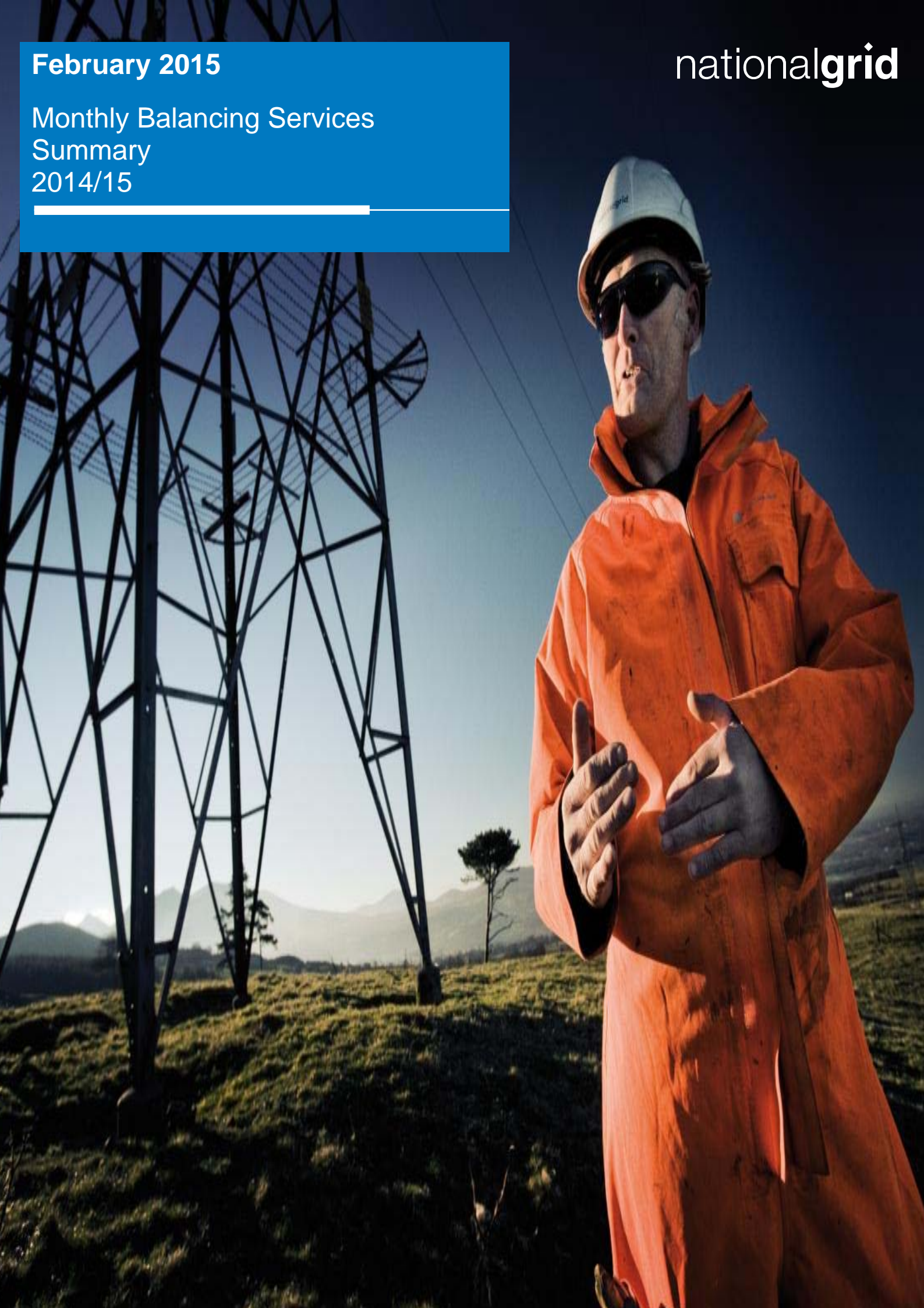


**February 2015**

**Monthly Balancing Services  
Summary  
2014/15**

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**nationalgrid**



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## **1. Introduction**

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. National Grid has undertaken to publish this summary on a monthly basis to increase the timeliness and visibility of the Balancing Service actions taken during the given month. This Monthly Summary provides information on the procurement of Balancing Services in twelve separate monthly publications.

### **1.1 Purpose of Monthly Balancing Services Summary Report**

The purpose of the Monthly Balancing Services Summary Report is to provide information in respect of Balancing Services that National Grid has procured during the relevant month for the purpose of operating the electricity transmission system. This publication contains volume and cost information associated with these balancing services and is based on the latest data and information available at the time of publication. The data in this report is subject to revision post publication as reconciled information becomes available. This report, however, is intended only to give an indication of the balancing actions National Grid has undertaken and so the relevant months report will not be republished in light of any revisions.

### **1.2 Nature of information provided in this report**

The information provided for the relevant month is based upon preliminary data. As future monthly summaries are produced, information in the graphs and tables will be updated to reflect the latest information available at that time. Changes to preliminary data that occur after the publication of the relevant month's report will thus be visible in the graphs and tables of future reports. Each monthly report will report volume data on a monthly rolling basis. The cost values contained in this document are predominantly reported to 2 decimal places (£m). Due to confidentiality agreements in place within Balancing Services contracts and the resolution of utilisation on a monthly basis, some information cannot be published in relation to the provision of some of these services. Where there are only a limited number of providers in a given month, cost information will not be separately identified on a monthly basis against the relevant service.

### 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, Short Term Operating Reserve, BM Start-up
- System to Generator Operational Intertripping Schemes
- Commercial Intertrip Service
- Ancillary Contracts to manage System Issues
- Maximum Generation Service
- All Other Services
- System to System Services
- Energy Related Products (including PGBT)

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 on the National Grid website.

### 1.4 Report Structure

This report presents the Balancing Services under four main titles:

- Services Procured via Market Arrangements
- Services Procured via Non-Tendered Bilateral Contracts
- Energy Related products
- A summary section providing the high level information for all services for the relevant month.

Further information is also provided within this report on the total costs of managing constraints, payments made to wind powered generation and overall costs of system operation, including forecast BSUoS charges.

### 1.5 Services not included in the report

The monthly total costs in this document intentionally do not include the acceptance of Bids or Offers in the Balancing Mechanism. However where the structure of ancillary services include a utilisation component exercised

through the Balancing Mechanism those Bid and Offer volumes and costs have been included in the relevant graphs to better inform participants of the costs in those areas.

Further information on Bid and Offer acceptances is contained within the Balancing Principles Statement which can be located on the National Grid Website in the Electricity section under Balancing Services & Transmission Licence Statements. All Bid and Offer information is available by clicking the following link to the NETA web site in the BMRS: <http://www.bmreports.com/>

## 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.

#### 2.1.1 Market Arrangements for Reactive Power

All contracts awarded via tender **round 34 (TR34)** commenced on the **01 October 2014**. For further information regarding the nature of these contracts please refer to the National Grid Website:

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

For this reporting period, the total utilisation volume for reactive power procured via market arrangements was **0GVArh**. The total expenditure relating to the capability and utilisation costs of reactive power procured via market arrangements was **£0.00m**.

#### 2.1.2 Default Arrangements for Reactive Power

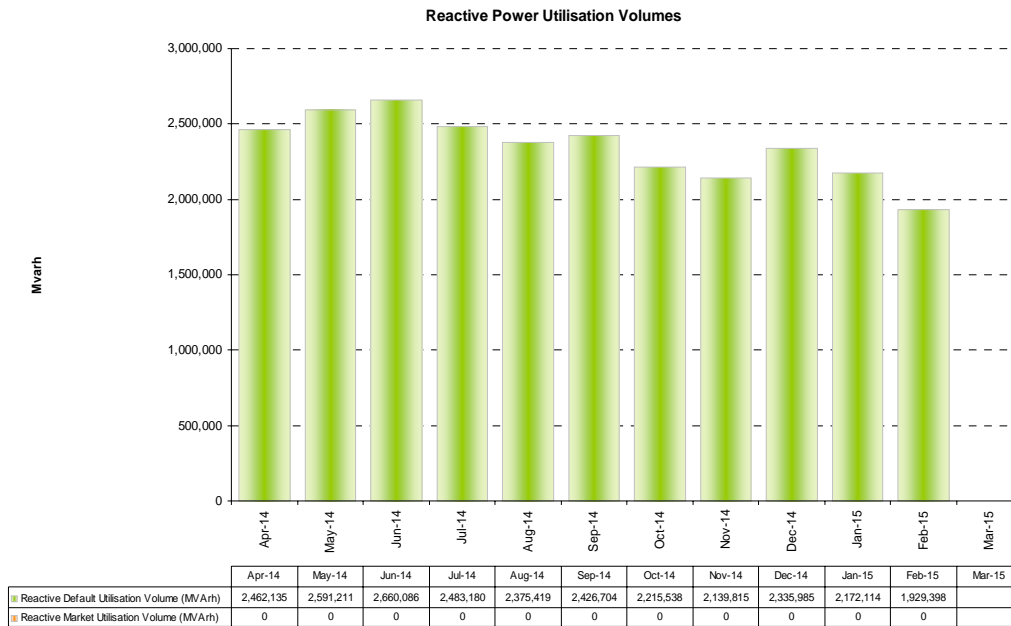
For this reporting period, the total utilisation volume for reactive power under the default arrangements was **1,929GVArh**. The total amount spent on Reactive Power under the default arrangements during this reporting month was **£5.09m**.

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

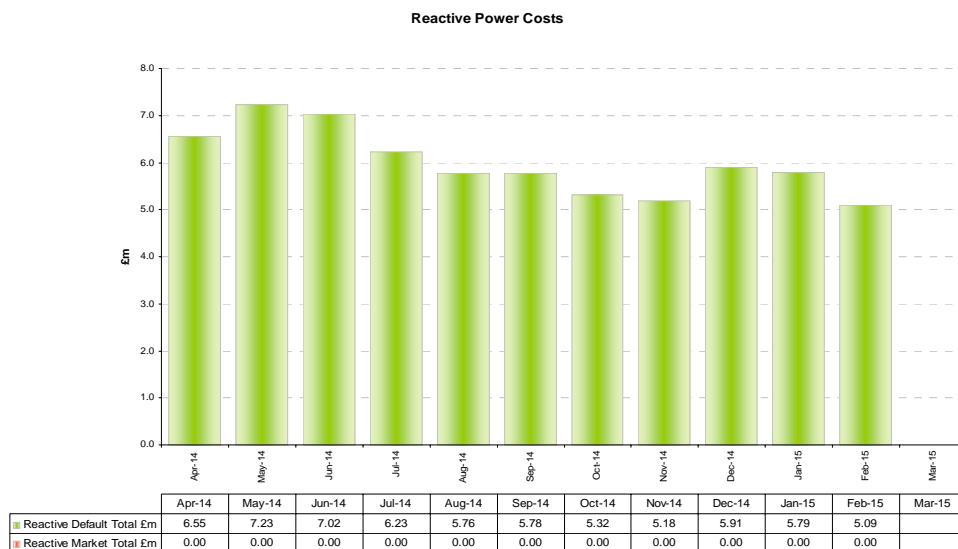
For this month, the combined total expenditure on reactive power was **£5.09m**.

### 2.1.3 Utilisation of Reactive Power

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.



## 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.

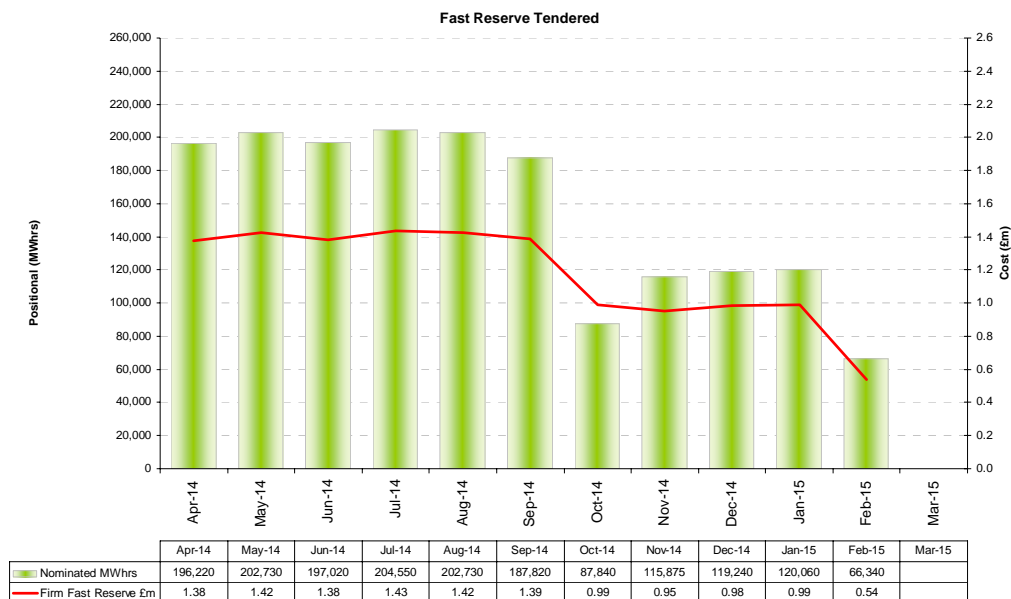
The following table lists the tender details for the relevant month.

|               | Total MW tendered | Total MW contracted | Nominated MWhrs | Firm Fast Reserve £m |
|---------------|-------------------|---------------------|-----------------|----------------------|
| <b>Apr-14</b> | 400               | 400                 | 196,220         | 1.38                 |
| <b>May-14</b> | 400               | 400                 | 202,730         | 1.42                 |
| <b>Jun-14</b> | 400               | 400                 | 197,020         | 1.38                 |
| <b>Jul-14</b> | 400               | 400                 | 204,550         | 1.43                 |
| <b>Aug-14</b> | 400               | 400                 | 202,730         | 1.42                 |
| <b>Sep-14</b> | 400               | 400                 | 187,820         | 1.39                 |
| <b>Oct-14</b> | 180               | 180                 | 87,840          | 0.99                 |
| <b>Nov-14</b> | 270               | 270                 | 115,875         | 0.95                 |
| <b>Dec-14</b> | 270               | 270                 | 119,240         | 0.98                 |
| <b>Jan-15</b> | 270               | 270                 | 120,060         | 0.99                 |
| <b>Feb-15</b> | 280               | 280                 | 66,340          | 0.54                 |

Please note that eligible companies, eligible unit data, units accepted/tendered and max GWh data are no longer available to National Grid hence we are unable to report this information.

### 2.2.1 Fast Reserve (Tendered) Capacity Contracting

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



A total of **280MW** of capacity was contracted during the month. The total expenditure on availability and utilisation excluding bids and offers was **£0.54m**.

