

**National Grid Transco**

**Report on Electricity Balancing  
Services Contracts**

**1<sup>st</sup> April 04 – 31 March 05**

**(Informal Procurement  
Guidelines Report)**

**Published 27<sup>th</sup> May 2005**

## Contents

<b>1. Introduction .....</b>	<b>3</b>
<b>1.1 Purpose of Report .....</b>	<b>4</b>
<b>1.2 Reporting Period .....</b>	<b>4</b>
<b>1.3 Balancing Services.....</b>	<b>4</b>
<b>1.5 Services not included in the report .....</b>	<b>4</b>
<b>1.6 Structure of Report.....</b>	<b>4</b>
<b>2. Services Procured Via Market Arrangements .....</b>	<b>5</b>
<b>2.1 Reactive Power .....</b>	<b>5</b>
<b>2.2 Fast Reserve (Tendered).....</b>	<b>7</b>
<b>2.3 Standing Reserve and Supplementary Standing Reserve .....</b>	<b>8</b>
<b>3 Services Procured via Non-Tendered Bilateral Contracts</b>	<b>10</b>
<b>3.1 Mandatory Frequency Response .....</b>	<b>10</b>
<b>3.2 Commercial Frequency Response.....</b>	<b>11</b>
<b>3.3 Fast Start.....</b>	<b>11</b>
<b>3.5 Warming &amp; Hot Standby.....</b>	<b>12</b>
<b>3.6 Fast Reserve (Procured on a Non-Tendered basis) .....</b>	<b>12</b>
<b>3.7 System to System Services .....</b>	<b>13</b>
<b>3.8 All Other Services.....</b>	<b>14</b>
<b>3.9 Forward Trading .....</b>	<b>14</b>
<b>3.10 Pre-Gate BMU Transactions (PGBT's).....</b>	<b>16</b>
<b>4. Summary.....</b>	<b>17</b>
<b>5. Further information .....</b>	<b>18</b>
<b>6. Annual Information Summary Page .....</b>	<b>19</b>

# Report on Balancing Services Contracts 2004 – 05

## 1. Introduction

This report is being produced in place of the annual Procurement Guidelines Report as required by Condition C16 of NGC's Transmission Licence. The Authority has granted a delay to the annual Procurement Guidelines review in order to align future reporting periods with the standard financial year.

A more detailed explanation of the rationale for the delay to the Procurement Guidelines review can be found in correspondence between National Grid and the Authority. A copy of this correspondence is available via the link below.

[http://www.nationalgridinfo.co.uk/balancing/mn\\_whats\\_new.html](http://www.nationalgridinfo.co.uk/balancing/mn_whats_new.html)

National Grid procures Balancing Services to operate the transmission system in an efficient, economic and co-ordinated manner. A number of statements and market reports pertaining to the procurement and use of Balancing Services are already published on the industry information web site. This Report provides information on the procurement of Balancing Services over the past twelve months.

National Grid procures Balancing Services subject to the framework laid down in Special Condition C16 of the Transmission Licence. This framework obliges National Grid to "operate the transmission system in an efficient, economic and co-ordinated manner" and also requires a number of statements and reports on the procurement and use of Balancing Services to be established. The **Procurement Guidelines** is one of these statements, and sets out the principles used in our procurement of Balancing Services, the kinds of Balancing Services that we may be interested in purchasing and the mechanisms by which we do so. The [Procurement Guidelines](#) is published on the National Grid Industry Information website and is usually subject to annual review and industry consultation. When a new Procurement Guidelines statement is published annually (covering the forthcoming relevant period), National Grid is required to produce a **Procurement Guidelines Report** ("Report") covering the preceding relevant period, having previously agreed the 'form' of the Report with The Authority.

As explained the formal annual review has not taken place and therefore a formal a formal PGs Report can not been written. This report is being produced by National Grid to ensure that the industry enjoys the same visibility and transparency as would have been the case had the Annual Review and Report been formally carried out.

## 1.1 Purpose of Report

The purpose of the Report is to provide information in respect of the relevant<sup>1</sup> Balancing Services that National Grid has procured in the defined reporting period.

## 1.2 Reporting Period

The period covered by this report is the 12 month financial accounting period 1<sup>st</sup> April 04 to 31<sup>st</sup> March 05.

## 1.3 Balancing Services

The Balancing Services National Grid has procured, either via market arrangements or bilateral contracts, throughout the period covered by the Report, are:

- Frequency Response
- Reactive Power
- Fast Start
- Black Start
- Reserve Services - Fast Reserve, Standing Reserve, Supplemental Standing Reserve, Warming and Hot Standby
- All Other Services
- System to System Services
- Energy Related Products (including PGBT's)

Balancing Services maybe procured from both Balancing Mechanism and Non Balancing Mechanism Participants.

For further information regarding the type of providers of Balancing Services please consult the [Procurement Guidelines](#).

## 1.5 Services not included in the report

This document intentionally does not report the acceptance of Bids or Offers in the Balancing Mechanism. Further information on Bid and Offer Acceptances is contained within the [Balancing Principles Statement Report](#). All Balancing Mechanism information is available by clicking the following link to the NETA web site - [Balancing Mechanism Reporting System \(BMRS\)](#).

## 1.6 Structure of Report

This report presents the Balancing Services under three main titles –

- Services Procured via Market Arrangements
- Services Procured via Non-Tendered Bilateral Contracts
- A summary section providing a summary of all services procured during the year.

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<sup>1</sup> Other than balancing services acquired by the mere acceptance of an offer or bid in the Balancing Mechanism, provided such offer or bid was not made pursuant to any other previously agreed Balancing Service.

