

Procurement Guidelines Report

1 April 2006 to 31 March 2007

As required by Standard Condition C16
of National Grid's Electricity Transmission Licence

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Procurement Guidelines Report for The National Grid Company 1st April 2006 to 31st March 2007

1. Introduction

National Grid procures Balancing Services subject to the framework laid down in 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 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.

1.1 Purpose of Procurement Guidelines Report

The purpose of the Report is to provide information in respect of the relevant¹ Balancing Services that National Grid has procured in the defined reporting period.

1.2 Form of Procurement Guidelines Report

The proposed form of the Report was approved by the Authority in February 2007. In an effort to provide more information to the market this Report now also contains a number of cost comparisons with the previous year for specific services. The report follows a similar form to the 2005/2006 Informal Procurement Guidelines Report. The opportunity still remains for Participants to submit comments and suggestions to the Authority on the scope and content of any subsequent Procurement Guidelines Reports.

1.3 Reporting Period

In accordance with Condition C16 of the Transmission Licence, the Report will be produced within one month after the publication date of the revised Procurement Guidelines Statement. Version 7.0 of the Procurement

¹ Other than balancing services acquired by the 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. (refer to section 1.6)

Guidelines became effective on 1st April 2007, therefore the period covered by this Report is 1st April 2006 – 31st March 2007.

The information utilised in this report is the best available at the time of publication and may be subject to minor changes as a result of final reconciliation.

1.4 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, Warming and Hot Standby/ BM Start-Up
- System to System Services
- Inter-trips
- Ancillary Contracts to manage System issues
- Maximum Generation Service
- All Other Services
- Energy Related Products (including PGBT's)

It is important to note that Balancing Services are procured from both Balancing Mechanism and Non Balancing Mechanism Parties.

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

1.5 Structure of Report

This report presents the Balancing Services under four main titles –

- Services Procured via Market Arrangements
- Services Procured via Non-Tendered Bilateral Contracts
- Other Energy Related Products
- A summary section providing the high level information for all services for the financial year 2006-07.

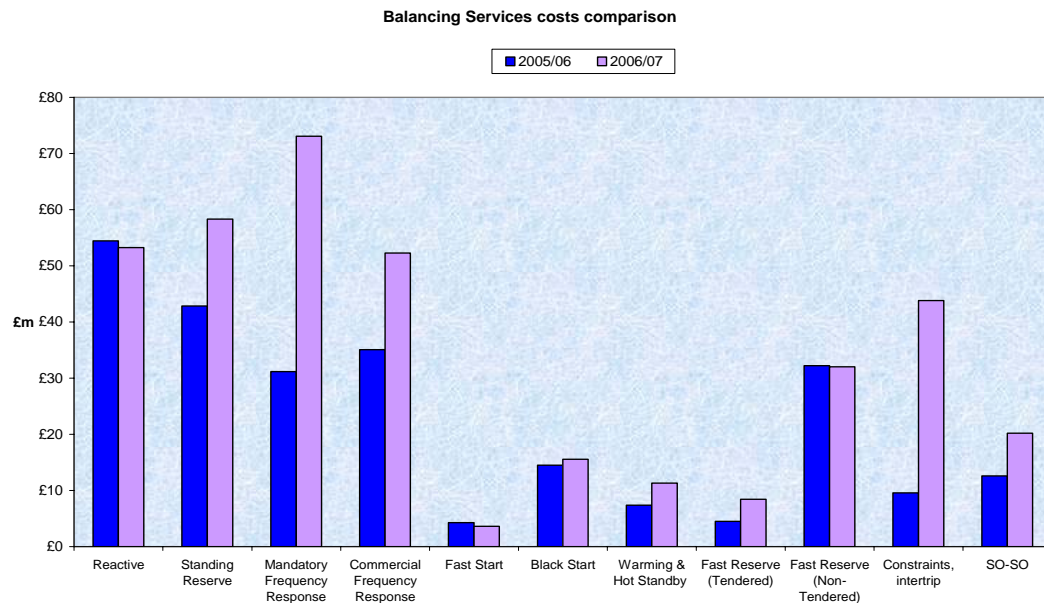
1.6 Services not included in the report

The scope of the Procurement Guidelines and, consequentially, this report do not include 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 Bid and Offer information is

available by clicking the following link to the NETA web site - [Balancing Mechanism Reporting System \(BMRS\)](#).

1.7 Comparison with the previous year

Total costs of balancing services (ancillary services excluding Balancing Mechanism) in 2006/7 rose from £249m in 2005/6 to £372m. This increase of nearly 50% on the previous year is mainly attributable to increases in spending on 4 main areas, namely Frequency Response (up £59m), Constraints (up £34m), Standing Reserve (up £15m) and SO-SO (up £8m). The reasons for these increases in these 4 main areas are analysed in more detail in the relevant section of this Report.



2. Services Procured Via Market Arrangements

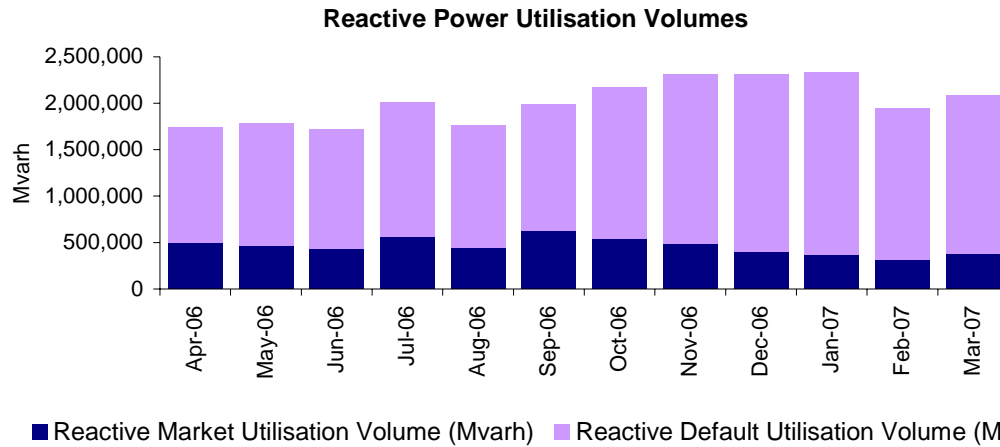
2.1 Reactive Power

National Grid manages voltage on the transmission system within statutory limits to ensure quality of supply. In doing this we ensure that reactive power resources are provided on a localised basis to meet the constantly varying needs of the system, and that there is sufficient reactive power reserve available to meet contingencies.

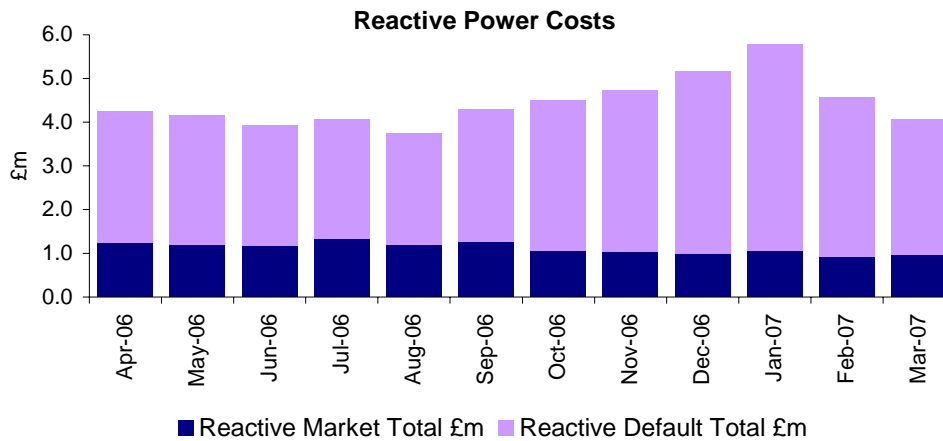
Market Arrangements for Reactive Power

All contracts awarded via tender round 18 (TR18) commenced on the 1st October 2006. Further information regarding the nature of these contracts can be found on the National Grid website.

