to sharp rises in NBP gas prices during October 2003, switched from export to import mode, and remained on import mode for most of the November period.

### 3. Security of supply developments

3.1. This chapter discusses market functioning over the past six months, identifying possible issues in relation to system security. The chapter starts by outlining the main issues and conclusions contained within NGT's Winter Operations Report 2003/04, which was published at the beginning of the winter period. The chapter then presents the main demand and price developments and the corresponding supply responses and any relevant issues identified. Finally, the chapter looks at other market developments both domestically and internationally.

#### ***NGT Winter Operations report***

3.2. NGT's Winter Operations Report 2003/4<sup>16</sup> was published on 14 October 2003 and raised a number of issues that were taken forward as a priority ahead of the winter. The main issues and conclusions raised in the report were:

- ◆ That NGT had the capacity to meet the published transportation requirements of cold winters.
- ◆ In evaluating security of supply for gas this coming winter, it was necessary to consider the level of demand, availability of beach gas, the role of the interconnector, potential market response and the use of storage.
- ◆ In evaluating the security of supply for electricity this coming winter, it would be necessary to consider the level of demand, the availability of generation, European market effects on the direction of flow of the French interconnector, and levels of gas interruption and availability of alternative fuels at CCGT stations.

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<sup>16</sup> The report is available from Ofgem's website: [www.ofgem.gov.uk](http://www.ofgem.gov.uk).  
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- 3.3. NGT also suggested a number of changes to existing arrangements to enhance the level of gas and electricity supply security, one of which included the introduction of a new Maximum Generation Service (MaxGen) for winter 2003/04 as a means of obtaining additional energy at times of system stress. NGC proposed an interim solution to be used over winter 2003/4, 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.

## ***Electricity***

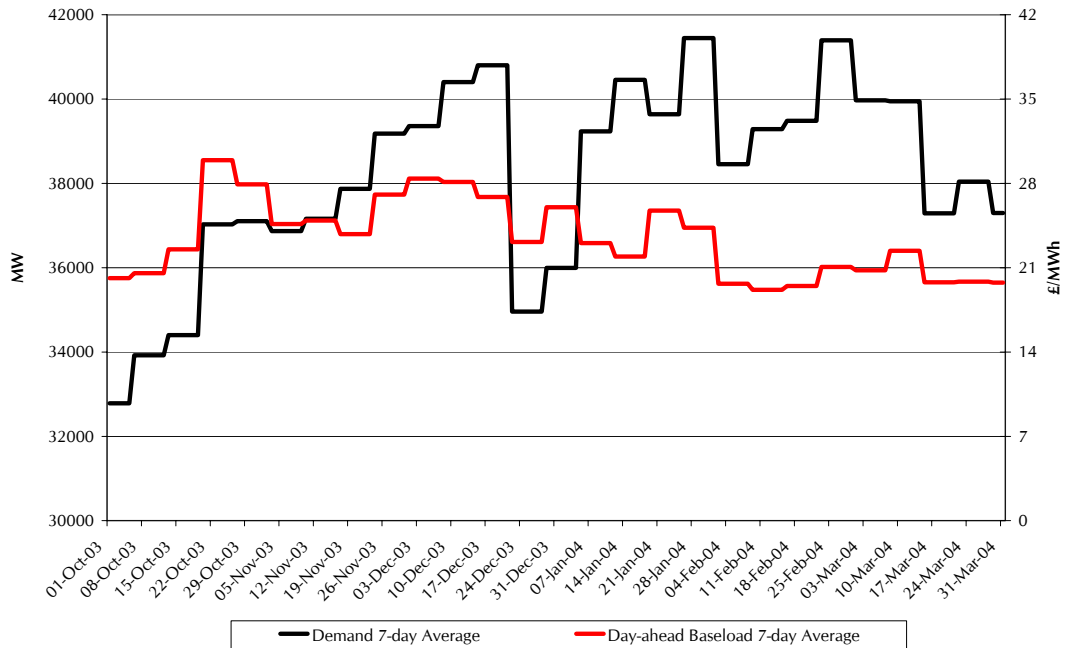
### ***Price and Demand Overview***

- 3.4. Following NGT's operations report, a number of changes to the market rules were highlighted to improve the incentives on market participants to maintain security of supply. The expectations of a tightening supply/demand balance, led to rising prices and the return of previously mothballed plant to the system. The mild winter kept demand relatively low, and peak demands were also relatively low due to the timing of the cold spells.



3.5. Figure 3.1 below illustrates electricity price and demand over the last six months. The day-ahead baseload price is used as an indicator of price. Both price and demand are shown as seven day averages in order to remove price volatility.

**Figure 3.1: Electricity price and demand**



3.6. Figure 3.1 shows, with the exception of the Christmas period, there was a general increase in electricity demand over the six months. Prices have nevertheless softened from those observed during the early stages of winter with the Baseload contract priced at around £21/MWh at the end of March compared to around £30/MWh in December.

