

Monthly Balancing Services Summary

2010/2011

May 2010

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Monthly Balancing Services Summary

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.

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 BRMS, <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 25 (TR25) commenced on the 1st April 2010. Further information regarding the nature of these contracts can be found on the National Grid website.

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 **£0.0m**

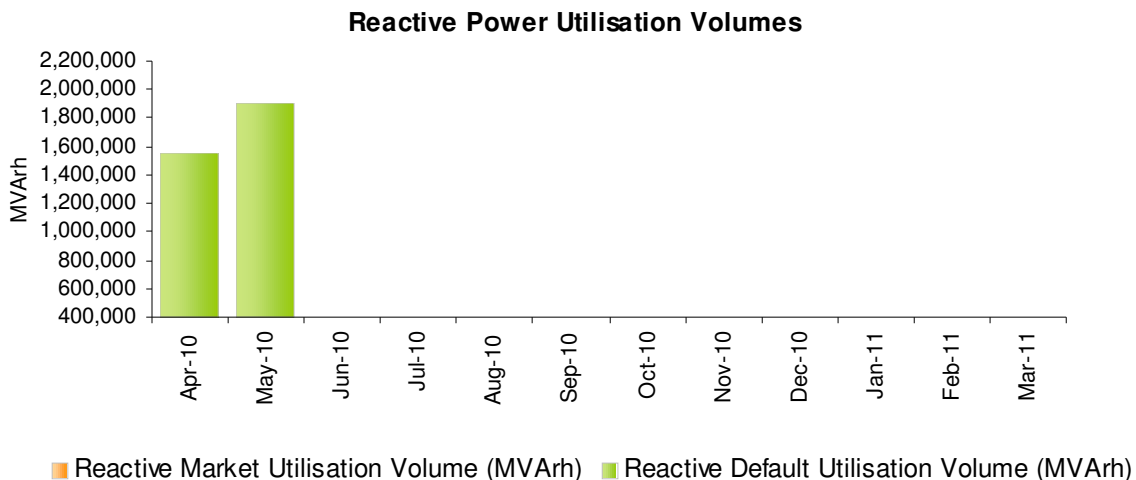
2.1.2 Default Arrangements for Reactive Power

For this reporting period, the total utilisation volume for reactive power under the default arrangements was **1900GVArh**. The total amount spent on Reactive Power under the default arrangements during this reporting month was **£4.06m**

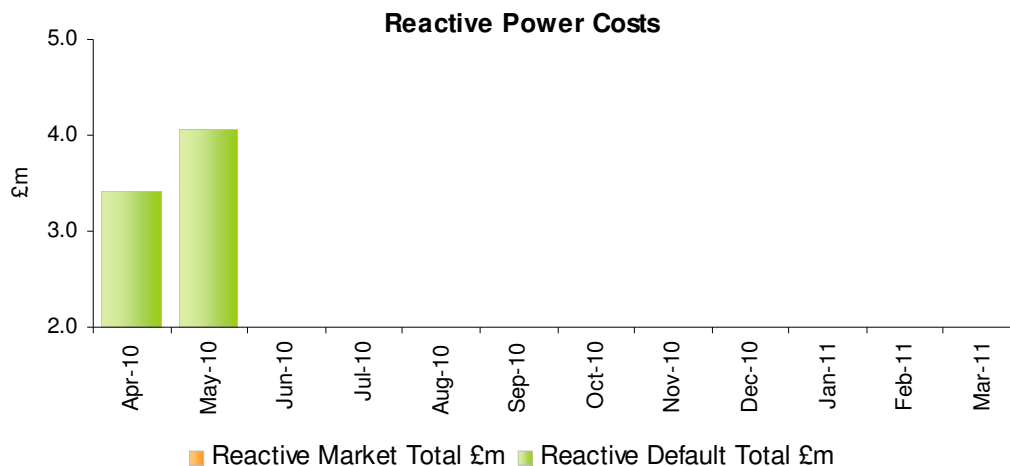
For further information regarding the default payment arrangements please view the Introduction to Reactive document which can be found on the National Grid Website.

For this month, the combined total expenditure on reactive power was **£4.06m**

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.



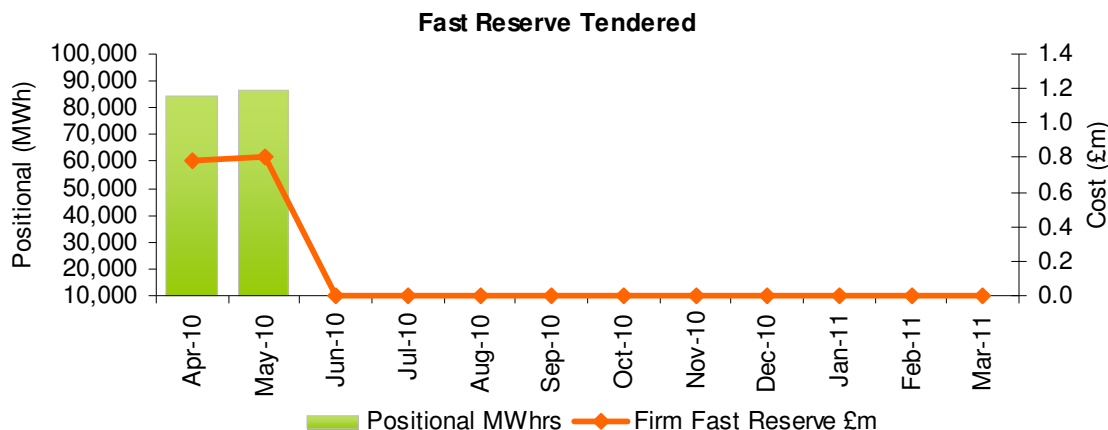
2.2 Fast Reserve (Tendered)

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

| | Eligible companies | Eligible units | Units tendered in previous months | Units tendered this month | Units accepted from previous months | Units accepted from this month | Total MW tendered | Total MW contracted | Max GWh tendered | Max GWh contracted | Positional MWhrs |
|---------------|--------------------|----------------|-----------------------------------|---------------------------|-------------------------------------|--------------------------------|-------------------|---------------------|------------------|--------------------|------------------|
| Apr-10 | 6 | 18 | 1 | 1 | 1 | 1 | 180 | 180 | 84.60 | 84.60 | 84,240 |
| May-10 | 6 | 18 | 1 | 0 | 2 | 0 | 180 | 180 | 86.76 | 86.76 | 86,760 |
| Jun-10 | 6 | 18 | | | | | | | | | |
| Jul-10 | 6 | 18 | | | | | | | | | |
| Aug-10 | 6 | 18 | | | | | | | | | |
| Sep-10 | 6 | 18 | | | | | | | | | |
| Oct-10 | 6 | 18 | | | | | | | | | |
| Nov-10 | 6 | 18 | | | | | | | | | |
| Dec-10 | 6 | 18 | | | | | | | | | |
| Jan-11 | 6 | 18 | | | | | | | | | |
| Feb-11 | 6 | 18 | | | | | | | | | |
| Mar-11 | 6 | 18 | | | | | | | | | |

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



A total of **180MW** of capacity was contracted during the month. The total expenditure on availability and utilisation excluding bids and offers was **£0.81m**.

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

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

2.3 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 consult the 'tender and reports' section of National Grid's Balancing Services information website.

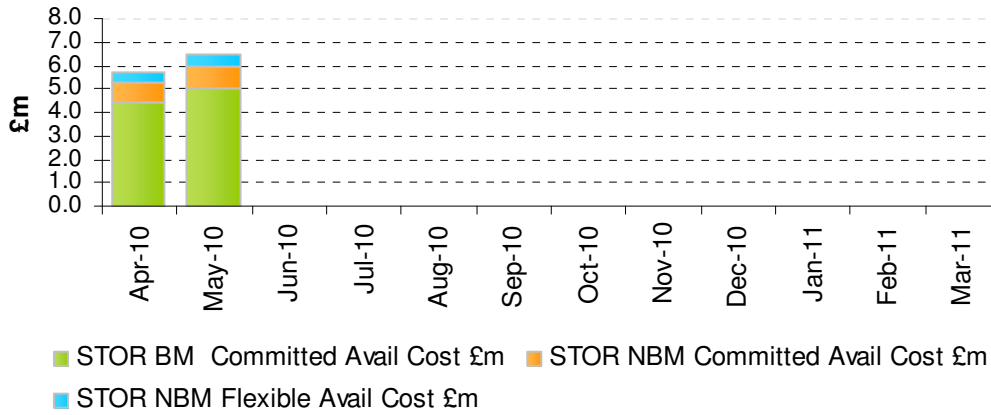
The current reporting month is covered by tender round **Season 2010/11 1-2**. The volume that was assessed as economic and that proceeded to contract for this tender round season was: **2621MW**.

