

Procurement Guidelines Report

1 April 2014 to
31 March 2015

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

Procurement Guidelines Report

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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 National Grid’s 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 Reporting Period

In accordance with Condition C16 of the Transmission Licence, the Report will be produced within one month after the date on which each revised Procurement Guidelines Statement is to be published.

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 Scope of the balancing services covered in this document can be found in section 1.3 and 1.5

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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, STOR and 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 PGBTs)
- BM Constraints

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

1.4 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
- Constraints

It is then followed by a summary section providing the high level information for all services for the financial year 2014-15.

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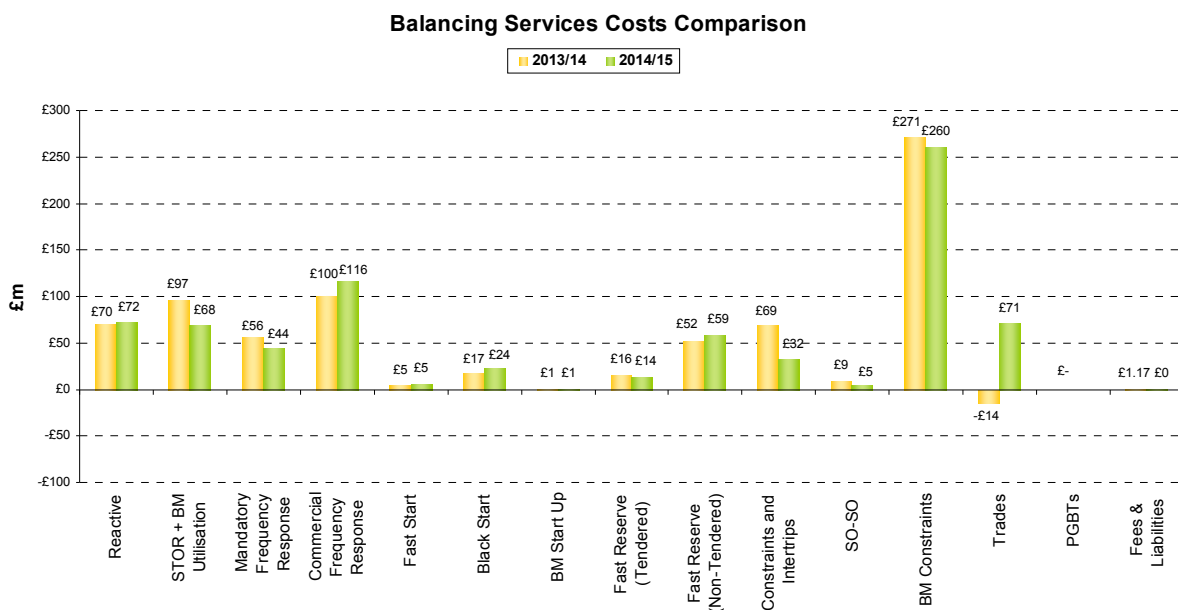
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1.5 Services not included in the report

The scope of the Procurement Guidelines does not include the acceptance of Bids and Offers in the Balancing Mechanism. However, Bids and Offers for Constraint management (see section 5) and BM STOR Utilisation (see section 2.7) have been included to provide an appreciation of the overall costs. Further information on Bid and Offer acceptances can be found in the Balancing Principles Statement Report.

1.6 Comparison with previous year

The total cost of Balancing Services has increased by £22m from £750m in 2013/14 to £772m in 2014/15. Constraint and intertrip costs saw the biggest reduction of £37m in 2014/15. STOR costs also reduced by £28m from £97m in 2013/14. Forward trades however, increased by £85m from -£14m in 2013/14. The reasons behind the changes discussed above are analysed in more detail in the relevant sections of this report.



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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 line with the National Electricity Transmission System Security and Quality of Supply Standards (NETS SQSS). 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.

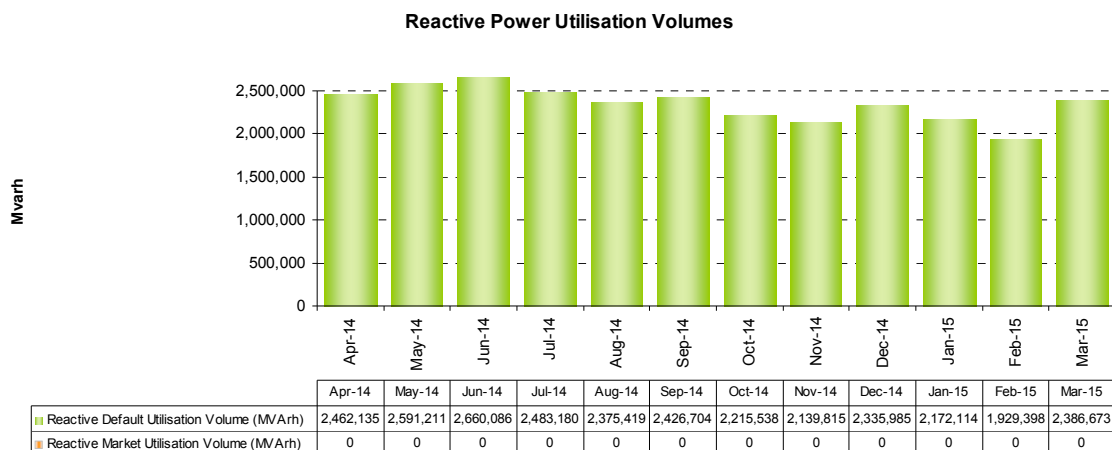
2.2 Market Arrangements for Reactive Power

There were two tender rounds (TR33, TR34) covering April 2014 to March 2015 period. No tenders were received for this period. Further information regarding each of these tender rounds can be found at the following website address:

<http://www2.nationalgrid.com/UK/Services/Balancing-services/Reactive-power-services/Reactive-Market-Tender/>

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

There was no reactive power utilisation volumes under market arrangements as a result of no tenders being received for the period.

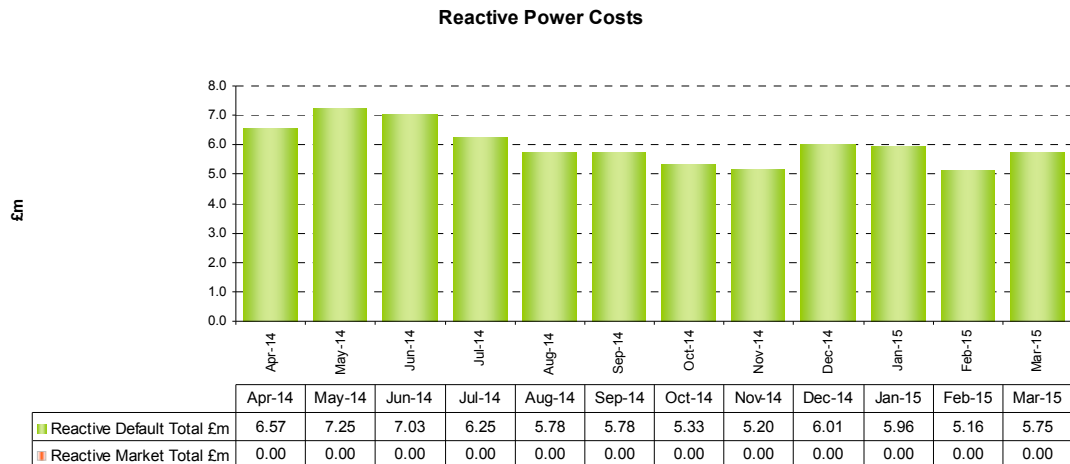


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Utilisation costs of Reactive Power under Market and Default arrangements over the relevant period are detailed in the chart below.

There were no costs associated with reactive power from market arrangements due to no tenders being received for the period.



2.3 Default Arrangements for Reactive Power

Further information regarding the default payment arrangements can be found at the following National Grid Website.

<http://www2.nationalgrid.com/uk/services/balancing-services/reactive-power-services/>

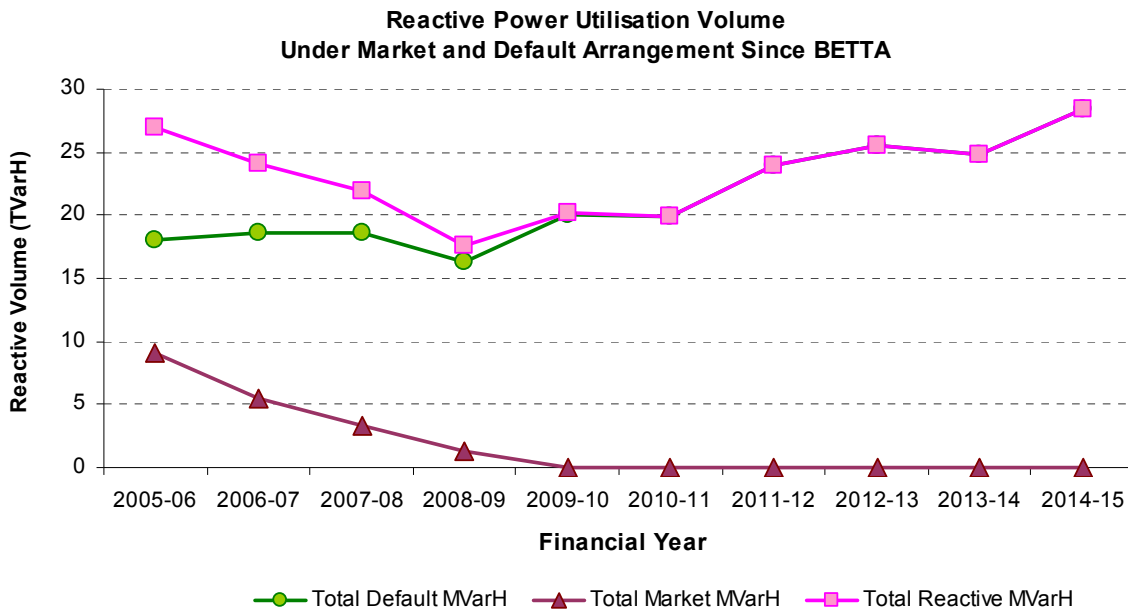
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2.4 Reactive Power Comparison with previous year

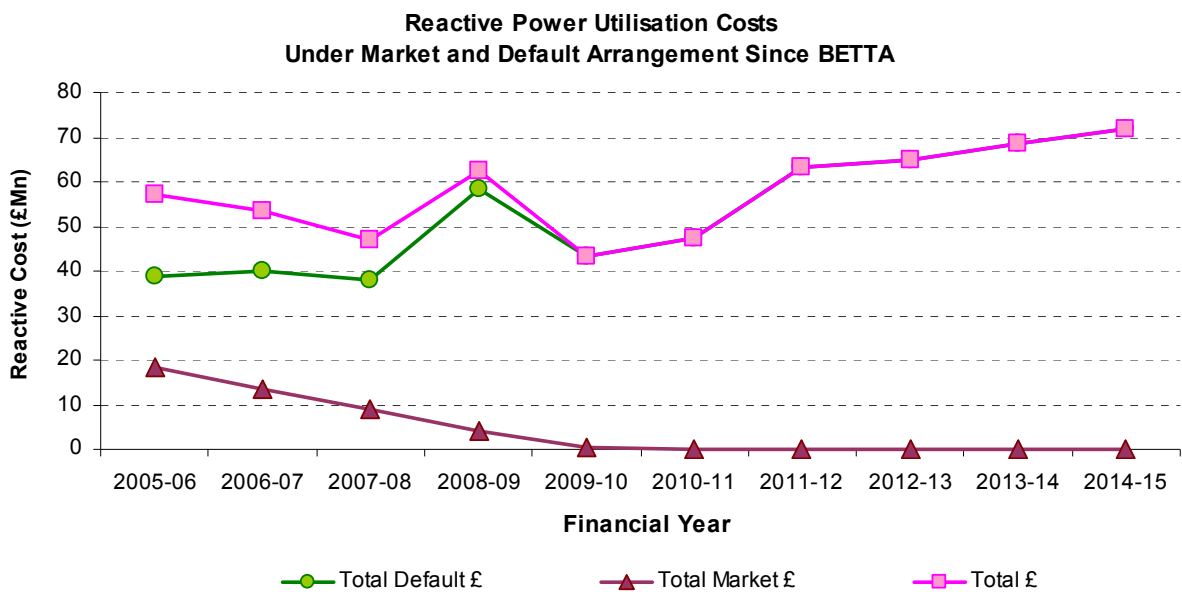
Total Reactive costs have increased by 3% from ~£70m in 2013/14 to ~£72m in 2014/15, while the utilisation increased by 12% from ~25TVarH in 2013/14 to ~28TVarH in 2014/15. The average monthly Reactive Default Price in 2014/15 decreased by 9% from £2.99/MVarH in 2013/14 to £2.71/MVarH.