For more information on Fast Reserve please refer Fast Reserve information at:

<http://www2.nationalgrid.com/uk/services/balancing-services/reserve-services/fast-reserve/>

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

### **2.3 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. For further information regarding this service, and the timetable for future tenders, please refer to the STOR information at:

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

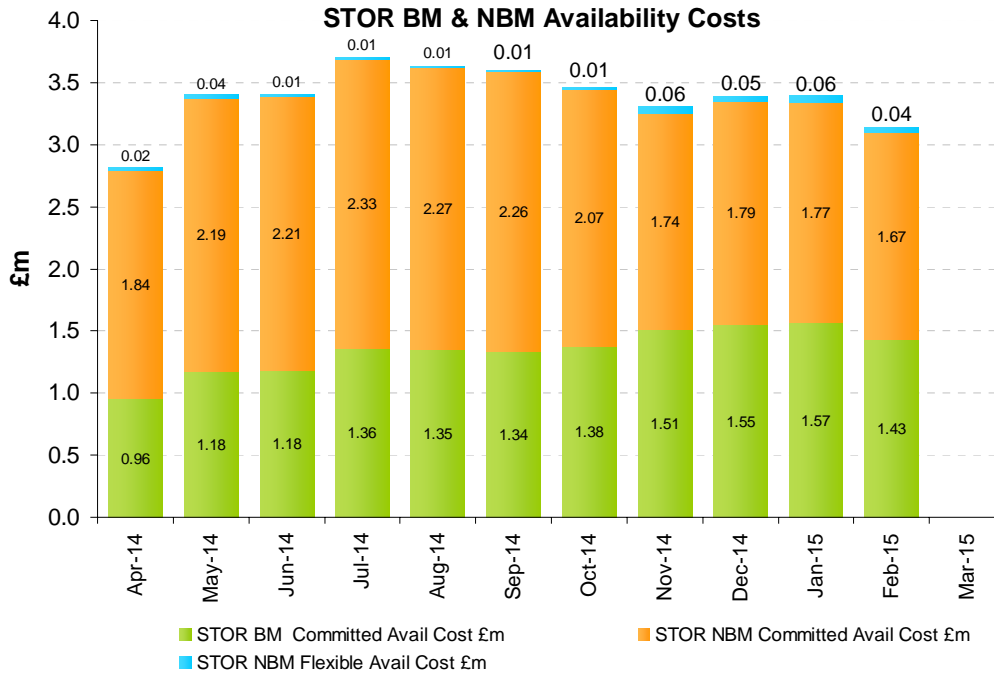
The current reporting month falls in Seasons 8.5 and 8.6 2014/15. These seasons were available for tenders in tender rounds 10 to 12 for long term tenders and tender rounds 19 to 24. A total of 3500MW were accepted for Season 8.5 and 3498MW for season 8.

Outturn and contracted figures for **February 2015** are shown in the table below.

|   | <b>Outturn</b> | <b>Contracted</b> |
|---|----------------|-------------------|
| <b>Volume weighted average availability price</b> | £4.45/MWh      | £3.27/MWh         |
| <b>Volume weighted average utilisation price</b>  | £114.39/MWh    | £171.33/MWh       |
| <b>MW available</b>                               | 2400.98MW      | 3498MW            |



**2.3.1 STOR BM and Non-BM Availability Costs**



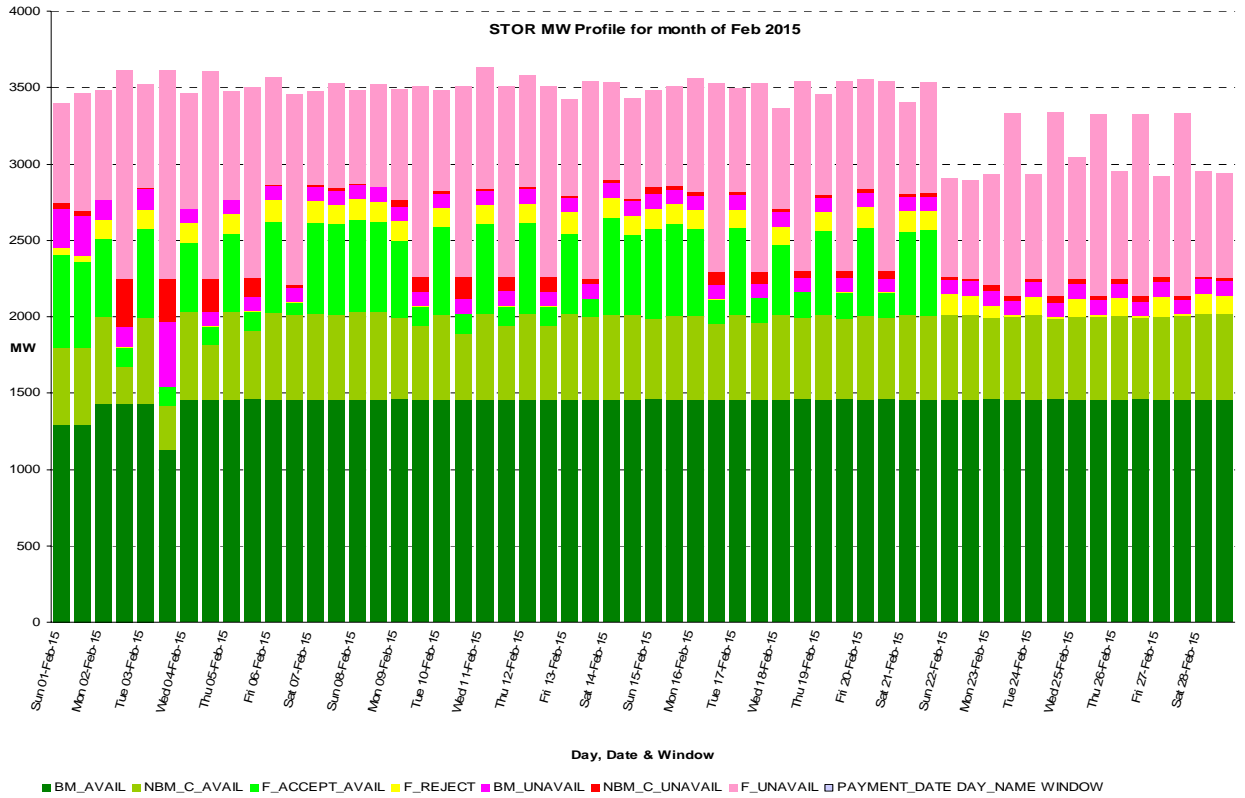
**Note – the underlying data, presenting flexible STOR information since 1 April 2007, is available in the MBSS\_DATA Excel file.**

**2.3.2 Previous Year STOR BM & NBM Availability Costs**

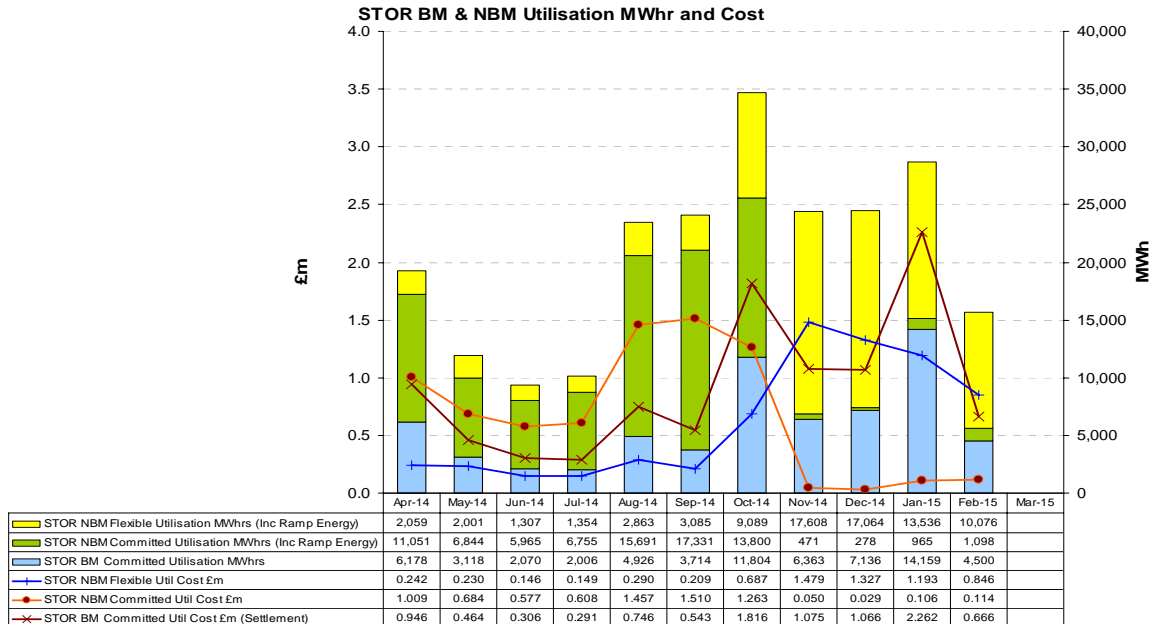
|                                    | February 2013/14 | February 2012/13 | February 2011/12 | February 2010/11 | February 2009/10 |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|
| <b>Previous Years August Costs</b> |                  |                  |                  |                  |                  |
| STOR BM Committed Avail Cost £m    | 2.49             | 3.47             | 5.35             | 4.68             | 4.10             |
| STOR NBM Committed Avail Cost £m   | 1.73             | 1.67             | 0.59             | 0.32             | 0.38             |
| STOR NBM Flexible Avail Cost £m    | 0.02             | 0.23             | 0.16             | 0.88             | 0.70             |
| Average Utilisation Payment £/MWh  | 192.21           | 201              | 223.90           | 256.08           | 282.98           |

**Note – this table is based on previous years' Settlements data. This year's figures to date are available in the chart in 2.3.1.**

2.3.3 STOR MW Profiles with Results of Flexible STOR Assessments



2.3.4 STOR BM and Non-BM Utilisation



Non-BM STOR Availability payments, Non-BM STOR Utilisation payments and BM STOR Availability payments are paid as Balancing Services. BM STOR Utilisation payments are paid via the BM Bids and Offers, not as a Balancing Service, they are included in this report only to clarify the total STOR expenditure.

The total STOR expenditure on availability payments and utilisation payments to both BM and NBM providers for the month was **£4.77m**.

The total STOR Utilisation volume for both BM and Non-BM units for the month was **15,674MWh**.

For further information on the nature of this service please refer to the STOR information at:

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

2.4 Tendered Frequency Response.

Please see Section 3.2 Commercial Frequency Response.

### **3. Services Procured Via Non-Tendered Bilateral Contracts**

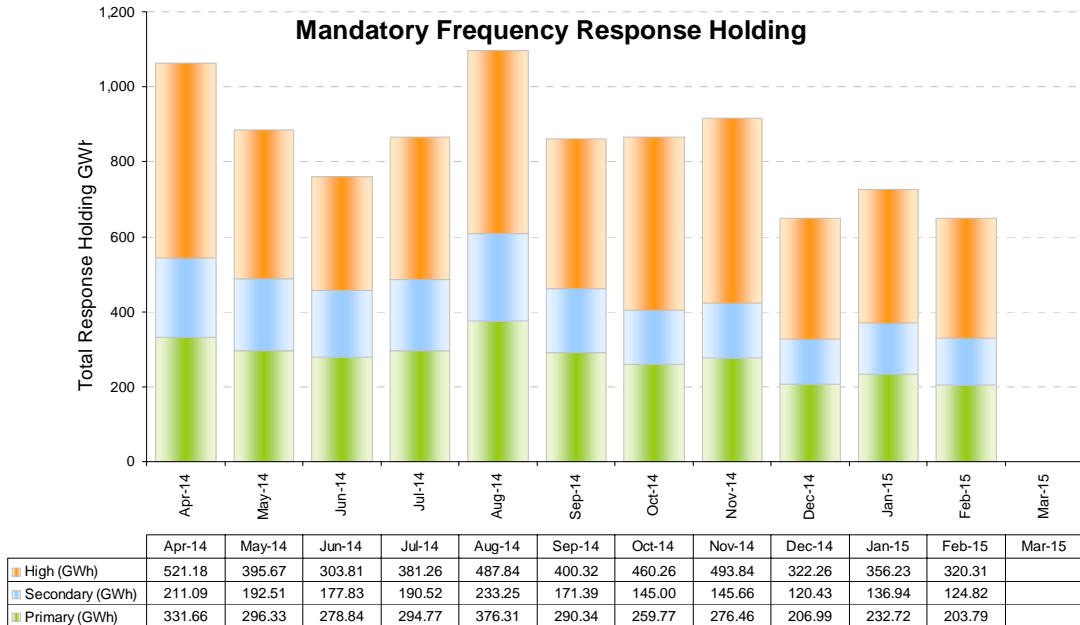
#### **3.1 Mandatory Frequency Response**

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.

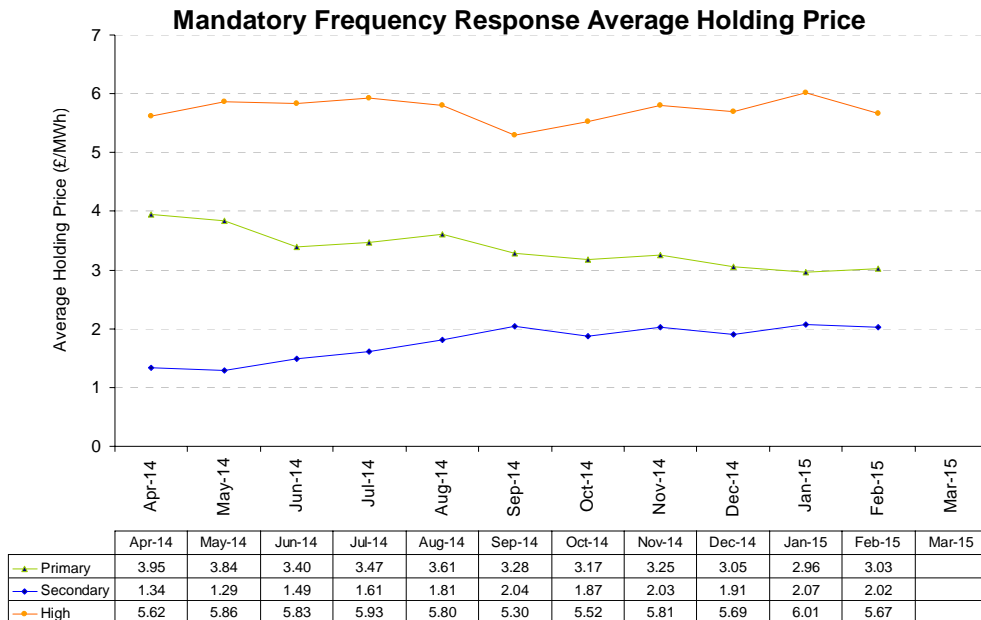
Payments for Mandatory Frequency Response comprise a Holding Payment (£/MWh) and a Response Energy Payment (£/MWh). Details on frequency response holding are given below. More information on this can be found on the National Grid Website:

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

### 3.1.1 Mandatory Frequency Response Holding



### 3.1.2 Average Holding price of Mandatory Frequency Response



Spend on Mandatory Frequency Response holding for the reporting month was **£2.74m**.

Spend on Response Energy Payments was **£0.09m<sup>1</sup>**. The methodology for calculating these payments is given in the Connection & Use of System Code (CUSC) section [4.1.3.9 & 4.1.3.9A](#). The CUSC can be found on the National Grid website.

The total expenditure on Mandatory Frequency Response during the reporting month was **£2.83m**.