Utilisation of Reactive Power under market and Default arrangements for the relevant month is detailed in the chart below.



Utilisation costs of Reactive Power under market and Default arrangements over the relevant period are detailed in the chart below.



Further information is contained on the National Grid Industry information web site.

Default Arrangements for Reactive Power

For further information regarding the default payment arrangements please view the Introduction to Reactive document which can be found on the National Grid Website.

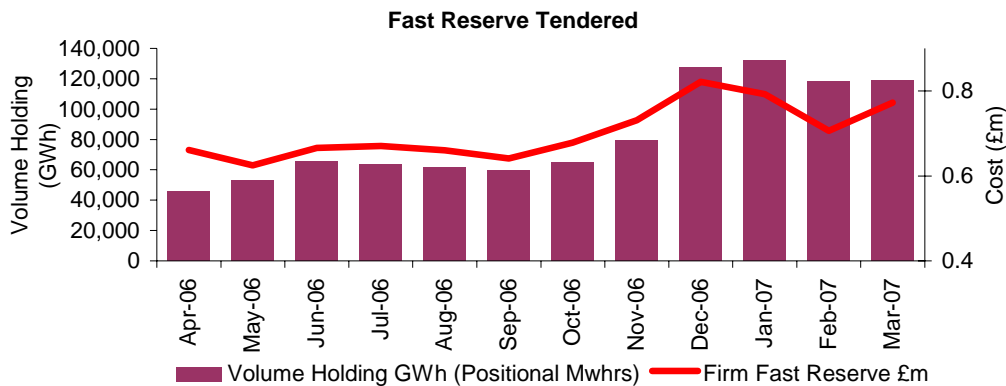
2.2 Fast Reserve (Tendered)

Further information explaining the service and assessment criteria of tenders for this Balancing Service can be found on the National Grid Website under Electricity/Balancing/tender reports/fast reserve.

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

	Eligible companies	Eligible units	Units tendered in previous months	Units tendered this month	Units accepted from previous months	Units accepted from this month	Total MW tendered	Total MW contracted	Max GWh tendered	Max GWh contracted	Volume Holding GWh (Positional Mwhrs)
Apr-06	6	18	3	0	3	0	278	278	111.81	111.81	45,855.00
May-06	6	18	2	0	2	0	180	180	87.12	87.12	53,460.00
Jun-06	6	18	2	0	2	0	180	180	84.96	84.96	65,880.00
Jul-06	6	18	2	0	2	0	180	180	87.48	87.48	63,945.00
Aug-06	6	18	2	0	2	0	180	180	87.48	87.48	61,425.00
Sep-06	6	18	2	0	2	0	180	180	84.96	84.96	59,760.00
Oct-06	6	18	2	2	2	0	587	180	194.18	87.48	65,025.00
Nov-06	6	18	2	2	2	0	597	180	191.07	84.96	79,740.00
Dec-06	6	18	2	1	2	1	638	355	208.48	138.30	127,723.00
Jan-07	6	18	3	0	3	0	688	405	223.92	153.74	131,963.00
Feb-07	6	18	3	0	3	0	689	406	202.71	139.32	118,436.00
Mar-07	6	18	3	0	3	0	687	404	223.99	153.81	118,725.00

The following graph shows the variation in Fast Reserve capacity contracting by month.



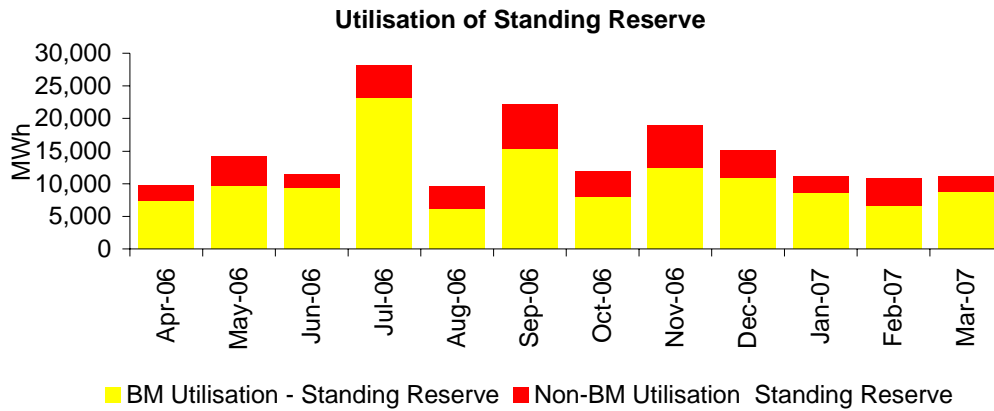
For more information on Fast Reserve please refer to the National Grid Website

Fast Reserve Contracts placed through non-tendered bilateral agreements are detailed in section 3.6 of this report.

2.3 Standing Reserve and Supplemental Standing Reserve

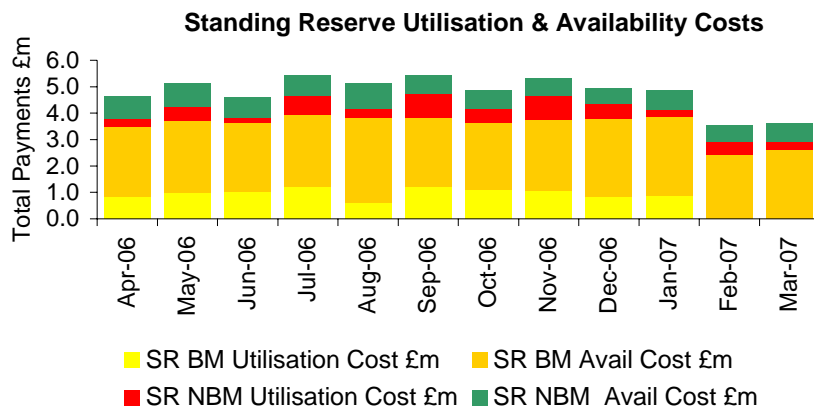
Standing Reserve

The following chart shows the utilisation of Standing Reserve.



The average availability payment for Standing Reserve during this period was **£5.48/MW/h** for non-working days, and **£5.47/MW/h** for working days.

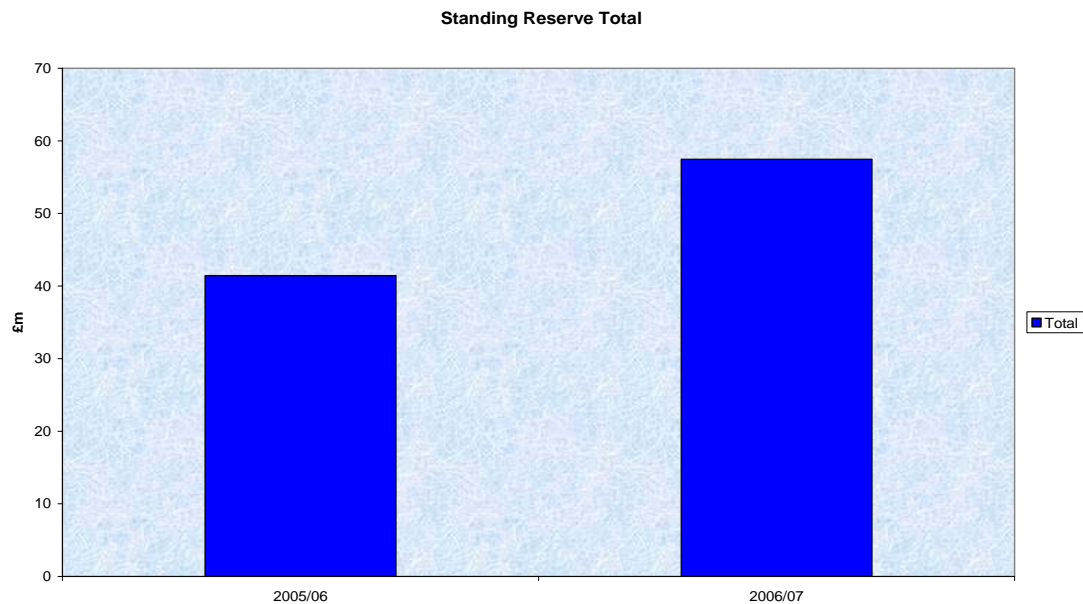
The following chart shows the cost of availability and utilisation of Standing Reserve.