Utilisation volume and costs of Reactive Power under Market and Default arrangements for the last 10 years are detailed in the charts below. The proportion of utilisation under units under “market arrangement” has been shrinking; and in the previous five years, reactive power was purchased solely via the default arrangement. In some instances additional Balancing Service contracts were taken to ensure generators were running and thus able to provide reactive power via the default mechanism. The costs of these addition contracts are reported in section 3.14.



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2.5 Fast Reserve

Further information explaining Fast Reserve and the assessment criteria of tenders can be found on the National Grid Website.

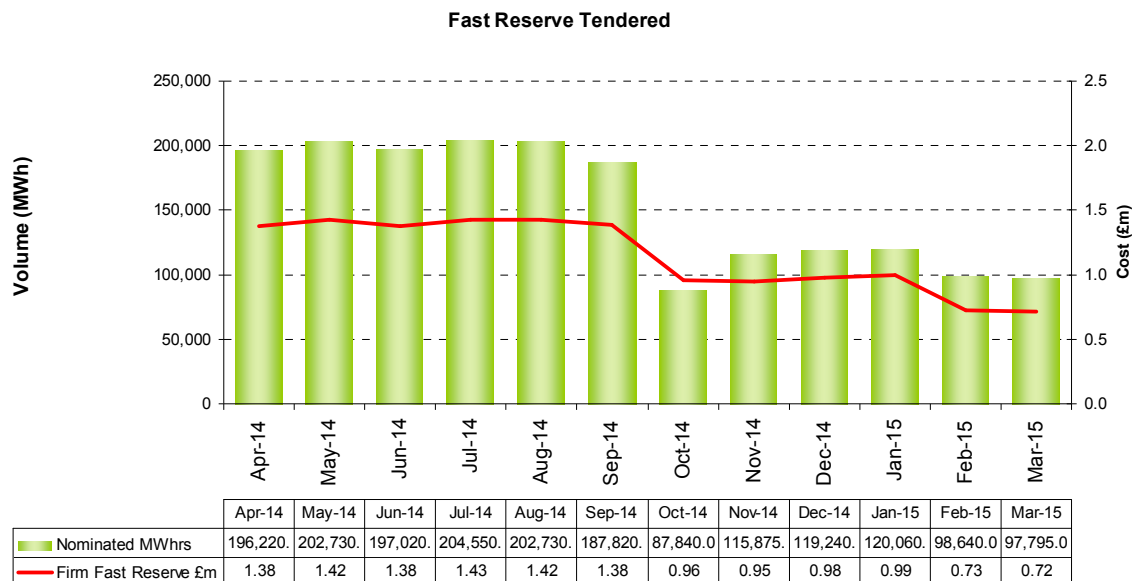
<http://www2.nationalgrid.com/UK/services/Balancing-services/Reserve-services/Fast-reserve/>

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2.6 Fast Reserve (Tendered) Comparison with previous year

The following graph shows the monthly variation in nomination hours from the contracted Fast Reserve Capacity.



The nominated volume of Fast Reserve in 2014/15 has reduced to 1,831GWh, from 2,023GWh in 2013/14. This was due to National Grid optimising the contracted Fast Reserve position from October 2014, through reducing the contracted requirement from 400MW to 300MW. Additionally, slightly lower prices for contracted Fast Reserve were seen in 2014/15 leading to a 14% reduction in costs from £16m in 2013/14 to £13.7 in 2014/15.

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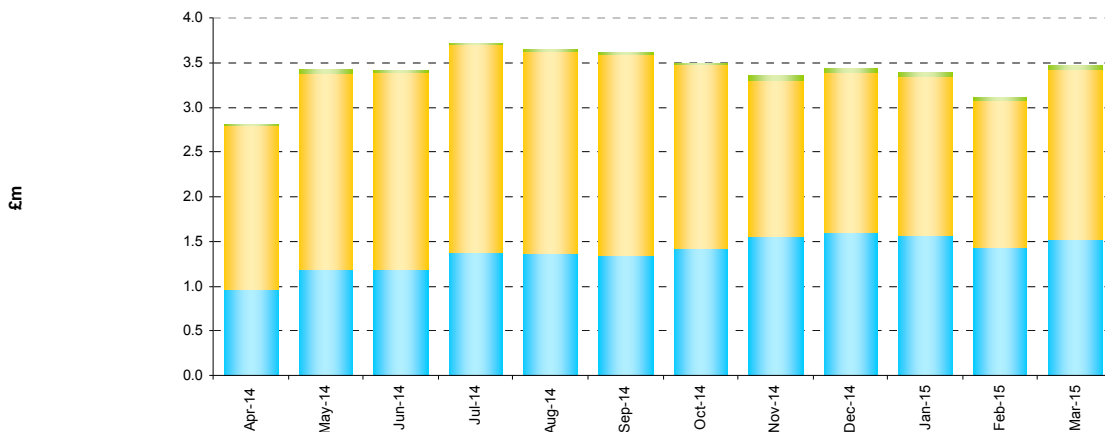
2.7 Short Term Operating Reserve (STOR) including Balancing Mechanism (BM) and Non Balancing Mechanism (NBM)

National Grid procures Short Term Operating Reserve (STOR) through a competitive tender process which is conducted three times per year.

Further information on STOR can be found on the National Grid website.

<http://www2.nationalgrid.com/uk/services/balancing-services/reserve-services/short-term-operating-reserve/>

STOR BM & NBM Availability Costs

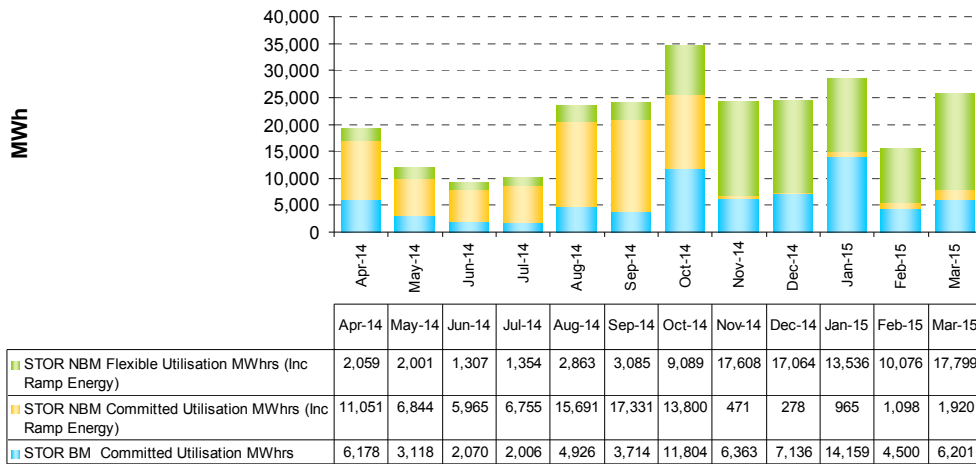


	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
STOR NBM Flexible Avail Cost £m	0.024	0.035	0.014	0.012	0.010	0.006	0.014	0.059	0.048	0.058	0.038	0.055
STOR NBM Committed Avail Cost £m	1.836	2.195	2.206	2.332	2.267	2.255	2.069	1.741	1.791	1.771	1.646	1.886
STOR BM Committed Avail Cost £m	0.960	1.185	1.192	1.372	1.361	1.347	1.419	1.559	1.602	1.571	1.432	1.532

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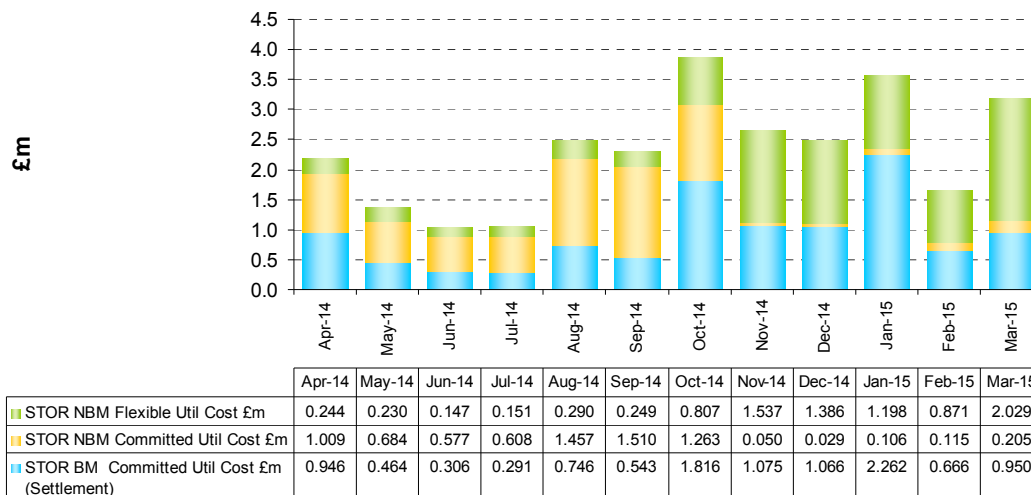
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STOR BM and NBM Utilisation Volume - Flexible and Committed



The increase and fall in the proportion of STOR NBM Committed and Flexible utilisation during 2014/15 is seasonally driven by the NBM market's provision of Committed and Flexible STOR services. During the winter seasons (November to March) a large proportion of the NBM market switches from a committed service to the flexible service. More details can be found in the STOR market reports.