### **3.2 Commercial Frequency Response**

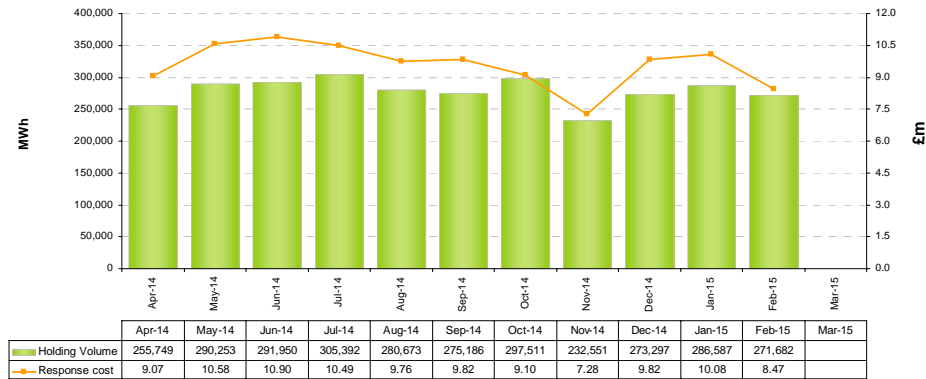
Commercial Frequency Response is a collection of services that can be provided by demand side participants and generation plant. The technical characteristics of these services are different to those required under mandatory service arrangements, and range from enhanced mandatory dynamic services through 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.

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<sup>1</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.

### 3.2.1 Commercial Frequency Response Holding Volume and Cost

Commercial Frequency Response Holding



The total amount spent on Commercial Frequency Response holding during the reporting month was **£8.47m**.

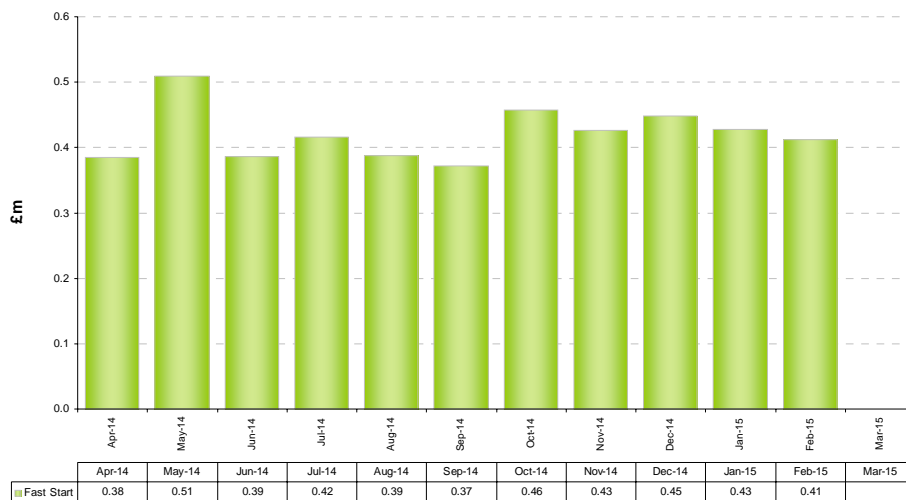
Further information on Commercial Frequency is found in the appropriate place on the National Grid Website, or specifically on firm frequency response through the tenders and reports section of National Grid’s Balancing Services website.

### 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.

3.3.1 Fast Start Details

Fast Start Utilisation

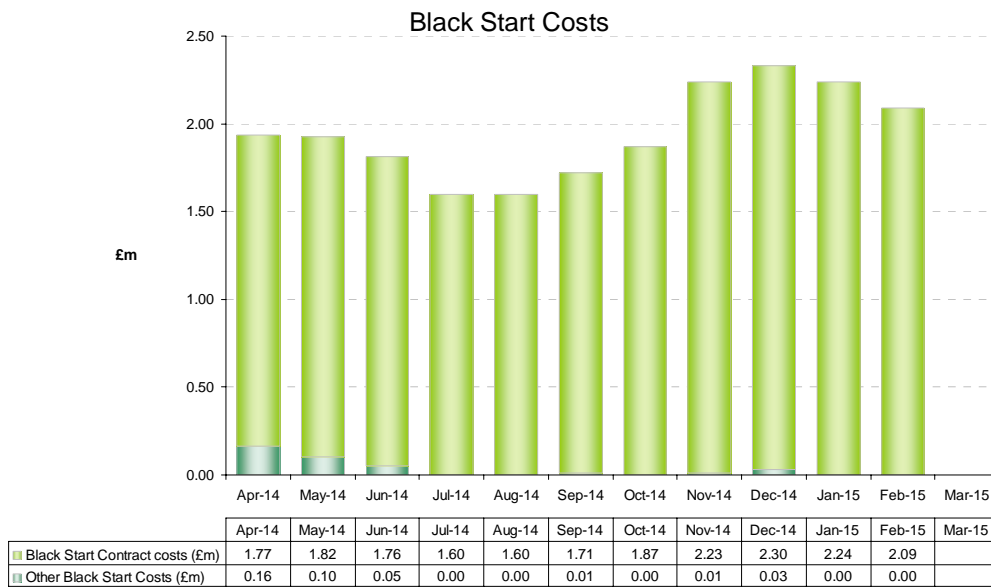


The total amount paid during the relevant reporting month for the availability and utilisation of the Fast Start service was **£0.41m**.



### 3.4 Black Start

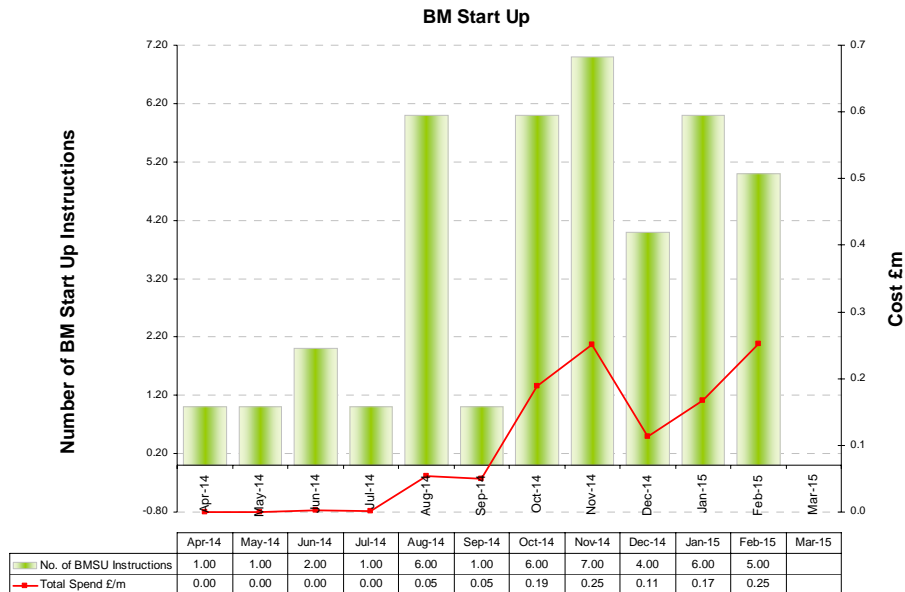
During the reporting month there were up to **15** stations with Black Start agreements in place. No new agreements were entered into during the period. The total amount paid during the relevant reporting month for the availability of the Black Start service was **£2.09m**.



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/>

### 3.5 BM Start up

The chart below contains information relating to the procurement of BM Start Up Balancing Services.

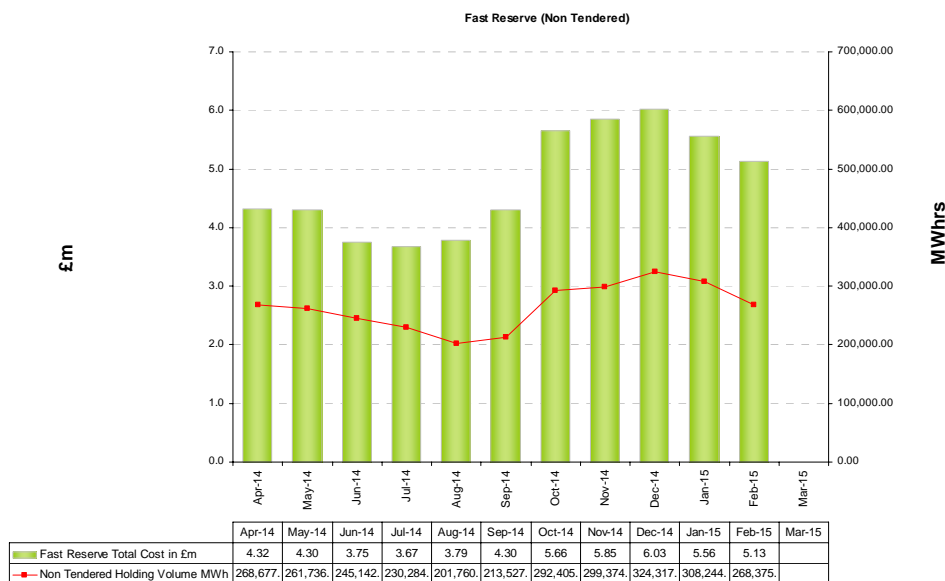


The total amount spent on BM Start Up during the reporting month was **£0.25m**. The total number of BM Start Up instructions was **0**. Further details are available via the National Grid Website:

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

### 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.

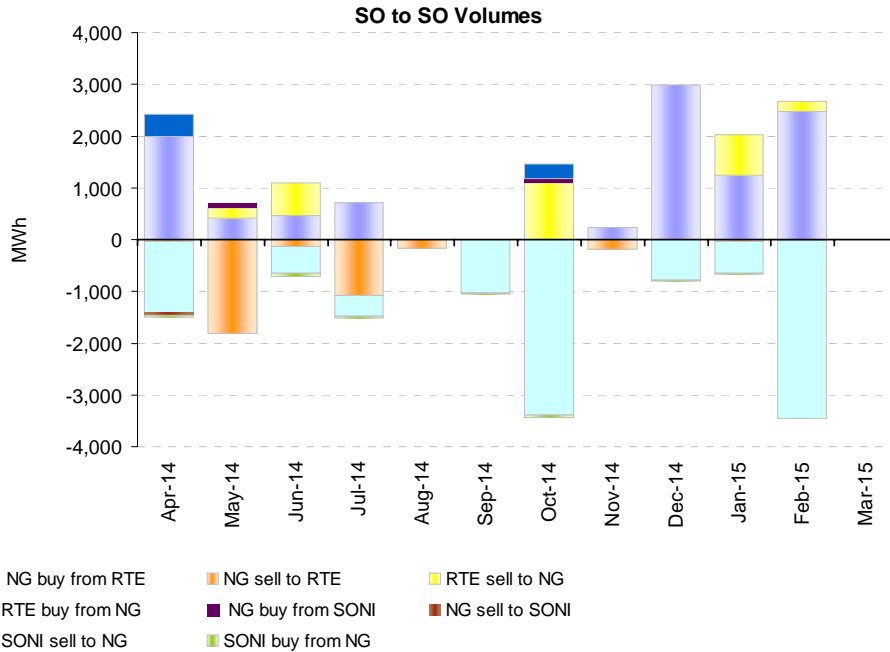


The availability payments during the relevant month totalled **£5.13m**, excluding utilisation via offers and bids accepted in the Balancing Mechanism.

### 3.7 System to System Services

System to System services are provided mutually with other Transmission System Operators connected to the 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 Northern Ireland.

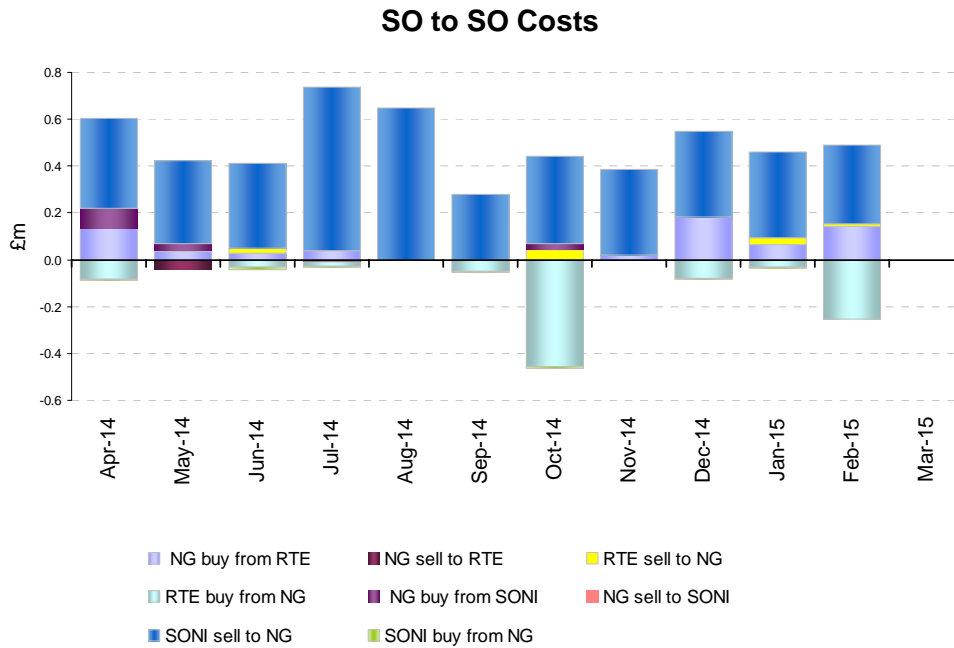
**3.7.1 Volumes of System to System Services**



The total energy volumes associated with system to system services during the reporting month was **-3GWh** export (from GB) and **3GWh** import (to GB).

**3.7.2 Expenditure on System to System Services**

The following graph shows total net expenditure associated with System to System Services and was **£0.24m**.

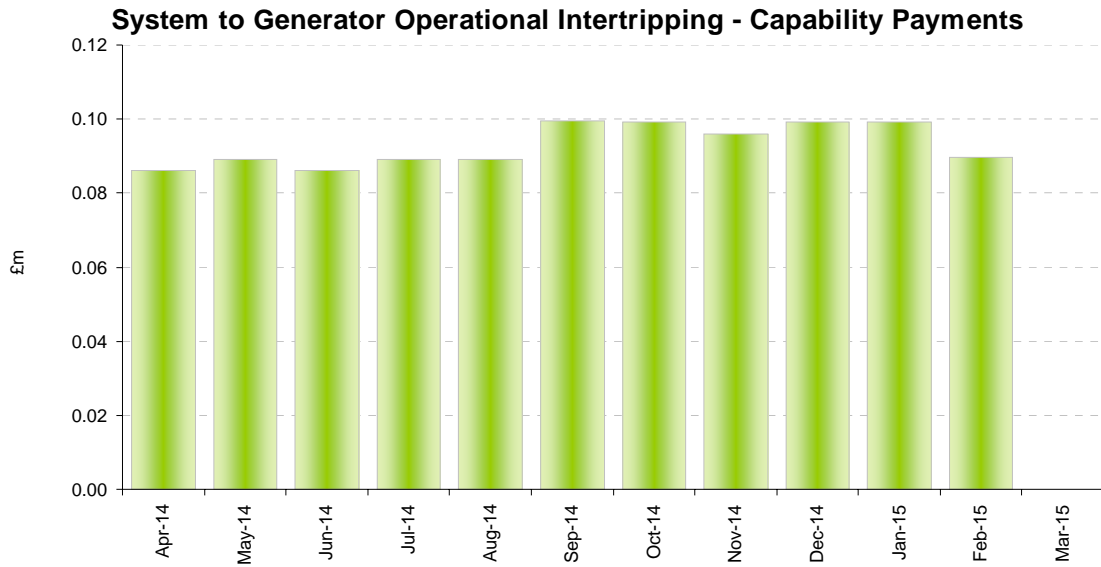


### 3.8 System to Generator Operational Intertipping Schemes

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.