For further information on the nature of this service please refer to the Standing Reserve Information on the National Grid Website.

Comparison with previous year

Standing Reserve costs have risen from £43m in 2005/6 to £58m in 2006/7. The main reasons for this are that National Grid contracted for higher volumes of standing reserve in year 06/07 (up around 11%), which together with increases in availability prices (over 9%) resulted in an increase of around £15m when compared with the previous year's spending levels. The decision to procure reserve forward is partially based on a forecast of the on-the-day reserve prices and a forecast of available capacity. An assessment of forecasted reserve availability and cost in 2006/07 resulted in National Grid determining that it was economic and efficient to procure an additional 11% from Standing Reserve tenders.



Supplemental Standing Reserve

National Grid initiated a tender process for SSR in order to enable the economic procurement of an increased level of firm ex-ante reserve above that previously procured via the annual Standing Reserve tender for 2006/07. SSR contracts were struck for the period 2nd October 06 – 27th March 2007 for working-day windows only.

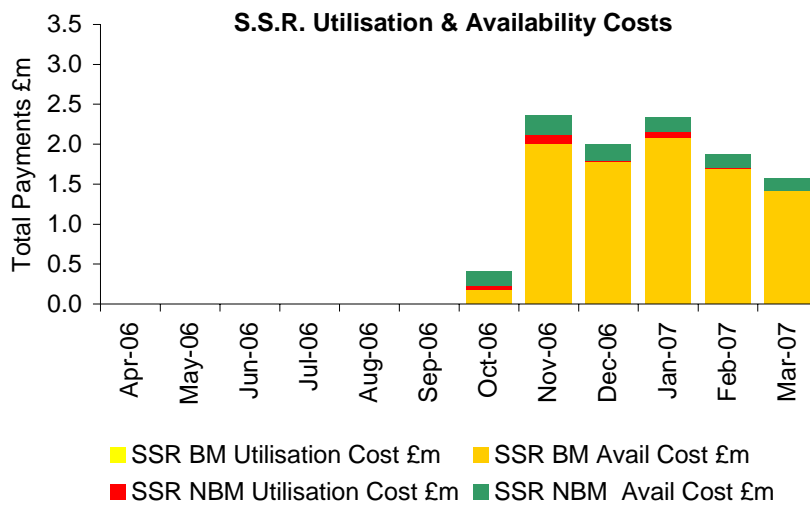
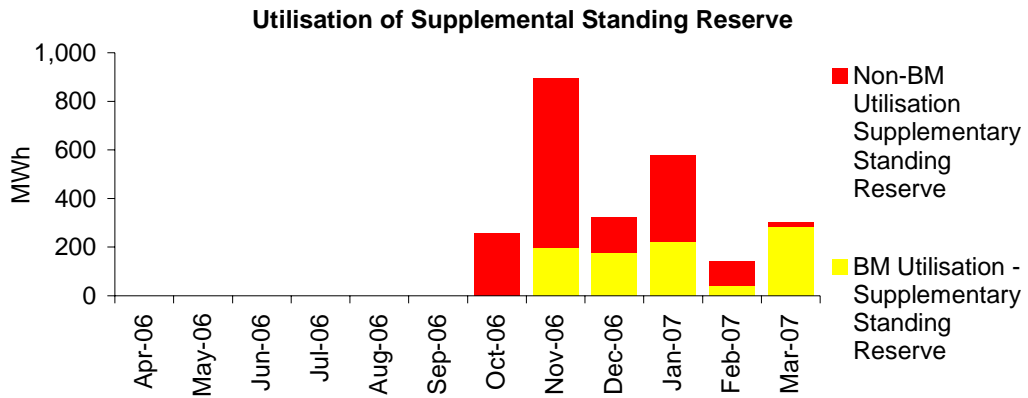
The volume tendered was as follows:

- 934MW from BM Participants
- 496MW from Non-BM Participants

The volume which was assessed as economic and which proceeded to contract was

- 334MW from BM Participants
- 408MW from Non-BM Participants

Hence an additional 742MW was procured through SSR for winter 06/07.



2.4 Tendered Frequency Response.

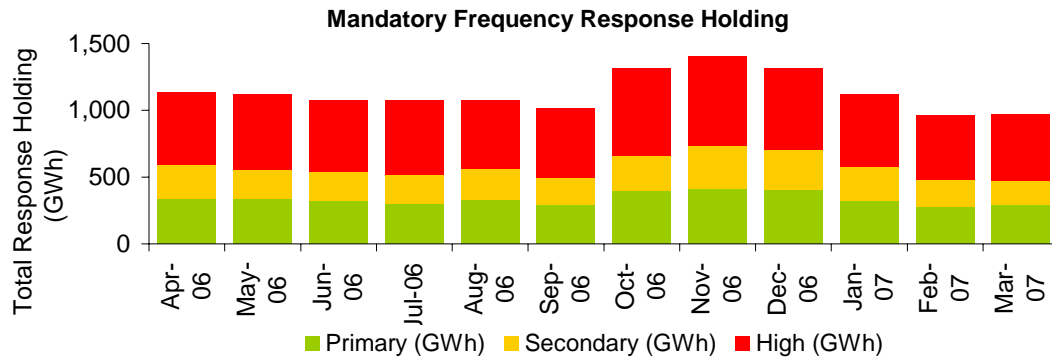
Please see Section 3.2

3 Services Procured via Non-Tendered Bilateral Contracts

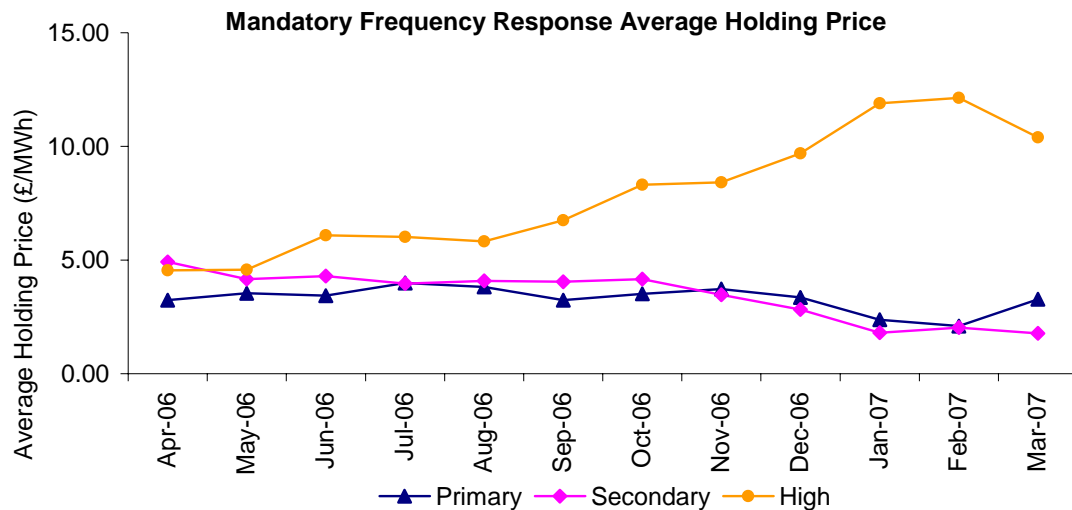
3.1 Mandatory Frequency Response

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 Condition 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). Details on frequency response holding are given below. More information on this can be found on the National Grid Website.