STOR BM and NBM Utilisation Cost - Flexible and Committed



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STOR BM and NBM Utilisation Volume and Costs (Data)

Month	STOR BM Committed Util Cost £m (Settlement)	STOR NBM Committed Util Cost £m	STOR NBM Flexible Util Cost £m	STOR BM Committed Utilisation MWhrs	STOR NBM Committed Utilisation MWhrs (Inc Ramp Energy)	STOR NBM Flexible Utilisation MWhrs (Inc Ramp Energy)
Apr-14	0.946	1.009	0.244	6,178	11,051	2,059
May-14	0.464	0.684	0.230	3,118	6,844	2,001
Jun-14	0.306	0.577	0.147	2,070	5,965	1,307
Jul-14	0.291	0.608	0.151	2,006	6,755	1,354
Aug-14	0.746	1.457	0.290	4,926	15,691	2,863
Sep-14	0.543	1.510	0.249	3,714	17,331	3,085
Oct-14	1.816	1.263	0.807	11,804	13,800	9,089
Nov-14	1.075	0.050	1.537	6,363	471	17,608
Dec-14	1.066	0.029	1.386	7,136	278	17,064
Jan-15	2.262	0.106	1.198	14,159	965	13,536
Feb-15	0.666	0.115	0.871	4,500	1,098	10,076
Mar-15	0.950	0.205	2.029	6,201	1,920	17,799

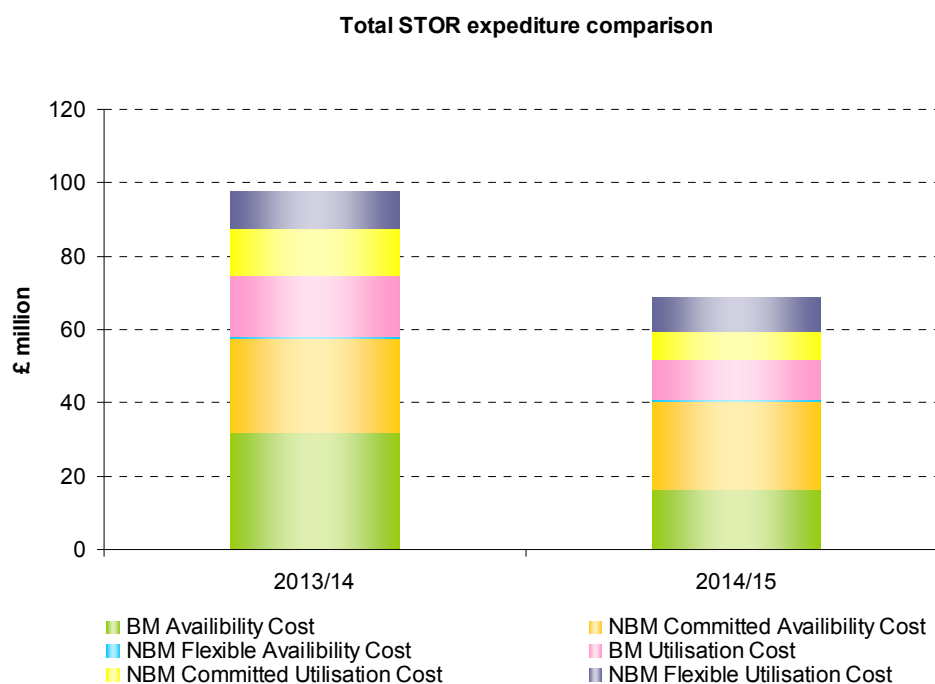
[Please note graphs and the table above do not reflect any seasonal reconciliation due to non-availability]

Non Balancing Mechanism (Non-BM) STOR Availability payments, Non-BM STOR Utilisation payments and BM STOR Availability payments are paid as Ancillary Services. BM STOR Utilisation payments are paid via the BM Bids and Offers, not as an Ancillary Service; they are included in this report to clarify the total STOR expenditure. STOR BM Utilisation costs in this report are based on actual spend (i.e. MWh Utilised x Utilisation Price for that BM STOR unit).

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2.8 STOR Comparison with previous year



Total STOR costs for 2014/15 were £69m - £29m lower than in 2013/14. This reduction has occurred in all areas of cost. A large decrease has been seen in BM availability costs, this has been driven by NBM units making up an increased share of the market at lower prices than previous BM availability prices. Availability prices across all service types have continued to drop along with the associated utilisation prices. The average availability price paid for 2014/15 was £4.71/MW/h compared to £6.29/MW/h for 2013/14.

Utilisation volumes across all service types have also dropped by ~17%. The volume weighted average utilisation price paid for synchronised STOR volumes fell from £129/MWh in 2013/14 to £111/MWh in 2014/15.

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2.9 Tendered Frequency Response.

Please see Section 3.2 Services Procured via Non-Tendered Bilateral Contracts.

3. Services Procured Via Non-Tendered Bilateral Contracts

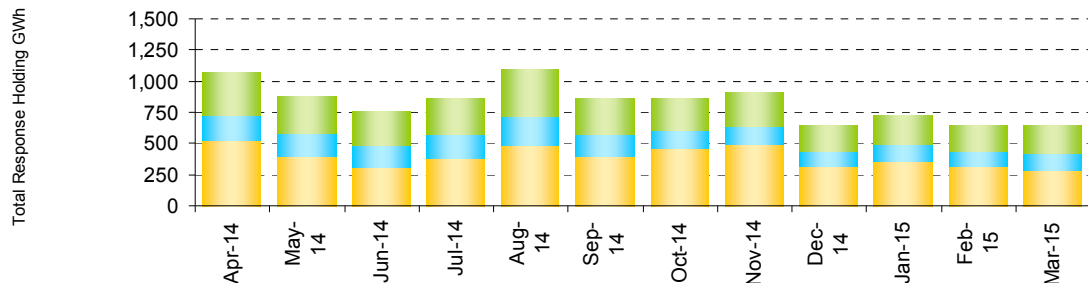
3.1 Mandatory Frequency Response

Mandatory Frequency Response is a compulsory 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 volumes are given below. More information on this can be found on the National Grid Website.

<http://www2.nationalgrid.com/uk/services/balancing-services/frequency-response/mandatory-frequency-response/>

Mandatory Frequency Response Holding



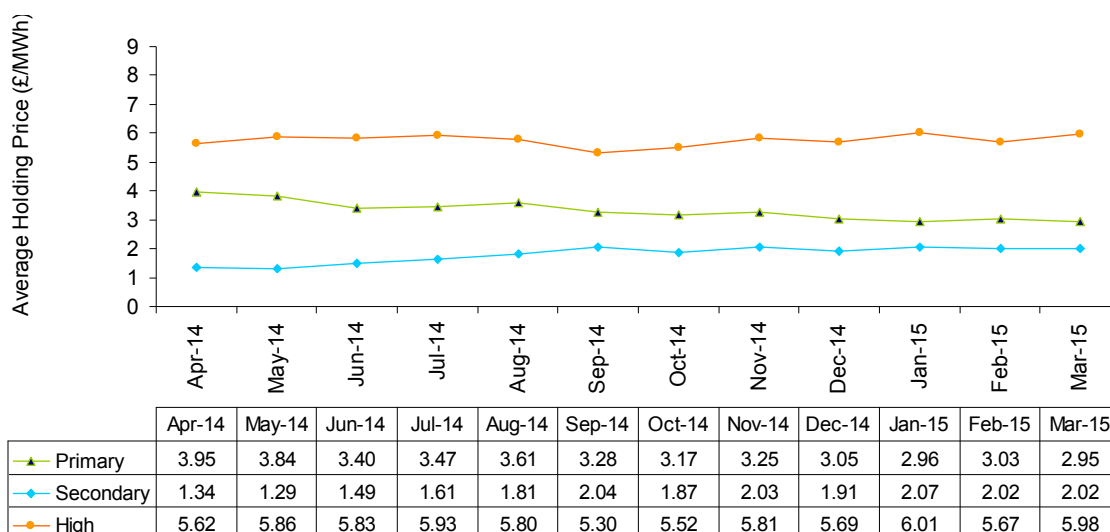
	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
Primary (GWh)	331.66	296.33	278.84	294.77	376.31	290.34	259.77	276.46	206.99	232.72	203.79	229.79
Secondary (GWh)	211.09	192.51	177.83	190.52	233.25	171.39	145.00	145.66	120.43	136.94	124.82	134.81
High (GWh)	521.18	395.67	303.81	381.26	487.84	400.32	460.26	493.84	322.26	356.23	320.31	286.55

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The next chart shows the Average Holding price paid for Mandatory Frequency Response.

Mandatory Frequency Response Average Holding Price



The methodology for calculating Mandatory Frequency Response energy payments is given in CUSC section 4.1.3.9 & 4.1.3.9A.

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/>

3.2 Commercial Frequency Response

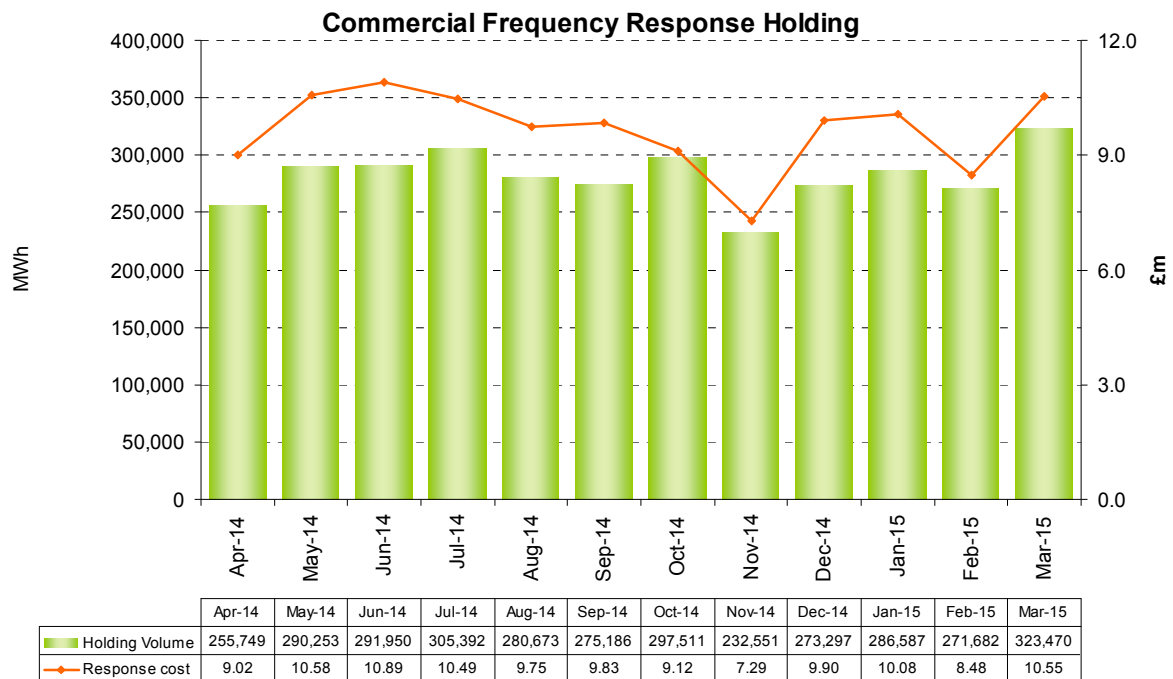
Commercial Frequency Response is a collection of services that can be provided by demand side participants and generation plant. The technical characteristics of these services are different to those required under mandatory service arrangements, and range from enhanced mandatory dynamic services through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

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

<http://www2.nationalgrid.com/uk/services/balancing-services/frequency-response/>

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The response holding volume shown in the chart above is the Primary response capability or Secondary response capability if no Primary is offered. The costs are the total cost for all capabilities (Primary, Secondary and High).

3.3 Frequency Response Comparison with previous year

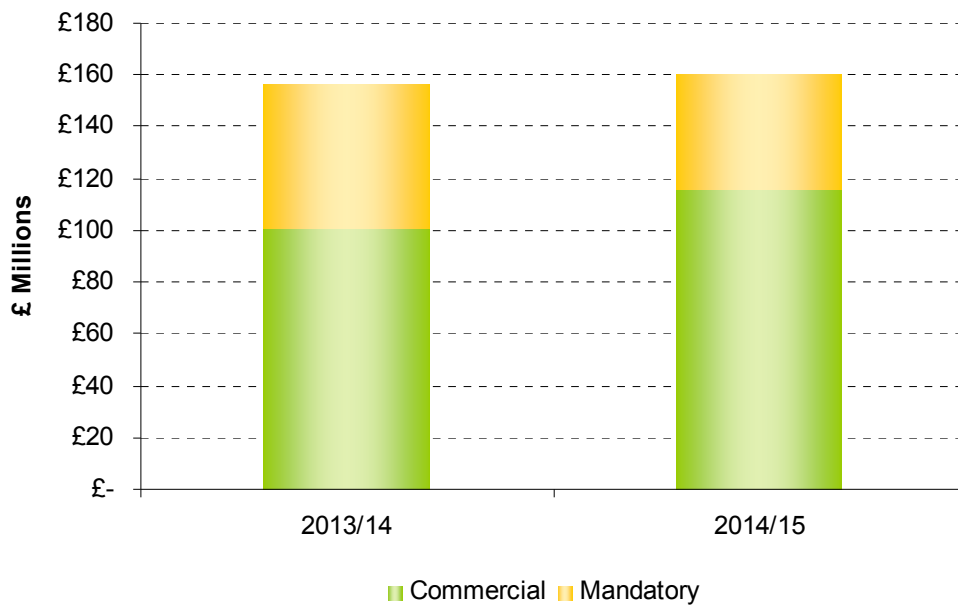
There was a £16m increase in commercial frequency response costs in 14/15, to £116m. This was partly offset by a £12m reduction in Mandatory frequency response costs to £44m. This gives an overall year-on-year increase of £4m, or 2.4%.