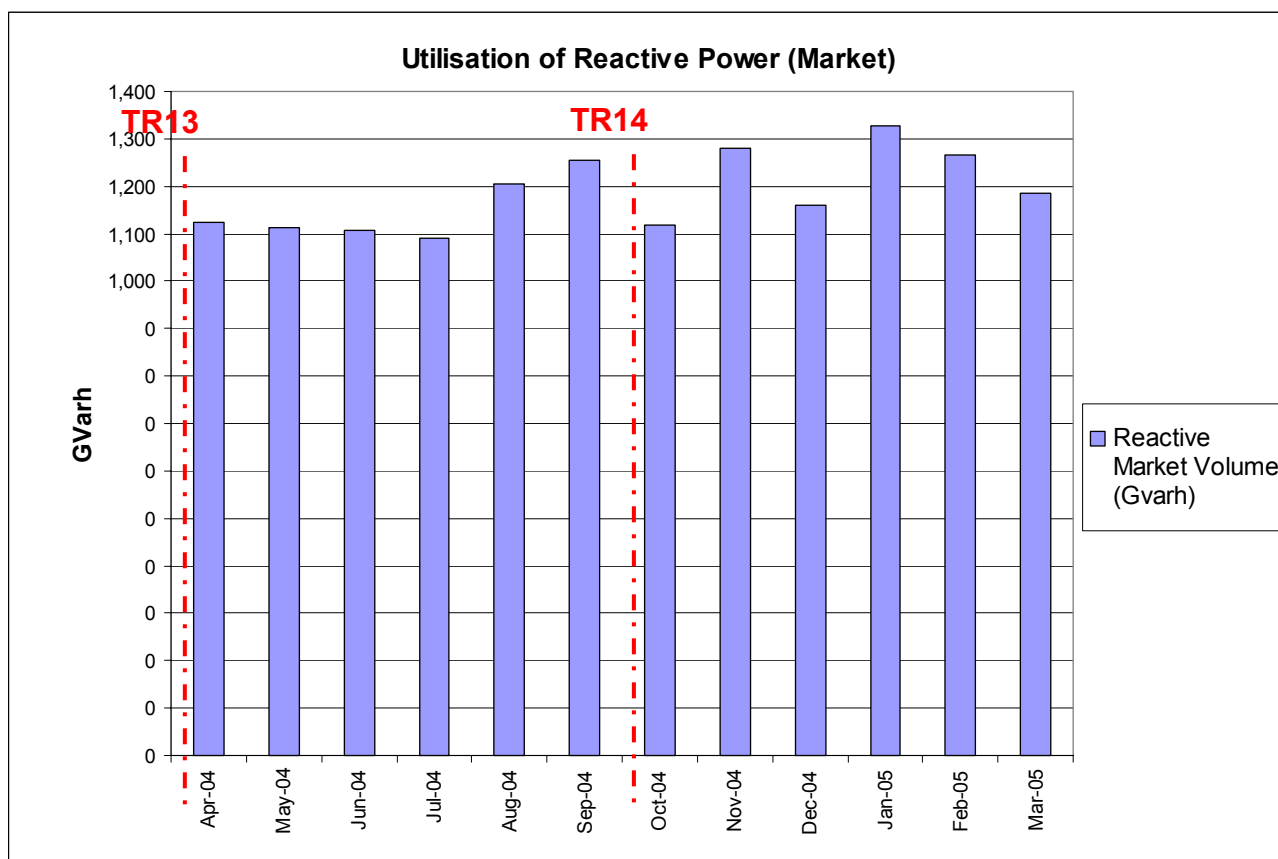
## 2. Services Procured Via Market Arrangements

### 2.1 Reactive Power

#### Market Arrangements for Reactive Power

All contracts awarded via tender round 13 (TR13) commenced on the 1<sup>st</sup> April 04 and tender round 14 (TR14) commenced on the 1<sup>st</sup> October 2004, further information regarding the nature of these contracts can be found in the [Reactive Market Reports for TR13 and TR14](#).

Utilisation of Reactive Power under market arrangements over the relevant period is detailed in the chart below.



Over this period, the total spend on reactive power procured via market arrangements was **£19.1m**.

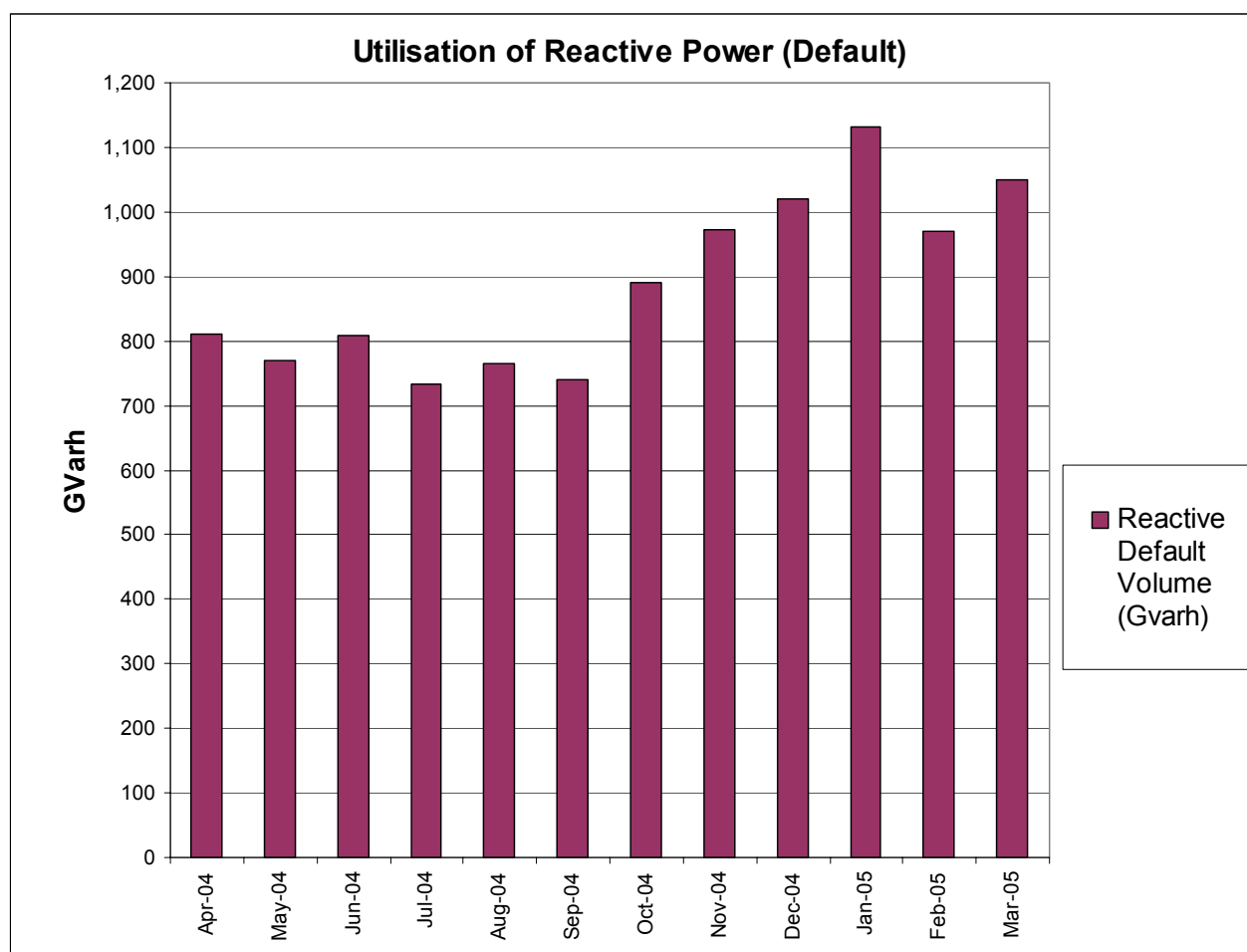
Further information is contained on The National Grid Industry Web Site, please click on the following link to be re-directed to the relevant information on the [Reactive Power Market](#).