3.7. NGC issued two NISMs<sup>17</sup> in December 2003 and another two which occurred on 10 and 11 March 2004. This is significantly less than in previous years.

<sup>17</sup> A Notice of Inadequate System Margins (NISM) is a tool that NGC has available to ensure that the system is in balance by highlighting to market participants a forecast period of a tight supply-demand balance. This enables the market to respond, where appropriate. Throughout the year it is expected that NGC will use NISMs for this purpose and the issuing of a NISM does not in itself raise system security concerns.  
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## ***Mothballing and de-mothballing of plant***

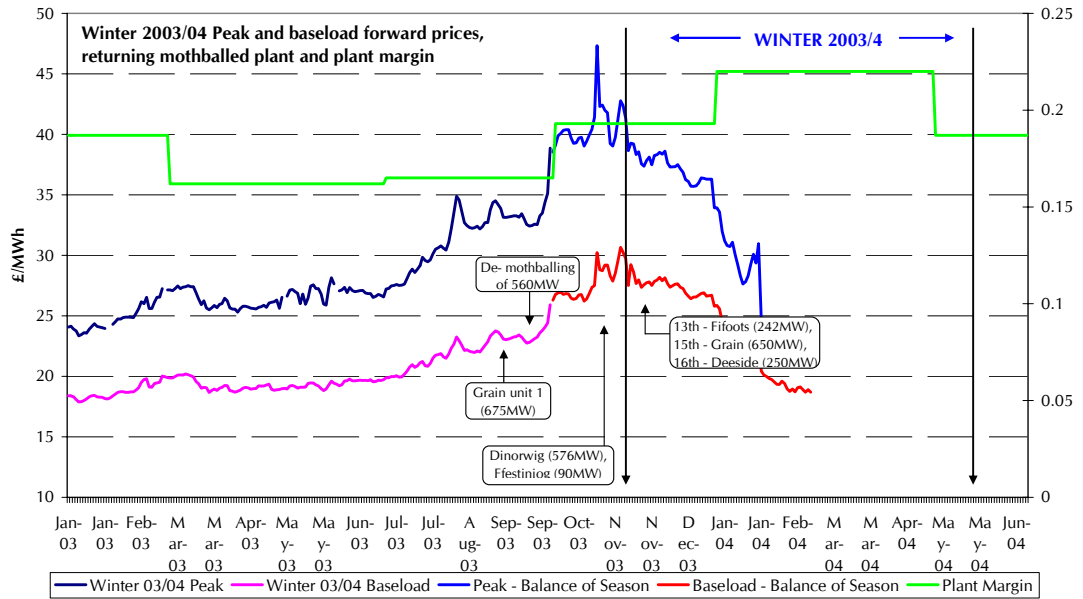
- 3.8. In 2002 and early 2003 a number of plants were closed or mothballed,<sup>18</sup> following the historically low levels of wholesale prices observed during 2002. Following the subsequent increase in forward prices, in part a response to expectations of a tighter supply-demand balance, a number of plants returned to the system.
- 3.9. On 19 August 2003 Powergen announced that unit one of Grain would be returned to service, this increased available capacity by 675 MW. On 29 September 2003 Edison announced that two units at Dinorwig would be returned to the system and one unit at Ffestiniog. These fast-response units increased capacity by 666 MW.
- 3.10. On 13 October 2003 KPMG, the administrator of Fifoots (which was previously owned by AES), allowed Innogy to operate two of the three units over the winter period. On 15 October Powergen announced the return of the second mothballed unit at Grain, and on 16 October International Power announced that they would return the mothballed unit at Deeside. In aggregate a further 1,142 MW of capacity was returned back to the system.

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<sup>18</sup> Temporary closure of plant, that can be brought back to generate within a relatively short timescale.  
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3.11. The return of these units increased the capacity margins to 19 per cent in the last quarter of 2003, and 22 per cent in the first quarter of 2004. Figure 3.2 below shows evolution of peak and baseload forward prices for winter 2003/4. It also shows plant de-mothballing and the subsequent change in NGC's forecast of plant margin.<sup>19</sup>

**Figure 3.2: Price movements and plant response**



Source: Heren - EDEM, NGC - SYS

### ***Scottish electricity interconnector capacity***

- 3.12. During the period, a combination of moderately high demand and lower than expected generation availability on 10 March 2004 highlighted that the Scotland to England and Wales interconnector was not being fully utilised in all circumstances when it appeared economic.
- 3.13. It has been suggested that the Scottish interconnector arrangements did not provide sufficient incentives and/or ability for parties to trade capacity entitlements in the short-term. This can lead to available, economic 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.

<sup>19</sup> Strictly speaking the winter 2003/4 contract expires on 31 September 2003. However, we have calculated 'balance of season' winter 03/04 prices using packages traded *during* winter 03/04 for delivery *in* 03/04.