A higher volume of commercial frequency response in 14/15 was the main reason for the increase in costs. This has had the effect of displacing a large volume of Mandatory holding volume and potential costs.

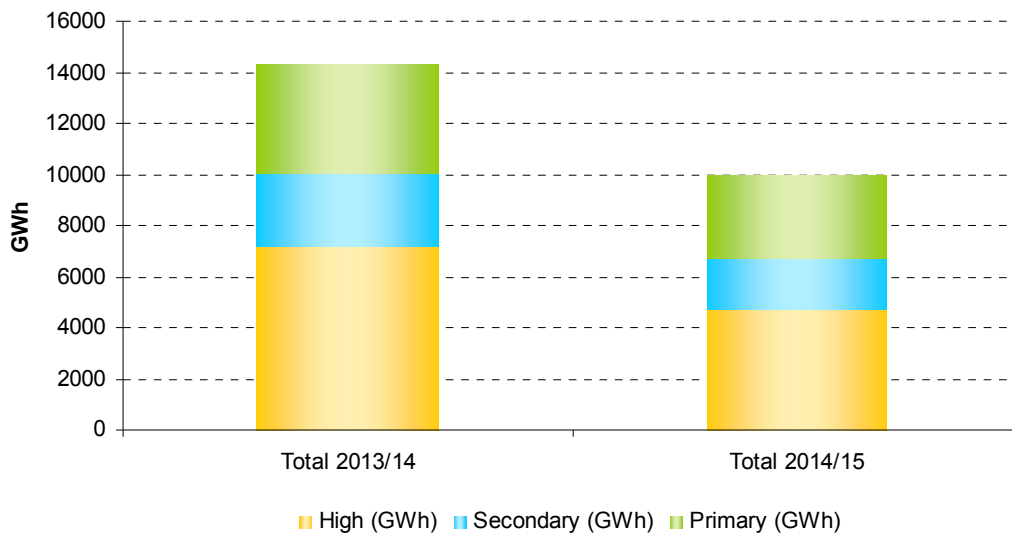
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Total Response Holding Costs (Commercial/ Mandatory)



Total Mandatory Response Holding Volumes



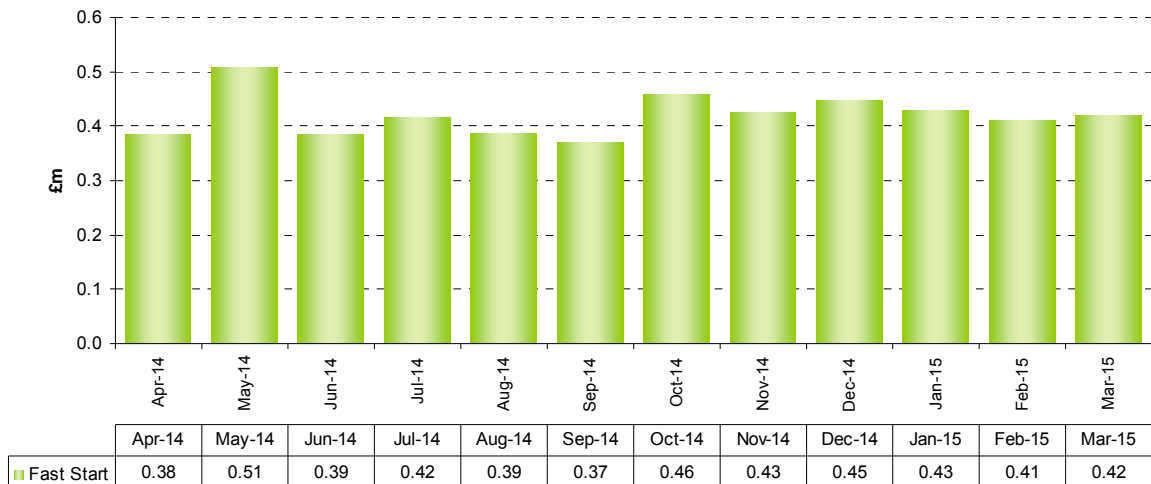
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3.4 Fast Start

Fast Start is the ability of generation to start rapidly from a standstill condition, either via a Low Frequency triggered relay or through manual instruction; and to deliver its rated power output automatically within a defined time period. The Fast Start service is a legacy service and as such volumes and costs are not expected to change significantly. Utilisation of the Fast start service in 2014/15 was consistent with 2013/14. Fast Start Capability and Utilisation Costs remain unchanged at £5m in 2014/15. Fast Start costs per month from April 2014 to March 2015 can be found below:

Fast Start Capability and Utilisation Costs



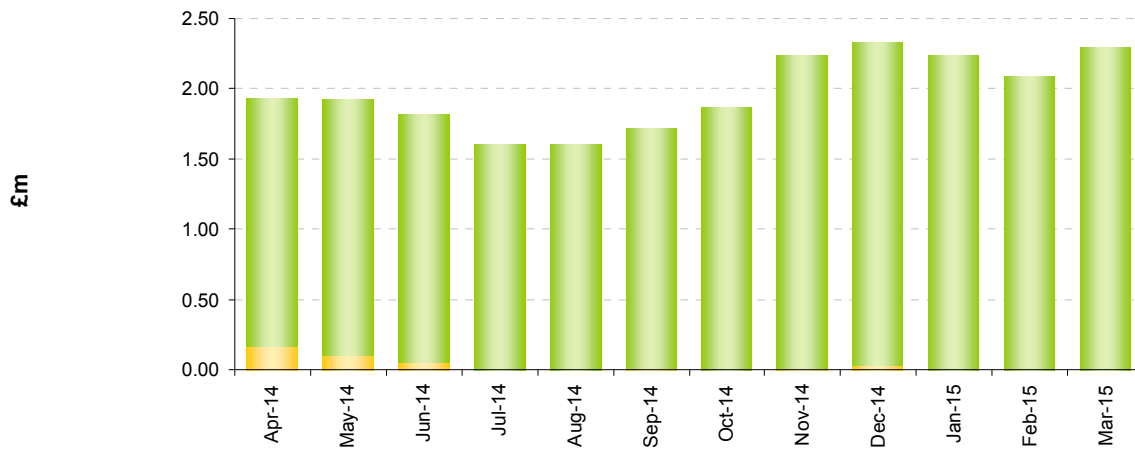
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3.5 Black Start

In 2014/15 the number of providers with Black Start agreements in place increased from 15 stations in October to 16 in November 2014. Total costs increased by 41% from £17m in 2013/14 to £24m 2014/15. Testing costs however, reduced from £0.38m to £0.27m in 2014/15. The increase in Black Start Costs is due to changes in supplier contracts as part of the normal review and renewal process.

Black Start Costs



	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15
Black Start Contract costs (£m)	1.77	1.82	1.76	1.60	1.60	1.71	1.87	2.23	2.30	2.24	2.09	2.29
Other Black Start Costs (£m)	0.16	0.10	0.05	0.00	0.00	0.01	0.00	0.01	0.03	0.00	0.00	0.00

[Please note that the above chart and table do not include the costs incurred in warming and running Blackstart units to maintain service availability]

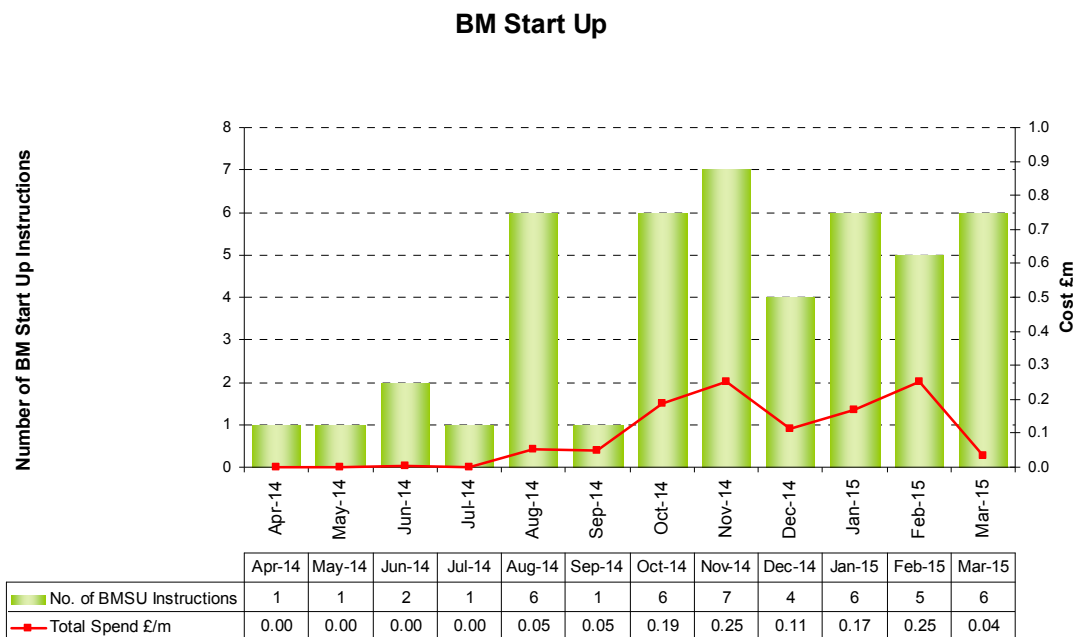
Further information on Black Start can be found on the National Grid Website.
<http://www2.nationalgrid.com/uk/services/balancing-services/system-security/black-start/>

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3.6 BM Start up

The chart below contains information relating to the procurement of BM Start up Balancing Services:



3.7 BM Start up Comparison with previous year

The number of BM Start up instructions issued during 2014/15 was 46 compared to 21 instructions during the previous year. In terms of costs, £1.1m was spent on this service in 2014/15 compared to £0.6m in 2013/14.

Further details are available via the National Grid Website.

<http://www2.nationalgrid.com/uk/services/balancing-services/reserve-services/bm-start-up/>

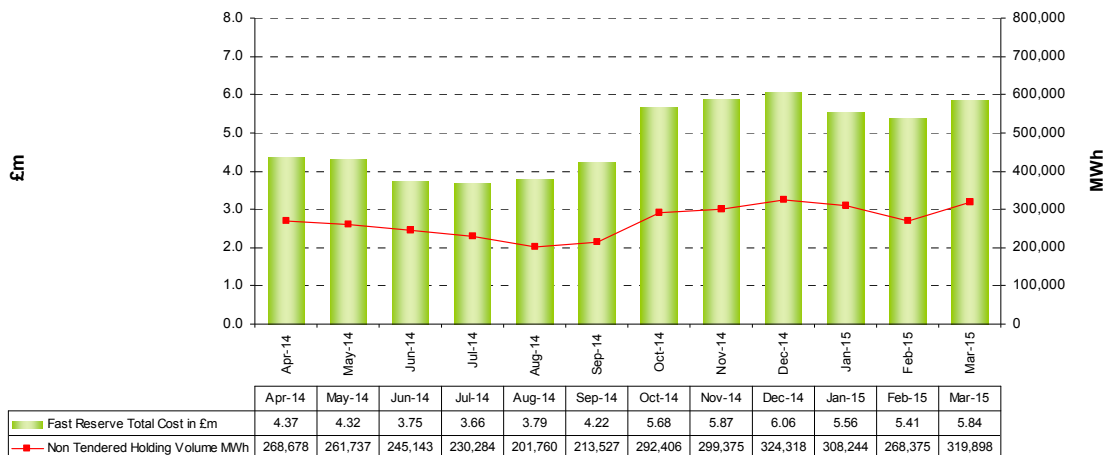
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3.8 Fast Reserve (Procured on a Non-Tendered basis)

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.