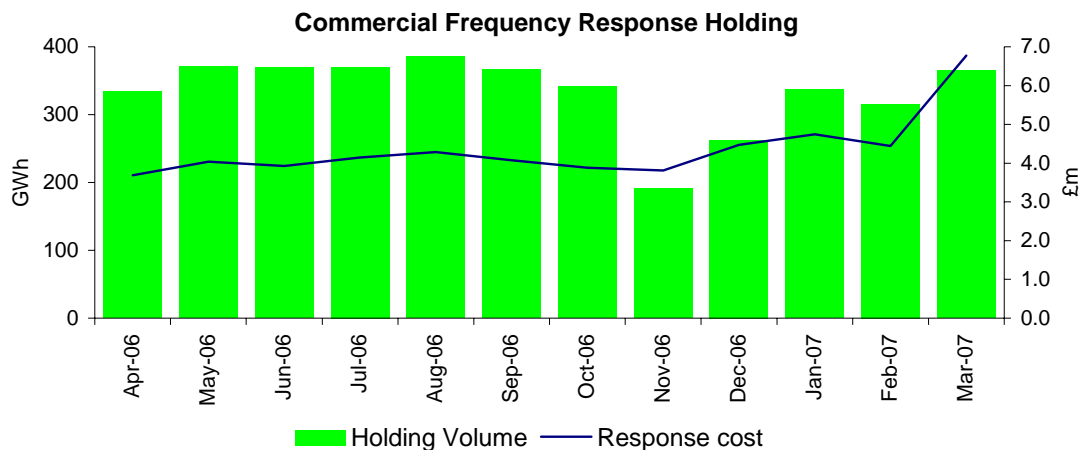
The chart below shows the Average Holding cost of Mandatory Frequency Response.



The methodology for calculating these payments is given in CUSC section [4.1.3.9 & 4.1.3.9A](#). The CUSC can be found on the National Grid website.

3.2 Commercial Frequency Response

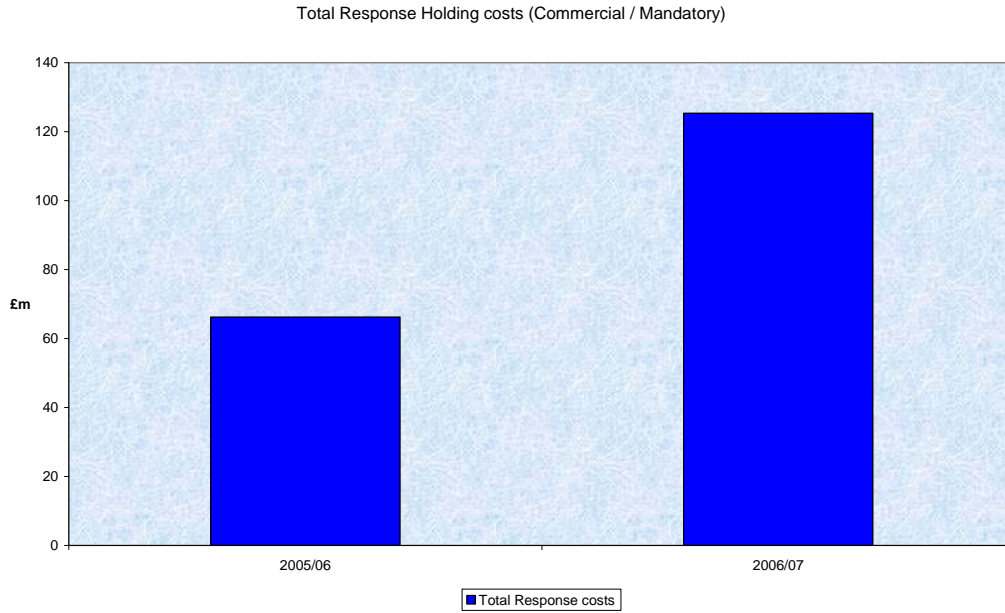
Commercial Frequency Response is a collection of services that can be provided by demand side participants and generation plant. The technical characteristics of these services are different to those required under mandatory service arrangements, and range from enhanced mandatory dynamic services through to non-dynamic services effected via LF relays. Part of the contract portfolio includes services provided by demand side participants through Frequency Control Demand Management (FCDM) and through the firm frequency response (FFR) tender rounds.



Further information on Commercial Frequency is found in the appropriate place on the National Grid Website, or specifically on firm frequency response through the tenders and reports section of National Grid's Balancing Services website.

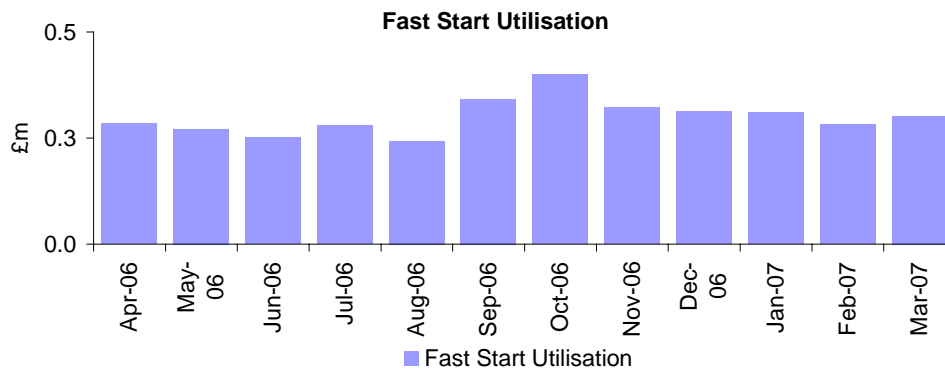
Comparison with the previous year

Frequency Response costs have increased from £65m in 2005/6 to £124m in 2006/7. These comprise both mandatory and commercial response costs. From 1st October 2005, CAP047 was introduced which removed the administered 'cost-reflective' basis for setting Response Holding Payment prices. Following this change, generators were able to price freely this aspect of their Mandatory Frequency Response service. Since the introduction of this change, prices have risen significantly. For example between 2005/6 and 2006/7, average holding prices for high frequency response have tripled. The cost increases have resulted in an increase in the total cost of mandatory response holding from £31m in 2005/6 to £73m in 2006/7. Commercial response holding costs have also risen from £34m to £52m. Certain Commercial Frequency Response services available to National Grid in 2005/06 were not available in 2006/07. As a consequence this shortfall was made up through the procurement of additional Mandatory Frequency Response services. The increase in costs experienced in these services between 2005/06 and 2006/07 therefore contributed significantly to the increase in total response costs.



3.3 Fast Start

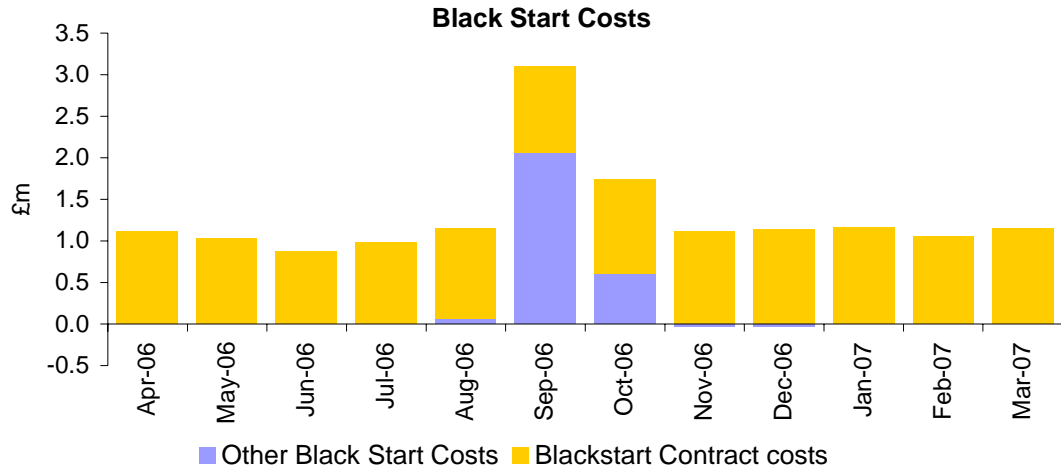
Fast Start is the ability of Open Cycle Gas Turbine (OCGT) plant to start rapidly from a standstill condition and to deliver its rated power output automatically within a defined time period. Fast Start details below:



Further information on Fast Start can be found on the National Grid Website.