**3.8.1 Capability Payments**

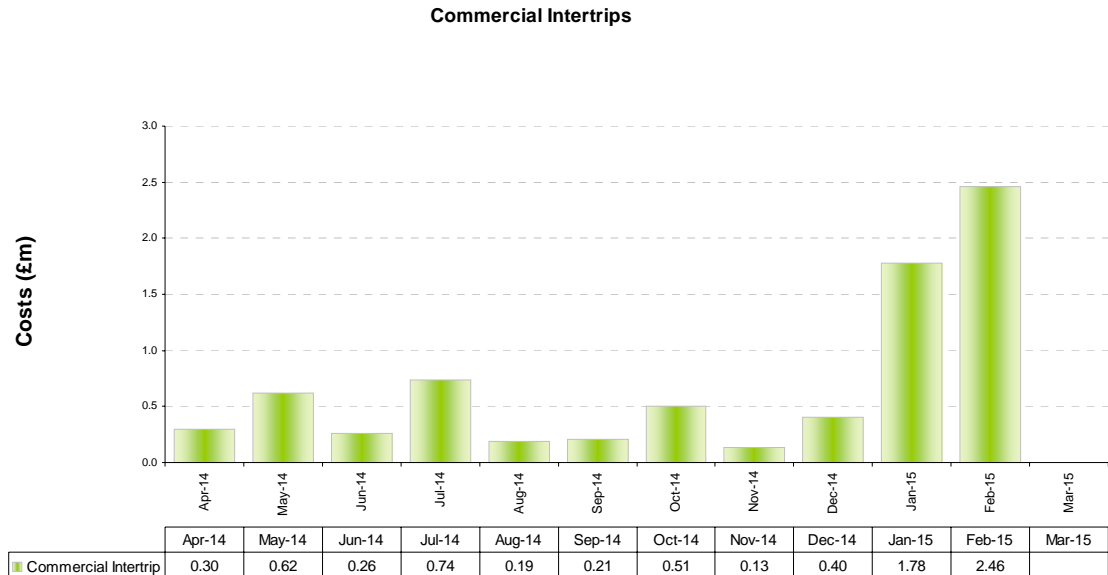


System to Generator Operational Intertipping – Capability Payments in the reporting month totalled **£0.09m**.

**3.9 Commercial Intertrip Service**

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

### 3.9.1 Commercial Intertrip Expenditure



Expenditure on Commercial Intertrips was **£2.46m**.

### 3.9.2 Commercial Intertrip Cost Breakdown

| 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 |                        |                    |   |                                |   |                 |                      |

Under commercial intertrip agreements arming is payable either as:

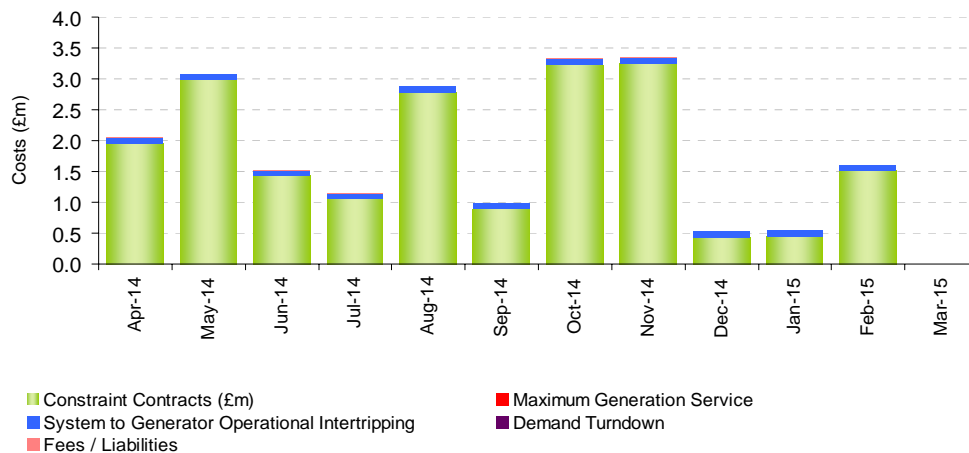
1. A fixed pre-agreed sum, this may be for a fixed number of hours or unlimited hours (shown above as Contracted arming) or;
2. Payable on utilisation with the generator typically having the right to alter their payments with a short notice period (shown above as Arming Payments).

- NGET have on occasion agreements in place with generators to manage system issues which include the use of a number of hours of arming on an intertrip. The figure quoted in the “Contracted pre-paid arming” column is the maximum firm payment that could be made assuming the intertrip is available for use for all the Contracted Arming Hrs as quoted in the above table during the contracted period.

### 3.10 Ancillary Contracts to Manage System Issues

On occasion, National Grid enters into bespoke Ancillary service contracts to manage certain transmission system issues. A number and nature of these contracts is necessarily confidential however where possible National Grid will make the information available via our website. The costs reported here include any costs of ‘Transmission Related Agreements’, which are entered as a consequence of certain customer choices of connection conditions.

All other services



Further details on constraint contracts are available, where possible, via the National Grid Website: <http://www2.nationalgrid.com/UK/Services/Balancing-services/System-security/Transmission-Constraint-Management/>

### 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.

**3.12 Demand Turndown, Fees and Liabilities**

The figure for Demand Turndown, Fees and Liabilities includes bespoke services to manage specific system conditions and costs relating to fees and liabilities.



The total expenditure on Demand Turndown, Fees and Liabilities during the reporting month was **£0.00m**. Please note that these costs are usually one month in arrears.

## 4. Energy Related Products

### 4.1 Forward Trading

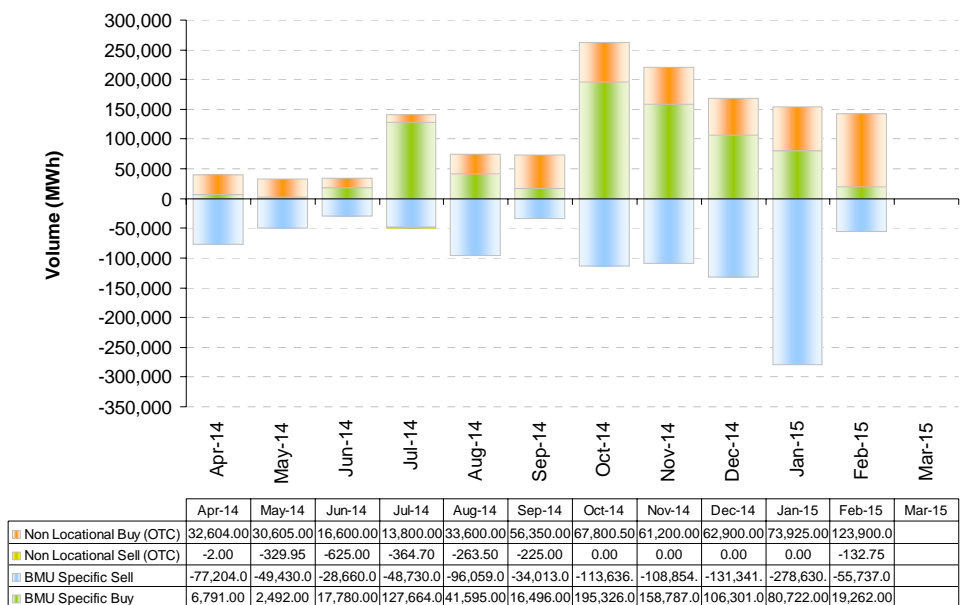
National Grid’s forward trading is undertaken to reduce the overall costs of balancing the system, and to resolve system issues as appropriate. There are a number of products and procurement mechanisms available. During the reporting month, National Grid traded a gross volume of **199,032MWh**.

|                       |                   |                                 |
|-----------------------|-------------------|---------------------------------|
| <b>Non Locational</b> |                   | } Total Net Spend <b>£5.76m</b> |
| Buy Volume            | <b>123,900MWh</b> |                                 |
| Sell Volume           | <b>-133MWh</b>    |                                 |
| <b>BMU Specific</b>   |                   |                                 |
| Buy Volume            | <b>19,262MWh</b>  |                                 |
| Sell Volume           | <b>-55,737MWh</b> |                                 |

#### 4.1.1 Volume of Forward Trading Buys and Sells

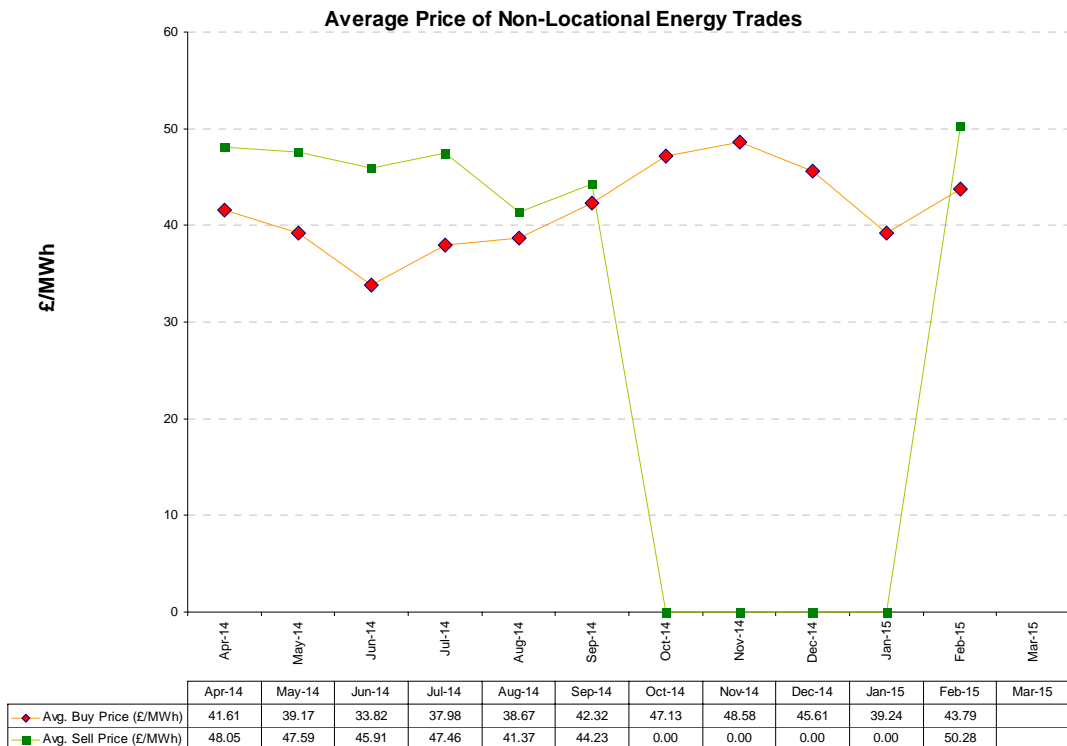
The following chart shows the monthly profile of our trading activities, both for non-locational energy trades and BMU-Specific trades.

Forward Trade Buys and Sells



**4.1.2 Non-Locational Trading Activity**

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

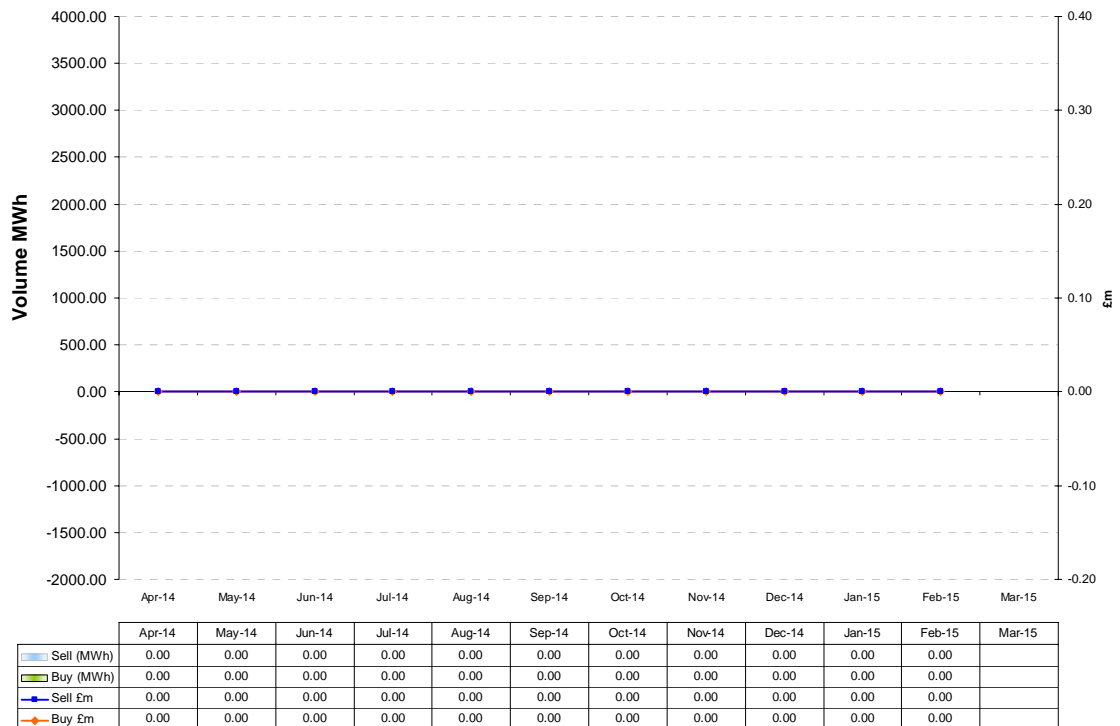


Further details are available via the National Grid Website:  
<http://www2.nationalgrid.com/uk/services/balancing-services/trading/>.

### 4.2 Pre-Gate BMU Transactions (PGBT)

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

**PGBT Actions**



The total net spend on PGBT during the reporting month was **£0m**.  
 Details on real time PGBT transactions can be found on the BMRS (system warning page) and post event, on the National Grid Website.

## 5. Constraints

A constraint is essentially when the energy flow in a certain area of the network is limited by the capacity of the network. When National Grid asks a generator to reduce output (constrain) we still need the electricity it would have produced to keep the network balanced, it's just that we can't move it in or out of a certain area. We manage this by buying energy from the market for another generator elsewhere on the network to increase output and make up the difference essentially. This can equally happen the other way around in that some areas might need more energy to be produced within them and hence there would need to be reductions elsewhere.

If we did not carry out these activities then this could result in damage to equipment or put areas of the system at risk of shutting down completely. National Grid resolves these constraints on the GB Transmission System through different mechanisms, including bids and offers in the Balancing Mechanism, PGBTs, Trades, SO-SO actions and through contracted services. The costs of resolving constraints via intertrip contracts (see section 3.9) and bilateral contracts (see section 3.10) have already been explored.