Fast Reserve (Non Tendered)



3.9 Non-tendered Fast Reserve Comparison with previous year

Non-tendered Fast Reserve costs have increased by 13% from £52m in 2013/14 to £59m in 2014/15. The price for using pump storage units in Spin-Gen mode increased from October onwards coinciding with the reduction in the Tendered volumes accepted. Unit capability fees have also increased from £0.60m to £1.75m in 2014/15.

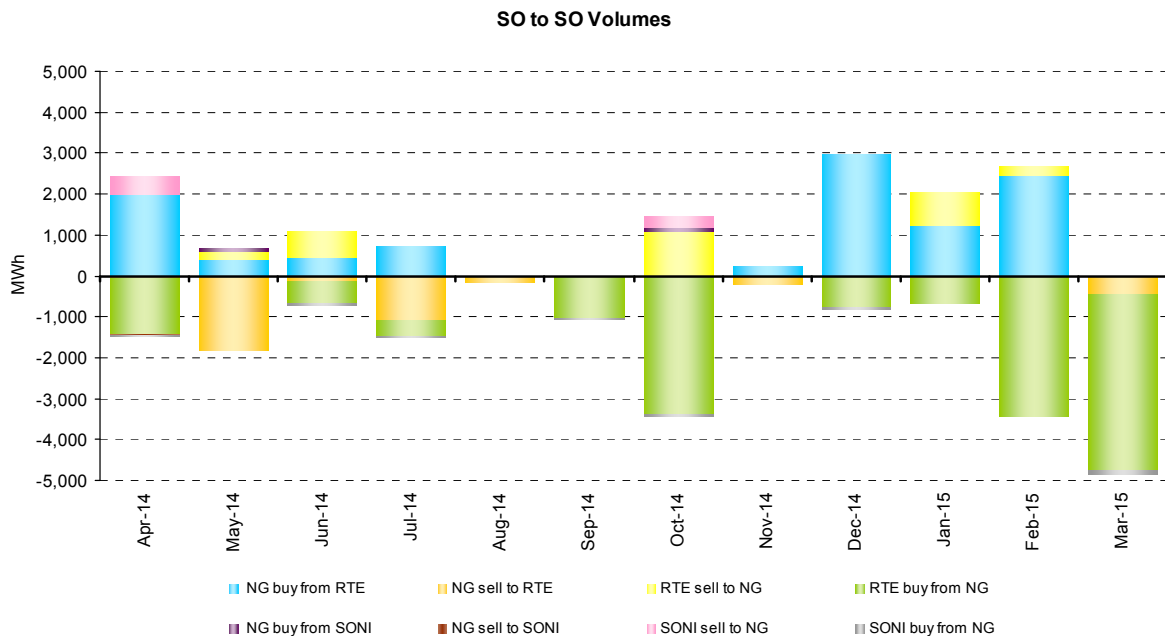
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3.10 System to System Services

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.

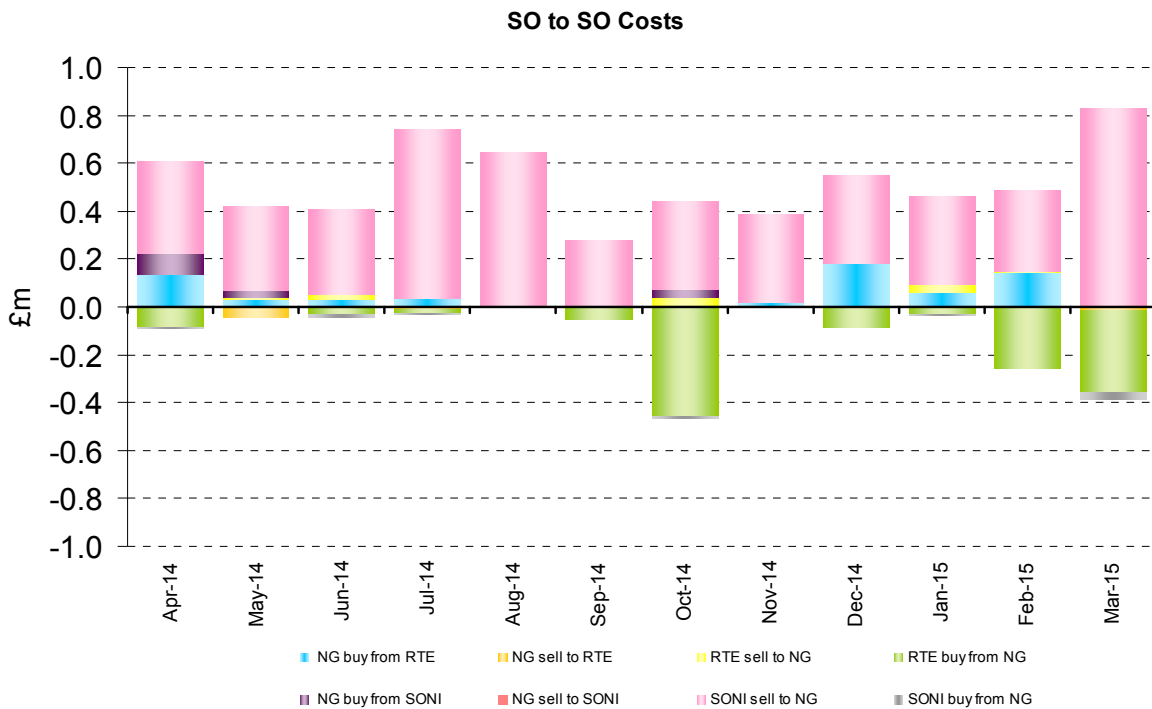
The graph below shows the total net volume imported and exported between Great Britain, France and Ireland. Please see **Appendix 1** for further clarification on System Operator to System Operator (SO-SO) services.



For definition see Appendix 1

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For definition see Appendix 1

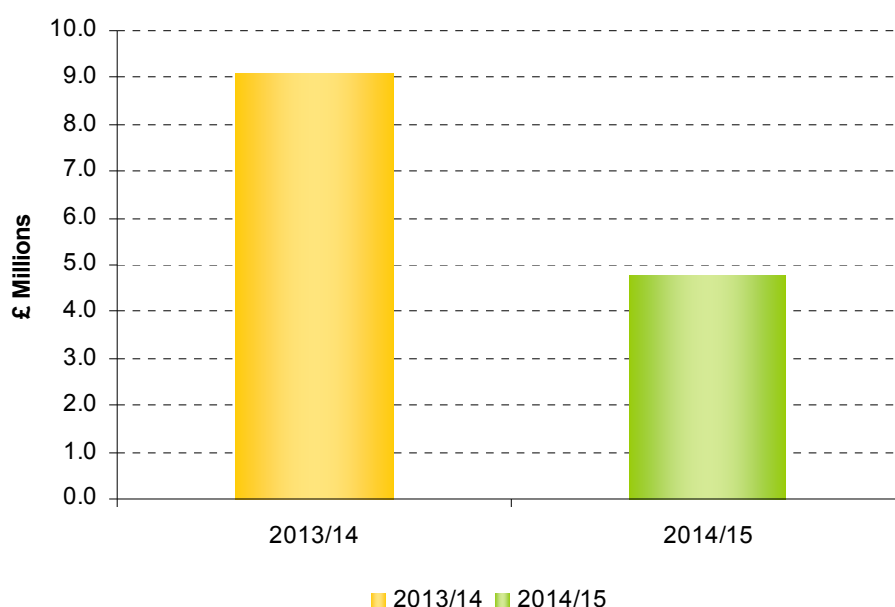
3.11 SO-SO Comparison with previous year

Total System Operator to System Operator Costs have reduced from £9 million in 2013/14 to £5 million in 2014/15 as shown in the graph below.

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SO-SO Net Costs



The volume of SO-SO trades undertaken decreased this year from 137GWh net in 2013/14 to 35GWh net in 2014/15.

There has been a significant decrease in import volume to the UK from 117GWh in 2013/14 to 15GWh in 2014/15. This represents a move on the part of National Grid away from using SO-SO actions towards other, more economic tools for managing the wider system. Export volumes remained roughly similar at 20GWh per year.

SONI represents actions on both EWIC and Moyle although a limited number of actions were taken on Moyle due to serious fault which occurred in April 2013, curtailing the capability to 50%.

SO-SO trade services are still not available over the BritNed Interconnector due to contractual and market differences between the UK and Dutch markets.

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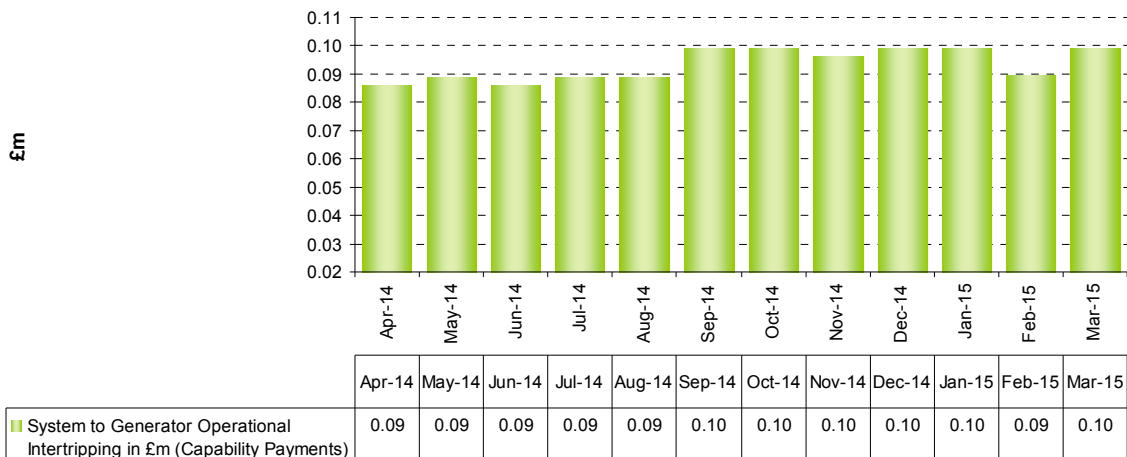
3.12 System to Generator Operational Inter-tripping Schemes

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 respective compensation arrangements. A proportion of these categories entitle the counterparty to payments for maintaining the capability to provide the intertrip and also following utilisation of the service.

Total costs for System to Generator Operational Inter-tripping Schemes has increased from £0.72m for reporting year 2013/14 to £1.14m in 2014/15.

System to Generator Operational Intertripping - Capability Payments



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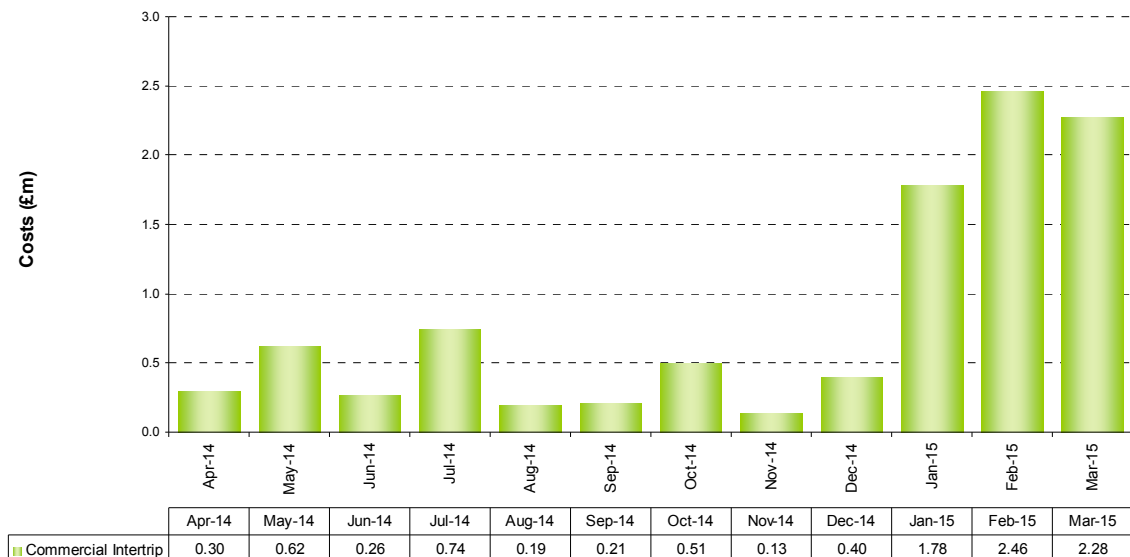
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3.13 Commercial Intertrip Service

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 assist with managing system issues.