3.4 Black Start

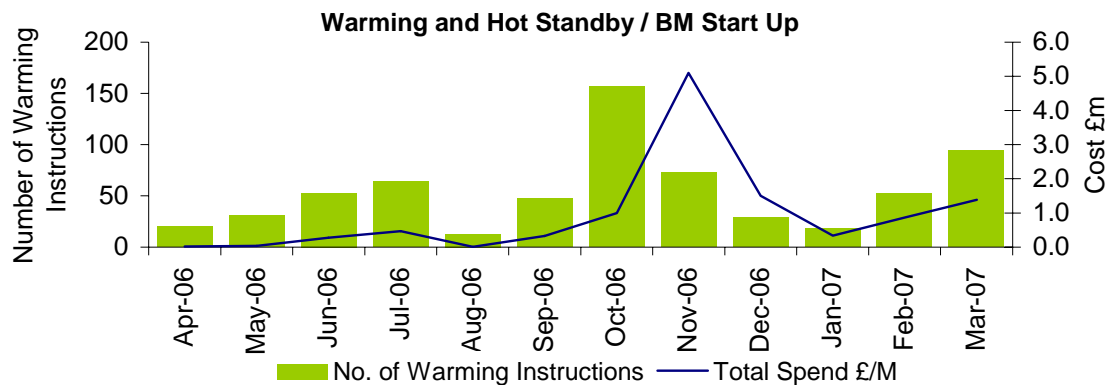
During the reporting month there were up to **23** stations with Black Start agreements in place. No new agreements were entered into during the period.



Further information on Black Start can be found on the National Grid Website.

3.5 Warming & Hot Standby / BM Start up

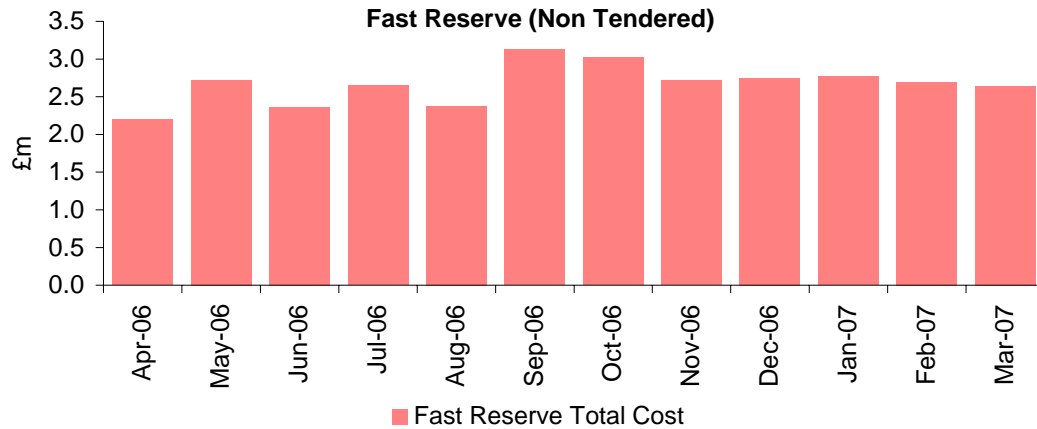
The chart below contains information relating to the procurement of Warming, Hot Standby and, since November 2006, BM Start Up Balancing Services;



Further details are available via the National Grid Website.

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

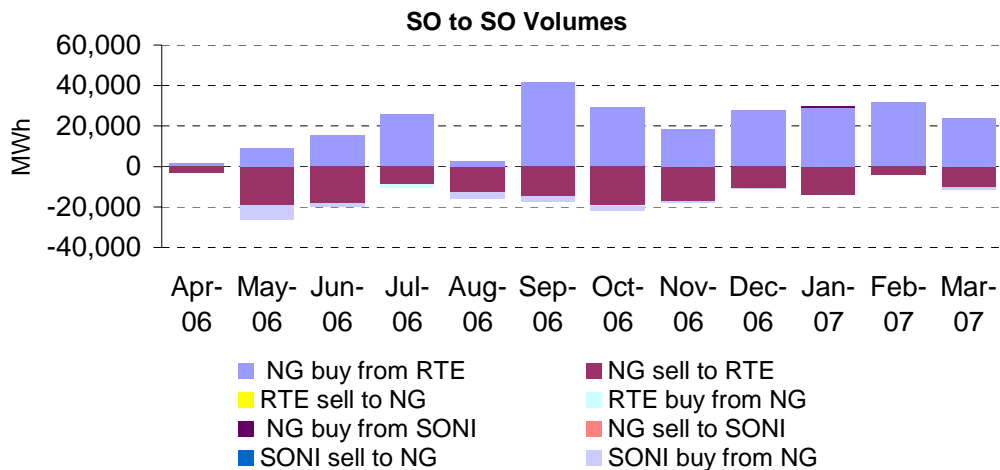
Non-Tendered Fast Reserve is a service that is contracted on a bilateral basis with service providers. The nature of the service is similar to the Firm Fast Reserve service although the payment and utilisation mechanisms differ for each service.

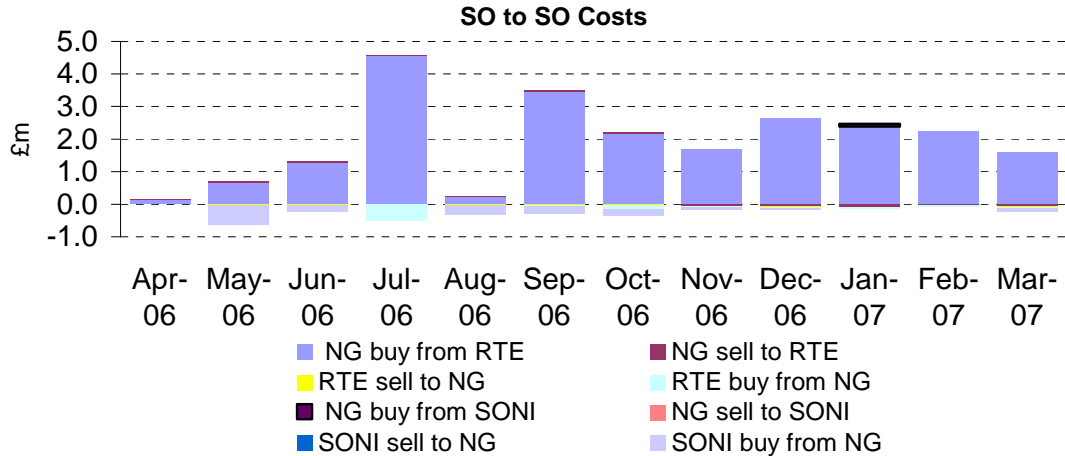


3.7 System to System Services

System to System services are provided mutually with other Transmission System Operators connected to the GB system via interconnectors. 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, or provide Emergency Assistance if required.