The average availability payment for STOR during this period was **£9.47/MW/h¹** for both non-working days and working days.

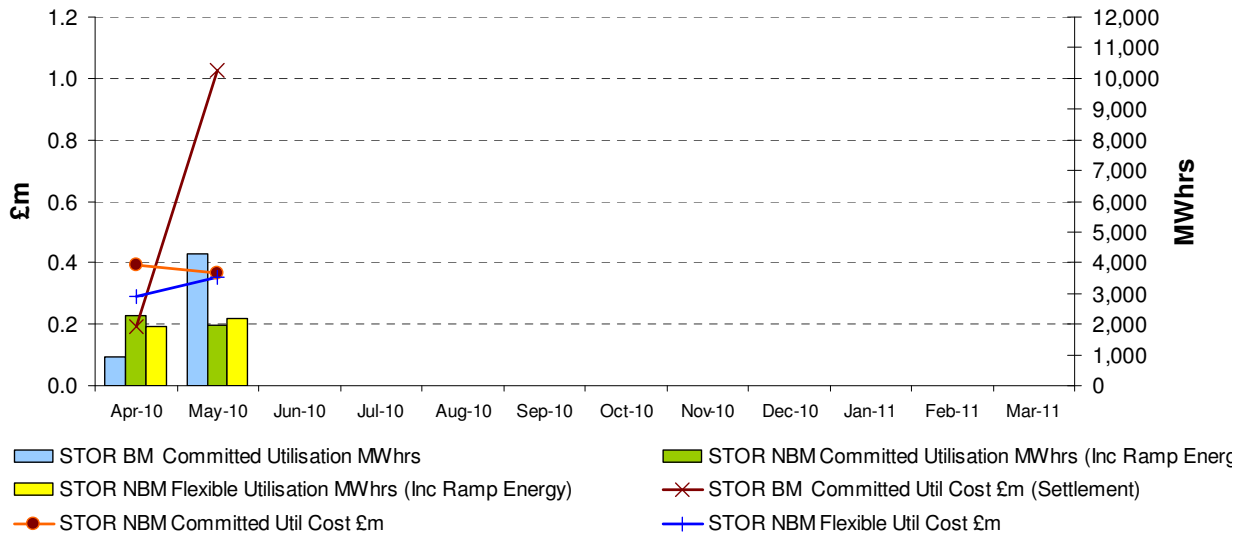
The average contracted utilisation payment for STOR during this period was **£271.18/MWh¹**.

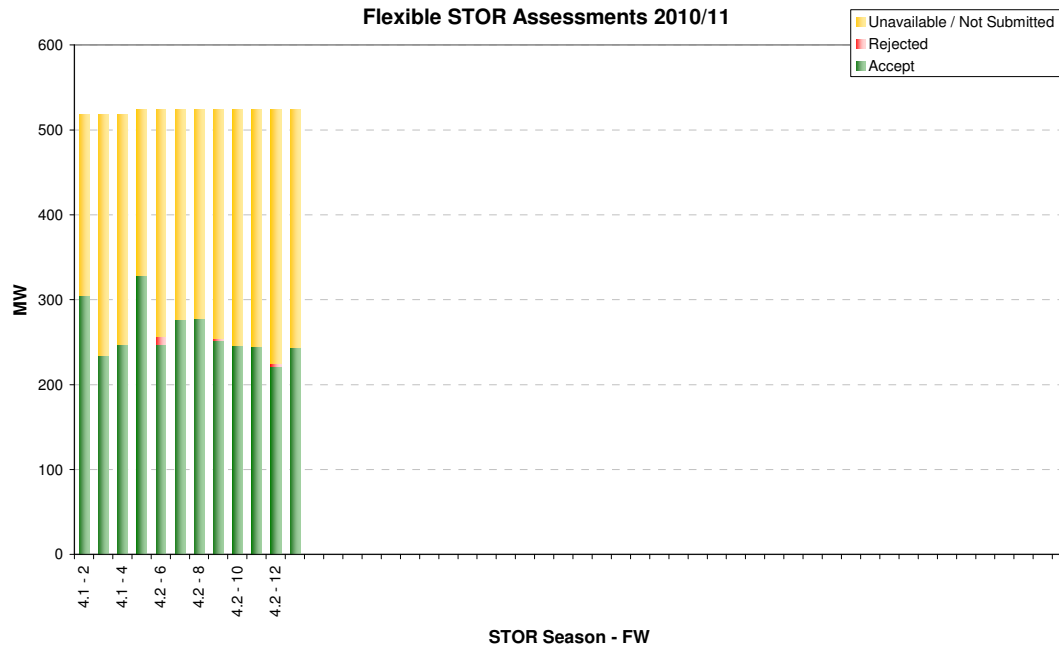
¹ Average prices are weighted by volume and availability hours.

STOR BM & NBM Availability Costs



STOR BM & NBM Utilisation MWhr and Cost





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 **£7.19m**.

The total STOR Utilisation volume for both BM and Non-BM units for the month was **8420MWh**

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

<http://www.nationalgrid.com/uk/Electricity/Balancing/services/reserveservices/STOR/>