### **Default Arrangements for Reactive Power**

The total costs of Reactive Power procured under the default arrangements during the reporting period was **£17.7m**.

Utilisation of Reactive Power under Default arrangements over the relevant period is detailed in the chart below.

For further information regarding the default payment arrangements please click on the following the link - [Obligatory Reactive Power Service \(ORPS\) Default Payment Arrangements](#).



Over this period, the combined total costs of reactive power (MA & DA) was **£36.7m**.

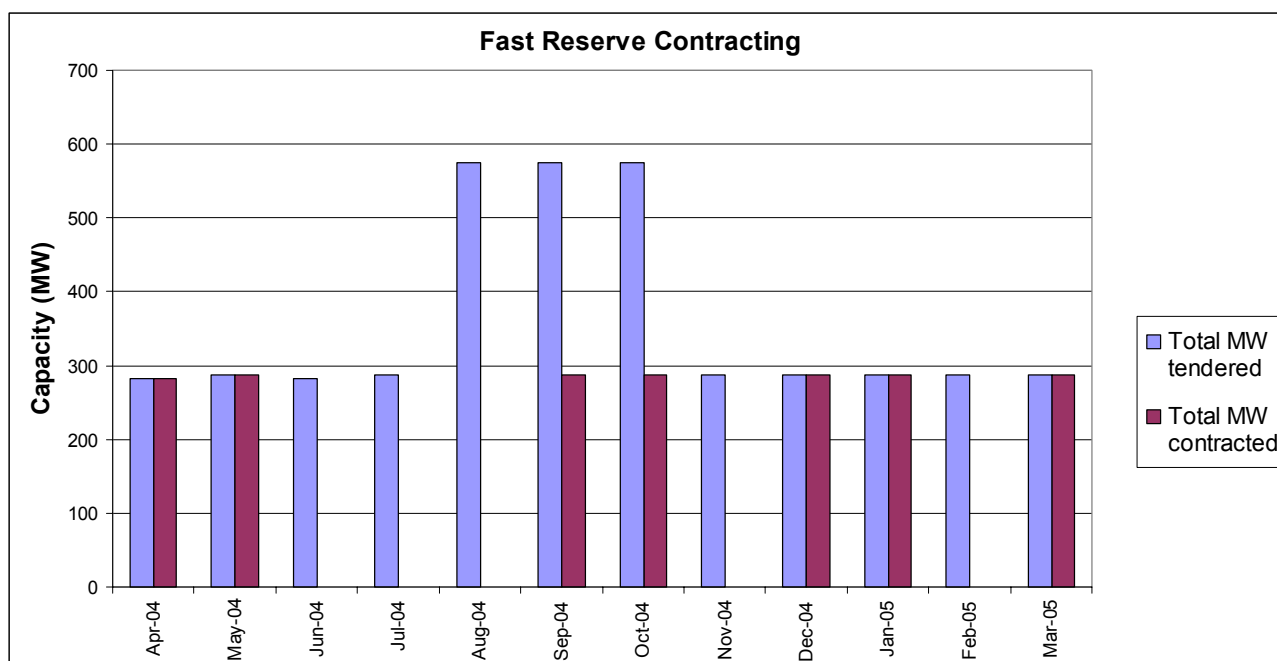
## 2.2 Fast Reserve (Tendered)

Further information explaining the service and assessment criteria of tenders for this balancing service can be found by clicking the following link for [assessment principles for firm fast reserve](#).

The table detailed below lists the tender details for each month.

Tender Round	Eligible companies	Eligible units	Units tendered	Units accepted	Total MW tendered	Total MW contracted	Max GWh tendered	Max GWh contracted
Apr-04	6	18	1	1	287	287	68.9	68.9
May-04	6	18	1	1	287	287	71.2	71.22
Jun-04	6	18	1	0	287	0	68.9	0
Jul-04	6	18	1	0	287	0	71.2	0
Aug-04	6	18	2	0	575	0	142.6	0
Sept-04	6	18	2	1	575	287	138.0	68.9
Oct-04	6	18	2	1	575	287	142.6	71.2
Nov-04	6	18	1	0	287	0	68.9	0
Dec-04	6	18	1	0	287	287	71.2	71.2
Jan-05	6	18	1	1	287	287	71.2	71.2
Feb-05	6	18	1	0	287	0	64.3	0
Mar-05	6	18	1	1	287	287	71.2	71.2

The following graph shows the variation in Fast Reserve capacity contracting by month. The cost is included under All Other Services.



For more information on [Fast Reserve](#) please click the link. Fast Reserve Contracts placed through non-tendered bilateral agreements are detailed in section 3.6 of this report.

### 2.3 Standing Reserve and Supplementary Standing Reserve

#### Standing Reserve

The following tables illustrate the tendering and contracting activity for 2004/2005.