- 3.14. In response to the demand/supply balance in England and Wales on 10 March 2004, NGC was able to source an additional 672 MW of generation capacity across the interconnector, as the arrangements prevailing on the interconnector appeared to have limited the market response in this case. Such action by the System Operator, although necessary and appropriate given the circumstances, could be avoided by ensuring that the arrangements on the interconnector enable generation in both markets to effectively respond to relative price signals.

### ***Corporate transactions***

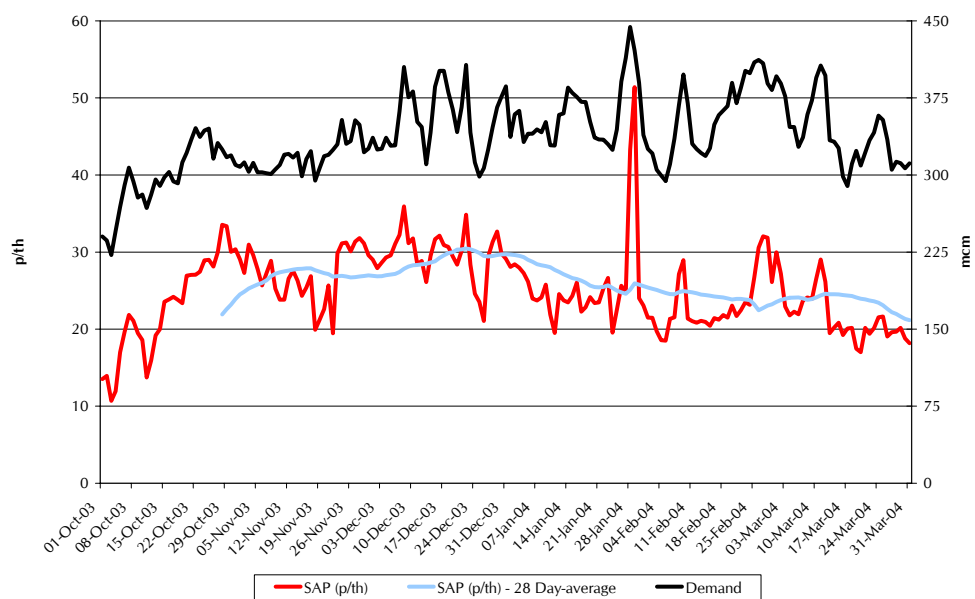
- 3.15. Scottish and Southern Energy has bought a 120 MW gas-fired power station in Cardenden, Fife for £12.3 million. The CCGT was previously owned by a group of shareholders, including the US-based energy company El Paso, but has been in administration since January 2003.
- 3.16. The acquisition, which follows the £42 million deal to acquire 100 per cent ownership of Medway Power in October 2003, takes the capacity of SSE's power stations to almost 5,700 MW.
- 3.17. The holding company of Aquila Networks, Avon Energy Partners Holdings, was acquired by Powergen in January 2004. This acquisition moved Aquila Networks into a group with a financial position that was seen by the credit rating agencies and by financial markets as more robust. The new ownership structure should enable Ofgem's concerns to be addressed, which would enable removal of the restrictions on cash distributions from Aquila Networks.
- 3.18. Ofgem has announced a proposal to modify the standard conditions of electricity distribution licences to include provision for an automatic cash ring-fence in certain circumstances (where the company is at risk of losing an investment grade credit rating). This modification will be rolled out to all other energy network licences in due course, and further details are highlighted in the Ofgem document "Electricity Distribution Price Control Review: Policy document" published in March 2004.

## Gas

### Price & demand overview

- 3.19. Figure 3.3 shows gas price and demand over the six month period. System Average Price (SAP) is used as an indicator of price. A rolling 28-day average of SAP is included in order to remove price volatility and week day / weekend price variations.

**Figure 3.3: Gas price and demand October 2003 to March 2004**



- 3.20. Figure 3.3 shows that from the beginning of October there was a gradual increase in demand, illustrating the usual seasonal pattern. Prices have, for the most part, tracked demand with occasional spikes in the series reflecting incidences of short-term supply failures and/or unexpected changes in demand.
- 3.21. The chart highlights one instance during January 2004 when prices increased significantly. This was brought about through a combination of high demand and an outage at Centrica's Rough storage facility.

### **Storage and offshore outages – January 2004**

- 3.22. Centrica Storage Limited (CSL) experienced a fault on a pressure release valve at the offshore Rough platform, which resulted in a controlled shutdown of the facility. The outage at Rough occurred at around 1:00am on 22 January. Flows from the facility recommenced before 9:00 am on 26 January, four days later.

CSL kept shippers nominations whole for the gas day on 22 January, but invoked Force Majeure for subsequent days. Hence shippers would have had to obtain gas from other sources from 23 January onwards.