2.4 Tendered Frequency Response.

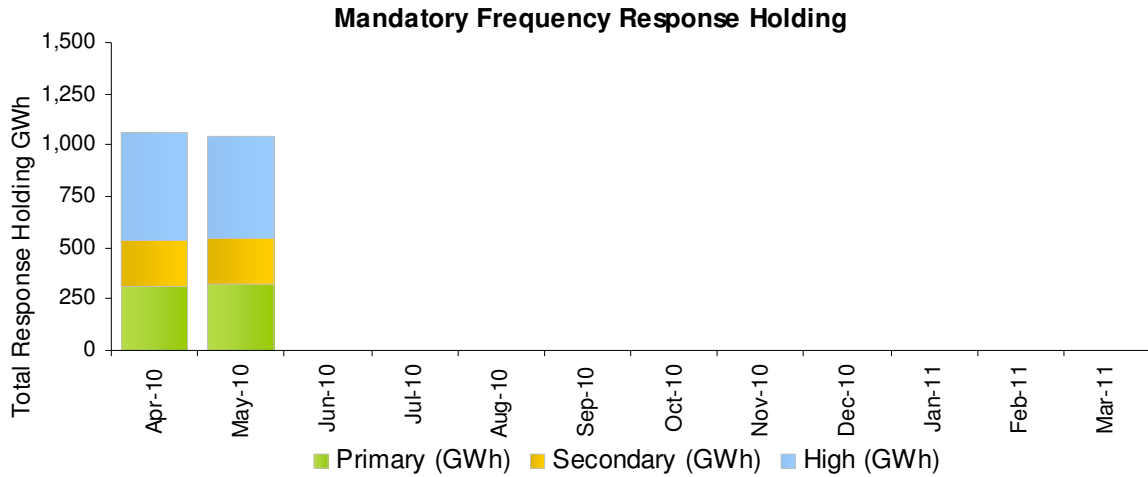
Please see Section 3.2

3. Services Procured Via Non-Tendered Bilateral Contracts

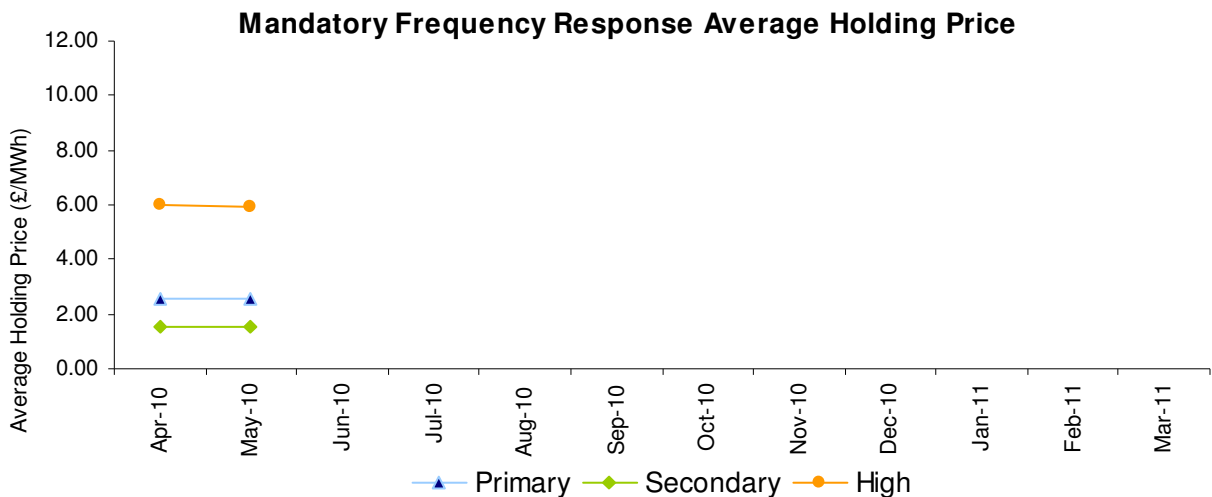
3.1 Mandatory Frequency Response

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

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



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



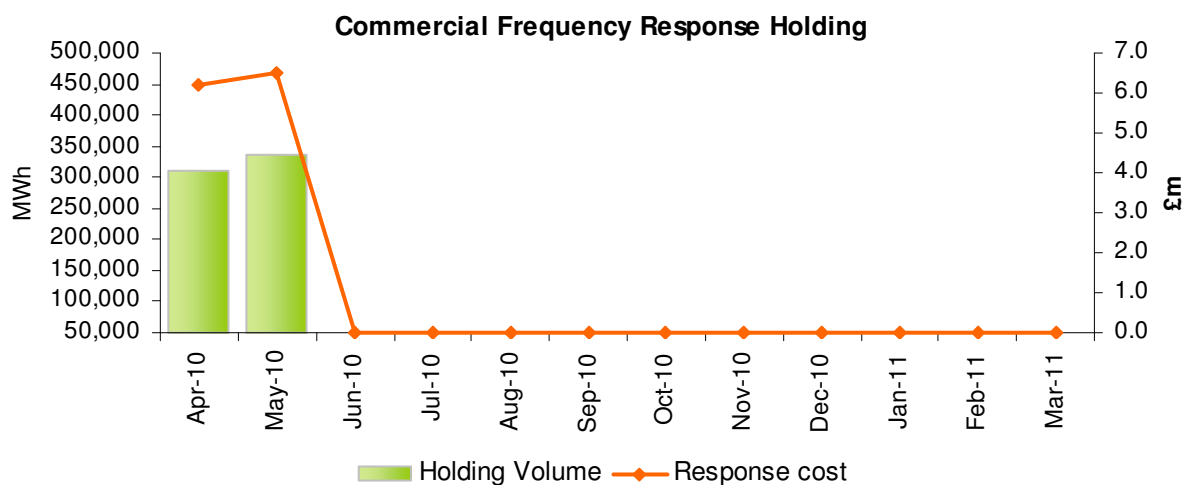
Spend on Mandatory Frequency Response holding for the reporting month was **£4.12m**.

Spend on Response Energy Payments was **£0.23m²**. 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 **£4.35m**.

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.



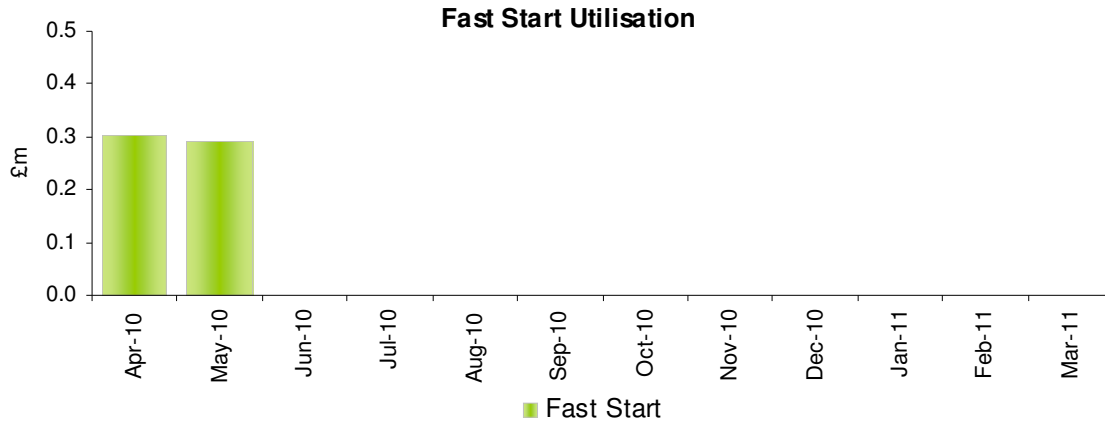
The total amount spent on Commercial Frequency Response holding during the reporting month was **£6.51m**.

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.

² 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.

3.3 Fast Start

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

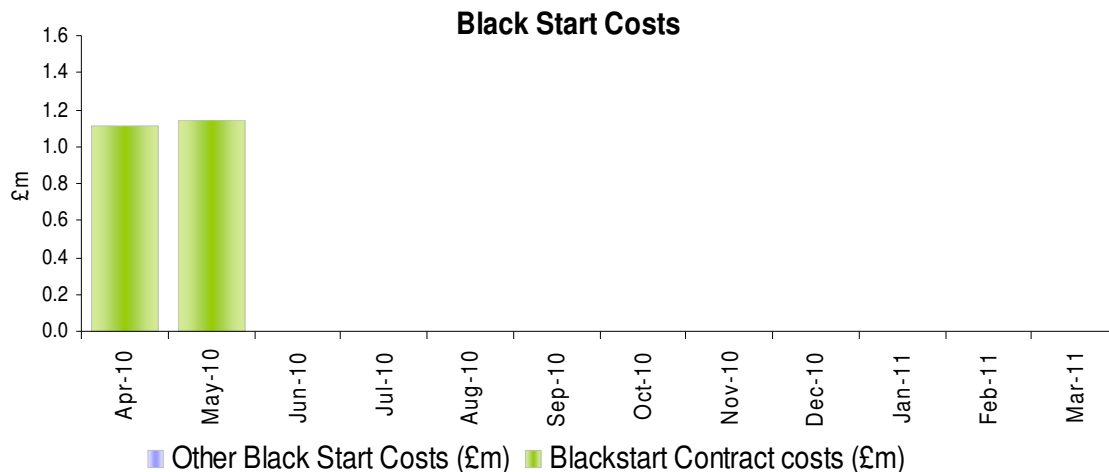


The total amount paid during the relevant reporting month for the availability and utilisation of the Fast Start service was **£0.29m**

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

3.4 Black Start

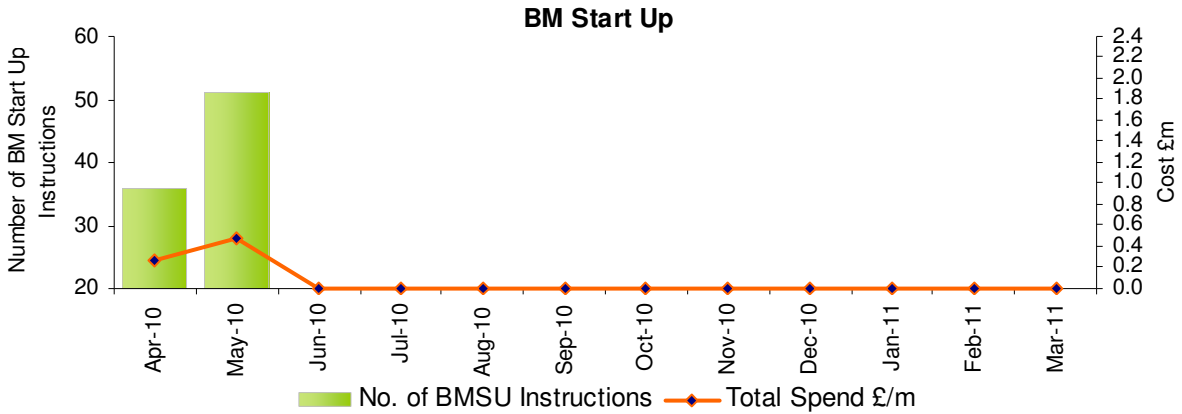
During the reporting month there were up to **22** stations with Black Start agreements in place. No new agreements were entered into during the period. The total amount paid during the relevant reporting month for the availability of the Black Start service was **£1.15m**.