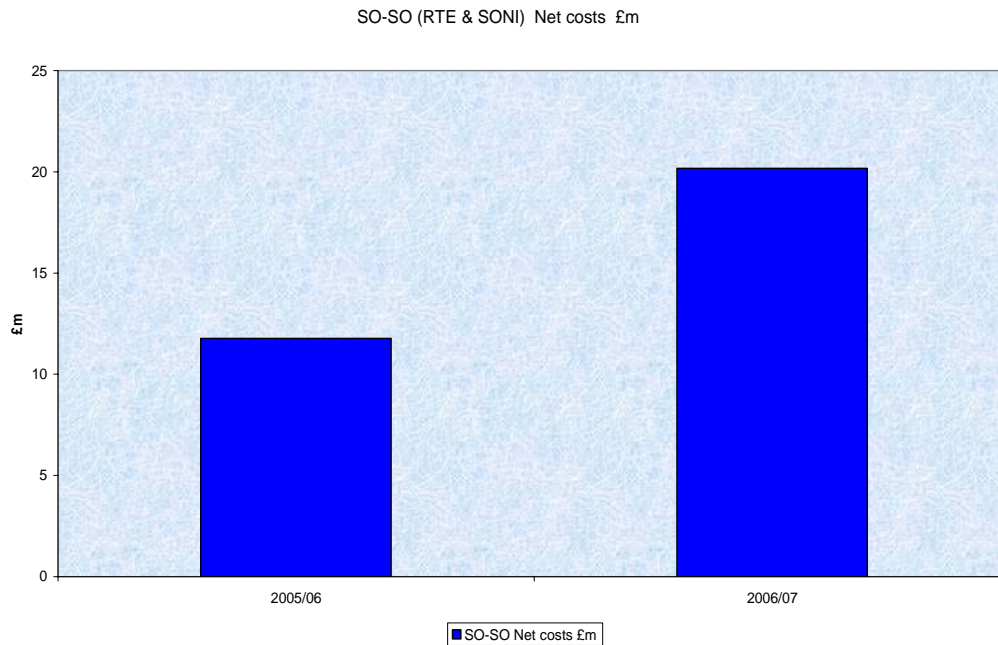
The graph below shows the total net volume imported and exported between GB, France and Ireland.





Comparison with previous year

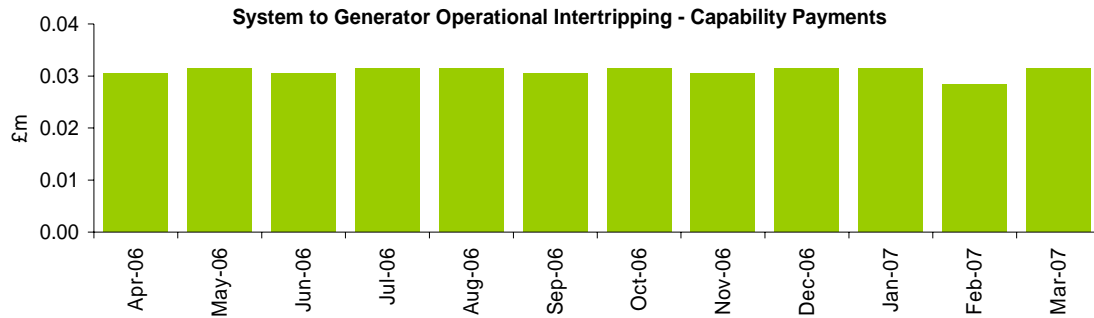
SO-SO costs have increased from £13m to £21m. This has largely been due to competitive prices resulting in SO-SO trades being the economic and efficient action for the system operator to take in comparison to other balancing services. As part of this, SO-SO trades have been used to manage the rate of change of the contracted profile on the link from one period to another.



3.8 System to Generator Operational Inter-tripping Schemes

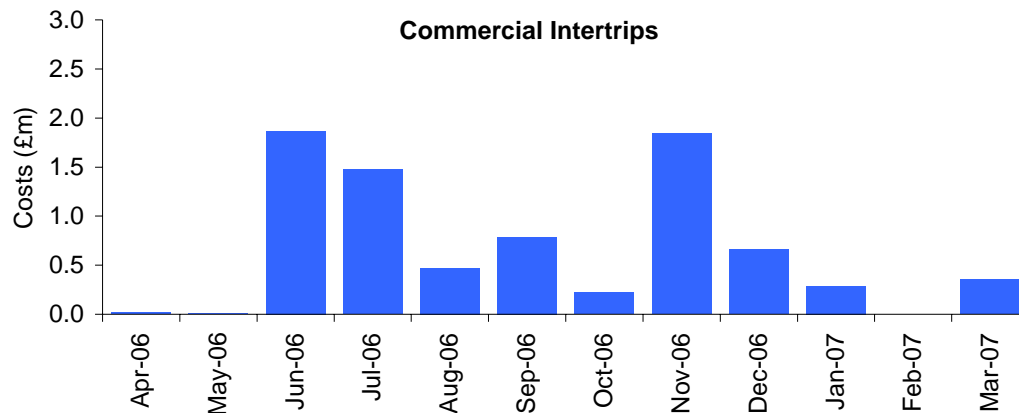
As a consequence of their connection conditions, certain generators are obligated to have in place operational intertrip schemes.

These schemes fall under a number of different category types as defined under section 4.2.A of the CUSC which describes the compensation arrangements relating for these schemes. A proportion of these categories entitle the counter party to payments for the arming (capability fee) and utilisation of this service.



3.9 Commercial Intertrip Service

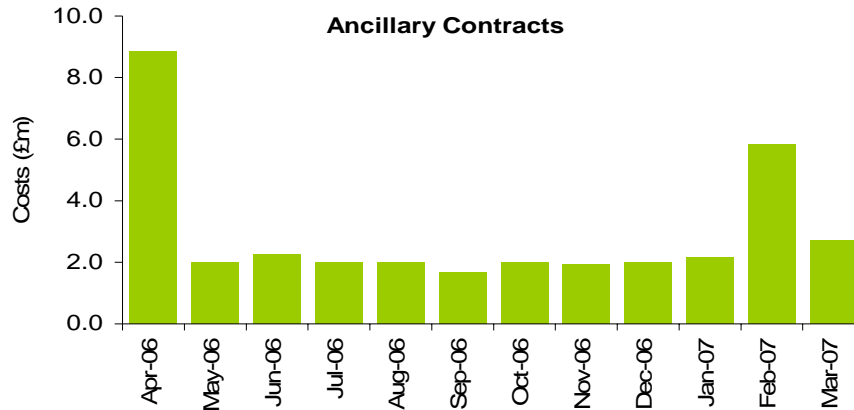
In addition to System to Generator Operational Inter-tripping Schemes, National Grid will seek to, where it proves economic and efficient to do so, enter into commercial Intertrip schemes to manage system issues.