- 3.23. Whilst this caused only a modest impact on prices for the next gas day (Friday 23 January), which increased to 29 p/th, there was a major increase in prices for the following Monday, reflecting anticipated low temperatures and associated high demand levels<sup>20</sup>. Contracts for that day had been trading at around 32 p/th before the outage, were trading at up to 100p/th once the outage was announced. When Rough returned to service on the Monday, within-day prices fell back to pre-outage levels.
- 3.24. On the morning of Thursday 29 January 2004 there was a significant volume of offshore field failures that led to a reduction in the deliveries of gas to the network. Transco entered the market to buy additional gas, increasing market prices. Demand increased to over 430 mcm and prices continued to increase, with SAP closing the day at around 52p/th. This increase in price led to a strengthening of the incentives on market participants to deliver gas to the market and also prompted a response from the demand side. On this occasion, a significant response came from gas-fired generation, which reduced its gas consumption by around 10mcm. Half of this response was from CCGTs with back-up oil-fired capability.
- 3.25. Chapter 4 discusses in more detail the exercise to release of offshore information. Phase one had been implemented at that stage, which aims to improve and standardise information provided on a voluntary basis to Transco on gas flows, and planned and unplanned outages. It was also agreed under phase one that Transco could request that DTI obtain maximum delivery information in the event of major potential supply shortages. The DTI provided such information to Transco and, as a result of phase one initiative, it was in a more informed position as system operator in terms of potential supply-side responses.

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<sup>20</sup> The actual figure for NTS demand on Friday 23 January was 344mcm, which could have been met by beach supplies alone. The actual figure for the following Monday was 63mcm, or 18%, higher at 407mcm, a level of demand which would normally be met, in part, by withdrawals from storage.

3.26. Transco's actions on the OCM and the rising prices were the primary means to signal the supply shortages to the market as it did not issue any specific notice to the market of the situation. Ofgem's analysis of the events of the day confirmed that the market was able to respond to the relevant signals to meet the demand/supply fundamentals. Chapter 4 discusses further work on the release of offshore information to market in aggregate form that would further enable the market to anticipate and respond to offshore failures.

### ***The long-term allocation of system entry capacity***

3.27. The long-term allocation arrangements for system entry capacity provide shippers with the ability to buy firm entry capacity rights to flow gas through NTS system entry points up to fifteen years ahead of the relevant gas day. These arrangements offer shippers the certainty of securing access rights at known prices, for extended periods.

3.28. The long-term system entry capacity (LTSEC) auctions, supplemented by trading of entry capacity rights on secondary markets, are an important element of a series of reforms that were introduced in 2003 to improve the signals that Transco and other market participants receive to inform their investment decisions. Ofgem considers that this information, when combined with investment incentives on Transco, should facilitate efficient levels of network investment, thereby meeting the needs of customers and promoting security of supply.

### **Results from the auctions**

3.29. In February 2004, Transco held auctions for long-term entry capacity at two new entry points. The auctions enabled shippers to buy capacity rights for gas to be delivered onto the NTS from prospective storage facilities at Humbly Grove (via the Barton Stacey entry point) and Aldbrough (via Garton). Bids were received for Garton for 420 GWh/d of entry capacity from Q4-2006 to Q3-2010. Following this auction, Transco submitted a proposal to the Authority for the release of incremental capacity in line with the bids received. The Authority has not vetoed this proposal and Transco has confirmed the capacity allocations with the respective bidders. The delivery of physical NTS capacity for this new entry point will include the construction of a 5km extension of the NTS.

## ***International developments***

- 3.30. During the period international security of supply concerns have heightened levels of interest in system security. The international events are summarised below.

### ***Northern Ireland***

- 3.31. On 4 December 2003, Ballylumford and Kilroot power stations were unable to supply Northern Ireland Electricity (NIE) with enough electricity to meet customer demand, due to operational problems. This generation shortfall caused an interruption in supply to approximately 100,000 customers for a period of around two hours. The incident, in combination with other system supply shortfalls, led to temporary load shedding on the NIE system, and also resulted in Kilroot incurring a commercial penalty.
- 3.32. A full report was produced by Kilroot in accordance with the requirements of Operating Code No. 8 of the NIE Grid Code for the electricity industry in Northern Ireland. The cause of the incident was as a result of a back-up steam source failing to cut in when a technical problem necessitated a shut down due of the “on-duty” source<sup>21</sup>. The fault on the valve on the “on-standby” source has now been rectified, and a modification is being designed to ensure that there will always be at least 100 per cent back-up.