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

3.5 BM Start up

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

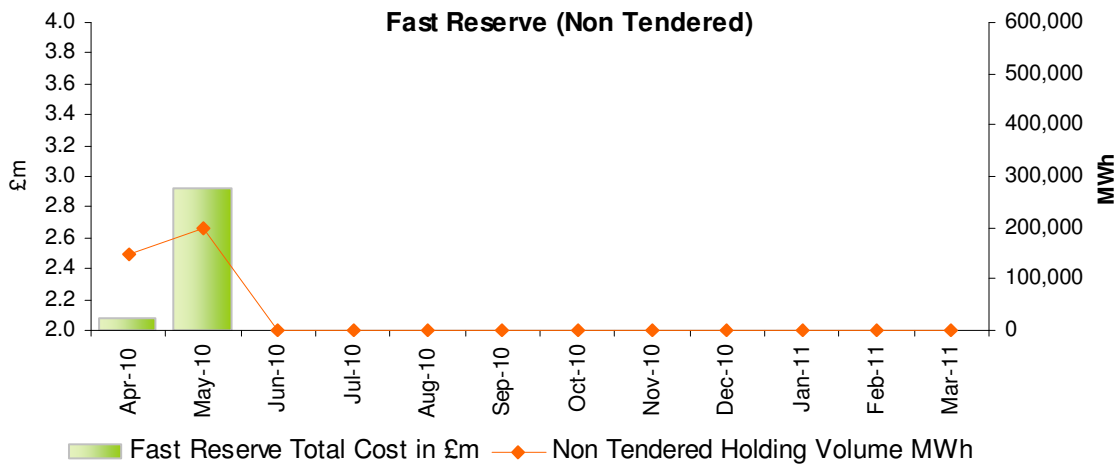


The total amount spent on BM Start Up during the reporting month was **£0.48m**. The total number of BM Start Up instructions was **51**.

Further details are available via the National Grid Website.

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

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

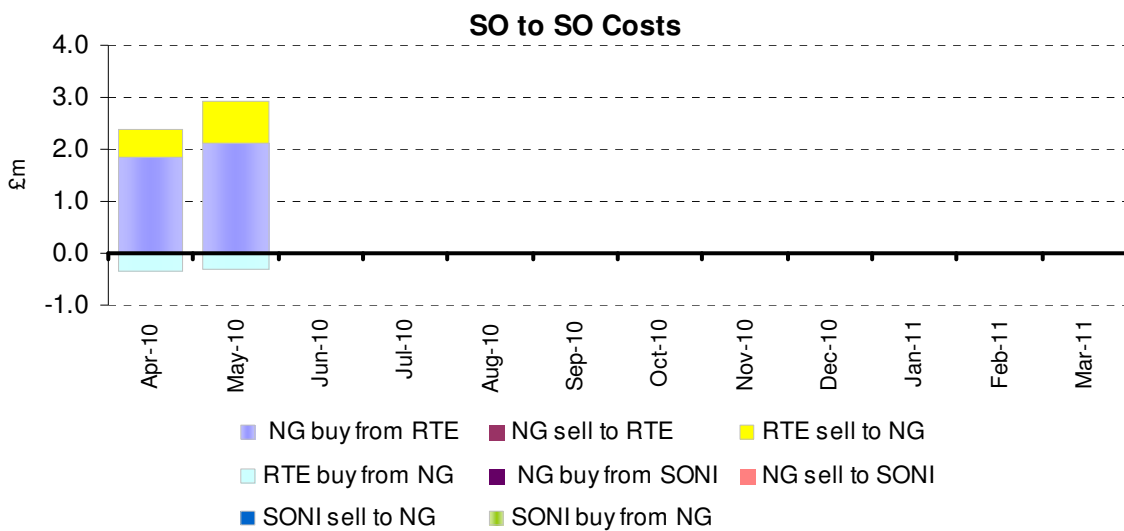


The availability payments during the relevant month totalled **£2.93m**. Excluding Utilisation Via Offers and Bids Accepted in the Balancing Mechanism).

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.



The total energy volumes associated with system to system services during the reporting month was **-10GWh** export (from GB) and **56GWh** import (to GB).

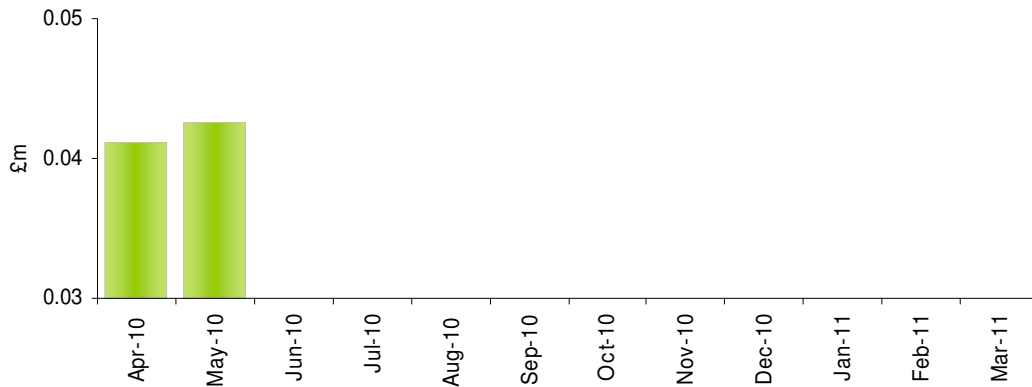
The total expenditure associated with system to system services during the reporting month was **£2.62m**.

3.8 System to Generator Operational Inter-tripping Schemes

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

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

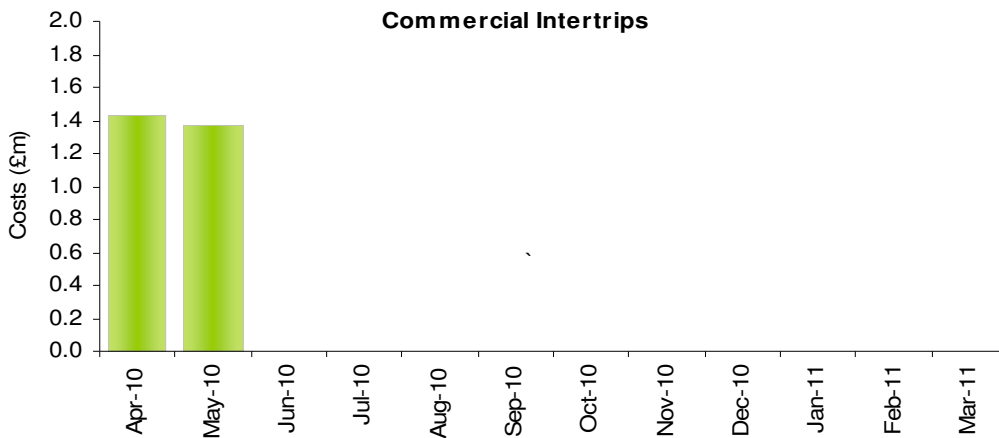
System to Generator Operational Intertripping - Capability Payments