The total cost of managing transmission constraints in this month was **£25.32m**.

### 5.1 Constraint management taken in the Balancing Mechanism, via Trades or by SO-SO actions

The total cost of resolving constraints via Balancing Mechanism, Trading and SO-SO actions was **£21.26m**. This total includes part of the costs of SO-SO actions (section 3.7), Trades (section 4.1) and PGBTs (section 4.2) already reported above. This section shows how this figure was calculated.

**5.1.1 Summary of costs of constraint actions taken in the Balancing Mechanism, via Trades and SO-SO actions**

|  | Type of Constraint | Location | Date            |                |          |         |                 |                |               |
|--|--------------------|----------|-----------------|----------------|----------|---------|-----------------|----------------|---------------|
|  | Export             |          |                 | Export summary | Import   |         |                 | Import summary | Grand Summary |
|  | Scotland           | Cheviot  | England & Wales |                | Scotland | Cheviot | England & Wales |                |               |
| Constrained Volume (GWh) [A]                                       | -262.70            | -73.69   | -31.22          | -367.61        | 0.63     | 0.00    | 14.82           | 15.45          | <b>383.06</b> |
| Average Price of Action (£/MWh) [B]                                | 17.95              | -50.76   | 22.38           | 4.56           | 137.86   | 0.00    | 63.05           | 66.11          | <b>7.04</b>   |
| Average Energy Replacement Price (£/MWh) [C]                       | 41.37              | 37.88    | 41.84           | 40.71          | 59.88    | 0.00    | 35.49           | 36.49          | <b>40.54</b>  |
| Total Direct Cost (£m) [G]=[A*(B-C)]                               | 6.15               | 6.53     | 0.61            | 13.29          | 0.05     | 0.00    | 0.41            | 0.46           | <b>13.75</b>  |
| Reserve Replaced (GWh)   | 295.43             | 232.29   | 114.00          | 641.72         | 0.00     | 0.00    | 0.10            | 0.10           | <b>641.81</b> |
| Volume of Actions Required for Reserve Replacement (GWh) [D]       | 172.28             | 138.94   | 67.73           | 378.95         | 0.00     | 0.00    | 0.02            | 0.02           | <b>378.97</b> |
| Average Reserve Replacement Price (£/MWh) [E]                      | 62.67              | 61.99    | 63.35           | 105.91         | 0.00     | 0.00    | 31.00           | 131.55         | <b>105.92</b> |
| Average Energy Reference Price for Reserve Replacement (£/MWh) [F] | 41.49              | 42.36    | 43.85           | 71.50          | 0.00     | 0.00    | 51.32           | 217.79         | <b>71.52</b>  |
| Total Reserve Cost (£m) [H]=[D*(E-F)]                              | 3.65               | 2.73     | 1.32            | 7.70           | 0.00     | 0.00    | 0.00            | 0.00           | <b>7.70</b>   |
| Total Cost (£m) [I]=[G+H]  | 9.80               | 9.26     | 1.93            | 20.99          | 0.05     | 0.00    | 0.41            | 0.46           | <b>21.45</b>  |
| Additional (Transferred) Costs (£m) [J]                            | 0.04               | 0.01     | 0.01            | 0.06           | -0.01    | 0.00    | -0.23           | -0.24          | <b>-0.19</b>  |
| Total constraint net cost (£m) [I+J]                               | 9.84               | 9.27     | 1.93            | 21.04          | 0.04     | 0.00    | 0.17            | 0.21           | <b>21.26</b>  |

\*Please note Constrained Volumes for Import and Export are now shown as positive volumes. The Grand Summary therefore is the absolute constrained volume.

**5.1.2 Break down of constraint costs per category**

| ACTION TYPE             | Export       | Import      | Total        |
|-------------------------|--------------|-------------|--------------|
| BM Actions              | 19.09        | 0.15        | 19.25        |
| SO-SO Trades            | 0            | 0           | 0            |
| Trades (including PGBT) | 1.95         | 0.05        | 2.00         |
| <b>Total</b>            | <b>21.04</b> | <b>0.21</b> | <b>21.26</b> |

**5.1.3 Explanatory Notes**

| Row  | Description  |
|--|--|
| Constrained Volume (GWh)                                       | Total volume of bids/offers accepted for BM Units within a constrained zone  |
| Average Price of Action (£/MWh)                                | Volume weighted average prices of bids / offers  |
| Average Energy Replacement Price (£/MWh)                       | Volume weighted average of the energy reference price(*)   |
| Total Direct Cost (£m)   | Constrained Volume x (Average Price of Action - Average Energy Replacement Price)  |
| Reserve Replaced (GWh)   | Additional reserve created to replace reserve sterilised behind constraints e.g. capacity of additional units synchronised to the system   |
| Volume of Actions Required for Reserve Replacement (GWh)       | Volume of actions required by National Grid to create replacement reserve e.g. offers in the BM to run a unit at SEL thus gaining access to capacity of unit.  |
| Average Reserve Replacement Price (£/MWh)                      | Volume weighted average of prices of the reserve actions   |
| Average Energy Reference Price for Reserve Replacement (£/MWh) | Volume weighted average of the energy reference price(*) for periods when reserve is replaced  |
| Total Reserve Cost (£m)  | Reserve replaced x (Average Reserve Replacement Price - Average Energy Reference Price for Reserve Replacement)  |
| Total Cost (£m)  | Total Direct Cost + Total Reserve Cost   |
| Additional (Transferred) Costs (£m)                            | For some import constraints, actions taken in BM units within the constrained zone may end up being the cheapest option for creating system reserve - in this case all or part of the cost is transferred to the relevant account. In all other circumstances, |
| Total constraint net cost (£m)                                 | Total Cost + Additional (Transferred) Costs  |
| (*) Energy reference price (£/MWh)                             | For each settlement period, it is the volume weighted average of the submitted bids/offers available for National Grid to resolve NIV, i.e. the lowest (highest) available price of offers (bids) stacked up to NIV when the market is short (long)            |

**5.2 Breakdown of Constraint Costs by Fuel Type**

In mid January 2014 National Grid confirmed we would include a table within this report showing the costs of constraints broken down by fuel type. In the tables below, you will see that there are two columns showing what makes up constraint payments – one shows the costs National Grid has incurred to constrain generation (“Payments to Manage Constraint”) and the other column shows the money National Grid has paid generators to bring the system back into balance, both in terms of energy and to readdress the level of reserve available on the system (“Payments to Rebalance System”).

The majority of our constraint costs in general regard this process – payments for generation to reduce output, and payments to generation to increase output.

However, when managing constraints, National Grid can incur other costs. For example, make use of an intertrip service or bilateral contract to reduce the overall costs to consumers. Because these costs are a consequence of the constraint, these costs are also included in the tables below.

**5.2.1 Breakdown of Constraint Costs by Fuel Type (Reporting Month)**

| February 2015  | All Values £m                 |                              |              |
|----------------|-------------------------------|------------------------------|--------------|
| Fuel Type      | Payments to Manage Constraint | Payments to Rebalance System | Net          |
| COAL           | -4.12                         | 3.34                         | -0.78        |
| GAS            | 1.34                          | 16.02                        | 17.36        |
| INTERCONNECTOR | -0.07                         | 0.50                         | 0.43         |
| WIND           | 4.88                          | 0.02                         | 4.90         |
| OTHER          | 1.20                          | 2.21                         | 3.41         |
| <b>Total</b>   | <b>3.23</b>                   | <b>22.09</b>                 | <b>25.32</b> |

**5.2.2 Breakdown of Constraint Costs by Fuel Type (Year to Date)**

| FY2014-2015    | All Values £m                 |                              |               |
|----------------|-------------------------------|------------------------------|---------------|
| Fuel Type      | Payments to Manage Constraint | Payments to Rebalance System | Net           |
| COAL           | -29.92                        | 10.47                        | -19.45        |
| GAS            | 44.27                         | 168.50                       | 212.77        |
| INTERCONNECTOR | -2.17                         | -1.79                        | -3.96         |
| WIND           | 55.43                         | 0.08                         | 55.51         |
| OTHER          | 0.10                          | 12.34                        | 12.44         |
| <b>Total</b>   | <b>67.71</b>                  | <b>189.60</b>                | <b>257.32</b> |

Notes:

1. Positive values indicate costs to National Grid, negative values indicate receipts
2. “Other” includes all fuel types not reported separately and includes hydro, OCGT, demand side providers, nuclear & oil.

More detail on the methodology behind this table can be found here:

<http://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=31695>



## **6. Other Information**

### **6.1 New Wind Generation**

No new wind generation was reported in Elexon Settlement Data as having generated more than 2MW in any half hour for the first time during the last month.

### **6.2 How we manage Wind generation**

Energy generated by wind farms varies according to how windy it is. Sometimes there is very little wind, and on other days wind generation could be too strong such that the turbines shut down automatically for their own protection.

In order to balance the system we require backup generation everyday. This covers for power station breakdowns, forecasting errors and for unexpected events. In the past we have seen periods when the level of electricity generated from wind within the UK, Ireland and parts of Northern Europe has been very low. This can coincide with days of peak electricity demand when it's cold and still. The cost of using backup generation is part of the total cost of balancing the system.

Sometimes we ask some wind farms to stop generating, or reduce output, because very high wind may affect the transmission network, causing constraints. Where economic we may also use wind powered units to resolve other system issues such as frequency management or to create flexibility across the GB generation portfolio in the same way as we would use any other type of generation for these services.

**6.2.1 Payments to Wind Powered Generation**

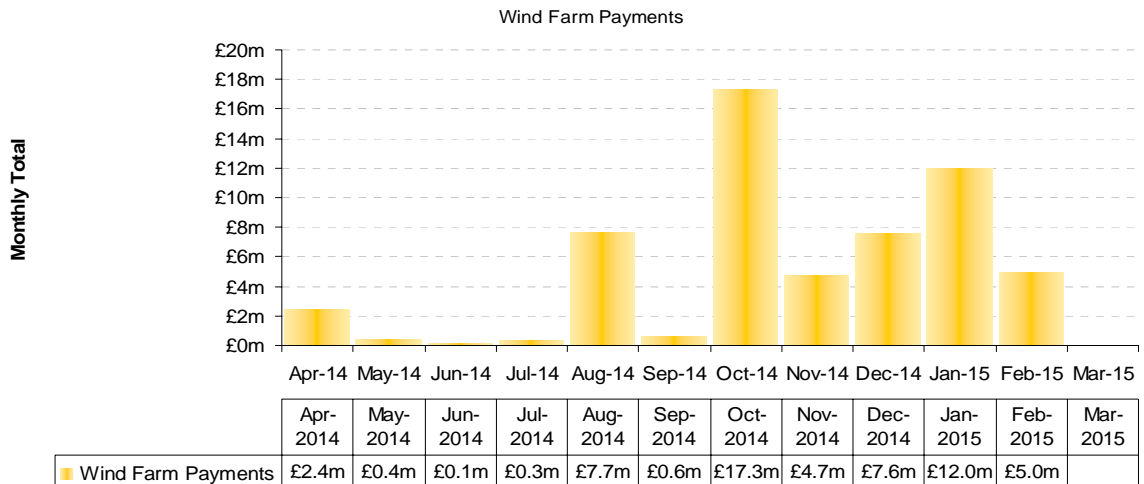
The table below shows the payments made to wind powered generation since the 2010/11 financial year. There were no payments to wind powered generation prior to this. All payments to wind powered generation are included regardless of the reason that this cost was incurred.

| £m                                  | 2010/11 | 2011/12 | 2012/13 | 2013/14 | 2014/15 |
|-------------------------------------|---------|---------|---------|---------|---------|
| Payments to Wind powered generation | 0.2     | 34.1    | 7.6     | 49.7    | 58.2    |

Payments to wind farms in **February 2015** totalled **£5.0m**.

**6.2.2 Monthly Breakdown of Wind Farm Payments**

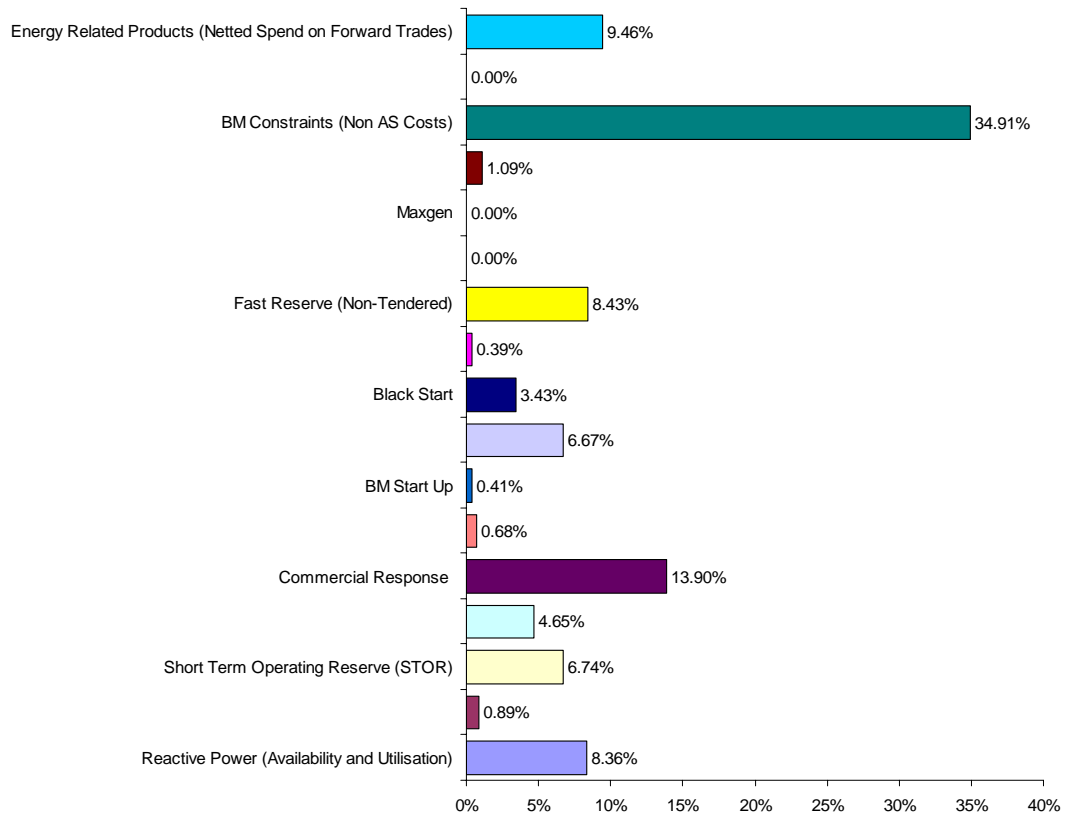
The graph below shows the monthly total payments to wind powered generation this financial year:



## 7. Summary

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

**Summary of Balancing Services Costs February 2015**



## 8. 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.

The Procurement Guidelines and Balancing Principles Statement Reports can be accessed via:

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-transmission-operational-data/Transmission-License-Condition-C16-Statements/>

**Electricity Balancing Services**

Email: [BSIS@nationalgrid.com](mailto:BSIS@nationalgrid.com)