Tender Round	NUMBER TENDERED				
	Tenders Received	BM	Non-BM	Committed	Flexible
2004/2005	131	51	80	70	61

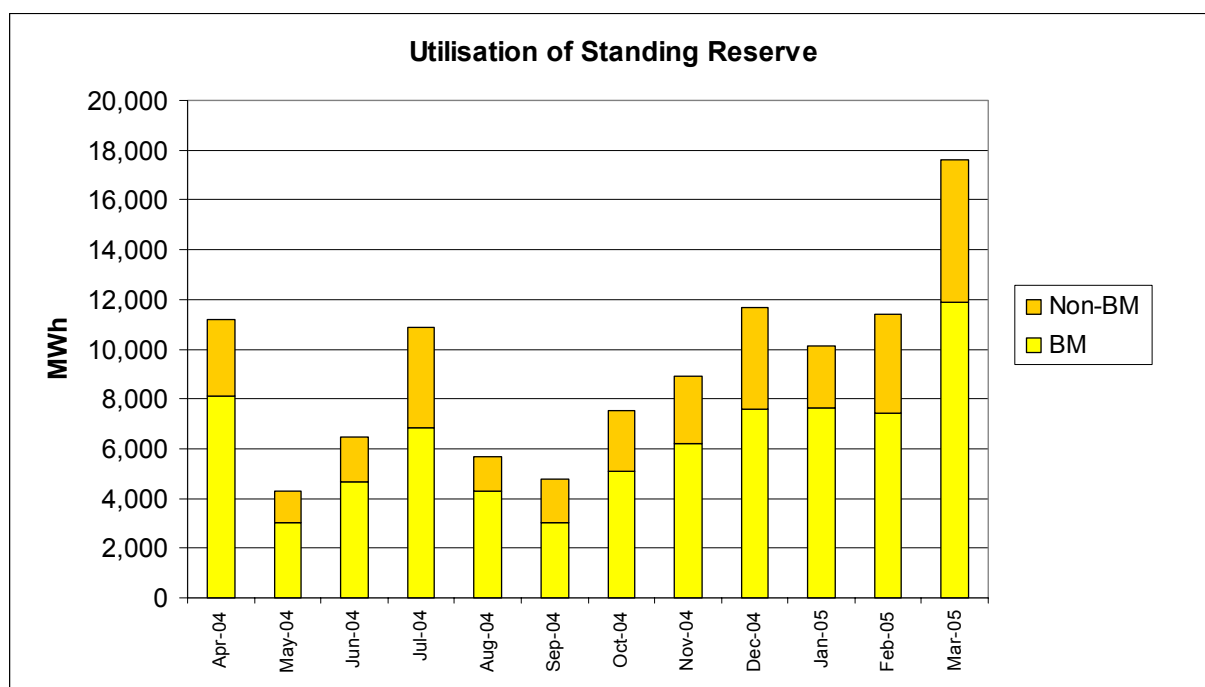
Tender Round	NUMBER CONTRACTED				
	Tenders Contracted	BM	Non-BM	Committed	Flexible
2004/2005	115	46	69	65	50

Tender Round	VOLUME TENDERED (MW)*				
	Volume Received	BM	Non-BM	Committed	Flexible
2004/2005	2497	1733	764	1947	550

Tender Round	VOLUME CONTRACTED (MW)*				
	Volume Contracted	BM	Non-BM	Committed	Flexible
2004/2005	2106	1445	661	1659	447

\*Volume received values are based on maximum number received in any one tender round.

The following graph shows the utilisation of Standing Reserve.

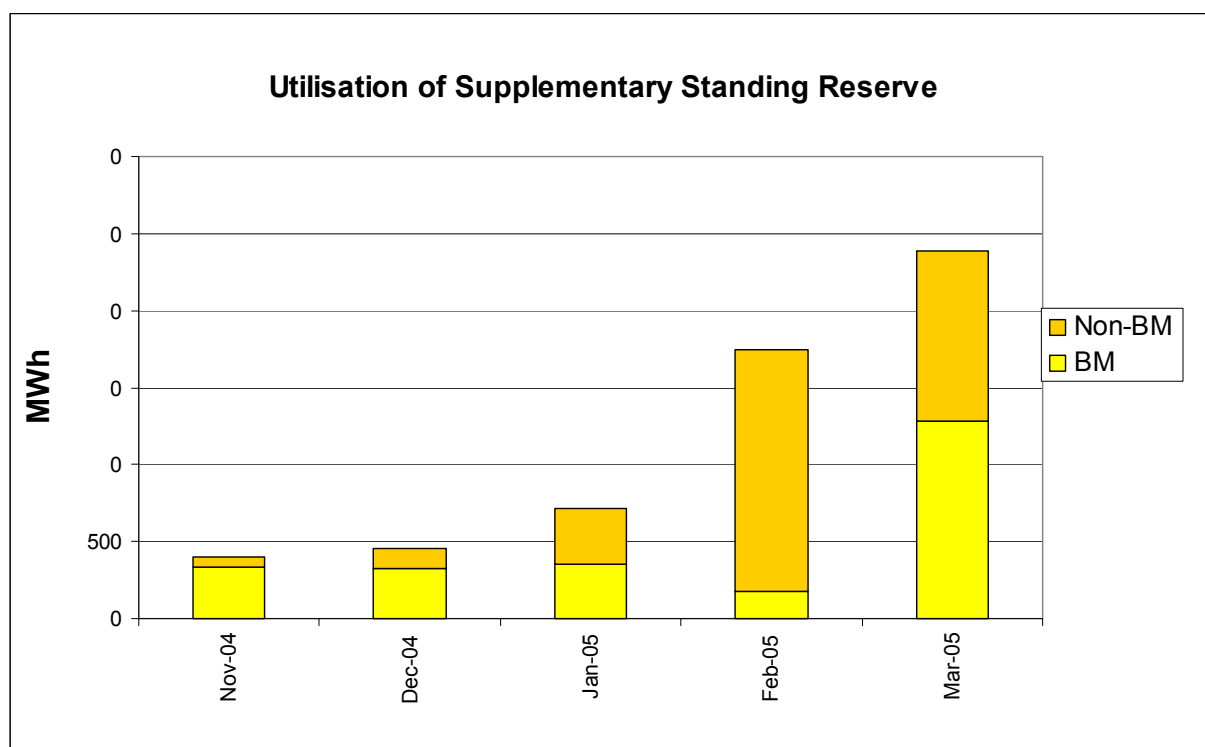


The average availability payment for Standing Reserve during this period was **£4.12 /MW/h** for non-working days, and **£4.12 /MW/h** for working days.

For further information on the nature of this service please see the [Standing Reserve Introduction document](#) or the [Standing Reserve Market Reports](#).

### **Supplemental Standing Reserve**

SSR is the same contract form as Standing Reserve but with some changes to encourage greater market liquidity whilst maintaining alignment of service specification to requirements. This year tenders for SSR over the winter period were invited in order to procure reserve on a purely economic basis. SSR has been contracted for working days only.



The average availability payment for Supplemental Standing Reserve during this period was **£16.31 /MWh** for working days.

The total spend on all availability and non-BM utilisation payments for both Standing Reserve and Supplemental Standing Reserve over the year was **£49.4m**.