3.9 Commercial Intertrip Service

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

Commercial Intertrips



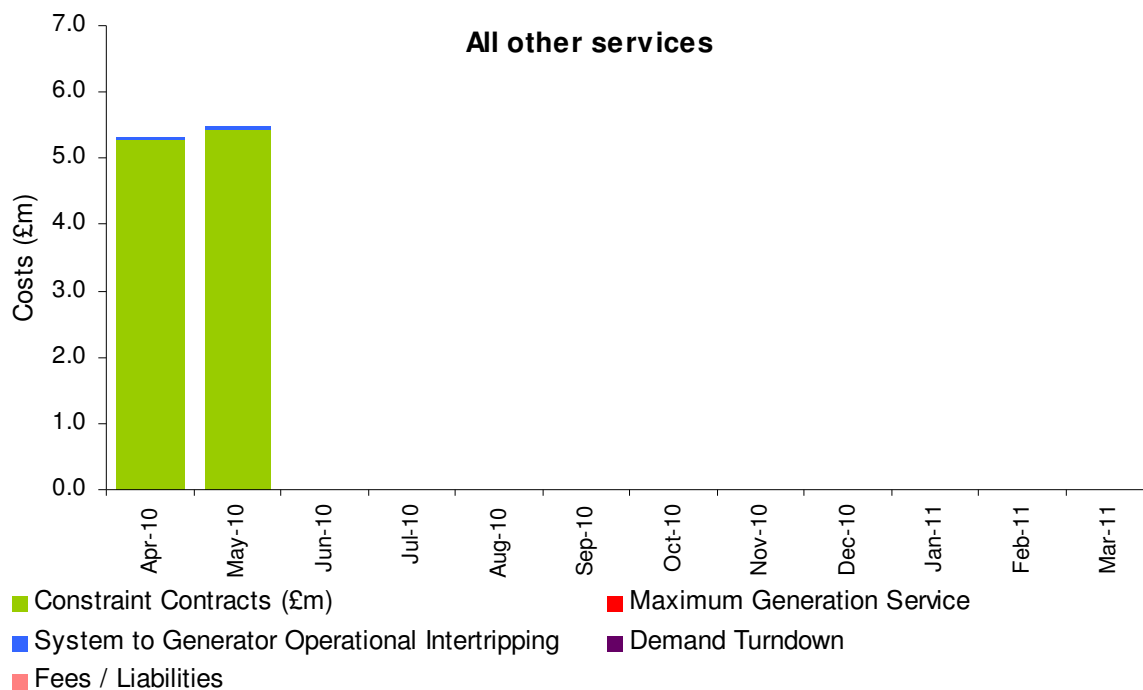
| Month | Capability Payment £'s | Arming Payment £'s | Number of Hours of Intertrip Arming, Outside of Pre-Paid Arming Contract(s) | Contracted Pre-paid Arming £'s | Number of Hours Armed under Pre-Paid Arming Contract(s) | Number of Trips | Tripping Payment £'s |
|--------|------------------------|--------------------|---|--------------------------------|---|-----------------|----------------------|
| Apr-10 | 90,389 | 106,433 | 7 | 1,236,960 | 212 | 0 | 0 |
| May-10 | 93,402 | 2,335 | 5 | 1,278,192 | 152 | 0 | 0 |
| Jun-10 | | | | | | | |
| Jul-10 | | | | | | | |
| Aug-10 | | | | | | | |
| Sep-10 | | | | | | | |
| Oct-10 | | | | | | | |
| Nov-10 | | | | | | | |
| Dec-10 | | | | | | | |
| Jan-11 | | | | | | | |
| Feb-11 | | | | | | | |
| Mar-11 | | | | | | | |

Under commercial intertrip agreements arming is payable either as;

1. A fixed pre-agreed sum, this may be for a fixed number of hours or unlimited hours (shown above as Contracted arming) or;
2. Payable on utilisation with the generator typically having the right to alter their payments with a short notice period (shown above as Arming Payments).
3. An agreement has been put in place with a generator from March 2010 to manage system issues which include the use of a number of hours of arming on an intertrip. The figure quoted in the "Contracted 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.
4. Contracted pre-paid arming allows for arming of the intertrip for an aggregated total of 50% of the hours across the duration of the contract.

3.10 Ancillary Contracts to manage System Issues

On occasion, National Grid enters into bespoke Ancillary contracts to manage certain transmission system issues. The number and nature of these contracts is necessarily confidential. The costs reported here include any costs of 'Transmission Related Agreements', which are entered as a consequence of certain customer choices of connection conditions.



3.11 Maximum Generation Service

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

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

3.12 All Other Services

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

The total expenditure on All Other Services during the reporting month was **£0.0m**.

4. Energy Related Products

4.1 Forward Trading

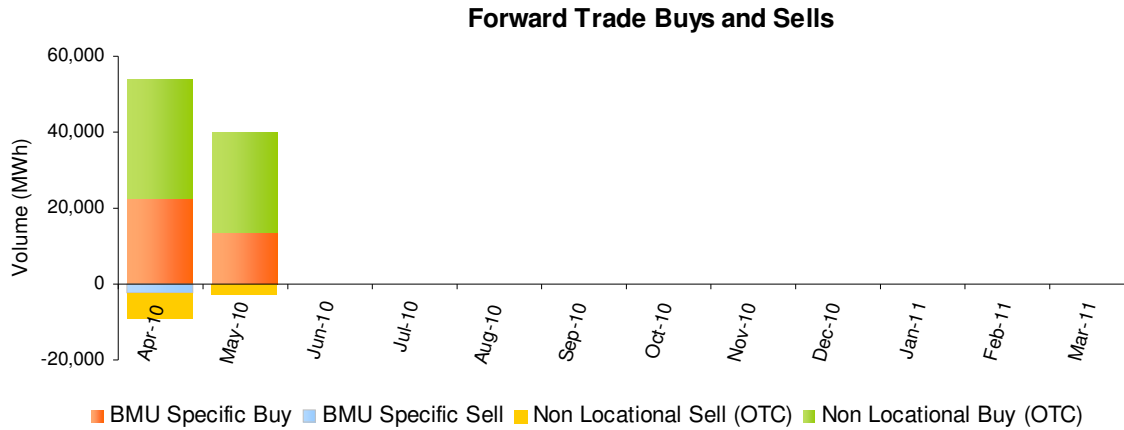
National Grid’s forward trading is undertaken to reduce the overall costs of balancing the system, and to resolve system issues as appropriate. There are a number of products and procurement mechanisms available. During the reporting month, National Grid traded a gross volume of **42828MWh**.

| Non Locational | |
|----------------|----------|
| Buy Volume | 26396MWh |
| Sell Volume | -2800MWh |

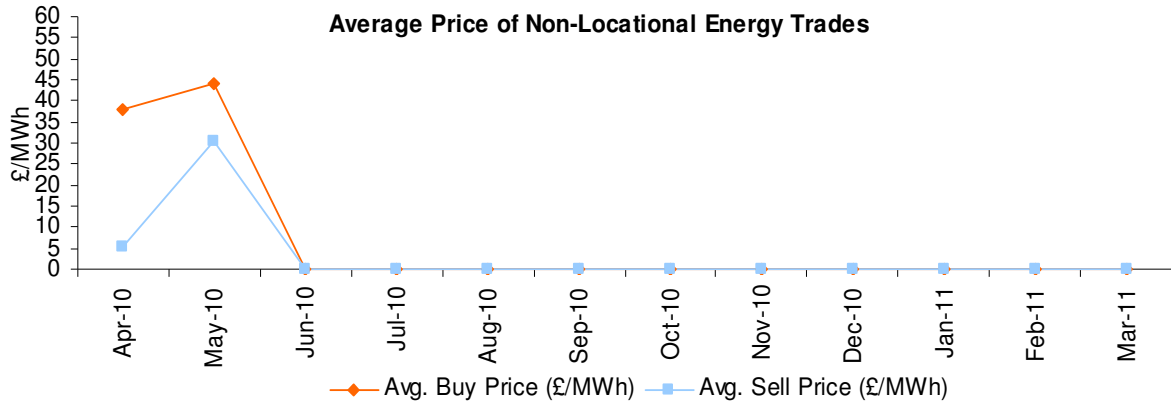
| BMU Specific | |
|--------------|----------|
| Buy Volume | 13632MWh |
| Sell Volume | -0MWh |