The total expenditure on Commercial Intertrips has reduce from £14m in 2013/14 to £10m in 2014/15. A very “low wind” summer and the unavailability of Scottish conventional plant reduced the flows out of Scotland, to the extent that the Cheviot Intertrip was not required for much of the summer. An extended outage period to upgrade a commercial intertrip reduced the availability later in the year and therefore the spend. January, February and March have seen increased spend due to a new Commercial Intertrip service.

Commercial Intertrips



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Commercial Intertrip Monthly Summary

Month	Capability Payment £'s	Arming Payment £'s	Number of Hours of Intertrip Arming, Outside of Pre-Paid Arming Contract(s)	Contracted Pre-paid Arming £'s	Number of Hours Armed under Pre-Paid Arming Contract(s)	Number of Trips	Tripping Payment £'s
Apr-14	130,205	166,350	55	0	0	0	0
May-14	134,545	489,348	206	0	0	0	0
Jun-14	116,640	144,036	100	0	0	0	0
Jul-14	134,545	605,227	134	0	0	0	0
Aug-14	134,545	57,624	27	0	0	0	0
Sep-14	133,646	76,750	26	0	0	0	0
Oct-14	138,101	367,850	123	0	0	0	0
Nov-14	133,647	0	0	0	0	0	0
Dec-14	138,101	266,328	220	0	0	0	0
Jan-15	138,101	1,640,925	483	0	0	0	0
Feb-15	124,797	2,337,940	565	0	0	0	0
Mar-15	138,101	2,139,565	519	0	0	0	0

Under commercial intertrip agreements arming is payable either as;

1. A fixed pre-agreed sum, this may be for a fixed number of hours or unlimited hours (shown above as Contracted arming) or;
2. Payable on utilisation with the generator typically having the right to alter their payments with a short notice period (shown above as Arming Payments).
3. The "Contracted Pre-Paid Arming" column indicates the maximum firm payment that could be made assuming the intertrip is available for use for all the Contracted Arming hours during the contracted period.

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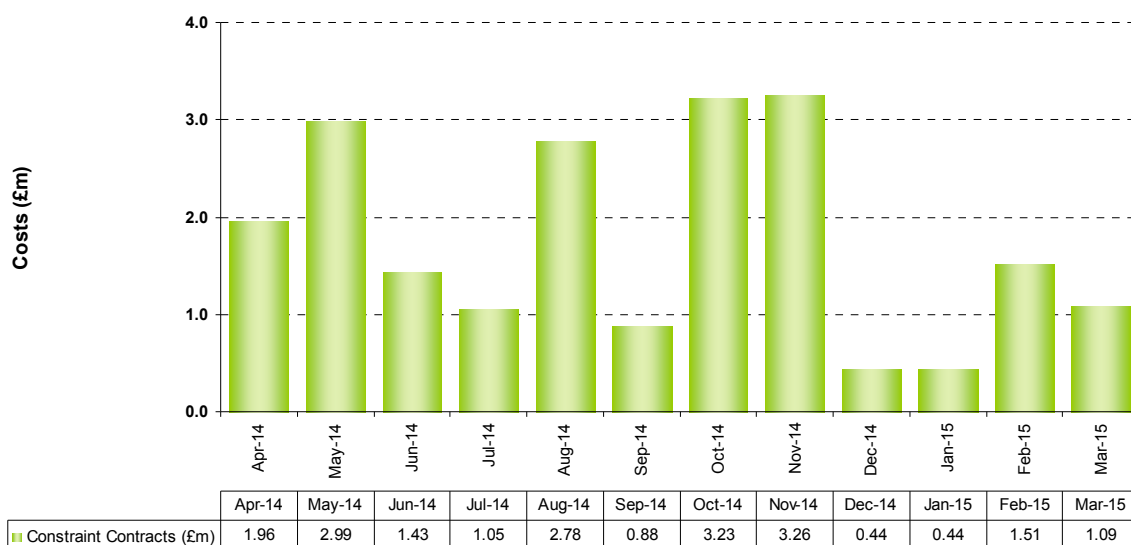
3.14 Balancing Services Contracts to manage System Issues

On occasion, National Grid enters into bespoke Balancing Services contracts to manage certain transmission system issues such as voltage issues or system inertia. The contracts agreed via tender runs are available on the National Grid website, some of them however, by the nature of these contracts, remain 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.

More information related to contracts designed to economically and effectively manage forecast constraint cost and volumes, arising from declining MVAR demand and low levels of expected generation overnight, can be found on the National Grid Website:

<http://www2.nationalgrid.com/UK/Services/Balancing-services/System-security/Transmission-Constraint-Management/Transmission-Constraint-Management-Information/>

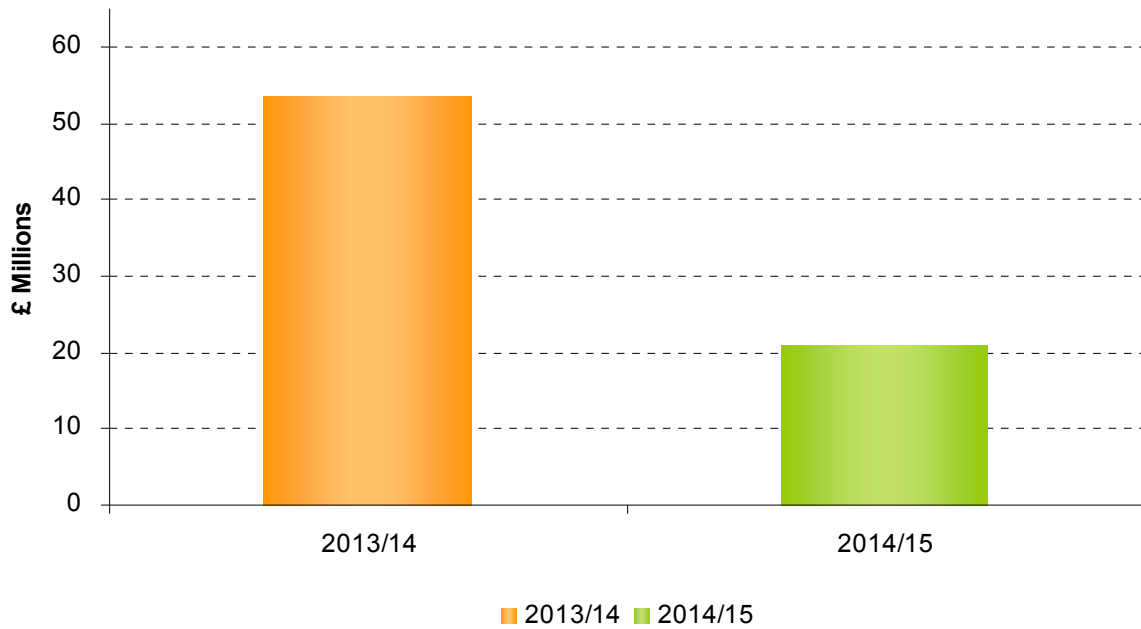
Balancing Services Contracts for System Issues



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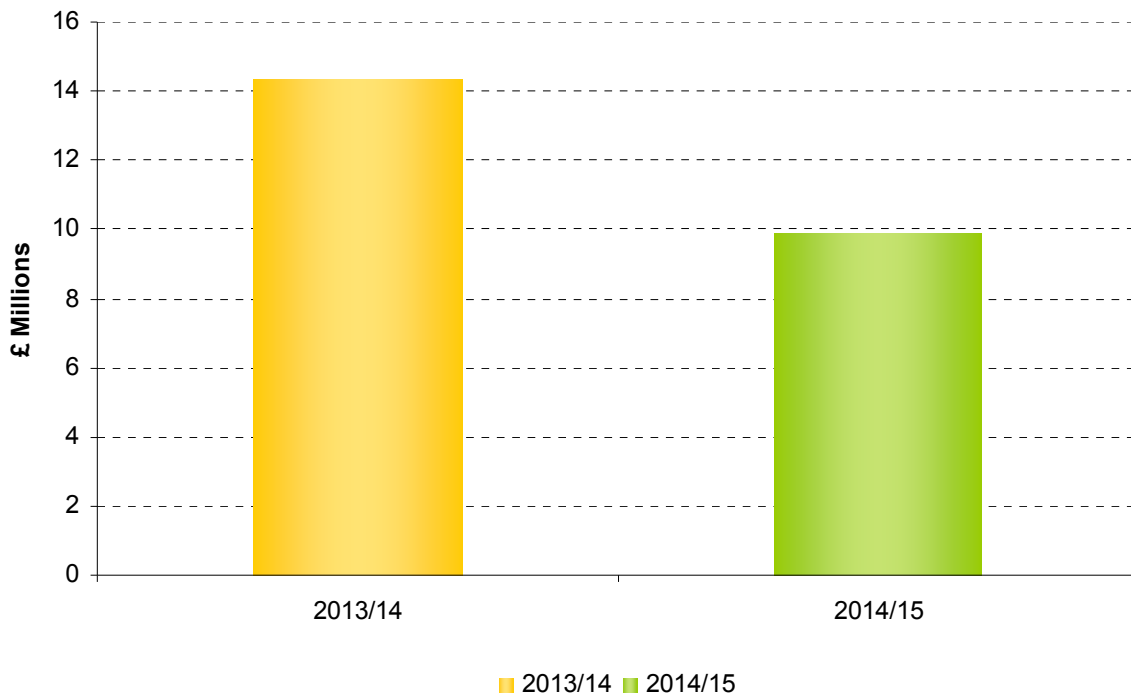
Balancing Service Contracts for System Issues Costs



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Commercial Intertrip Cost Comparison



3.15 System Issues Comparison with previous year

The costs of managing Transmission System constraints via contracts decreased from £53.43m in 2013/14 to £21.06m in 2014/15. Commercial Intertrip costs have also decreased from £14.36m in 2013/14 to £9.89m in 2014/15.

The constraint contract costs is the amount spent on contracts with generators to manage constraint groups as economically as possible and avoid cost that would have otherwise been accrued in the Balancing Mechanism. Costs have decreased since last year and this will be due to the nature of the contracts procured, which is in turn dependant on the outages that were taken in 2014/15. The commercial intertrip costs are the costs of arming generator intertrips to manage constraints, major contributors to this figure have been SCOTEX and SWALEX constraint boundaries.