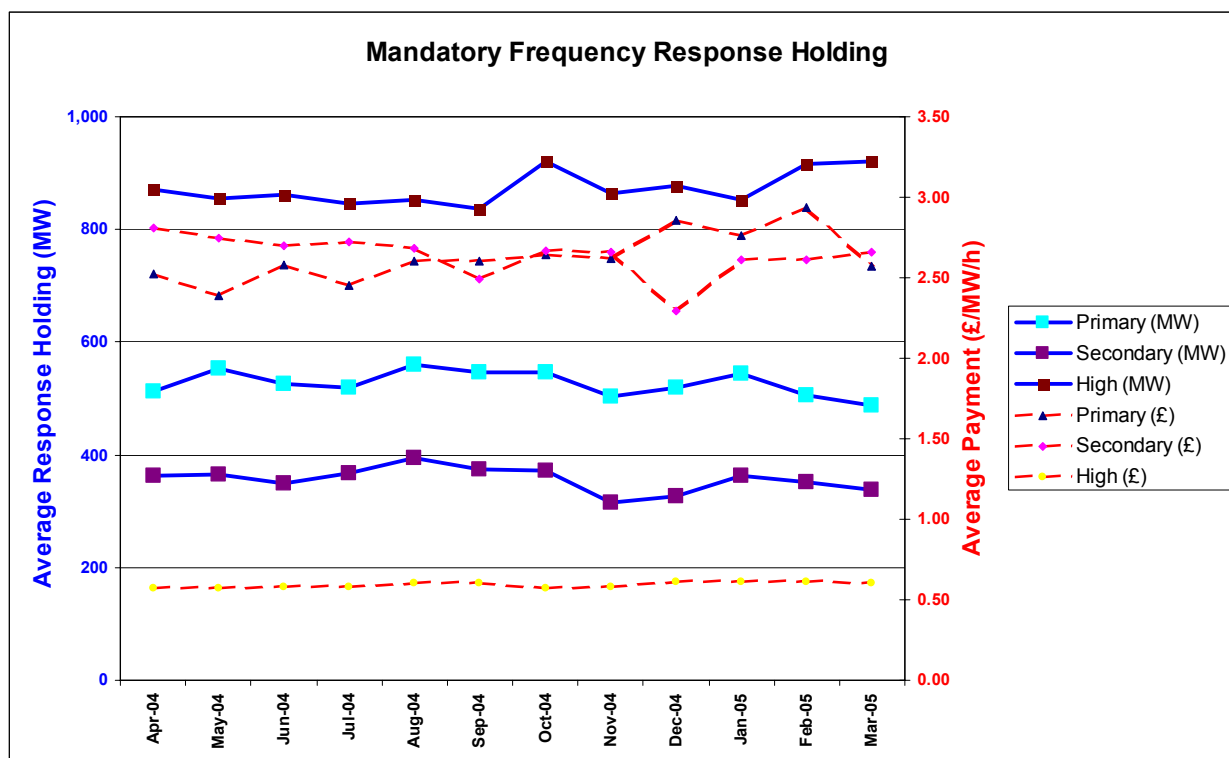
For more information regarding the Supplemental Standing Reserve service please click on the following link – [Supplemental Standing Reserve Market Report Winter 2004/05](#).

### 3 Services Procured via Non-Tendered Bilateral Contracts

#### 3.1 Mandatory Frequency Response

Mandatory Frequency Response is a mandatory service provided by large generators (>100MW) to automatically change their active power output in response to a change in system frequency. The Grid Code Connection Conditions 6.3.7 and 8.1 describe the technical requirements for this service.

Payments for Mandatory Frequency Response, comprise a Holding Payment (£/MW/h) and a [Response Energy Payment](#) (£/MWh). Information on frequency response holding levels are given below.



The total spend on Mandatory Frequency Response Holding during the year was **£24.2m**.

The total spend on Response Energy Payments was **(£3.3m)<sup>2</sup>**. The methodology for calculating these payments is given in CUSC section [4.1.3.9](#) & [4.1.3.9A](#).

Hence, the net spend on Mandatory Frequency Response during 2004-05 was **£20.9m**.

<sup>2</sup> The Response Energy Payment can be both a positive or negative payment, dependant upon the relative volumes of high and low frequency response dispatched during the course of the relevant month.

### 3.2 Commercial Frequency Response

Commercial Frequency Response is a service that can be provided by demand side participants and generation plant. The technical characteristics of this service are different to those required under mandatory service arrangements, and range from enhanced mandatory dynamic services through to non-dynamic services effected via LF relays. National Grid has **6** contracts in place for both firm and optional (high and low) frequency response services. The maximum response capability available under these contracts is **2074 MW**. Part of this contract portfolio includes services provided by demand side participants through Frequency Control Demand Management (FCDM). This is an aggregated volume service procured from demand side participants via a single agent.

The total amount spent on Commercial Frequency Response holding during 2004-05 was **£23.8m**.

Further information is available by clicking the [Commercial Frequency Response](#) link.

### 3.3 Fast Start

Fast Start is the ability of Open Cycle Gas Turbine (OCGT) plant to start rapidly from a standstill condition and to deliver its rated power output automatically within a defined time period. Fast Start details below:

Average Capability Payment Rate	<b>£10.76/ MWh</b>
Total spend for 2004-05	<b>£4.1m</b>

Further information is available by clicking the [Fast Start](#) link.

### 3.4 Black Start

During the reporting period there were **18** stations with Black Start agreements in place. No new agreements were entered into during the period. The total amount paid during 2004-05 for the availability of the Black Start service was **£9.9m**.

Further information is available by clicking the [Black Start](#) link.

### 3.5 Warming & Hot Standby

The table below contains information relating to the procurement of Warming and Hot Standby Balancing Services;

Month	Total Contracted Capacity (MW)	Total Actual Volume (MW)	Average Contract Price Warming (£/MWh)	Average Contract Price Hotstandby (£/MWh)	Average Actual Price Warming (£/MWh)	Average Actual Price Hotstandby (£/MWh)
Apr 04	27564	38,513	9.53	7.13	3.56	5.48
May-04	27564	57,026	9.53	7.13	3.54	6.50
Jun-04	27564	58,660	9.53	7.13	5.41	6.24
Jul-04	27564	72,237	9.53	7.13	3.44	7.64
Aug-04	27564	55,445	9.53	7.13	4.80	6.68
Sept-04	27564	74,313	9.53	7.13	4.00	5.59
Oct-04	27564	129,089	9.53	7.13	7.67	5.61
Nov-04	27564	67,364	9.53	7.13	7.69	9.08
Dec-04	27564	36,729	9.53	7.13	6.42	2.02
Jan-05	27564	32,875	9.53	7.13	1.30	7.51
Feb-05	27564	23,749	9.53	7.13	1.28	10.02
Mar-05	27564	34,195	9.53	7.13	3.41	9.29

The total amount spent on Warming and Hot Standby during 2004-05 was **£16.1m**.