} Total Net Spend **£1.88m**

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



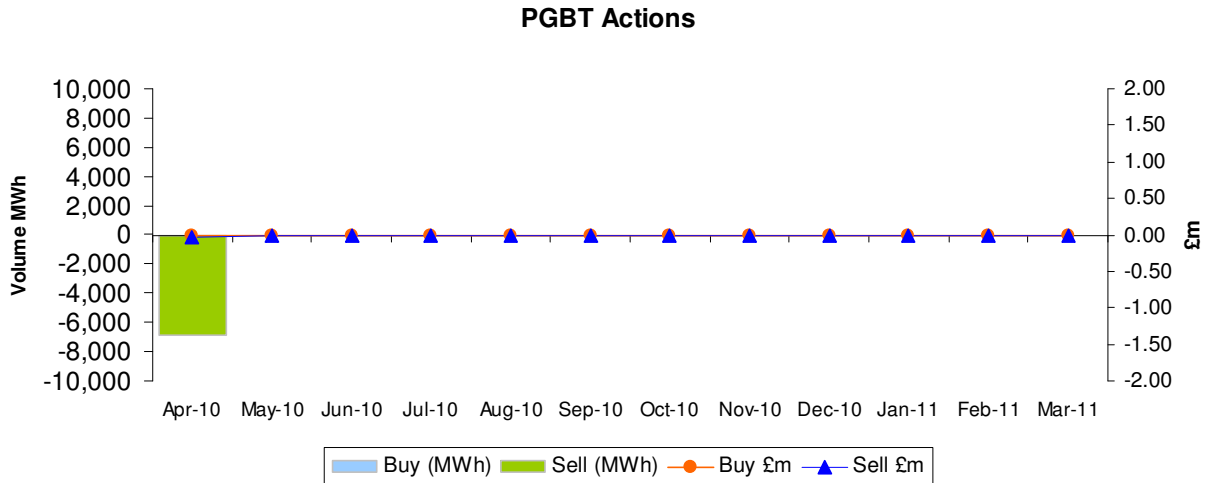
The following graph shows the monthly profile of our non-locational energy trading activities. It comprises all the trades undertaken by National Grid through Power Exchanges and through the use of brokerage houses for that purpose.



Further details are available via the National Grid Website.

4.2 Pre-Gate BMU Transactions (PGBT)

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



The total net spend on PGBT during the reporting month was **£0.0m**. 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

National Grid resolves constraints in the GB Transmission System through different mechanisms, including bids and offers in the Balancing Mechanism, PGBTs, Trades and SO-SO actions. This section presents the costs for National Grid to resolve constraints in the reporting period, breaking them down into the three aforementioned categories. 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 resolving constraints via those mechanisms was **£6.60m**. This cost includes part of the costs of SO-SO actions (section 3.7), Trades (section 4.1) and PGBTs (section 4.2) already reported above.

Explanatory notes on the meaning of each row in the tables below follow at the end of this section.

5.1 Summary of costs of constraint actions, including Balancing Mechanism, 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] | 35.828 | 110.742 | 144.867 | 291.437 | 0.229 | 0.357 | 117.188 | 117.774 | 409.211 |
| Average Price of Action (£/MWh) [B] | 27.23 | 23.36 | 27.25 | 25.77 | 51.33 | 46.52 | 78.48 | 78.33 | 40.90 |
| Average Energy Replacement Price (£/MWh) | 34.76 | 34.36 | 38.29 | 36.36 | 38.63 | 35.84 | 43.02 | 42.99 | 38.27 |
| Total Direct Cost (£m) | -0.27 | -1.22 | -1.60 | -3.09 | 0.00 | 0.00 | 4.16 | 4.16 | 1.08 |
| Margin Replaced (GWh) [D] | 30.027 | 105.340 | 109.069 | 244.436 | 0.000 | 0.000 | 1.684 | 1.684 | 246.120 |
| Average Margin Replacement Price (£/MWh) | 7.53 | 7.53 | 8.16 | 7.81 | 0.00 | 0.00 | 5.19 | 5.19 | 7.79 |
| Average Energy Reference Price for Margin Replacement | 69.37 | 63.31 | 74.64 | 69.11 | 0.00 | 0.00 | 220.27 | 220.27 | 70.15 |
| Total Margin Cost (£m) | -1.86 | -5.88 | -7.25 | -14.98 | 0.00 | 0.00 | -0.36 | -0.36 | -15.35 |
| Total Cost (£m) | -2.13 | -7.09 | -8.85 | -18.07 | 0.00 | 0.00 | 3.79 | 3.80 | -14.27 |
| Additional (Transferred) Costs (£m) | 3.15 | 10.81 | 12.94 | 26.90 | 0.00 | 0.00 | -0.42 | -0.42 | 26.48 |
| Total constraint net cost (£m) [+J] | 1.03 | 3.71 | 4.09 | 8.83 | 0.00 | 0.00 | 3.37 | 3.38 | 12.21 |

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

5.2 Break down of constraint costs per category

| Sum of TOTAL_COST | IMPORT E | Month | |
|-------------------------|-------------|-------------|-------------|
| | Export | Import | Total |
| ACTION TYPE | | | |
| BM Actions | 5.99 | 0.60 | 6.60 |
| SO-SO Trades | 0.00 | 0.01 | 0.02 |
| Trades (including PGBT) | - | 0.05 | 0.05 |
| Total | 6.00 | 0.67 | 6.66 |

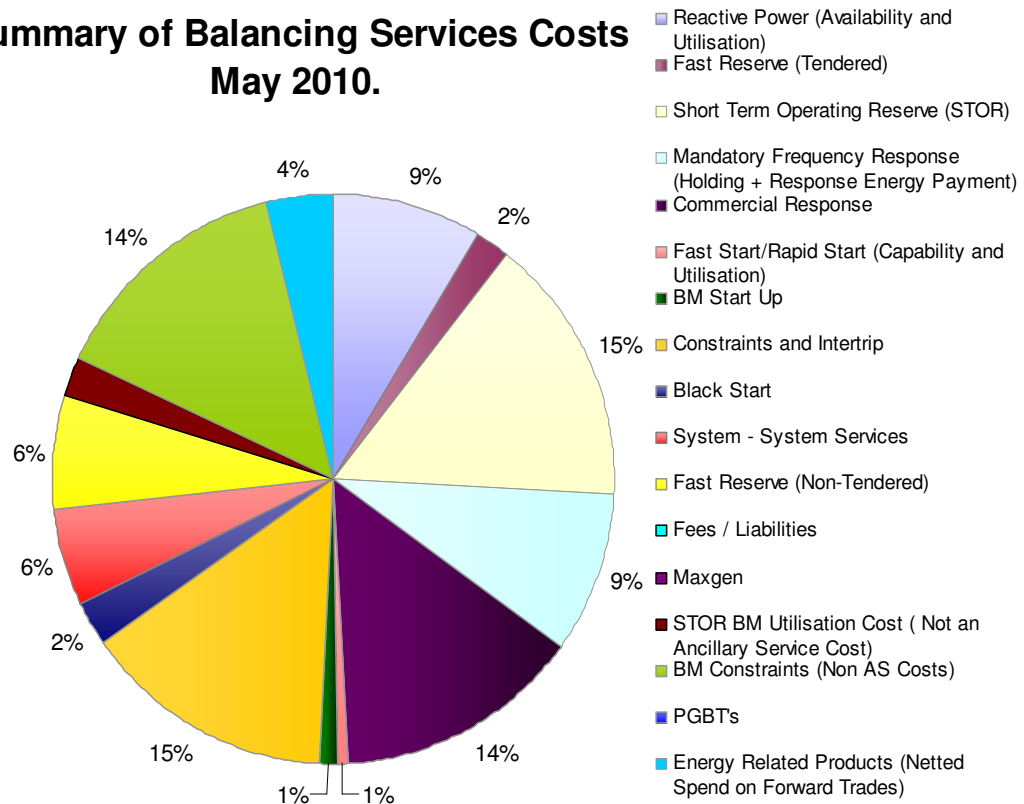
5.3 Explanatory Notes

| 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 of the bids/offers prices |
| 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) |
| Margin Replaced (GWh) | Replacement for the sterilised footroom/headroom due to the constraint |
| Average Margin Replacement Price (£/MWh) | Volume weighted average of the prices of the margin actions |
| Average Energy Reference Price for Margin Replacement (£/MWh) | Volume weighted average of the energy reference price(*) for periods when margin is replaced |
| Total Margin Cost (£m) | Margin Replaced x (Average Margin Replacement Price - Average Energy Reference Price for Margin Replacement) |
| Total Cost (£m) | Total Direct Cost + Total Margin 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 margin -- in this case all or part of the cost is transferred to the relevant account. In all other circumstances, some actions taken to resolve the constraint may end up flipping the market direction, so additional action is required to re-establish market balance and this cost is allocated here |
| 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) |

6. Summary

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

Summary of Balancing Services Costs May 2010.