3.10 Ancillary Contracts to manage System Issues

On occasion, National Grid enters into bespoke Ancillary contracts to manage certain transmission system issues. The number and nature of these contracts is necessarily confidential. The costs reported here include any

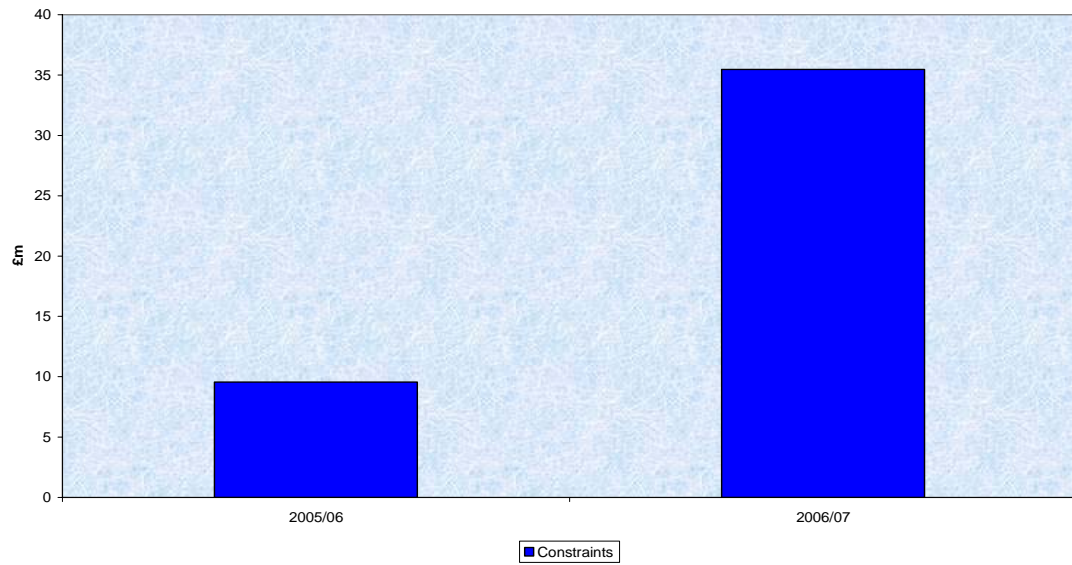
costs of 'Transmission Related Agreements', which are entered as a consequence of certain customer choices of connection conditions.



Comparison with previous year

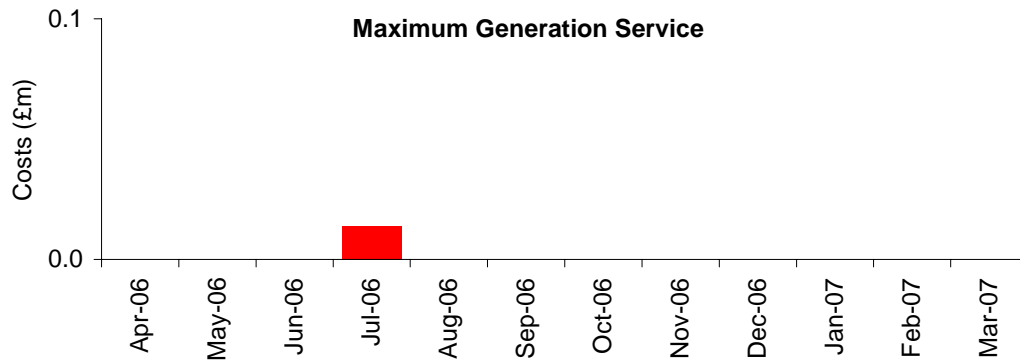
The costs of managing Transmission System constraints rose from 2005/6 to 2006/7. The cost of the ancillary service contracts associated with managing these constraints rose from £10m in 2005/6 to £44m in 2006/7. Constraint contracts with Scottish generation have accounted for the majority of these costs with the remainder of costs being incurred to manage issues on the England and Wales system.

The months of April 2006 and February 2007 saw higher than average expenditure due to the occurrence of unplanned fault outages. Both of these events required National Grid to take additional actions to resecure the system. Such unplanned outages are an infrequent occurrence but can have a material impact on costs.



3.11 Maximum Generation Service

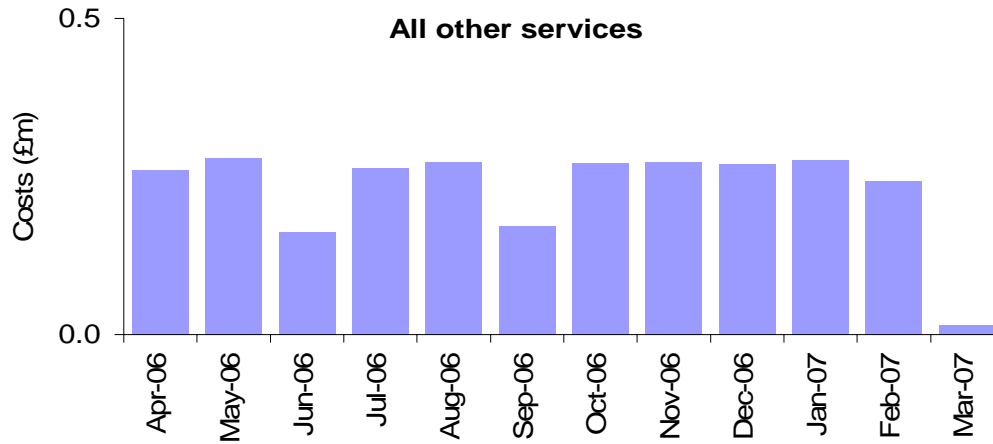
The Maximum Generation Service (MGS) is required to provide additional short term generation output during periods of system stress for system balancing. This service allows access to unused capacity outside of the Generator’s normal operating range. MGS will be initiated by the issuing of an Emergency Instruction in accordance with the Grid Code BC2.9.2. Details of the service are contained in the CUSC section 4.2



Further details on the utilisation and availability of the service are available on the National Grid Website.

3.12 All Other Services

These include bespoke services to manage specific system conditions and costs relating to fees and liabilities.



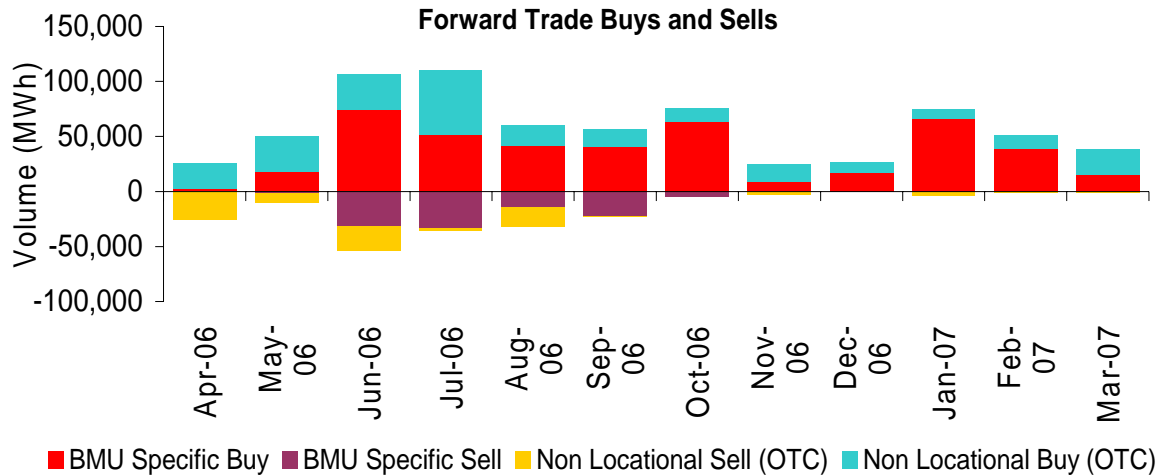
4 Energy Related Products

4.1 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.