Further details are available by clicking the [Warming & Hot Standby](#) link.

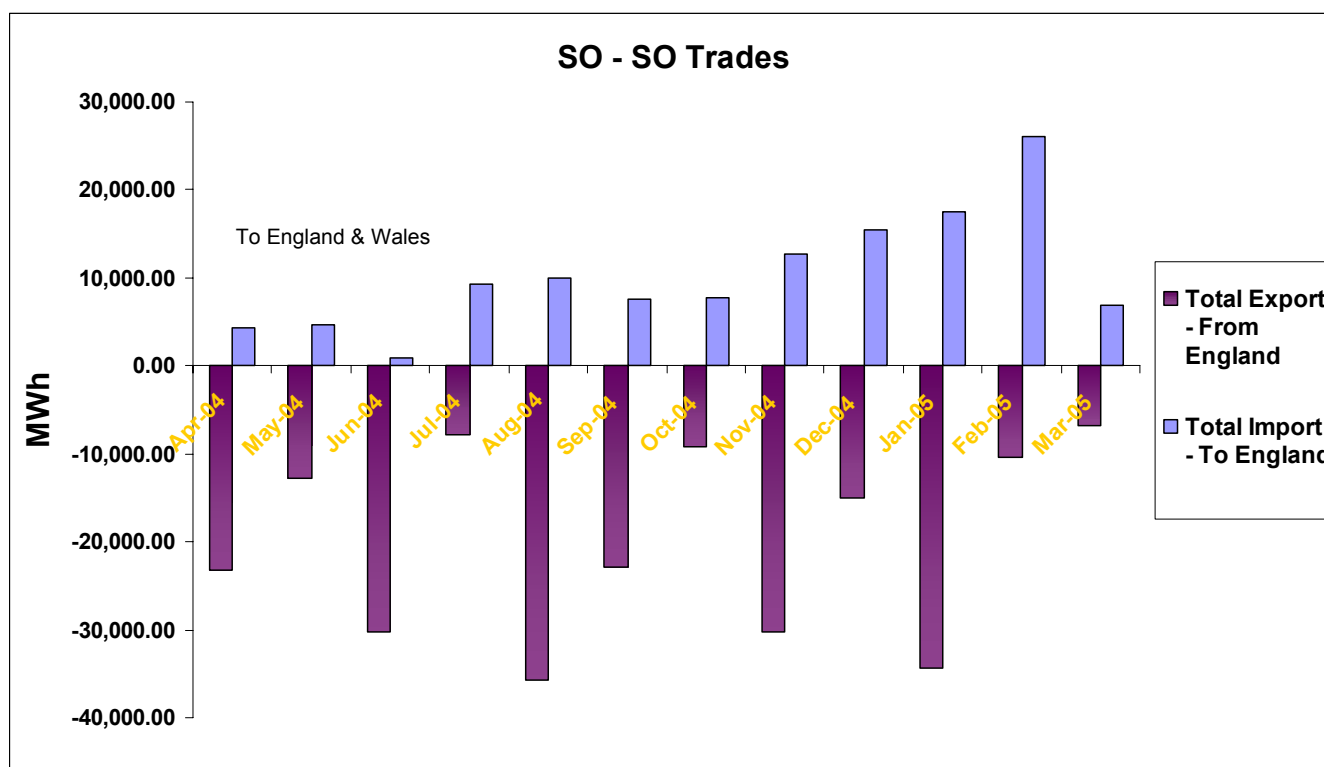
### 3.6 Fast Reserve (Procured on a Non-Tendered basis)

Non-Tendered Fast Reserve is a service that is contracted on a bilaterally basis with service providers. The nature of the service is similar to the Firm Fast Reserve service although the payment and utilisation mechanisms differ for each service.

The availability payments during the relevant periods totalled **£24.6m**. (Excluding Utilisation Via Offers and Bids Accepted in the Balancing Mechanism).

### 3.7 System to System Services

System to System services are provided mutually with other Transmission System Operators connected to the England and Wales system via an interconnector. Such services are typically used to manage interconnector transfer profiles and to increase or reduce power flows across an interconnector to resolve transmission constraints on either side. The graph below shows the total net volume imported and exported across all Interconnectors. The total to and from the England and Wales transmission system cost is included in All Other Services.



The total energy volumes associated with system to system services during 2004-05 was **245 GWh** Export (from England & Wales) and **123 GWh** Import (to England & Wales).

### 3.8 All Other Services

During 2004-05 a number of Balancing Services were procured that are not reported specifically due to contract confidentiality and commercially sensitivity reasons. These costs have been aggregated for reconciliation purposes.

The total spend on All Other Services during the reporting period was **£19.7m**.

### 3.9 Forward Trading

National Grid's forward trading is undertaken to reduce the overall costs of balancing the system, and to resolve system issues as appropriate. There are a number of products and procurement mechanisms available. During the reporting period, National Grid traded a gross volume of **991,247 MWh**.