### 9. Information Summary Page

| Balancing Services  | Info Provision                            | Total Costs £m | Total Value          |
|---|---|----------------|----------------------|
| Reactive Power Market   | Utilisation Volume (MA)                   |                | 0GVArh               |
|   | Utilisation Volume (DefaultPM)            |                | 1,929GVArh           |
|   | Total Spend (MA)                          | 0.00           |                      |
|   | Total Spend (Default PM)                  | 5.09           |                      |
| Short Term Operating Reserve(STOR)<br>Including BM and NBM Availability & Utilisation | Average Contracted Availability Payment   |                | £4.45 /MWh           |
|   | Average Contracted Utilisation Payment    |                | £114.39 /MWh         |
|   | Total Spend                               | 4.77           |                      |
|   | Total Utilisation Volume (MWh)            |                | 15,674MWh            |
| Mandatory Frequency Response  | Holding Volumes & Prices:                 |                | Primary / Sec / High |
|   | Average Volume Held MW                    |                | 304 / 186 / 477      |
|   | Average Price £/MWh                       |                | 3.03 / 2.02 / 5.67   |
|   | Total Holding Spend                       | 2.74           |                      |
|   | Total Response Energy Payment Spend       | 0.09           |                      |
| Commercial Frequency Response   | No. Of Contracts                          |                |                      |
|   | Total Spend                               | 8.47           |                      |
| Fast Start  | Total Spend                               | 0.41           |                      |
| Black Start   | Total Spend                               | 2.09           |                      |
|   | Number of Stations                        |                | 15                   |
| BM Start Up   | Total Cost of BM Start Up                 | 0.25           |                      |
|   | Number of Instructions                    |                | 5                    |
| Fast Reserve -Tendered  | Total Spend on Availability & Utilisation | 0.54           |                      |
|   | Capacity                                  |                | 280MW                |
| Fast Reserve Non-Tendered   | Total Spend on Availability               | 5.13           |                      |
|   | Volume Imported                           |                | 3GWh                 |
| SO to SO  | Volume Exported                           |                | -3GWh                |
|   | Total Spend                               | 0.24           |                      |
|   |   |                |                      |
| System to Generator Operational Intertrips  | Capability Payments                       | 0.09           |                      |
|   | Utilisation Payments                      | 0.00           |                      |
| Commercial Intertrip Service  | Total Spend                               | 2.46           |                      |
| Balancing Services Constraint Contracts   | Total Spend                               | 1.51           |                      |
| BM Constraints Only   | Total Spend                               | 21.26          |                      |
| Transmission Constraints  | Total Management Cost                     | £25.32m        |                      |
| Maximum Generation Service  | Total Spend                               | 0.00           |                      |
| Demand Turndown, Fees and Liabilities   | Total Spend                               | 0.00           |                      |
| Forward Trading   | Traded Gross Volume                       |                | 199,032MWh           |
|   | Net Cost of Forward Trading               | 5.76           |                      |
|   | OTC - Power Exchange & Energy:            |                |                      |
|   | Buy Volume                                |                | 123,900MWh           |
|   | Sell Volume                               |                | -133MWh              |
|   | OTC - BMU Specific:                       |                |                      |
|   | Buy Volume                                |                | 19,262MWh            |
| Sell Volume   |   | -55,737MWh     |                      |
| PGBT  | No. of PGBT Entered Into:                 |                |                      |
|   | Sourced                                   |                | 0                    |
|   | Agreed                                    |                | 0                    |
|   | Average PGBT Prices £/MWh:                |                |                      |
|   | Buy                                       |                | 0.00                 |
|   | Sell                                      |                | 0.00                 |
|   | Volume MWh:                               |                |                      |
|   | Buy                                       |                | 0MWh                 |
|   | Sell                                      |                | 0MWh                 |
|   | Total Cost of PGBT                        | 0.00           |                      |
| Summary (exc. Transmission Constraints)   | Total                                     | £60.90m        |                      |

The category of Transmission Constraints is listed in the Balancing Services Data. It is a sub total of BM Constraints only, Balancing Services Constraints Contracts, Commercial Intertrip Service and System to Generator Operational Intertrips. This is provided for ease of use. The Summary/Total excludes the Transmission Constraints sub total.

## 10. Summary of BSIS Costs

### 10.1 MBSS Year to Date Summary

MBSS costs report absolute costs (volume x price) on services. Costs differences in the table below compared to the summary in Section 9 are directly related to the estimate of the additional costs of obtaining that service above the costs of balancing the system.

| 2014/15 £m             | A. Year to Date Total Cost | B. Year To Date Target | C. Year to Date Latest Cost Forecast | D. Year to Date Initial Target Forecast | E. Projected Total Cost for Year<br>(Cost Outturn + Latest Cost Forecast) | F. Projected Scheme Target Total (Year 1) | G. Initial Forecast for Year |
|------------------------|----------------------------|------------------------|--------------------------------------|---|---|---|------------------------------|
| Energy Imbalance       | -£13.4                     | -£13.5                 | -£14.0                               | -£90.3                                  | -£11.9  | -£17.2                                    | -£94.0                       |
| Operating Reserve      | £74.0                      | £73.8                  | £69.4                                | £158.2                                  | £83.2   | £85.5                                     | £174.8                       |
| BM Startup             | £1.0                       | £1.9                   | £0.7                                 | £4.6                                    | £1.0  | £2.0                                      | £4.8                         |
| STOR                   | £55.7                      | £57.4                  | £63.0                                | £75.7                                   | £65.4   | £64.1                                     | £82.8                        |
| Constraints - E&W      | £65.9                      |                        |                                      |   |   |   |                              |
| Constraints - Cheviot  | £119.2                     | £278.3                 | £237.2                               | £555.6                                  | £286.8  | £337.7                                    | £610.9                       |
| Constraints - Scotland | £72.3                      |                        |                                      |   |   |   |                              |
| Footroom               | £7.4                       | £20.5                  | £8.6                                 | £15.6                                   | £7.6  | £20.6                                     | £15.6                        |
| Fast Reserve           | £118.9                     | £137.3                 | £117.0                               | £137.1                                  | £128.8  | £149.1                                    | £148.9                       |
| Response               | £159.9                     | £173.3                 | £160.9                               | £196.3                                  | £175.1  | £188.0                                    | £213.4                       |
| Reactive               | £65.9                      | £70.4                  | £65.8                                | £80.7                                   | £71.0   | £77.6                                     | £87.8                        |
| Minor Components       | £36.3                      | £44.9                  | £36.7                                | £47.1                                   | £39.7   | £49.0                                     | £51.8                        |
|                        |                            |                        |                                      |   |   |   |                              |
| <b>TOTAL</b>           | <b>£763.1</b>              | <b>£844.3</b>          | <b>£745.4</b>                        | <b>£1,180.6</b>                         | <b>£846.7</b>   | <b>£956.4</b>                             | <b>£1,296.8</b>              |

Note - Individual cost forecasts of 'England & Wales, Cheviot and Scotland' are not available. Outturn costs remain split by area.

10.2 Latest Projection of Scheme Outturn Cost

| Latest Projection of Scheme Outturn Cost | 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 14/15 | Apr-15 | May-15 | Jun-15 | Jul-15 | Aug-15 | Sep-15 | Oct-15 | Nov-15 | Dec-15 | Jan-16 | Feb-16 | Mar-16 | Total 15/16 | Total  |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------|--------|
| Energy imbalance                         | -3.7   | -5.5   | -6.3   | -4.9   | -6.9   | -1.7   | 5.5    | 0.6    | 3.1    | 1.4    | 4.8    | 1.5    | -11.9       | -3.7   | -5.5   | -6.3   | -4.6   | -4.7   | -2.1   | -2.7   | -3.0   | -2.9   | -0.7   | 6.7    | 1.5    | -26.0       | -39.9  |
| Operating Reserve                        | 6.3    | 5.0    | 3.1    | 4.1    | 4.8    | 5.5    | 10.1   | 9.5    | 7.5    | 8.8    | 9.4    | 9.1    | 83.2        | 6.3    | 4.9    | 3.4    | 5.0    | 6.6    | 6.6    | 9.2    | 7.7    | 7.1    | 5.6    | 7.4    | 8.6    | 78.4        | 161.6  |
| BM Startup                               | 0.0    | 0.0    | 0.0    | 0.0    | 0.1    | 0.0    | 0.2    | 0.3    | 0.1    | 0.2    | 0.3    | 0.0    | 1.0         | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0         | 1.0    |
| STOR                                     | 4.4    | 4.6    | 4.4    | 4.7    | 5.6    | 5.5    | 6.4    | 5.2    | 5.1    | 5.3    | 4.3    | 9.7    | 65.4        | 4.4    | 4.6    | 4.4    | 4.9    | 6.9    | 7.9    | 7.3    | 8.6    | 8.9    | 8.6    | 8.7    | 9.7    | 84.9        | 150.3  |
| Constraints - E&W                        | 5.5    | 4.3    | 2.3    | 2.0    | 1.9    | 0.9    | 16.3   | 13.3   | 9.9    | 4.4    | 5.1    |        |             |        |        |        |        |        |        |        |        |        |        |        |        |             |        |
| Constraints - Cheviot                    | 2.6    | 4.0    | 0.9    | 1.7    | 12.1   | 2.6    | 28.8   | 11.6   | 20.5   | 24.1   | 10.2   | 28.5   | 286.8       | 16.4   | 11.2   | 8.2    | 6.9    | 14.5   | 16.3   | 24.8   | 37.0   | 37.6   | 17.8   | 28.0   | 21.3   | 240.1       | 526.8  |
| Constraints - Scotland                   | 4.8    | 0.7    | 1.0    | 1.3    | 3.8    | 0.2    | 16.3   | 10.6   | 9.5    | 14.2   | 10.0   |        |             |        |        |        |        |        |        |        |        |        |        |        |        |             |        |
| Footroom                                 | 0.7    | 1.0    | 1.2    | 1.5    | 1.6    | 0.2    | 0.5    | 0.3    | 0.2    | 0.1    | 0.0    | 0.2    | 7.6         | 0.7    | 1.0    | 1.2    | 1.6    | 1.7    | 2.5    | 1.4    | 0.6    | 0.9    | 1.1    | 0.3    | 0.2    | 13.3        | 20.8   |
| Fast Reserve                             | 11.3   | 10.9   | 9.5    | 9.3    | 10.2   | 10.5   | 12.0   | 11.3   | 12.3   | 12.5   | 9.1    | 9.9    | 128.8       | 11.2   | 10.9   | 9.5    | 9.4    | 10.1   | 9.7    | 9.0    | 9.7    | 10.7   | 10.6   | 9.5    | 9.9    | 120.2       | 249.0  |
| Response                                 | 14.5   | 15.4   | 14.9   | 16.1   | 15.8   | 13.0   | 14.7   | 13.8   | 14.6   | 14.8   | 12.5   | 15.2   | 175.1       | 15.4   | 15.4   | 14.1   | 15.7   | 14.6   | 16.7   | 15.9   | 15.1   | 14.7   | 15.1   | 13.6   | 15.2   | 181.4       | 356.5  |
| Reactive                                 | 6.6    | 7.2    | 7.0    | 6.2    | 5.8    | 5.8    | 5.3    | 5.2    | 5.9    | 5.8    | 5.1    | 5.1    | 71.0        | 6.5    | 7.1    | 6.8    | 6.3    | 6.1    | 5.7    | 5.9    | 5.8    | 5.6    | 5.8    | 4.9    | 5.1    | 71.7        | 142.7  |
| Minor Components                         | 3.0    | 3.2    | 2.8    | 3.2    | 3.8    | 3.1    | 3.0    | 3.5    | 4.2    | 3.8    | 2.8    | 3.4    | 39.7        | 3.0    | 3.2    | 2.7    | 3.1    | 3.4    | 4.1    | 4.0    | 3.7    | 4.5    | 4.2    | 3.4    | 3.4    | 42.6        | 82.3   |
| TOTAL                                    | 56.0   | 50.8   | 40.9   | 45.3   | 58.4   | 45.5   | 119.0  | 85.3   | 92.8   | 95.4   | 73.6   | 83.6   | 846.7       | 60.1   | 52.9   | 44.0   | 48.3   | 59.0   | 67.5   | 74.6   | 85.3   | 87.2   | 68.1   | 82.4   | 74.9   | 804.5       | 1651.2 |
| Estimated BSUoS Vol (TWh)                | 43.6   | 43.0   | 41.0   | 42.0   | 39.8   | 42.6   | 45.5   | 48.1   | 50.9   | 52.7   | 48.6   | 57.3   | 555.1       | 50.2   | 49.4   | 46.8   | 47.7   | 47.2   | 47.8   | 53.2   | 56.1   | 60.4   | 62.1   | 56.5   | 57.3   | 634.6       | 1189.7 |
| Forecast NGET Profit/(Loss)              | 25.0   |        |        |        |        |        |        |        |        |        |        |        | 25.0        | 0.0    |        |        |        |        |        |        |        |        |        |        |        | 0.0         | 25.0   |
| DSBR Set-Up Fees                         | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.3    | 0.3    | 0.3    | 0.2    | 0.0    | 1.1         | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.3    | 0.3    | 0.3    | 0.2    | 0.0    | 1.1         | 2.1    |
| DSBR Admin Fees                          | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.2         | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.2         | 0.3    |
| DSBR Testing*                            | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.3    | 0.3    | 0.3    | 0.2    | 0.0    | 1.0         | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.3    | 0.3    | 0.3    | 0.2    | 0.0    | 1.0    | 2.0         |        |
| SBR Capability                           | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 5.9    | 6.1    | 6.1    | 5.5    | 0.0    | 23.5        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 5.9    | 6.1    | 6.1    | 5.5    | 0.0    | 23.5        | 47.0   |
| SBR Testing                              | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.5    | 1.6    | 1.6    | 1.4    | 0.0    | 0.0    | 6.0         | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 1.5    | 1.6    | 1.6    | 1.4    | 0.0    | 6.0    | 12.0        |        |
| Total DSBR & SBR Cost (£m)               | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 7.9    | 8.2    | 8.2    | 7.4    | 0.0    | 31.7   | 31.7        | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 7.9    | 8.2    | 8.2    | 7.4    | 0.0    | 31.7   | 63.4        |        |
| Estimated Internal BSUoS (£m)            | 11.6   | 12.0   | 11.6   | 12.0   | 12.0   | 11.6   | 12.0   | 11.6   | 12.0   | 12.0   | 10.8   | 12.0   | 141.3       | 11.6   | 12.0   | 11.6   | 12.0   | 12.0   | 11.6   | 12.0   | 11.6   | 12.0   | 12.0   | 11.2   | 12.0   | 141.27      | 282.5  |
| Estimated BSUoS Charge (£/MWh)           | 1.60   | 1.51   | 1.33   | 1.42   | 1.82   | 1.39   | 2.93   | 2.22   | 2.26   | 2.23   | 1.93   | 1.71   | 1.88        | 1.47   | 1.36   | 1.23   | 1.31   | 1.55   | 1.70   | 1.67   | 1.91   | 1.81   | 1.46   | 1.82   | 1.56   | 1.58        | 1.68   |

Note - Individual cost forecasts of 'England & Wales, Cheviot and Scotland' are not available. Outturn costs remain split by area.