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3.16 Maximum Generation Service

The Maximum Generation Service (MGS) is required to provide additional short term generation output during periods of system stress for energy 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

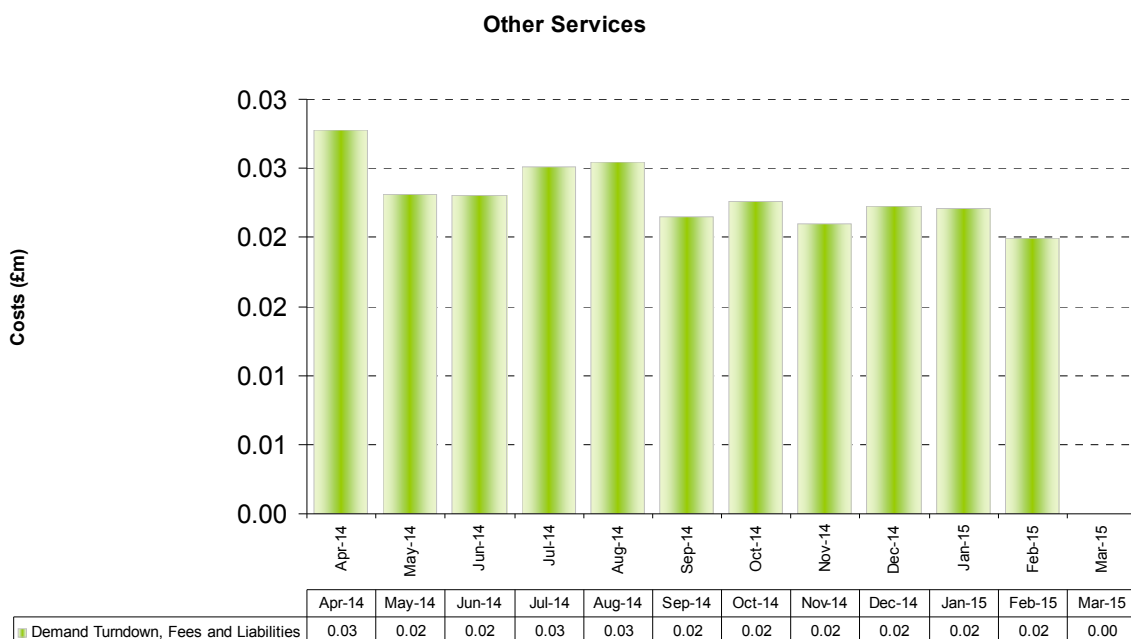
Further details on the utilisation and availability of the service are available on the National Grid Website.

<http://www2.nationalgrid.com/uk/services/balancing-services/system-security/maximum-generation/>

This service was not utilised during 2013, 2014 or 2015.

3.17 All Other Services

These include costs relating to trading fees and liabilities which are expected to be paid as a result of contracts awaiting signature or unresolved disputes. In 2014/15 costs have decreased to £0.25m from £1.17m in reporting year 2013/14.



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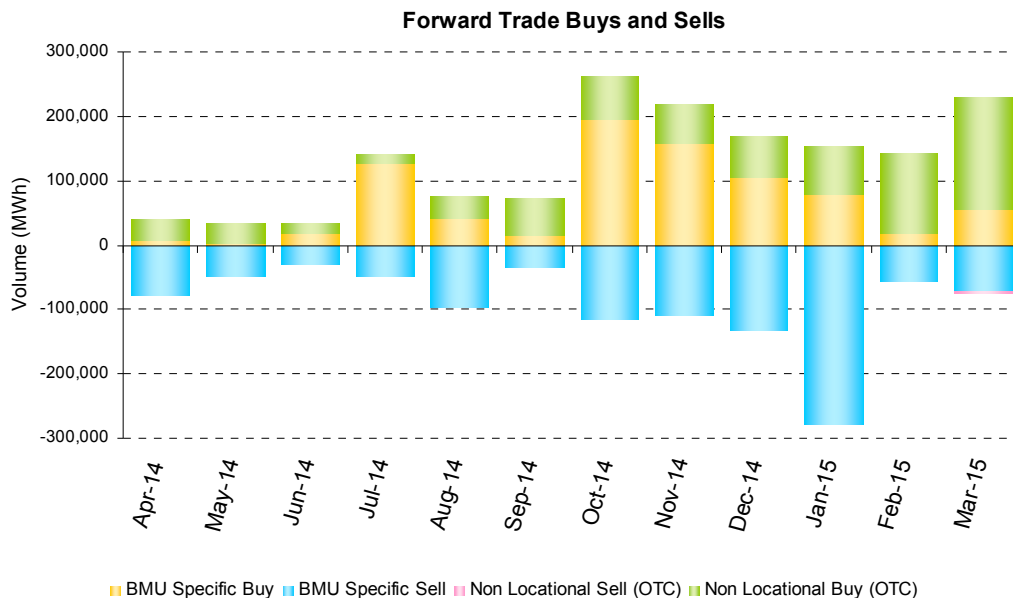
4. Energy Related Products

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	Volume (MWh)	Cost (£)
Buy Volume	748,653	£32,719,132.3
Sell Volume	-4,744	-£218,002.05
BMU Specific		
Buy Volume (MWh)	827,994	£56,711,547.0
Sell Volume (MWh)	-1,094,043	-£17,886,840.93
Net Total		£71,325,836.36

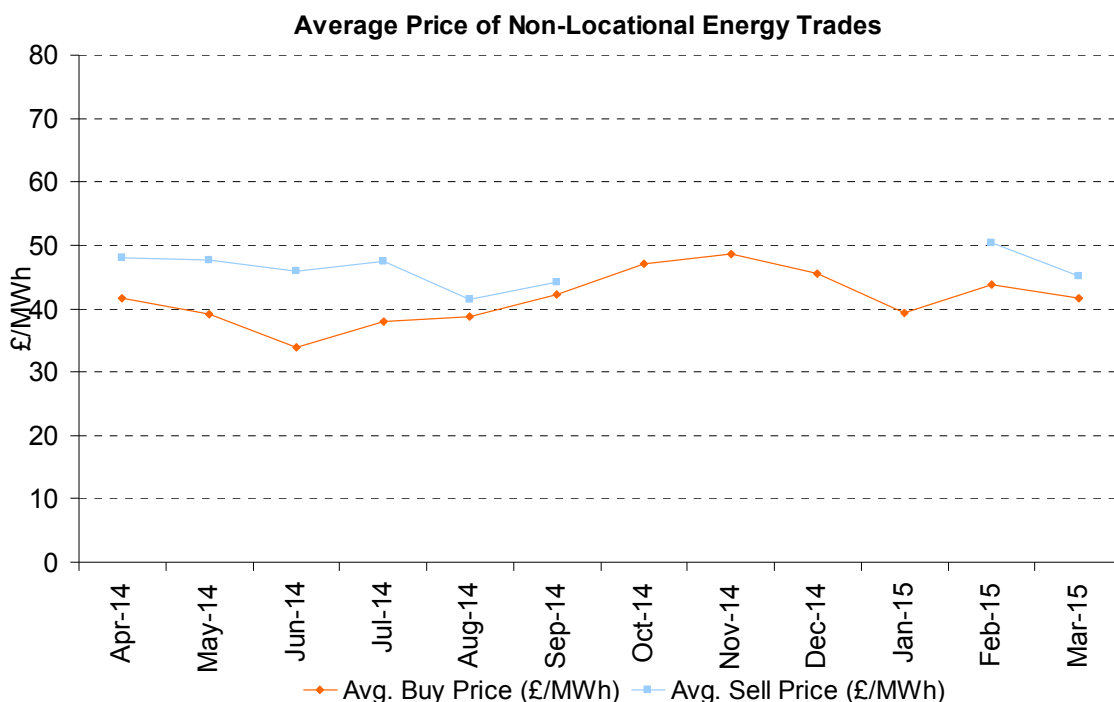
The following chart shows the monthly profile of our trading activities, both for non-locational energy trades and BMU-Specific trades.



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The following graph shows the monthly profile of our non-locational energy trading activities. It



4.2 Trades Comparison with previous year

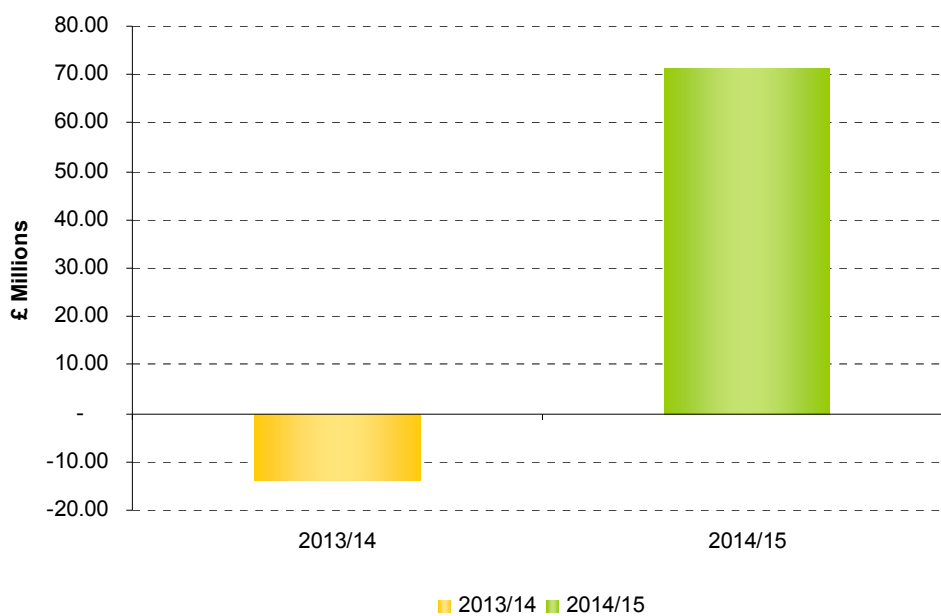
There has been an increase in both non-locational and BMU specific trading over the last financial year reflecting National Grid's continued efforts to employ the most economic mechanism for energy balancing and system management. The 360GWh increase in non-locational purchases is largely reflective of an increased energy requirement resulting from margin shortfall. This also reflects a negligible increase in intra-day activity for energy balancing purposes.

The 700GWh increase in BMU specific purchases was driven by a higher number of instances of locational specific system constraints requiring additional synchronous plant. The number of constraints requiring the de-sync of plant reduced, leading to a 450GWh decrease in BMU specific sells. The volume of trades undertaken on IFA and Britned for system management remained broadly constant year-on-year.

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Net Trading Costs £m



Further details are available on the National Grid Website

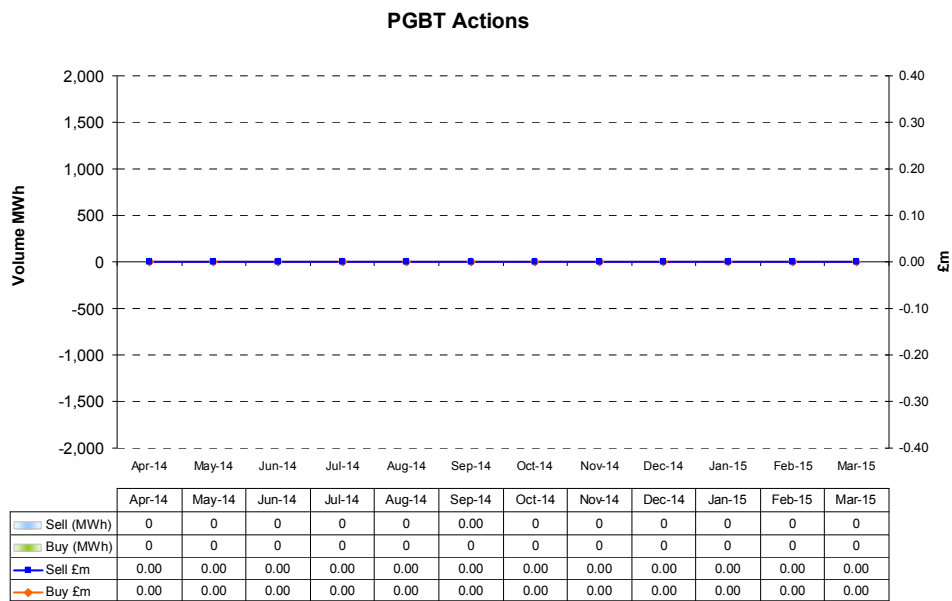
<http://www2.nationalgrid.com/UK/Services/Balancing-services/Trading/>

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4.3 Pre-Gate BMU Transactions (PGBT)

Information on PGBT activity transactions is given in the chart below:



4.4 PGBTs Comparison with previous year

There were no Pre-Gate BMU Transactions undertaken in 2014/15.