<b>PX and non-locational OTC</b>	
Buy Volume	203,832 MWh
Sell Volume	352,363 MWh

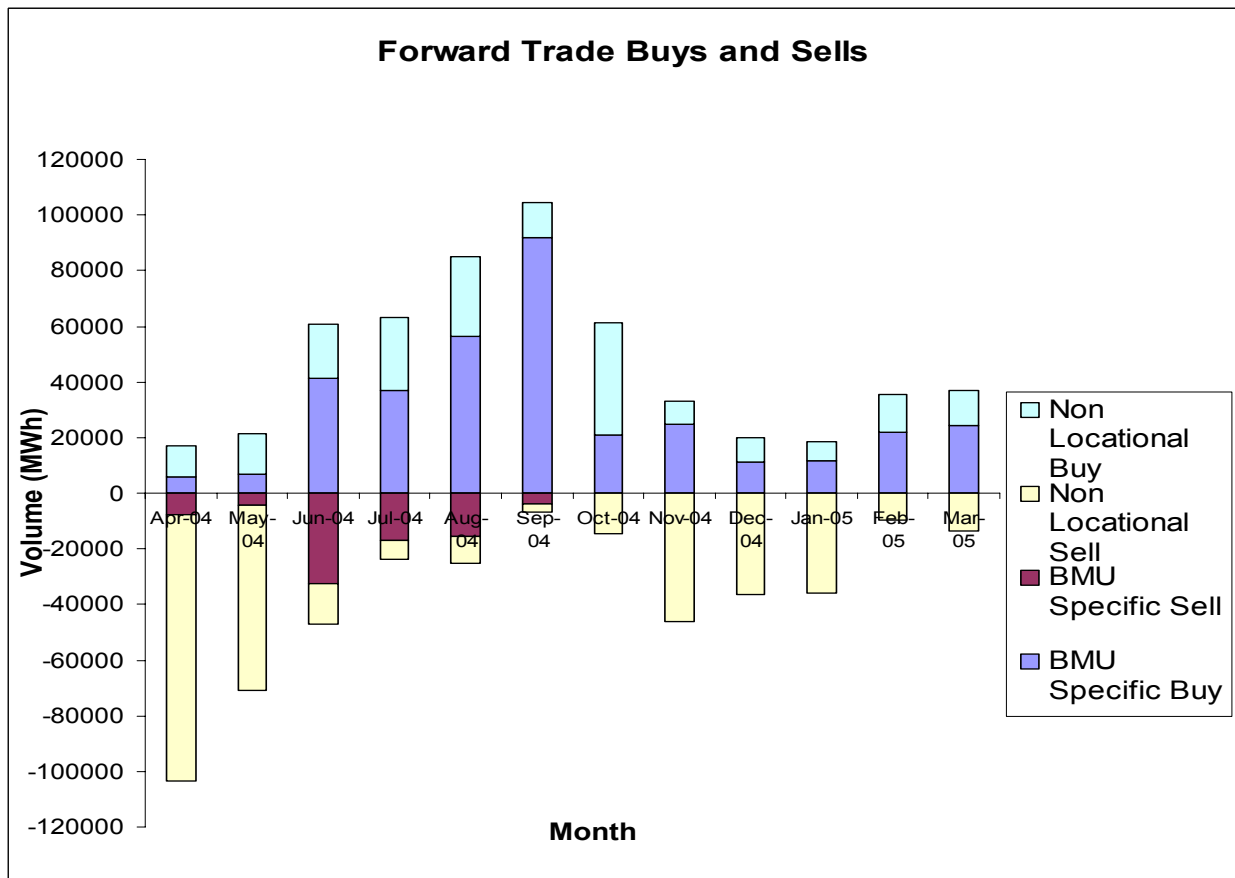
  

<b>BMU Specific OTC</b>	
Buy Volume	353,723 MWh
Sell Volume	81,328 MWh

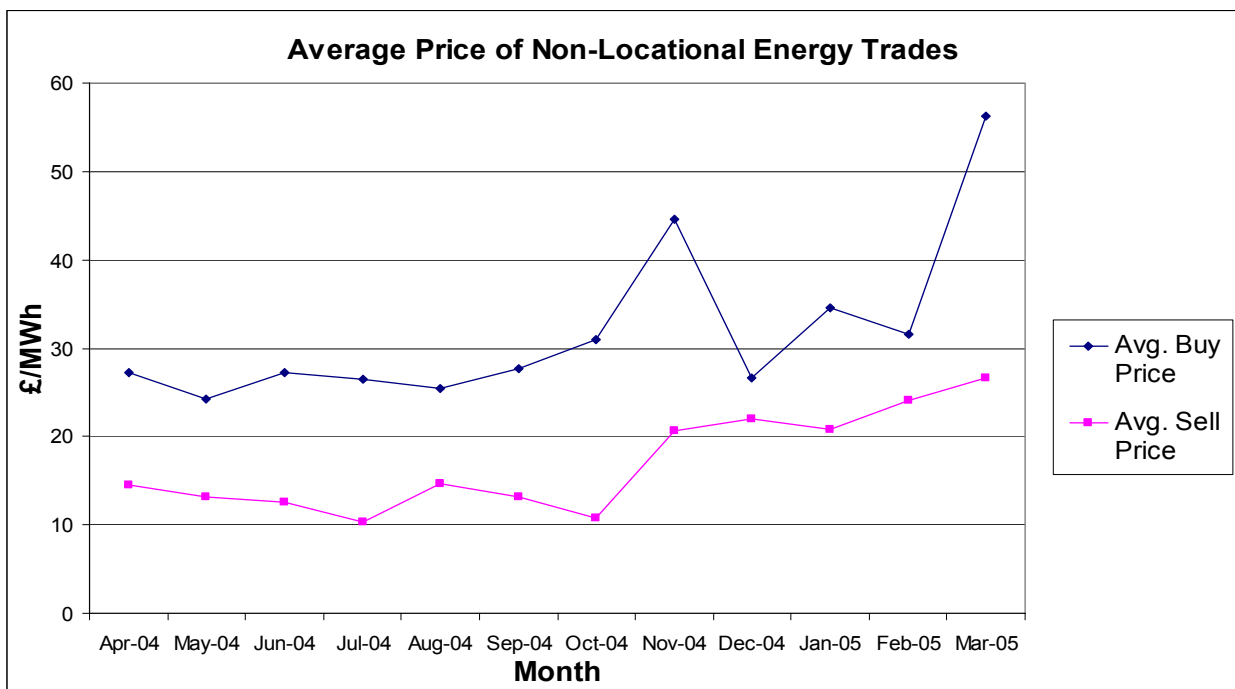
} Total Net Spend **£11.1m**

## Report on Balancing Services Contracts 04/05

The following chart shows the monthly profile of our trading activities, both for non-locational energy trades and BMU-Specific trades;



The following chart shows the monthly profile of our trading activities, combined for buy and sell non-locational energy trades;



Further details are available by clicking the [Energy Related Products](#) link.

### 3.10 Pre-Gate BMU Transactions (PGBT's)

Information on PGBT activity is given in the table below.

PGBT Transactions Sourced and Agreed

PGBT	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Sourced	0	3	3	4	0	2	4	15	0	1	6	1
Agreed	0	2	1	1	0	1	1	5	0	0	2	1

Price £/MWh	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Avg Buy	0	95	49	48.75	0	440	480	281	0	0	170	145
Avg Sell	0	0	0	0	0	0	0	0	0	0	0	0

Volume MWh	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Buy	0	2134	1347	724	0	522	522	4093	0	0	1954	2609
Sell	0	0	0	0	0	0	0	0	0	0	0	0

Total	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Cost £m	0.0	0.203	0.06	0.395	0.0	0.2	0.25	0.913	0.0	0.0	0.323	0.378

The total spend on PGBT's during 2004-05 was **£2.7m**.