### ***US-Canada***

- 3.33. An interim report was published by the US-Canada Power Outage task force in November 2003 and the final report was published in April 2004. The final report reached a slightly different conclusion to the interim report, as the earlier view that the cascade failure was driven by voltage collapse is now replaced by the conclusion that dynamic instability played a significant part.
- 3.34. The report details the causes of the blackout on 14 August 2003, and concluded that it was preventable. Of the forty six recommendations made, only eight require particular consideration in the UK as the structure of the UK electricity

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<sup>21</sup> The shut down of the “on-duty” source is a normal operation and is designed to protect turbines.  
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industry and associated regulatory arrangements differ significantly from those in the US. The report details how the networks run in the US, and which parties control which parts of that network. The main issues in this part of the report are the inadequacies and vulnerability of the systems controlling the networks, and the lack of any real co-ordinated response to emergency situations.

## ***Summary***

- 3.35. At a high-level, the demand, supply and price developments during the six month period followed expected responses in a competitive market whereby the availability of capacity responds to prices, which reflect underlying supply and demand conditions.
- 3.36. Ofgem, through its work with JESS, continues to monitor the market to ensure that there are no unnecessary barriers to the market responding to price signals over the medium to long-term. In addition, Ofgem has powers under UK and European legislation to ensure that prices reflect market fundamentals and are not subject to market abuse.

## 4. Current market developments

- 4.1. This chapter provides an overview of the work being undertaken by the industry with Ofgem that is aimed to improve the ability of the gas and electricity industries to deliver secure energy supplies. The chapter also provides a summary of a number of subsequent developments and initiatives relevant to security of supply.

### ***Ofgem publications***

- 4.2. In May this year, Ofgem published the following four documents which have implications/links to security of supply.

### ***NGT's preliminary winter outlook report 2004/05***

- 4.3. Each year, Ofgem asks National Grid Transco (NGT), in its role as System Operator (SO) of the gas and electricity networks, to produce an assessment, known as the Winter Outlook Report.<sup>22</sup> This report sets out NGT's analysis of any operational issues in the coming winter, particularly during very extreme weather conditions.<sup>23,24</sup> This year, Ofgem asked NGT to produce the report earlier in the year. This will have two main benefits: it will give companies more time to respond to any issues highlighted by NGT; and it will allow more time for rule changes to be identified, assessed and (if appropriate) implemented ahead of the winter. NGT is also intending to provide an update document with further analysis, drawing on the additional information available nearer to the start of winter.

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

- 4.4. This document provides Ofgem's views on this issues raised by NGT in its Preliminary Winter Outlook Report 2004/5 and by other industry participants in

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<sup>22</sup> In previous years this report has been referred to as the Winter Operations Report.

<sup>23</sup> 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.

<sup>24</sup> Scottish Power Transmission Limited and Scottish Hydro Electric Transmission Limited, the SOs in

response to a number of issues and events. The document also highlighted a number of preliminary conclusions and some areas of the existing market rules that industry participants should consider to ensure that there are no barriers preventing the market delivering security of supply.

### ***Review of top up arrangements in gas***

- 4.5. This document reviewed whether the ‘top up’ rules are appropriate. Top up is gas that is held in store by Transco in response to a shortfall identified by Transco between the level of demand that it forecasts would be observed if the forthcoming winter – or what remains of it – turned out to be ‘severe’, and its assessment of the level of available supplies over that period. When a top up provision is made, the gas is subsequently made available to market participants (including Transco in its role as system operator) at times of high system demand at a price determined by rules set out in Transco’s network code.
- 4.6. Ofgem initiated a review of the top up rules in May this year<sup>25</sup>. Ofgem’s preliminary analysis suggested that the top up arrangements could lead to significant direct and indirect costs to Transco and customers. It also suggested that the top up actions that Transco would be required to take would not enhance security of supply. Ofgem was of the view that, at best, Transco’s actions would simply substitute for actions that market participants would take anyway and therefore provide the same level of security of supply but at a higher cost to customers. Ofgem also set out why it considered that the detailed operation of the rules could undermine the commercial incentives on companies to deliver secure supplies. Ofgem also noted that the current top up rules could distort competition in the provision of storage and other flexibility services. Ofgem was therefore of the view that top up should be removed.
- 4.7. Ofgem published its conclusions document in respect of the top up review in August of this year<sup>26</sup>. This document included an impact assessment on the replacement of top up with the ‘safety monitor’ – a concept which was developed by Transco to facilitate removal of top up whilst ensuring that the risk of a supply emergency was minimised.

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Scotland have not been asked to produce comparable Winter Outlook Reports.

- 4.8. On the basis of its impact assessment, and having considered the views of respondents, Ofgem remained of the view that top up should be removed from Transco's network code. As set out in Ofgem's impact assessment of the removal of top up in the context of the safety monitor, Ofgem was of the view the pre-winter expected direct and indirect costs associated with top up counter nomination actions could be over £200m. In addition, given Ofgem's view that top up counter nomination actions are unlikely to be effective in maintaining gas in store and its concerns over the mechanism by which top up gas is made available to the market, Ofgem was of the view that the removal of top up in the context of the safety monitor would be likely to be neutral, and at best slightly positive, for security of supply. Further, Ofgem was of the view that the removal of top up in the context of the safety monitor would be likely to lead to a lower level of interruption for customers than would otherwise be the case, particularly in mild conditions.
- 4.9. Ofgem's proposed way forward was therefore that the top up arrangements be removed from Transco's network code. On 10 August 2004, Transco submitted a revised safety case to the HSE on the basis of the safety monitor proposal. The HSE has indicated that it expects to have concluded whether this change is acceptable within three months. On 20 August 2004, Transco raised modification proposal 710 (Removal of Top-up arrangements) to remove top up from its network code consistent with its proposed revision to its safety case in time for this winter.