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

<http://www.nationalgrid.com/uk/Electricity/Balancing/services/energyrelated/pgbt/>

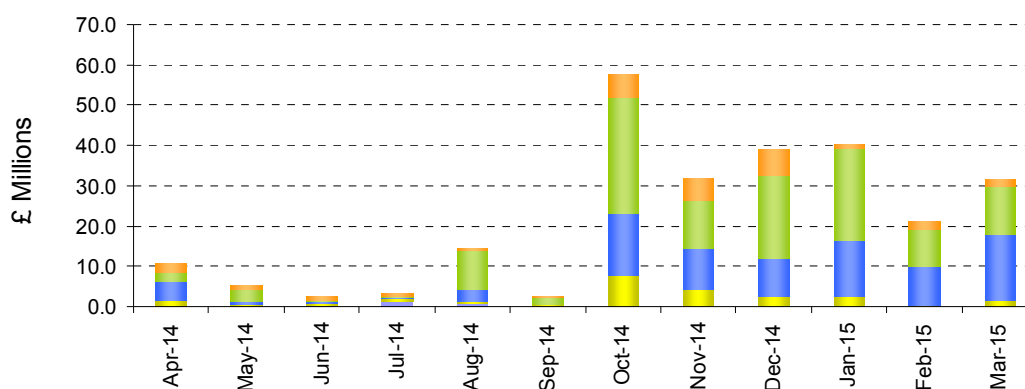
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5. Constraints

National Grid resolves constraints in the GB Transmission System through different mechanisms, including Bids and Offers in the Balancing Mechanism, PGRTs, Trades and System to System Services (SO-SO). The costs of resolving constraints via intertrip contracts (see section 3.13) and bilateral contracts (see section 3.14) have already been explored.

Balancing Mechanism Constraints Cost £m



	01/04/2014	01/05/2014	01/06/2014	01/07/2014	01/08/2014	01/09/2014	01/10/2014	01/11/2014	01/12/2014	01/01/2015	01/02/2015	01/03/2015
Export BMUnits E&W	2.15	1.04	0.69	0.50	0.74	0.04	5.72	5.71	6.52	0.96	1.94	1.63
Export BMUnits Cheviot	2.32	3.02	0.37	0.54	9.88	1.60	28.99	11.59	20.35	22.86	9.26	11.99
Export BMUnits Scotland	4.64	0.55	0.44	0.02	2.64	0.03	15.19	10.39	9.41	14.06	9.87	16.23
Import BMUnits E&W	1.47	0.60	0.53	0.95	0.43	0.72	7.71	4.27	2.76	2.45	0.17	1.54
Import BMUnits Cheviot					0.00							0.03
Import BMUnits Scotland	0.03		0.43	1.15	1.03	0.05	0.07	0.06	0.00	0.01	0.04	0.01

5.1 BM Constraints Comparison with previous year

BM Constraints Costs for reporting year 2014/15 out turned at £260.4m compared to £270.7m in 2013/14. Significant capital investment schemes have continued to reduce capacity on the network, requiring continued spend to manage constraints. Over running of some large schemes were exacerbated by some significant storms and high wind days increasing the cost of managing Scottish constraints.

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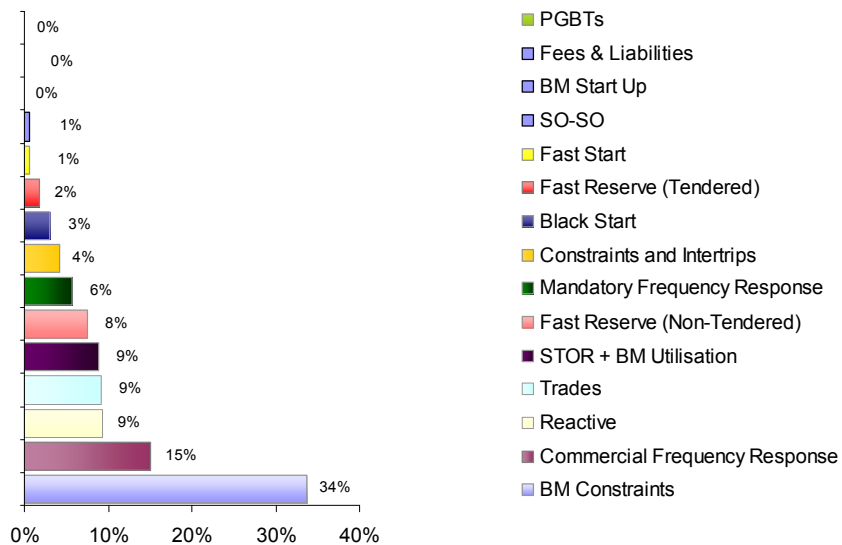
6. Summary

As a summary of financial activity, the following breakdown of balancing services costs is provided by category, for the financial year 2014/15.

6.1 Summary Chart

The information presented in the chart below is analysed in more detail in the relevant sections of this report.

Summary of Balancing Services Costs



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6.2 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** and published via the <http://bmreports.com> website. These documents, along with the **Procurement Guidelines Report**, are published in accordance with Standard Condition C16 of the Transmission Licence and are available on National Grid's website.

6.3 Contact and Feedback

National Grid welcomes feedback on any aspect of this report including suggestions for future reports. For any comments please email Electricity Codes at soincentives@nationalgrid.com

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7.1 Appendix 1: System to System Services Definitions

Initiator	Definition
NG buy from RTE	National Grid request to RTE for additional energy to GB
NG sell to RTE	National Grid request to RTE for reduced energy to GB
RTE sell to NG	RTE request to National Grid for additional energy to GB
RTE buy from NG	RTE request to National Grid for reduced energy to GB
NG buy from SONI	National Grid request to SONI for additional energy to GB
NG sell to SONI	National Grid request to SONI for reduced energy to GB
SONI sell to NG	SONI request to National Grid for Additional energy to GB
SONI buy from NG	SONI request to National Grid for reduced energy to GB.

RTE = Reseau de Transport de l'Electricite (*French electricity grid operator*)

NG = National Grid

SONI = System Operator Northern Ireland

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7.2 Appendix 2: Table of Raw Data

Balancing Service	Info Provision	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Total costs £m	Total Value
Reactive Power Market	Utilisation Volume (Market)	0	0	0	0	0	0	0	0	0	0	0	0		0GVArh
	Utilisation Volume (Default)	2482	2591	2660	2483	2375	2427	2218	2140	2336	2172	1929	2387		28178 GVArh
	Total Spend (Market)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total Spend (Default)	6.57	7.25	7.03	6.25	5.78	5.78	5.33	5.20	6.01	5.96	5.16	5.75	72.07	
Short Term Operating Reserve(STOR)	Annual Average Availability Payments:	5.13	5.06	5.01	5.02	4.81	4.84	5.04	4.38	4.42	4.38	4.45	4.51		4.75
Including BM and NBM Availability & Utilisation	Average Contracted Utilisation Payments	122.43	122.76	119.59	111.37	116.13	106.78	124.56	118.37	110.85	131.94	114.39	133.03		119.35
	Total Spend in £m	5.02	4.79	4.44	4.77	6.00	5.91	7.39	6.02	5.92	6.80	4.77	6.66	68.49	
	Total Volume	19288	11963	9342	10115	23479	24130	34693	24478	24478	28661	15674	25920		252185.569MWh
Mandatory Frequency Response	Holding Volumes & Prices:														
	Average Volume held MW	P S H	P S H	P S H	P S H	P S H	P S H	P S H	P S H	P S H	P S H	P S H	P S H	Primary / Sec / High	Primary / Sec / High
	Average price £/MWh	461 294 724	399 259 532	388 247 422	397 267 513	506 314 656	404 239 557	350 195 619	384 203 686	279 162 434	313 185 479	304 186 477	309 182 386		374 227 541
	Total Holding Spend	3.95 1.34 5.62	3.84 1.29 5.86	3.4 1.49 5.83	3.47 1.61 5.93	3.61 1.81 5.8	3.28 2.04 5.3	3.17 1.87 5.62	3.26 2.04 5.81	3.05 1.91 5.69	2.96 2.07 6.01	3.03 2.02 5.67	2.95 2.02 5.98		3.34 1.8 5.752
	Total Response Energy Payment Spend	0.17	0.26	0.22	0.15	0.25	0.08	-0.07	0.00	0.13	0.07	0.09	0.20		1.55
Commercial Frequency Response	Total Spend	9.02	10.58	10.89	10.49	9.75	9.83	9.12	7.29	9.90	10.08	8.48	10.55		115.97
Fast Start	Total Spend	0.38	0.51	0.42	0.39	0.42	0.37	0.46	0.43	0.45	0.43	0.41	0.42		5.05
Black Start	Total Spend	1.94	1.93	1.81	1.60	1.60	1.72	1.87	2.24	2.33	2.24	2.09	2.29		23.65
BM Start Up	Total Cost of BM Start Up	0.00	0.00	0.00	0.00	0.05	0.05	0.19	0.25	0.11	0.17	0.25	0.04		1.11
	Number of Instructions	1	1	2	1	6	1	6	7	4	5	6	6		46
Fast Reserve-Tendered	Total Spend on Availability & Utilisation	1.38	1.42	1.38	1.42	1.42	1.38	0.95	0.95	0.95	0.95	0.74	0.72		13.73
Fast Reserve Non-Tendered	Total Spend on Availability	4.37	4.32	3.75	3.66	3.79	4.22	5.68	5.87	6.06	5.56	5.41	5.84		58.53
SO to SO	Volume Imported	2	1	1	1	0	0	1	0	3	2	3	0		14GWh
	Volume Exported	-1	-1	-1	-2	0	-1	-3	-1	-1	-1	-3	-5		-20GWh
	Total Spend	0.52	0.38	0.37	0.71	0.65	0.23	-0.02	0.39	0.47	0.43	0.24	0.45		4.80
System to Generator operational inter-trips	Capability Payments	0.09	0.09	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.09	0.10	0.10		1.14
	Utilisation Payments	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Commercial Intertrip Service	Total Spend	0.30	0.62	0.28	0.74	0.19	0.21	0.51	0.13	0.40	1.78	2.46	2.28		9.89
Ancillary Constraint Contracts	Total Spend	1.96	2.99	1.43	1.05	2.78	0.88	3.23	3.26	0.44	0.44	1.51	1.09		21.06
Maximum Generation Service	Total Spend	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
All Other Services	Total Spend	0.03	0.02	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.00		0.25
BM Constraints	Total Spend	10.61	5.22	2.46	3.17	14.72	2.45	57.68	32.01	39.04	40.34	21.29	31.43		260.39
Forward Trading	Traded gross volume	116601	82857	63665	190559	171518	107084	376763	328841	300542	433277	199032	304695		2675433MWh
	Net cost of forward trading	0.68	0.63	1.01	6.17	3.28	2.86	15.32	13.59	8.36	3.66	5.76	10.00		71.33
	OTC - Power Exchange & Energy														
	Buy Volume	32604	30605	16600	13800	33600	56350	67800.5	61200	62900	73925	123900	175368.2		748653MWh
	Sell Volume	-2	-329.9499993	-625.0000002	-364.6999996	-263.5	-225.0000007	0	0	0	0	-132.7500008	-2800.950001		-4743.8500018604MWh
	OTC - BMU Specific														
	Buy Volume	6791	2492	17780	127664	41595	16496	195326	158787	106301	80722	19262	54778		827994MWh
	Sell Volume	-77204	-49430	-28660	-48730	-96059	-34013	-113636.5	-108854	-131341	-278630	-55737	-71748		-1094042.5MWh
PGBT	No. of PGBT entered into:														
	Sourced	0	0	0	0	0	0	0	0	0	0	0	0		0.00
	Agreed	0	0	0	0	0	0	0	0	0	0	0	0		0.00
	Average PGBT Prices £/MWh:														
	Buy	0	0	0	0	0	0.00	0	0.00	0.00	0.00	0	0		0
	Sell	0	0	0.00	0	0	0	0	0	0.00	0	0	0		0(Monthly Avg)
	Volume MWh:														
	Buy	0	0	0	0	0	0.00	0	0	0.00	0.00	0	0		0
	Sell	0	0	0.00	0	0	0	0	0	0.00	0	0	0		0
	Total Cost of PGBT	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00
Total		47.79	44.93	38.67	44.61	55.32	39.59	111.39	81.81	83.63	82.17	61.49	80.50		£771.90m