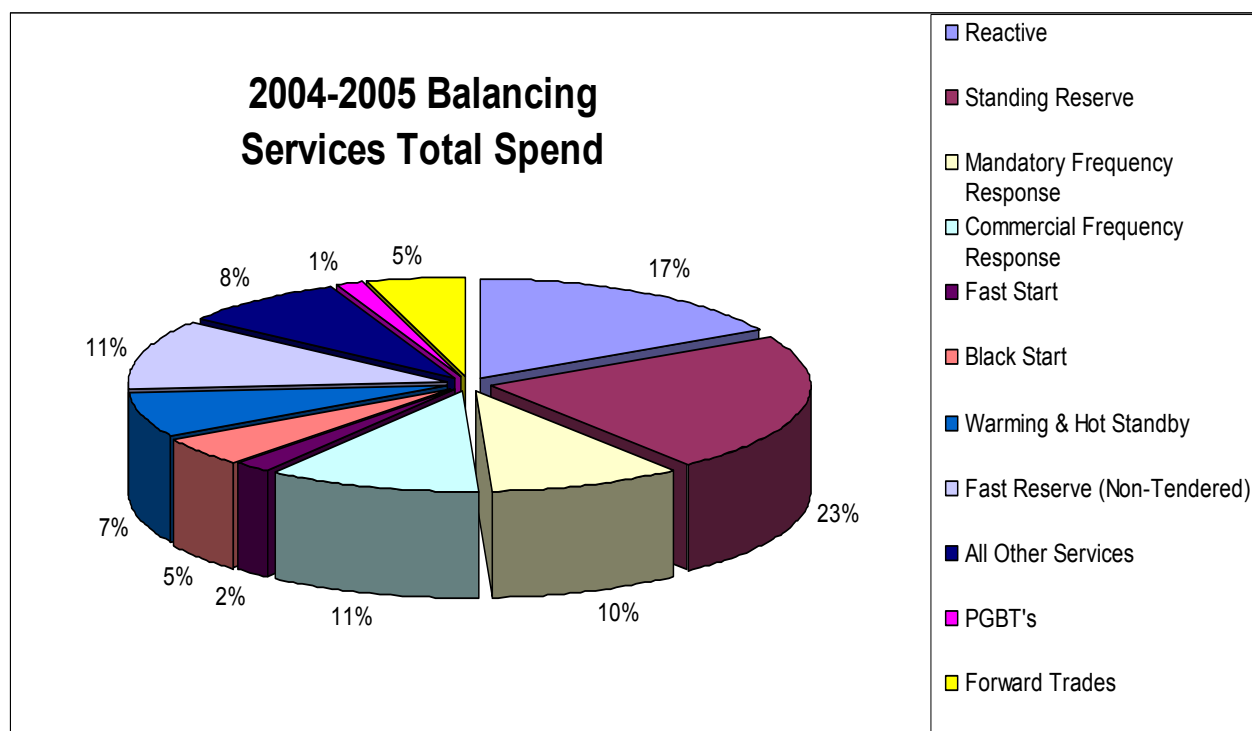
Details on real time PGBT transactions can be found on the BMRS (system warning page) and post event, on the [National Grid information website](#).

Further information is available through the link on [PGBT offers](#).

#### 4. Summary

This report has provided information on the Balancing Services procured (or acquired) during the relevant period.

As a summary of financial activity, the following breakdown of balancing service costs is provided by category, for this reporting period.



\*Percentages rounded to whole percents

This is based on a total net balancing services contract cost of **£219m** for the reporting period.

## **5. Further information**

For further information on the types of Balancing Services that National Grid intends to procure, please refer to the prevailing **Procurement Guidelines**.

Any comments or suggestions as to the scope and content of future reports should be forwarded directly to the [Balancingservices@ngtuk.com](mailto:Balancingservices@ngtuk.com).

### **Electricity Balancing Development**

## 6. Annual Information Summary Page

Balancing Service	Info Provision	Value
Reactive Power Market	Utilisation Volume (MA)	14,236,403 Mvarh
	Utilisation Volume (DefaultPM)	10,661,509 Mvarh
	Total Spend (MA)	£19.1m
	Total Spend (Default PM)	£17.6m
Standing Reserve	<u>Average availability payments:</u>	
	Non-Working Days	£4.12/MW/h
	Working Days	£4.12/MW/h
	Total Spend on SR & SSR	£49.4m
Supplemental Standing Reserve	<u>Average availability payments:</u>	
	Working Days	£16.31/MW/h
	Total Volume	5,709 MWh
Mandatory Frequency Response	<u>Holding Volumes &amp; Prices:</u>	Pri / Sec / High
	Average Volume held MW	6324 4278 10,472
	Average price £/MW/h	£31.53 £31.65 £7.08
	Total Holding Spend	£24.2m
	Total Response Energy Payment Spend	(£3.3)m
Commercial Frequency Response	No. Of Contracts	6
	Total Spend	£23.8m
Fast Start	Average Capability Rate	£10.76/h
	Total Spend	£4,1m
Black Start	Total Spend	£9.9m
	Number of stations	18
Warming	Total Cost of Warming & Hot Standby	£16.1m
	MWh Utilised during period (warming)	680,193MWh
Fast Reserve Non-Tendered	Total Spend on Availability	£24.6m
SO to SO	Volume Imported	123 GWh
	Volume Exported	245 GWh
All Other Services	Total Spend	£19.7m
Forward Trading	Monthly traded gross volume	991,247 MW
	Net cost of forward trading	£11.1m
	<b>OTC – Power Exchange &amp; Energy</b>	
	Buy Volume	203,832 MWh
	Sell Volume	352,363 MWh
	<b>OTC – BMU Specific</b>	
Buy Volume	353,723MWh	
Sell Volume	81, 328 MWh	
PGBT's	<u>No. of PGBT's entered into:</u>	
	Sourced	39
	Agreed	14
	<u>Average PGBT Prices £/MWh:</u>	
	Buy	£173/MWh
	Sell	£0MWh
	<u>Volume MWh:</u>	
Buy	13,905 MWh	
Sell	0 MWh	
	Total Cost of PGBT's	£2.7m
Summary	Total net balancing services contract cost	£219