### ***Electricity & gas cash out review***

- 4.10. This document relates to 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 by contracting to meet their customers' demand.

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<sup>25</sup> "The review of top-up arrangements in gas, A Consultation Document", Ofgem, May 2004.

<sup>26</sup> "The review of top up arrangements in gas. Conclusions document", Ofgem, August 2004.

- 4.11. The arrangements are important for ensuring that the market delivers security of supply by providing commercial incentives for market participants to balance supply and demand. However, some companies, including NGT, have highlighted concerns about whether the current rules provide appropriate commercial incentives on companies to maintain security of supply.
- 4.12. On 1 March 2004, Ofgem published a letter setting out its intention to carry out a review of cash out arrangements in the electricity and gas markets. On 17 May 2004, Ofgem published a consultation document<sup>27</sup> which initiated the review of the gas and electricity cash out arrangements and set out a number of areas which Ofgem considered should be focused on. On 18 August 2004, following consideration of responses to the consultation document, Ofgem published an open letter<sup>28</sup>, which established a working group to enable wider consideration of issues relating to both the gas and electricity cash out arrangements. This group is due to begin its assessment in September 2004.

### ***Energy Act 2004***

- 4.13. The Energy Act 2004 received Royal Assent on 22 July 2004, and provisions for special energy administration have remained without any significant amendments. The Act provides for the appointment of a special administrator to keep networks running should one of the monopoly network businesses become insolvent. This brings the energy networks into line with similar arrangements in the water industry.
- 4.14. One of the provisions of the Act places a duty on the Secretary of State to publish an annual report on the security of gas and electricity supplies, and obliges the Secretary of State to lay that report before Parliament. The DTI and Ofgem will need to consider in due course how best to meet this new responsibility, including an assessment of the existing reporting through JESS and this report.

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<sup>27</sup> 'Electricity and gas cash out review. A consultation document', Ofgem, May 2004.

<sup>28</sup> 'Gas and electricity cash out review: the way forward. An open letter', Ofgem, August 2004.

## ***Release of offshore information in the gas market***

- 4.15. The DTI has been facilitating discussions with the UK Offshore Operators Association (UKOOA), Transco and Ofgem to improve the flow of information from the offshore gas producers to Transco and to participants in the onshore gas market (including customers). This was initiated following the contracted interruption of some interruptible customers in Summer 2003. During the offshore information discussions, it was agreed that there would be a three-phased approach to release information to Transco and the wider market.
- 4.16. On 11 November 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. It was also agreed that in the event of a potential gas emergency, Transco would request that the DTI obtains maximum deliverability information from offshore participants on Transco's behalf.
- 4.17. Following on from the initial approach, phase two seeks the disclosure of operational and planning information which Transco uses to produce its "Transporting Britain's Energy" (TBE) forecasts. In order to facilitate the disclosure of this information, it has been proposed that Transco sign an agreement with offshore participants to address issues of confidentiality and liability. The proposed agreement contained a provision that should a modification be proposed to Transco's network code which required the disclosure of information protected by the agreement, offshore information could be recalled by the producers, or destroyed by Transco on request of the producers.
- 4.18. Phase 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 forecasts flows onto the NTS;
  - ◆ national and zonal forecast deliverability reflecting planned and unplanned maintenance; and

- ◆ after the day flows into the NTS by sub terminal (this information is already available to shippers).

- 4.19. UKOOA raised concerns with regard to the disclosure of phase two information. In particular, it was concerned that confidential information on individual fields which producers provide to Transco for the Ten Year Statement could be made available to all market participants by virtue of condition 4E of Transco's GT licence.
- 4.20. In order to facilitate a voluntary agreement, Ofgem considered consulting on a formal amendment to condition 4E of Transco's GT licence. The amendment, if made, would have allowed Transco to enter into the proposed agreements without risk of licence breach. However, the process required for a formal consultation on a licence amendment would take several months and facilitating the release of more information to Transco quickly is essential both for security of supply and facilitating competition in the gas market. Ofgem therefore launched a short consultation on whether to issue a temporary derogation to paragraph 5 of the amended condition 4E of Transco's GT licence. Ofgem made it clear in the consultation letter that the proposed derogation could only be granted on an informal basis as there is no statutory basis in the licence to enable the grant of any formal derogation or direction.
- 4.21. Ofgem proposed that the derogation would preclude Transco from complying with network code modifications to disclose information arising from the TBE process which could potentially reveal an individual participant's commercial position with respect to field specific information. The temporary derogation expires 6 months from the date of the grant, which is on 31 October 2004. Ofgem expects to begin consulting on possible amendments of paragraph 5 of amended standard condition 4E of Transco's GT licence in due course.
- 4.22. As production from the UK Continental Shelf declines and the UK becomes more dependent on imported gas, there will be an increasing need for new gas supply sources as well as investment in infrastructure projects to meet both annual demand and the seasonal and daily swings in demand. Ofgem has been working with the DTI about the adequacy of gas supplies to meet peak gas demand from consumers during a 1 in 20 winter day, or during a period of