10.3 Balancing Service Use of System Charges

The BSUoS forecast makes use of our current models, which were developed for use in the Incentive Scheme. This allows for SO cost and incentives to flow through to a more accurate BSUoS cost estimate. Our forecast takes into account our best view given the current outage plan and reflects trends in costs.

Please note that the internal costs for 2014/15 and 2015/16 align with the amount recoverable under RIIO T1. These values are fixed upfront under the RIIO terms and as such the amount now quoted will be recovered via BSUoS during 2014/15, subject to the annual iteration process described in NGET's Transmission Licence.

Dividing this by our latest forecast of demand, including station demand after reductions for embedded wind generation and PV, multiplied by 2 gives an estimate central BSUoS forecast of **£1.88/MWh**.

The new BSUoS forecast of **£1.88/MWh** represents a **£0.02/MWh** increase from the figure for 2014/15 in last month's report. This change has been driven by the revision of the estimated BSUoS forecast and the update in the estimated internal BSUoS cost.

10.4 Detail BSIS Costs

| £m                                       |   | Quarterly Month | Target for Month | Least Cost Forecast for month | Least Target Forecast for month | Share of Demand Target Cost | Share of Demand Target Forecast | Share of Demand Target | Projected Total cost for Scheme (Net Claim + Least Cost Forecast) | Projected Total Target for Scheme | Least Target Forecast for Scheme |
|--|---|-----------------|------------------|-------------------------------|---------------------------------|-----------------------------|---------------------------------|------------------------|---|-----------------------------------|----------------------------------|
| <b>Energy Imbalance</b>                  |   | 4.8             | 4.8              | 6.5                           | 0.0                             | -13.4                       | -13.5                           | -90.3                  | -11.9   | -17.2                             | -94.0                            |
|  | BM  | 4.8             | 4.8              | 6.5                           | 0.0                             | -13.5                       | -13.5                           | -90.3                  | -12.0   | -17.2                             | -94.0                            |
|  | Forward Trade                                 | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | SO-SO   | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.1                         | 0.0                             | 0.0                    | 0.1   | 0.0                               | 0.0                              |
| <b>Operating Reserve</b>                 |   | 9.4             | 6.5              | 7.6                           | 14.9                            | 74.0                        | 73.8                            | 158.2                  | 83.2  | 85.5                              | 174.6                            |
|  | BM  | 7.1             | 4.9              | 6.8                           | 11.6                            | 67.2                        | 64.4                            | 128.8                  | 64.4  | 64.2                              | 143.4                            |
|  | Constrained Margin                            | 2.3             | 1.1              | 0.0                           | 2.2                             | 13.9                        | 15.6                            | 21.6                   | 17.6  | 17.6                              | 23.7                             |
|  | Forward Trade                                 | -0.1            | 0.2              | 0.8                           | 0.5                             | 2.3                         | 1.6                             | 3.7                    | 3.3   | 1.5                               | 3.5                              |
|  | UTLV (Forward Trade)                          | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | Forward Constrained Margin                    | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.4                         | 0.7                             | 0.8                    | 0.4   | 0.7                               | 0.8                              |
|  | SO-SO   | 0.0             | 0.3              | 0.0                           | 0.6                             | 0.2                         | 1.3                             | 3.0                    | 0.2   | 1.3                               | 3.1                              |
|  | SO-SO Constrained Margin                      | 0.0             | 0.0              | 0.0                           | 0.1                             | 0.0                         | 0.2                             | 0.3                    | 0.0   | 0.3                               | 0.3                              |
|  | AS Demand Downturn                            | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS Capacity Contracts                         | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
| <b>BM Startup</b>                        |   | 4.3             | 4.6              | 8.4                           | 6.4                             | 55.7                        | 57.4                            | 75.7                   | 65.4  | 64.1                              | 82.8                             |
| <b>STOR</b>                              |   | 0.2             | 1.5              | 1.9                           | 2.2                             | 4.5                         | 17.6                            | 25.0                   | 7.7   | 19.7                              | 27.4                             |
|  | AS - BM Reserve Hydro Option Fees             | 0.4             | 0.5              | 6.5                           | 0.8                             | 4.5                         | 7.8                             | 9.9                    | 11.0  | 8.6                               | 10.7                             |
|  | AS - BM Reserve Other Option Fees             | 1.0             | 1.3              | 0.0                           | 1.8                             | 10.3                        | 14.6                            | 18.7                   | 10.3  | 16.4                              | 20.5                             |
|  | AS - NBM Reserve Option Fees                  | 1.7             | 0.5              | 0.0                           | 0.7                             | 22.5                        | 10.9                            | 13.6                   | 22.5  | 11.7                              | 14.4                             |
|  | AS - NBM Reserve Utilisation                  | 1.0             | 0.7              | 0.0                           | 1.0                             | 14.2                        | 7.3                             | 9.4                    | 14.2  | 8.8                               | 11.0                             |
|  | AS - Supplemental Standing Reserve            | 0.0             | 0.0              | 0.0                           | 0.0                             | -0.3                        | -0.8                            | -1.0                   | -0.3  | -1.0                              | -1.2                             |
| <b>Constraints - EAW</b>                 |   | 3.8             |                  |                               |                                 | 52.5                        |                                 |                        |   |                                   |                                  |
|  | BM  | 0.6             |                  |                               |                                 | 17.2                        |                                 |                        |   |                                   |                                  |
|  | Forward Trade                                 | 0.1             |                  |                               |                                 | 17.5                        |                                 |                        |   |                                   |                                  |
|  | SO-SO   | 0.0             |                  |                               |                                 | 0.0                         |                                 |                        |   |                                   |                                  |
|  | AS - Interrip                                 | 1.5             |                  |                               |                                 | 3.6                         |                                 |                        |   |                                   |                                  |
|  | AS - Constraints                              | 1.6             |                  |                               |                                 | 14.2                        |                                 |                        |   |                                   |                                  |
| <b>Constraints - Cheviot</b>             |   | 7.5             |                  |                               |                                 | 85.0                        |                                 |                        |   |                                   |                                  |
|  | BM  | 0.3             |                  |                               |                                 | 37.5                        |                                 |                        |   |                                   |                                  |
|  | Forward Trade                                 | 0.2             |                  |                               |                                 | 3.3                         |                                 |                        |   |                                   |                                  |
|  | SO-SO   | 0.0             | 9.5              | 20.2                          | 32.7                            | 0.0                         | 227.9                           | 460.2                  | 212.9   | 276.4                             | 508.2                            |
|  | AS - Interrip                                 | 1.0             |                  |                               |                                 | 3.7                         |                                 |                        |   |                                   |                                  |
|  | AS - Constraints                              | 0.0             |                  |                               |                                 | 5.8                         |                                 |                        |   |                                   |                                  |
| <b>Constraints - Scotland</b>            |   | 6.3             |                  |                               |                                 | 48.7                        |                                 |                        |   |                                   |                                  |
|  | BM  | 5.2             |                  |                               |                                 | 37.5                        |                                 |                        |   |                                   |                                  |
|  | Forward Trade                                 | 1.1             |                  |                               |                                 | 9.9                         |                                 |                        |   |                                   |                                  |
|  | SO-SO   | 0.0             |                  |                               |                                 | 0.0                         |                                 |                        |   |                                   |                                  |
|  | AS - Interrip                                 | 0.1             |                  |                               |                                 | 1.3                         |                                 |                        |   |                                   |                                  |
|  | AS - Constraints                              | 0.0             |                  |                               |                                 | 0.0                         |                                 |                        |   |                                   |                                  |
| <b>Constraints - Sterilised Headroom</b> |   | 7.7             | 2.5              | 3.4                           | 7.1                             | 71.1                        | 50.4                            | 95.4                   | 73.9  | 61.3                              | 102.7                            |
| <b>Constraints - Total</b>               |   | 25.3            | 12.1             | 23.6                          | 39.8                            | 257.3                       | 278.3                           | 555.6                  | 286.8   | 337.7                             | 610.9                            |
| <b>Footroom</b>                          |   | 0.0             | 1.2              | 0.3                           | 0.2                             | 7.4                         | 20.5                            | 15.6                   | 7.6   | 20.6                              | 15.6                             |
|  | BM  | 0.0             | 1.1              | 0.3                           | 0.2                             | 5.5                         | 15.9                            | 12.3                   | 5.5   | 15.9                              | 12.3                             |
|  | Forward Trade                                 | 0.0             | 0.1              | 0.0                           | 0.0                             | 1.8                         | 2.5                             | 2.2                    | 1.8   | 2.5                               | 2.2                              |
|  | SO-SO   | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.1                         | 0.1                             | 0.0                    | 0.1   | 0.1                               | 0.0                              |
| <b>Fast Reserve</b>                      |   | 9.1             | 12.8             | 9.2                           | 12.1                            | 118.9                       | 137.3                           | 137.1                  | 128.8   | 148.1                             | 148.9                            |
|  | BM  | 2.0             | 2.4              | 0.1                           | 2.3                             | 24.9                        | 25.4                            | 25.0                   | 25.0  | 27.5                              | 31.7                             |
|  | AS - PS Firm Fast Reserve                     | 0.5             | 1.1              | 1.0                           | 1.0                             | 12.9                        | 12.0                            | 11.6                   | 22.7  | 13.0                              | 12.6                             |
|  | AS - Other Firm Fast Reserve                  | 0.0             | 0.8              | 0.0                           | 0.8                             | 0.0                         | 7.1                             | 6.9                    | 0.0   | 7.9                               | 7.6                              |
|  | AS - Firm-Optional SpinGen Holding Adj        | -2.1            | -4.3             | 0.0                           | -4.0                            | -36.4                       | -44.1                           | -42.5                  | -36.4   | -48.1                             | -48.5                            |
|  | AS - PS E&W Optional SpinGen                  | 6.1             | 8.2              | 0.0                           | 7.7                             | 87.1                        | 98.4                            | 86.8                   | 87.1  | 98.0                              | 94.4                             |
|  | AS - PS Scotland Optional SpinGen             | 1.6             | 3.2              | 0.0                           | 3.0                             | 17.8                        | 30.9                            | 29.6                   | 17.8  | 33.8                              | 32.6                             |
|  | AS - Other Optional Fast Reserve              | 0.1             | 0.0              | 0.0                           | 0.0                             | 1.7                         | 0.2                             | 0.2                    | 1.7   | 0.2                               | 0.2                              |
|  | AS - GT Fast Start                            | 0.4             | 0.6              | 0.0                           | 0.6                             | 4.6                         | 7.3                             | 7.0                    | 4.6   | 8.0                               | 7.7                              |
|  | AS - PS Optional Fast Start                   | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - PS Optional Response                     | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.1                         | 0.2                             | 0.2                    | 0.1   | 0.2                               | 0.2                              |
|  | AS - PS Optional Response Energy              | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.2                         | 0.3                             | 0.3                    | 0.2   | 0.4                               | 0.4                              |
|  | AS - PS Optional Pumping                      | 0.2             | 0.4              | 0.0                           | 0.4                             | 2.3                         | 4.3                             | 4.2                    | 2.3   | 4.7                               | 4.6                              |
|  | AS - PS Optional Spin Pump                    | 0.4             | 0.3              | 0.0                           | 0.3                             | 3.8                         | 3.2                             | 3.1                    | 3.8   | 3.5                               | 3.4                              |
| <b>Response</b>                          |   | 12.5            | 15.9             | 13.1                          | 16.1                            | 159.9                       | 173.3                           | 196.3                  | 175.1   | 188.0                             | 213.4                            |
|  | BM  | 2.3             | 5.0              | 2.7                           | 3.6                             | 37.2                        | 53.5                            | 58.4                   | 42.5  | 56.3                              | 62.0                             |
|  | AS - Generator Response                       | 2.7             | 4.7              | 10.4                          | 5.4                             | 40.2                        | 54.9                            | 63.1                   | 50.0  | 59.8                              | 63.3                             |
|  | AS - Demand Side Response                     | 0.3             | 0.1              | 0.0                           | 0.1                             | 2.9                         | 3.8                             | 4.4                    | 2.9   | 4.0                               | 4.5                              |
|  | AS - Response Energy                          | 0.1             | 0.1              | 0.0                           | 0.1                             | 1.3                         | 3.2                             | 3.7                    | 1.3   | 3.4                               | 3.8                              |
|  | AS - PS E&W Firm PLR Fees                     | 3.3             | 5.3              | 0.0                           | 6.0                             | 38.8                        | 49.8                            | 57.3                   | 38.8  | 55.6                              | 63.4                             |
|  | AS - PS Scotland Firm PLR Fees                | 0.0             | 0.0              | 0.0                           | 0.0                             | 3.7                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - PS Firm Reconciliation Fees              | 0.6             | 0.8              | 0.0                           | 0.9                             | 6.6                         | 8.0                             | 9.2                    | 6.6   | 8.9                               | 10.1                             |
|  | AS - Non-PS Firm Response                     | 0.2             | 0.0              | 0.0                           | 0.0                             | 1.0                         | 0.1                             | 0.1                    | 1.0   | 0.1                               | 0.2                              |
|  | AS - Non-PS Firm Response Energy              | 1.7             | 0.0              | 0.0                           | 0.0                             | 21.6                        | 0.0                             | 0.0                    | 21.6  | 0.0                               | 0.0                              |
|  | AS - CAP&W                                    | 1.3             | 0.0              | 0.0                           | 0.0                             | 10.3                        | 0.0                             | 0.0                    | 10.3  | 0.0                               | 0.0                              |
| <b>Reactive</b>                          |   | 5.1             | 6.3              | 4.7                           | 7.1                             | 65.9                        | 70.4                            | 80.7                   | 71.0  | 77.6                              | 87.8                             |
|  | AS - Default Utilisation                      | 5.1             | 6.3              | 4.7                           | 7.1                             | 65.9                        | 69.7                            | 79.8                   | 71.0  | 76.8                              | 87.0                             |
|  | AS - Market Agreement Available Capability    | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - Market Agreement Synchronised Capability | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - Market Agreement Utilisation             | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - Sync Comp                                | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.7                             | 0.8                    | 0.0   | 0.7                               | 0.8                              |
| <b>Black Start</b>                       |   | 2.1             | 1.6              | 1.3                           | 1.6                             | 21.7                        | 19.5                            | 19.5                   | 23.1  | 21.4                              | 21.4                             |
|  | BM+BSMU                                       | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.3                         | 0.0                             | 0.0                    | 0.3   | 0.0                               | 0.0                              |
|  | AS - Black Start Availability Contracts       | 2.1             | 1.6              | 1.3                           | 1.6                             | 21.0                        | 19.5                            | 19.5                   | 22.5  | 21.4                              | 21.4                             |
|  | AS - Black Start Capital Contributions        | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.1                         | 0.0                             | 0.0                    | 0.1   | 0.0                               | 0.0                              |
|  | AS - Black Start Feasibility Studies          | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | Other Blackstart costs                        | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.3                         | 0.0                             | 0.0                    | 0.3   | 0.0                               | 0.0                              |
| <b>Unclassified BM</b>                   |   | 1.1             | 2.0              | 2.0                           | 2.1                             | 15.7                        | 18.5                            | 20.1                   | 17.7  | 20.1                              | 22.1                             |
| <b>BM+AS General</b>                     |   | -0.4            | 0.7              | 0.0                           | 0.8                             | -2.3                        | 6.9                             | 7.5                    | -2.3  | 7.5                               | 8.3                              |
|  | Non-Delivery                                  | -0.5            | 0.0              | 0.0                           | 0.0                             | -5.1                        | 0.0                             | 0.0                    | -5.1  | 0.0                               | 0.0                              |
|  | Other Reserve (Unwinding)                     | 0.3             | 0.4              | 0.0                           | 0.5                             | 3.2                         | 4.2                             | 4.6                    | 3.2   | 4.1                               | 4.4                              |
|  | Ramping                                       | 0.0             | 0.2              | 0.0                           | 0.2                             | 0.0                         | 0.3                             | 0.3                    | 0.0   | 0.3                               | 0.3                              |
|  | SO-SO invoked by external party               | -0.1            | -0.4             | 0.0                           | -0.5                            | -0.5                        | -1.4                            | -1.6                   | -0.5  | -0.5                              | -0.5                             |
|  | AS - SO-SO BSUs                               | 0.0             | 0.1              | 0.0                           | 0.0                             | 0.0                         | 0.5                             | 0.5                    | 0.0   | 0.5                               | 0.5                              |
|  | AS - SO-SO Interconnector                     | 0.0             | 0.1              | 0.0                           | 0.1                             | 0.0                         | 0.4                             | 0.4                    | 0.0   | 0.4                               | 0.4                              |
|  | AS - Trading Option Fees                      | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.1                             | 0.1                    | 0.0   | 0.1                               | 0.1                              |
|  | AS - Bank Charges                             | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - Incidentals                              | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.0                         | 0.0                             | 0.0                    | 0.0   | 0.0                               | 0.0                              |
|  | AS - Disputes Formally Raised                 | 0.0             | 0.0              | 0.0                           | 0.0                             | 0.1                         | 0.0                             | 0.0                    | 0.1   | 0.0                               | 0.0                              |
|  | AS - Queries/NGC Identified Issues            | 0.0             | 0.2              | 0.0                           | 0.3                             | 0.0                         | 2.8                             | 3.1                    | 0.0   | 2.7                               | 3.0                              |
| <b>Reconciliation</b>                    |   | -0.1            | 0.0              | 0.0                           | 0.0                             | 1.3                         | 0.0                             | 0.0                    | 1.3   | 0.0                               | 0.0                              |
| <b>TOTAL</b>                             |   | 73.6            | 68.6             | 76.6                          | 101.5                           | 763.1                       | 844.3                           | 1180.6                 | 846.8   | 956.4                             | 1286.8                           |