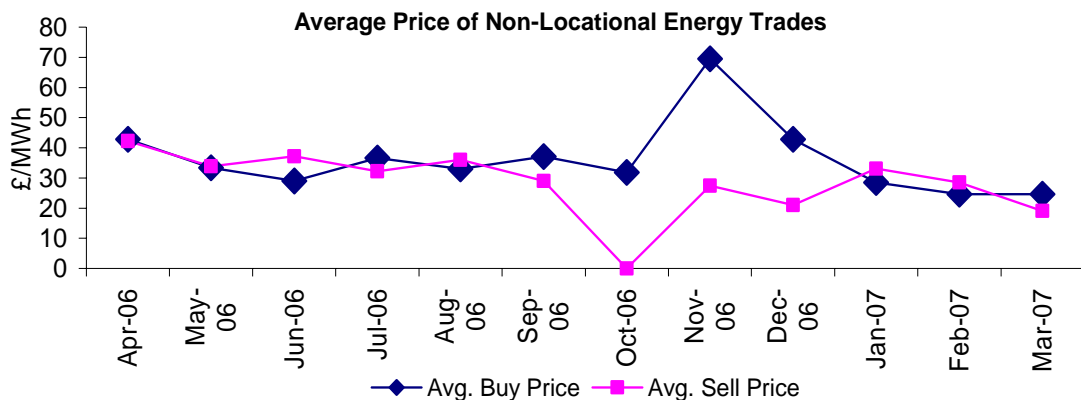
Non Locational		} Total Net Spend £29.8 m
Buy Volume	22,992 MWh	
Sell Volume	1014 MWh	
BMU Specific		}
Buy Volume	11,344 MWh	
Sell Volume	0 MWh	

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



The following graph shows the monthly profile of our non-locational energy trading activities. It comprises all the trades undertaken by National Grid through Power Exchanges and through the use of brokerage houses for that purpose;

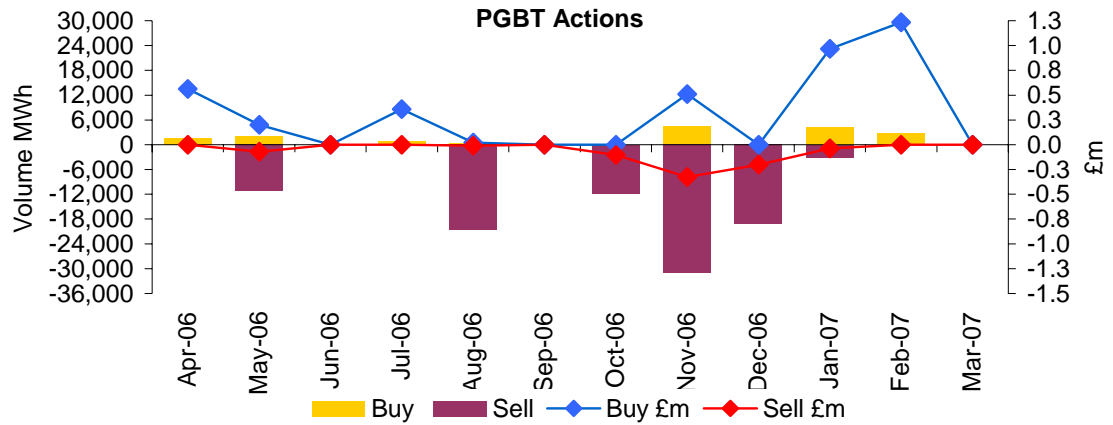
Please note there were no sell trades for October 06.



Further details are available via the National Grid Website.

4.2 Pre-Gate BMU Transactions (PGBT)

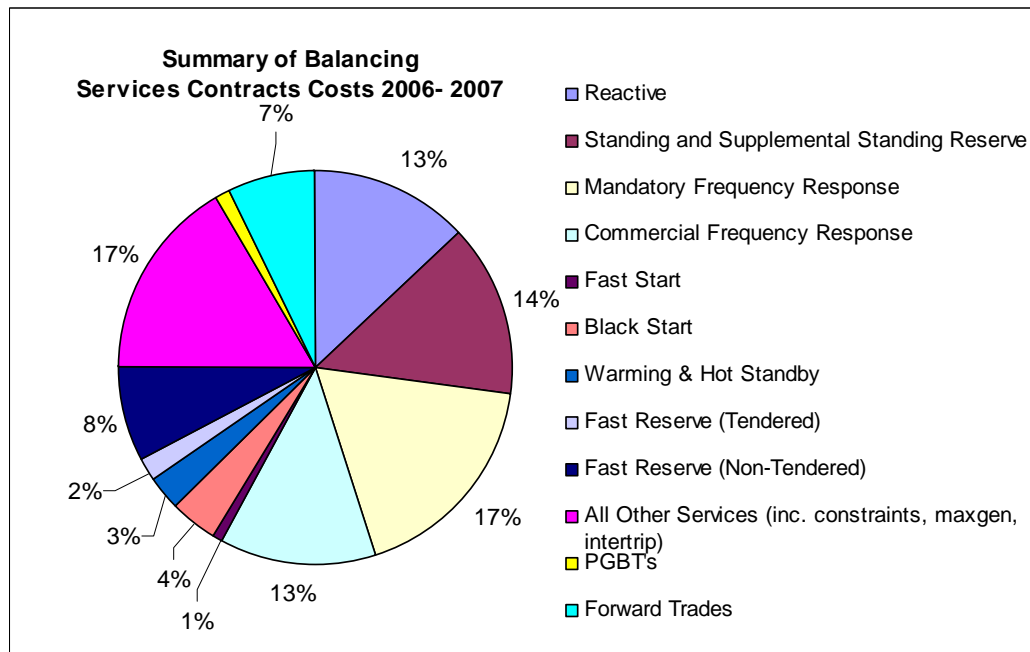
Information on PGBT activity Transactions Sourced and Agreed is given in the chart below.



Details on real time PGBT transactions can be found on the BMRS (system warning page) and post event, on the National Grid Website.

5 Summary

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



6 Further information

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

Information on bid and offer acceptances in the Balancing Mechanism is contained within the **Balancing Principles Statement Report**. These documents, along with the **Procurement Guidelines Report**, are published in accordance with Standard Condition C16 of the Transmission Licence and are available on the National Grid Industry Information website.

Electricity Balancing Development

Email: Balancingservices@uk.ngrid.com

7 Information Summary Page

Balancing Service	Info Provision	Value
Reactive Power Market	Utilisation Volume (MA)	5,530 Gvarh
	Utilisation Volume (DefaultPM)	18,659 Gvarh
	Total Spend (MA)	£13m
	Total Spend (Default PM)	£40m
Standing Reserve	<u>Annual Average availability payments:</u>	
	Non-Working Days	£5.55
	Working Days	£5.55
	Total Spend	£48m
	Total Volume	174567 MWh
Supplemental Standing Reserve	<u>Annual Average availability payments:</u>	
	Non-Working Days	£N/A/MWh
	Working Days	£6.02
	Total Spend	10m
	Total Volume	2503 MWh
Mandatory Frequency Response	Holding Volumes & Prices:	Primary / Sec / High
	Average Volume held MW	459 326 765
	Average price £/MWh	3.30 3.46 7.89
	Total Holding Spend	£73m
	Total Response Energy Payment Spend	(£3.00m)
Commercial Frequency Response	No. Of Contracts	5
	Total Spend	£52m
Fast Start	Total Spend	£4
Black Start	Total Spend	£16m
Warming / BM Start Up	Total Cost of Warming & Hot Standby /BM Start Up	£11m
	Number of instructions (warming)	651
Fast Reserve-Tendered	Total Spend on Availability & Utilisation	£8m
	Total Spend on Availability	£32m
SO to SO	Volume Imported	258 GWh
	Volume Exported	72 GWh
	Total Spend	£23m
System to Generator operational inter-trips	Capability Payments	£0.0m
	Utilisation Payments	£0.3m
Commercial Intertrip Service	Total Spend	£8m
Ancillary Constraint Contracts	Total Spend	£35m
Maximum Generation Service	Total Spend	£0.014m
All Other Services	Total Spend	£3m
Forward Trading	Traded gross volume	893,747 MWh
	Net cost of forward trading	£30m
	OTC - Power Exchange & Energy	
	Buy Volume	439,026 MWh
	Sell Volume	108,855 MWh
	OTC - BMU Specific	
	Buy Volume	260,553 MWh
Sell Volume	85,313 MWh	
PGBT	No. of PGBT entered into:	
	Sourced	74
	Agreed	43
	Average PGBT Prices £/MWh:	
	Buy	£218/MWh
	Sell	£6/MWh
	Volume MWh:	
	Buy	16,327 MWh
	Sell	96,786 MWh
Total Cost of PGBT	£3m	
Summary	Total	£410m