sustained cold weather. Forecasts have now been revised in accordance with Transco's 2003 supply and demand forecast, and the latest developments in planned gas infrastructure projects.

- 4.23. As a result of a voluntary agreement on 11 November 2003, it was proposed to improve and standardise information provided to Transco on gas flows and planned and unplanned outages. Phase three of this agreement proposed the disclosure of aggregated information to all market participants which requires development of Transco's systems, and Ofgem are currently developing a timetable with Transco for the systems release. Ofgem expects Transco and the storage operators to work with Ofgem to improve the degree of information release.

### ***Modifications to market rules***

- 4.24. A number of changes to the market rules, set out in industry documents have been proposed over the last six months by NGC, Transco and industry participants, some of which reflected the issues that NGT raised in its 2003/04 winter operations report.

### **P144 "Removal of Continuous Acceptance Duration Limit (CADL) from the BSC"**

- 4.25. This BSC Modification proposal was submitted by First Hydro Company on 10 October 2003, and was subsequently granted urgent status. 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.
- 4.26. Supplemental Standing Reserve Tender - NGC's new approach to procuring short term 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. 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. This revised approach, in part, led NGC to issue a Supplemental Standing Reserve tender for winter 2003/4 on 14 October 2003. The tender was closed on 27 October 2003 and was in respect of reserve services to be provided between 17 November 2003 and 1 April 2004.

#### **Network Code Modification Proposal 657 “Partial Volume Interruption Service”**

- 4.27. This was submitted by Transco on 14 October 2003, 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. Ofgem issued its decision letter to reject Proposed Modification 657 on 1 December 2003 on the basis that it would create the potential for discrimination between different classes of customers, and 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 658 “Interruption Transfer Service”**

- 4.28. This was submitted by Transco on 14 October 2003, sought to extend the existing interruption transfer arrangements to enable the trading and transfer of Transco’s interruption obligations between gas shippers. Ofgem issued its decision letter to reject Proposed Modification 658 on 1 December 2003 on the basis that 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 659 and 660**

- 4.29. These proposals related to submitted by Transco on 24 October 2003 and related to “Winter Injection Cost Allocation Based on User Daily Imbalances”

and “Winter Injection Cost Allocation Based on User Daily Offtakes” respectively. They 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 a number of principles and
- ◆ Modification proposal 660 put forward the same methodology as modification proposal 659, 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.

4.30. Ofgem issued its decision letter to reject Proposed Modifications 659 and 660 on 1 December 2003 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. Furthermore, Ofgem did not consider Transco’s methodology to be sufficiently robust and therefore acknowledged that implementing either 659 or 660 could put in jeopardy the commercial basis on which shippers have already prepared for this winter.

### **Infrastructure projects**

- 4.31. Ofgem continues to work to facilitate competitive and efficient investment in import capacity.
- 4.32. Interconnector (UK) Limited (IUK), the operator of the UK–Belgium gas pipeline, is set to proceed with the second phase of a £150 million project to triple the pipeline's import capacity. The plan is to increase the pipeline's current import capacity in two phases. In the first phase, the pipeline's current capacity of 8.5 bcm a year is to increase to 16.5 bcm a year in December 2005. In the second phase, import capacity will rise by a further 7 bcm a year to 23.5 bcm a year in December 2006.