10.5 Volume of BM Actions by Category

|   |                                 | Total for Month | Scheme forecast for Month | Year to Date Total | Year to Date Scheme Forecast | Projected total for year | Scheme Forecast for Year |
|---|---------------------------------|-----------------|---------------------------|--------------------|------------------------------|--------------------------|--------------------------|
| <b>Energy Imbalance</b>   |                                 | <b>10,705</b>   | <b>0</b>                  | <b>-1,389,242</b>  | <b>0</b>                     | <b>-1,389,242</b>        | <b>0</b>                 |
|   | BM                              | 11,470          | 0                         | -1,388,532         | 0                            | -1,388,532               | 0                        |
|   | Forward Trade                   | 0               | 0                         | 0                  | 0                            | 0                        | 0                        |
|   | SO-SO                           | -765            | 0                         | -710               | 0                            | -710                     | 0                        |
| <b>Operating Reserve</b>  |                                 | <b>815,714</b>  | <b>0</b>                  | <b>5,486,781</b>   | <b>0</b>                     | <b>5,486,781</b>         | <b>0</b>                 |
|   | BM                              | 278,175         | 0                         | 2,101,661          | 0                            | 2,101,661                | 0                        |
|   | Constrained Margin              | 397,272         | 0                         | 2,769,891          | 0                            | 2,769,891                | 0                        |
|   | Forward Trade                   | 89,723          | 0                         | 384,632            | 0                            | 384,632                  | 0                        |
|   | UTUV (Forward Trade)            | 0               | 0                         | 0                  | 0                            | 0                        | 0                        |
|   | Forward Constrained Margin      | 48,935          | 0                         | 223,467            | 0                            | 223,467                  | 0                        |
|   | SO-SO                           | 439             | 0                         | 3,362              | 0                            | 3,362                    | 0                        |
|   | SO-SO Constrained Margin        | 1,171           | 0                         | 3,768              | 0                            | 3,768                    | 0                        |
| <b>Absolute STOR</b>  |                                 | <b>2,055</b>    | <b>0</b>                  | <b>43,924</b>      | <b>0</b>                     | <b>43,924</b>            | <b>0</b>                 |
|   | Standing Reserve                | 2,055           | 0                         | 43,924             | 0                            | 43,924                   | 0                        |
| <b>Constraints by Area</b>  |                                 | <b>383,044</b>  | <b>N/A</b>                | <b>4,605,749</b>   | <b>N/A</b>                   | <b>4,605,749</b>         | <b>N/A</b>               |
|   | E&W                             | 46,041          |                           | 1,646,693          |                              | 1,646,693                |                          |
|   | Cheviot                         | 73,687          |                           | 1,283,620          |                              | 1,283,620                |                          |
|   | Scotland                        | 263,316         |                           | 1,675,436          |                              | 1,675,436                |                          |
| <b>Constraint Margin Replacement</b>  |                                 | <b>641,784</b>  | <b>N/A</b>                | <b>5,150,096</b>   | <b>N/A</b>                   | <b>5,150,096</b>         | <b>N/A</b>               |
|   | E&W                             | 114,097         |                           | 1,085,963          |                              | 1,085,963                |                          |
|   | Cheviot                         | 232,278         |                           | 2,390,261          |                              | 2,390,261                |                          |
|   | Scotland                        | 295,409         |                           | 1,673,872          |                              | 1,673,872                |                          |
| <b>Footroom</b>   |                                 | <b>-3,193</b>   | <b>0</b>                  | <b>-526,655</b>    | <b>0</b>                     | <b>-526,655</b>          | <b>0</b>                 |
|   | BM                              | -3,183          | 0                         | -374,061           | 0                            | -374,061                 | 0                        |
|   | Forward Trade                   | 0               | 0                         | -149,454           | 0                            | -149,454                 | 0                        |
|   | SO-SO                           | -11             | 0                         | -3,139             | 0                            | -3,139                   | 0                        |
| <b>Fast Reserve</b>   |                                 | <b>14,746</b>   | <b>0</b>                  | <b>211,129</b>     | <b>0</b>                     | <b>211,129</b>           | <b>0</b>                 |
|   | BM                              | 14,746          | 0                         | 211,129            | 0                            | 211,129                  | 0                        |
| <b>Absolute Response</b>  |                                 | <b>189,172</b>  | <b>0</b>                  | <b>3,272,960</b>   | <b>0</b>                     | <b>3,272,960</b>         | <b>0</b>                 |
|   | BM                              | 189,172         | 0                         | 3,272,960          | 0                            | 3,272,960                | 0                        |
| <b>Unclassified BM</b>  | Unclassified BM                 | -314,100        | 0                         | -2,362,447         | 0                            | -2,362,447               | 0                        |
| <b>BM General</b>   |                                 | <b>-794</b>     | <b>0</b>                  | <b>13,232</b>      | <b>0</b>                     | <b>13,232</b>            | <b>0</b>                 |
|   | Non Delivery                    | 0               | 0                         | 0                  | 0                            | 0                        | 0                        |
|   | Other Reserve (Unwinding)       | 2,429           | 0                         | 21,365             | 0                            | 21,365                   | 0                        |
|   | Ramping                         | 0               | 0                         | 0                  | 0                            | 0                        | 0                        |
|   | SO-SO invoked by external party | -3,223          | 0                         | -8,133             | 0                            | -8,133                   | 0                        |
| <b>Transmission Losses</b>  | Transmission Losses             | <b>572,005</b>  | <b>0</b>                  | <b>5,073,313</b>   | <b>0</b>                     | <b>5,073,313</b>         | <b>0</b>                 |
| Theoretical Cost of Transmission Losses if purchased on wholesale market @ £41.07/MWh |                                 | £23.5m          |                           | £208.4m            |                              | £208.4m                  | £0.0m                    |

**11. Glossary of Terms used in BSIS Tables**

|                          |                            |  |
|--------------------------|----------------------------|--|
| <b>NIA</b>               |                            | The Net Imbalance Adjustment   |
| <b>Energy Imbalance</b>  |                            |  |
|                          | BM                         | Offers and bids taken in the BM to manage the difference between generation supplied to the BM and system demand   |
|                          | Forward Trade              | Trades undertaken ahead of gate closure to reduce the forecast difference between generation to be supplied to the BM and system demand  |
|                          | SO-SO                      | Interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure to reduce the forecast difference between generation to be supplied to the BM and system demand                        |
| <b>Operating Reserve</b> |                            |  |
|                          | BM                         | Offers and bids taken in the BM to establish headroom on BMUs  |
|                          | Constrained Margin         | Offers and bids taken in the BM which both create additional reserve and replace pre-existing headroom that is sterilised behind a constraint boundary   |
|                          | Forward Trade              | Trades undertaken ahead of gate closure to establish additional headroom on BMUs   |
|                          | UTEV (Forward Trade)       | UnTagged Energy Volume is non-locational energy trade volume traded to help meet the forecast energy imbalance.  |
|                          | Forward Constrained Margin | Trades undertaken ahead of gate closure which both create additional reserve and replace pre-existing headroom that is sterilised behind a constraint boundary   |
|                          | SO-SO                      | Interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure to establish additional headroom on BMUs   |
|                          | SO-SO Constrained Margin   | Interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure which both create additional reserve and replace pre-existing headroom that is sterilised behind a constraint boundary |
|                          | AS Demand Downturn         | Ancillary services that enable demand to turndown relative to synchronised generation which, when pulled back to maintain energy balance, creates additional headroom  |
|                          | AS Capacity Contracts      | Ancillary services that provide additional generation capacity for headroom  |
| <b>BM Startup</b>        |                            | Optional service that allows BMUs to be warmed ready to  |

|                     |                                    |  |
|---------------------|------------------------------------|--|
|                     |                                    | synchronise in BM timescales and held in a state of hot-standby if required  |
| <b>STOR</b>         |                                    |  |
|                     | Standing Reserve                   | Offers and bids taken in the BM to run STOR BMUs   |
|                     | AS - BM Reserve Option Fees        | Ancillary service availability fees for STOR BMUs  |
|                     | AS - NBM Reserve Option Fees       | Ancillary service availability fees for non-BM STOR providers  |
|                     | AS - NBM Reserve Utilisation       | Ancillary service utilisation fees for non-BM STOR providers   |
|                     | AS - Supplemental Standing Reserve | Ancillary service fees associated with supplemental standing reserve   |
| <b>Constraints</b>  |                                    |  |
|                     | BM                                 | Offers and bids taken in the BM to resolve constraints   |
|                     | Forward Trade                      | Trades undertaken ahead of gate closure to resolve constraints   |
|                     | SO-SO                              | Interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure to resolve constraints         |
|                     | AS - Intertrip and constraints     | Ancillary services which provide operational intertrips, commercial intertrips and bespoke contracts to manage constraints   |
| <b>Footroom</b>     |                                    |  |
|                     | BM                                 | Offers and bids taken in the BM to establish negative regulating reserve capability (for example by desynchronising a BMU operating at SEL and increasing output on another BMU) |
|                     | Forward Trade                      | Trades undertaken ahead of gate closure to establish footroom  |
|                     | SO-SO                              | Interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure to establish footroom          |
| <b>Fast Reserve</b> |                                    |  |
|                     | BM                                 | Offers and bids taken in the BM to run fast reserve BMUs   |
|                     | AS - Firm Fast Reserve             | Ancillary service availability fees associated with fast reserve contracts   |
|                     | AS - SpinGen                       | Ancillary service fees associated with spingen fast reserve  |
|                     | AS - Other Fast Reserve            | Ancillary service fees associated with non-BM fast reserve units   |
|                     | AS - Fast Start                    | Ancillary service fees associated with OCGT fast start   |
| <b>Response</b>     |                                    |  |
|                     | BM                                 | Offers and bids taken in the BM to position BMUs to be able to provide frequency response  |
|                     | AS - Generator Response            | Ancillary service payments for frequency response capability on generation BMUs  |
|                     | AS - Demand Side Response          | Ancillary service payments for frequency response capability from demand side service providers  |
|                     | AS - Response                      | Ancillary service payments for the energy delivered when   |

|                        |   |   |
|------------------------|---|---|
|                        | Energy  | providing frequency response  |
|                        | AS - Other Response                           | Ancillary service payments for firm response, and firm response energy, including part loaded response.   |
| <b>Reactive</b>        |   |   |
|                        | AS - Default Utilisation                      | Ancillary service payments for metered reactive power provided under the Default Payment Arrangements   |
|                        | AS - Market Agreement Available Capability    | Ancillary service payments for the available capability to provide reactive power pursuant to a market agreement  |
|                        | AS - Market Agreement Synchronised Capability | Ancillary service payments for the synchronised capability to provide reactive power pursuant to a market agreement   |
|                        | AS - Market Agreement Utilisation             | Ancillary service payments for metered reactive power provided pursuant to a market agreement   |
|                        | AS - Sync Comp                                | Ancillary service payments for provision of synchronous compensation  |
| <b>Unclassified BM</b> |   | Actions not satisfying the specific criteria of any other category  |
| <b>BM+AS General</b>   |   |   |
|                        | Non Delivery                                  | Correction for failure to delivery energy as contracted.  |
|                        | Other Reserve (Unwinding)                     | Costs associated with reversing a previously agreed BOA.  |
|                        | Ramping                                       | Costs associated with managing changes on the interconnectors to limit rate of change of transfer to the technically achievable ramp rates  |
|                        | SO-SO invoked by external party               | SO-SO trades over an interconnector instigated at the request of the other system operator connected to the interconnector  |
|                        | AS - SO-SO BSUoS                              | BSUoS charges associated with interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure       |
|                        | AS - SO-SO Interconnector                     | Interconnector fees associated with interconnector actions entered into between the system operators of the interconnected transmission systems following interconnector gate closure |
|                        | AS - Trading Option Fees                      | Energy trading broker fees  |
|                        | AS - Bank Charges                             | Interest costs in respect of disputes   |
|                        | AS - Incidentals                              | Exchange rate adjustments   |
|                        | AS - Disputes Formally Raised                 | Disputes raised on AS payments  |
|                        | AS - Queries/NGC Identified Issues            | Forecast cost of unsigned contracts/disputes not yet formally raised  |

|             |                                |   |
|-------------|--------------------------------|---|
| <b>DSBR</b> | Demand Side Balancing Reserve  | DSBR is targeted at large energy users willing to reduce their demand during winter weekday evenings between 4pm and 8pm in return for a payment. The service covers the period 1st November 2014 – 28th February 2015.   |
| <b>SBR</b>  | Supplemental Balancing Reserve | SBR is targeted at contracting for reserves from generating plant that would otherwise be closed or mothballed. Plant would need to be available on winter weekdays between 6am and 8pm. All providers must be capable of providing the SBR contracted output within BM Timescales. The service covers the period 1st November 2014 – 28th February 2015. |