- 4.33. In 2006, the gas pipeline linking Zeebrugge in Belgium to Bacton in England will be able to import some 40 per cent of current UK household demand. IUK said it has secured commitments from several companies to buy capacity in the UK–Belgium gas pipeline until 2018, generating sufficient demand for a further expansion. IUK said the companies acquiring capacity in the second phase of the expansion are: French utility Gaz de France, Distrigas SA of Belgium, OAO Gazprom of Russia, and EDF Trading Limited based in London. Work on the first phase of the project is on schedule and work on the second phase can start immediately as consents and approvals from the relevant authorities have already been granted. IUK said it is also investigating whether further expansion would be possible later.
- 4.34. In November 2003, the DTI and Ofgem published their final views on how the requirements of the new EU gas and electricity Directives and electricity Regulation would be applied to gas and electricity interconnectors and Liquefied Natural Gas (LNG) and storage infrastructures. As a result, the Energy Act introduced a new licensing regime for gas and electricity interconnectors, so that all companies operating interconnectors between Britain and other EU Member States will now have to obtain a licence. The requirements of the gas Directive in relation to LNG and storage will be implemented via Regulations amending the existing Gas Act 1986 (as amended).
- 4.35. Ofgem has recently contacted companies in respect of the closure of the Bacton–Zeebrugge Interconnector, and the reduction in gas flows by 35 per cent resulting from the discovery of solids in the interconnector. Ofgem considers that there would be benefit in all relevant parties participating in further wide-ranging discussions of the issues affecting the reliability of the interconnector. This should consider all commercial, operational and institutional factors that may be explored as a means of resolving these issues. Ofgem also considers that given the potential importance of these issues for security of supply, it would be useful and appropriate if these issues were taken forward quickly ahead of this coming winter.
- 4.36. Ofgem is therefore proposing to hold a seminar on 8 September 2004 to facilitate these discussions so that solutions may be considered and implemented in time for this winter to manage the risk. Given the short period of time available before the winter, this may limit the range of options that can feasibly

be implemented. The seminar will therefore also seek to consider more enduring arrangements for subsequent years.

## 5. Conclusions

- 5.1. During the period October 2003 to March 2004, the market continued to provide evidence of its ability to respond to changing supply and demand fundamentals. The gas market responded to the storage and field outages in January 2004. The electricity market responded to expectations of a tightening supply/demand balance over the period led to rising prices and the return of previously mothballed plant to the system. Generators responded by returning a number of plants to the system in October 2003. In the event, the mild winter kept demand relatively low, and peak demands were also relatively low due to the timing of the relatively cold spells.
- 5.2. Ofgem's continues to work to improve further the ability of the market to deliver secure energy supplies and to develop the framework governing the monopoly network owners and system operators.
- 5.3. This report has highlighted a number of areas of work across a broad range of Ofgem's activities which will have impacts on the delivery of security of supply.

### ***Information provision***

- 5.4. Ofgem places great emphasis on the need to ensure that competitive markets can balance demand and supply over the short and long-term. A key component to this is the availability of information about supply-demand fundamentals. Ofgem continues to work with market participants in both gas and electricity to further improve the transparency of the system operators' actions and to increase the levels of information available to all market participants on underlying supply and demand fundamentals.

### ***BETTA***

- 5.5. Ofgem remains committed to the use of market-based mechanisms to deliver secure supplies. As a result, the extension of the England and Wales wholesale electricity trading arrangements into Scotland through BETTA will further develop this market-based approach to developing efficient markets and delivering security of supply and provide an enduring solution to concerns regarding trading arrangements across the Scotland–England interconnector.

- 5.6. The Energy Act 2004 ('the Act') received Royal Assent on 22 July 2004. The Act provides the legal framework underpinning the introduction of a single British wholesale electricity market. The main features of the new market will be a common set of trading rules so that electricity can be traded freely across Britain; a common set of rules for access to, and charging for the use of, the transmission network; and a GB-wide system operator, independent of generation and demand interests, so that those seeking to use the system and access the market can be confident there will be no undue limitation to access. BETTA is expected to Go Live on 1 April 2005.
- 5.7. The DTI has said that most of the Act will commence three months after Royal Assent. However, special arrangements are being made to commence the BETTA provisions in a shorter timeframe so as to enable 'Go Live' next April.

### ***Transmission and distribution networks***

- 5.8. Transmission and distribution networks will continue to play a key role in ensuring security of supply. The periodic price control reviews play a key role in determining the funding allowed to network owners to enable these companies to develop and maintain their networks to the required standard.
- 5.9. Ofgem published its Initial Proposals for the next five year electricity distribution price control on 28 June 2004, which includes initial views on the revenue allowances for the DNOs over the coming five year period (1 April 2005 – 31 March 2010). These initial proposals include significant extension of the financial incentives on companies to avoid large numbers of customers being without supply for prolonged periods following severe weather. Additional costs have been allowed to cover increases in vegetation management activities, which have been identified as a major issue for distribution network resilience. Final Proposals are planned for November 2004 and the new price controls are due to take effect on 1 April 2005.
- 5.10. The review of the electricity transmission price control will not take effect until 2007. Ofgem proposed to review the existing incentives in relation to network resilience and whether it is possible to improve incentives in this area. Ofgem anticipates producing an update paper in September 2004 and final proposals are planned to be published in November.

5.11. Security of supply can also be enhanced by the extension of incentives on network owners and operators to respond to the changing needs of their customers. The introduction of long-term auctions for entry capacity on Transco's network has provided useful, objective evidence about the future intentions of market participants to deliver gas to the UK. Ofgem continues to pursue the extension of more market-based incentives both in relation to gas exit capacity and electricity transmission access.