7. Further information

For further information on the types of Balancing Services that National Grid intends to procure, please refer to the prevailing **Procurement Guidelines**. Information on bid and offer acceptances in the Balancing Mechanism is contained within the **Balancing Principles Statement Report**. These documents, along with the **Procurement Guidelines Report**, are published in accordance with Standard Condition C16 of the Transmission Licence and are available on the National Grid Industry Information website.

Electricity Balancing Development

Email: BSIS@uk.ngrid.com

8. Information Summary Page

| Balancing Service | Info Provision | Total costs £m | Total Value |
|---|---|----------------|----------------------------------|
| Reactive Power Market | Utilisation Volume (MA) | | 0GVArh |
| | Utilisation Volume (DefaultPM) | | 1900GVArh |
| | Total Spend (MA) | 0.00 | |
| | Total Spend (Default PM) | 4.06 | |
| Short Term Operating Reserve(STOR) Including BM and NBM Availability & Utilisation | Average Contracted Availability Payment | | £9.4715 /MW/h |
| | Average Contracted Utilisation Payment | | £271.1782 /MW/h |
| | Total Spend | 8.22 | |
| | Total Utilisation Volume (MWh) | | 8419.983 MWh |
| Mandatory Frequency Response | Holding Volumes & Prices: | | Primary / Sec / High |
| | Average Volume held MW | | 430 305 672 |
| | Average price £/MW/h | | 0 0 0 |
| | Total Holding Spend | 4.12 | |
| | Total Response Energy Payment Spend | 0.23 | |
| Commercial Frequency Response | No. Of Contracts | | 5 (Apr-Jun, Oct-Mar), 6(Jul-Sep) |
| | Total Spend | 6.51 | |
| Fast Start | Total Spend | 0.29 | |
| Black Start | Total Spend | 1.15 | |
| BM Start Up | Total Cost of BM Start Up | 0.48 | |
| | Number of instructions | | 51 |
| Fast Reserve-Tendered | Total Spend on Availability & Utilisation | 0.81 | |
| Fast Reserve Non-Tendered | Total Spend on Availability | 2.93 | |
| SO to SO | Volume Imported | | 56GWh |
| | Volume Exported | | -10GWh |
| | Total Spend | 2.62 | |
| System to Generator operational inter-trips | Capability Payments | 0.04 | |
| | Utilisation Payments | 0.00 | |
| Commercial Intertrip Service | Total Spend | 1.37 | |
| Balancing Services Constraint Contracts | Total Spend | 5.44 | |
| | Total Spend | 6.60 | |
| BM Constraints only | Total Spend | 0.00 | |
| Maximum Generation Service | Total Spend | 0.00 | |
| All Other Services | Total Spend | 0.00 | |
| Forward Trading | Traded gross volume | | 42828MWh |
| | Net cost of forward trading | 1.88 | |
| | OTC - Power Exchange & Energy | | |
| | Buy Volume | | 26396MWh |
| | Sell Volume | | -2800MWh |
| | OTC - BMU Specific | | |
| | Buy Volume | | 13632MWh |
| | Sell Volume | | 0MWh |
| 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 | Total | £46.75m | |

9. Summary of BSIS Costs

| | Total for Month | Latest Forecast for Month | Agreed Scheme Forecast for Month | Year to Date Total Cost | Year to Date Agreed Scheme Forecast | Projected Total cost for Year (Outturn + Latest Scheme Forecast) | Agreed Scheme Forecast for Year |
|--------------------------|-----------------|---------------------------|----------------------------------|-------------------------|-------------------------------------|--|---------------------------------|
| NIA | -£23.6 | -£20.4 | -£20.4 | -£39.5 | -£38.1 | -£283.7 | -£282.3 |
| Energy Imbalance | -£3.6 | £1.2 | £1.2 | -£9.8 | £0.3 | £5.5 | £15.7 |
| Operating Reserve | £4.9 | £11.0 | £11.0 | £7.9 | £21.5 | £97.1 | £110.7 |
| BM Startup | £0.5 | £0.9 | £0.9 | £0.7 | £1.9 | £11.5 | £12.7 |
| STOR | £7.3 | £9.2 | £9.2 | £13.9 | £18.2 | £94.3 | £98.6 |
| Constraints - E&W | £4.1 | £6.8 | £6.8 | £7.7 | £10.2 | £84.0 | £86.5 |
| Constraints - Cheviot | £8.6 | £11.6 | £11.6 | £17.1 | £14.9 | £69.0 | £66.7 |
| Constraints - Scotland | £1.0 | £11.0 | £11.0 | £1.2 | £24.5 | £62.9 | £86.2 |
| Footroom | £1.0 | £3.2 | £3.2 | £1.4 | £5.0 | £24.9 | £28.5 |
| Fast Reserve | £5.2 | £5.7 | £5.7 | £9.2 | £11.2 | £67.5 | £69.5 |
| Response | £12.7 | £16.1 | £16.1 | £24.6 | £31.3 | £183.9 | £190.6 |
| Reactive | £3.9 | £3.4 | £3.4 | £7.4 | £6.7 | £46.4 | £45.7 |
| Minor Components | £2.3 | £4.0 | £4.0 | £4.1 | £8.1 | £44.5 | £48.5 |
| | | | | | | | |
| TOTAL (excl TLIC) | £24.3 | £63.8 | £63.8 | £45.8 | £115.6 | £507.6 | £577.5 |
| TLIC | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 | £0.0 |
| Total (incl TLIC) | £24.3 | £63.8 | £63.8 | £45.8 | £115.6 | £507.6 | £577.5 |

New Wind Generation

New wind generation reported in Elexon Settlement Data as having generated more than 2 MW in any half hour for the first time during this month:

None

Adjustment to scheme parameters due to new generation

Sum of maximum generation, as measured by ENCC operational metering, of units identified in Ofgem's Wind Adjustor side letter after 1st April 2010:

190.03MW

Reduction to BSIS Parameters based on latest total MW of generation connected:

£24.08m

Detail BSIS Costs

| | Outturn for Month | Latest Forecast for Month | Agreed Scheme Forecast for Month | Year to Date Total Cost | Year to Date Agreed Scheme Forecast | Projection for Year (Outturn + Latest Scheme Forecast) | Agreed Scheme Forecast for Year |
|---|-------------------|---------------------------|----------------------------------|-------------------------|-------------------------------------|--|---------------------------------|
| NIA | - | - | - | - | - | - | - |
| Energy Imbalance | 23.6 | 20.4 | 20.4 | 39.5 | -38.1 | 283.7 | -282.3 |
| | -3.6 | 1.2 | 1.2 | -9.8 | 0.3 | 5.5 | 15.7 |
| BM | -5.2 | 1.1 | 1.1 | 12.7 | 0.3 | 1.0 | 14.1 |
| Forward Trade | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| SO-SO | 1.6 | 0.1 | 0.1 | 2.9 | 0.0 | 4.5 | 1.6 |
| Operating Reserve | 4.9 | 11.0 | 11.0 | 7.9 | 21.5 | 97.1 | 110.7 |
| BM | 2.6 | 8.3 | 8.3 | 4.5 | 15.9 | 76.2 | 87.5 |
| Constrained Margin | 1.7 | 1.3 | 1.3 | 2.2 | 2.9 | 10.3 | 11.0 |
| Forward Trade | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 1.8 | 1.7 |
| UTUV (Forward Trade) | 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 | 0.0 | 0.2 | 0.2 |
| SO-SO | 0.3 | 1.1 | 1.1 | 0.6 | 2.1 | 7.6 | 9.1 |
| SO-SO Constrained Margin | 0.2 | 0.2 | 0.2 | 0.2 | 0.4 | 1.1 | 1.2 |
| AS Demand Downturn | 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 |
| BM Startup | 0.5 | 0.9 | 0.9 | 0.7 | 1.9 | 11.5 | 12.7 |
| STOR | 7.3 | 9.2 | 9.2 | 13.9 | 18.2 | 94.3 | 98.6 |
| Standing Reserve | 0.4 | 1.4 | 1.4 | 0.5 | 2.8 | 11.9 | 14.2 |
| AS - BM Reserve Option Fees | 5.0 | 5.2 | 5.2 | 9.4 | 10.3 | 61.6 | 62.5 |
| AS - NBM Reserve Option Fees | 1.3 | 1.4 | 1.4 | 2.6 | 2.7 | 12.0 | 12.1 |
| AS - NBM Reserve Utilisation | 0.6 | 1.2 | 1.2 | 1.3 | 2.3 | 8.7 | 9.8 |
| AS - Supplemental Standing Reserve | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Constraints | 13.7 | 29.5 | 29.5 | 26.0 | 49.6 | 215.9 | 239.5 |
| BM | 6.7 | 14.4 | 14.4 | 11.4 | 21.8 | 122.1 | 132.4 |
| Forward Trade | 0.0 | 0.7 | 0.7 | 0.7 | 1.4 | 20.6 | 21.3 |
| SO-SO | 0.0 | 0.2 | 0.2 | 0.3 | 0.2 | 0.7 | 0.5 |
| AS - Intertrip and constraints | 6.9 | 14.2 | 14.2 | 13.6 | 26.2 | 72.6 | 85.2 |
| Footroom | 1.0 | 3.2 | 3.2 | 1.4 | 5.0 | 24.9 | 28.5 |
| BM | 1.0 | 3.2 | 3.2 | 1.5 | 5.0 | 25.0 | 28.5 |
| Forward Trade | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| SO-SO | 0.0 | 0.0 | 0.0 | -0.1 | 0.0 | -0.1 | 0.0 |
| Fast Reserve | 5.2 | 5.7 | 5.7 | 9.2 | 11.2 | 67.5 | 69.5 |
| BM | 1.2 | 1.2 | 1.2 | 2.0 | 2.3 | 14.3 | 14.6 |
| AS - Firm Fast Reserve | 0.8 | 3.9 | 3.9 | 1.6 | 7.8 | 41.5 | 47.7 |
| AS - SpinGen | 2.7 | 0.0 | 0.0 | 4.6 | 0.0 | 4.6 | 0.0 |
| AS - Other Fast Reserve | 2.9 | 0.2 | 0.2 | 5.1 | 0.3 | 7.2 | 2.4 |
| AS - Fast Start | 0.3 | 0.4 | 0.4 | 0.6 | 0.9 | 4.5 | 4.8 |
| Response | 12.7 | 16.1 | 16.1 | 24.6 | 31.3 | 183.9 | 190.6 |
| BM | 1.8 | 5.3 | 5.3 | 3.1 | 9.8 | 57.9 | 64.6 |
| AS - Generator Response | 4.1 | 4.1 | 4.1 | 8.4 | 8.2 | 56.3 | 56.1 |
| AS - Demand Side Response | 0.6 | 0.8 | 0.8 | 1.3 | 1.6 | 9.5 | 9.9 |
| AS - Response Energy | 0.2 | 0.0 | 0.0 | 0.4 | 0.0 | 0.4 | 0.0 |
| AS - Other Response | 5.9 | 5.8 | 5.8 | 11.5 | 11.7 | 59.8 | 60.0 |
| Reactive | 3.9 | 3.4 | 3.4 | 7.4 | 6.7 | 46.4 | 45.7 |
| AS - Default Utilisation | 3.9 | 3.4 | 3.4 | 7.4 | 6.7 | 46.4 | 45.7 |
| AS - Market Agreement Available Capability | 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 |
| AS - Market Agreement Utilisation | 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 | 0.0 | 0.0 |
| Black Start | 1.1 | 1.9 | 1.9 | 2.3 | 3.9 | 21.5 | 23.1 |
| BM | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| AS - Black Start Existing Contracts | 1.1 | 1.9 | 1.9 | 2.3 | 3.9 | 21.5 | 23.1 |
| AS - Black Start Test Contracts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| AS - Black Start New Contracts | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Unclassified BM | 1.0 | 2.0 | 2.0 | 1.9 | 4.0 | 21.9 | 24.0 |
| BM+AS General | -0.2 | 0.1 | 0.1 | -0.3 | 0.2 | 0.8 | 1.4 |
| Non Delivery | -0.2 | 0.0 | 0.0 | -0.5 | 0.0 | -0.5 | 0.0 |
| Other Reserve (Unwinding) | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.2 | 0.0 |
| Ramping | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.7 | 0.7 |
| SO-SO invoked by external party | -0.2 | 0.0 | 0.0 | -0.3 | 0.0 | -0.3 | 0.0 |
| AS - SO-SO BSUoS | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| AS - SO-SO Interconnector | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.2 | 0.1 |
| AS - Trading Option Fees | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| AS - Bank Charges | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| AS - Incidentals | 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 | 0.0 | 0.1 | 0.1 |
| AS - Queries/NGC Identified Issues | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Reconciliation | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.3 | 0.0 |
| TOTAL (Excl TLIC) | 24.3 | 63.8 | 63.8 | 45.8 | 115.6 | 507.6 | 577.5 |

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 |
|--------------------------------------|------------------------|---------------------------|--------------------|------------------------------|--------------------------|--------------------------|
| Energy Imbalance | -187,091 | -96,230 | -466,880 | -230,204 | -581,905 | -1,202,327 |
| BM | -217,154 | -86,607 | -533,006 | -207,183 | -664,669 | -1,082,094 |
| Forward Trade | 0 | 0 | 0 | 0 | 0 | 0 |
| SO-SO | 30,063 | -9,623 | 66,126 | -23,020 | 82,764 | -120,233 |
| Operating Reserve | 274,014 | 312,995 | 446,809 | 610,756 | 588,816 | 3,229,883 |
| BM | 93,518 | 233,837 | 168,171 | 456,292 | 265,362 | 2,405,399 |
| Constrained Margin | 134,903 | 25,982 | 184,759 | 50,699 | 206,542 | 267,267 |
| Forward Trade | 12,535 | 22,291 | 41,024 | 43,496 | 52,984 | 214,847 |
| UTUV (Forward Trade) | 0 | 0 | 0 | 0 | 0 | 0 |
| Forward Constrained Margin | 14,305 | 0 | 21,500 | 0 | 21,809 | 0 |
| SO-SO | 5,351 | 30,886 | 12,166 | 60,269 | 20,236 | 342,370 |
| SO-SO Constrained Margin | 13,402 | 0 | 19,189 | 0 | 21,884 | 0 |
| Absolute STOR | 2,422 | 6,388 | 3,071 | 12,464 | 3,953 | 65,916 |
| Standing Reserve | 2,422 | 6,388 | 3,071 | 12,464 | 3,953 | 65,916 |
| Constraints by Area | 229,582 | 278,638 | 411,756 | 455,980 | 504,216 | 2,604,789 |
| E&W | 229,582 | 278,638 | 411,756 | 455,980 | 504,216 | 2,604,789 |
| Constraint Margin Replacement | 173,322 | 0 | 247,463 | 0 | 281,053 | 0 |
| E&W | 173,322 | 0 | 247,463 | 0 | 281,053 | 0 |
| Footroom | -69,281 | -178,527 | -112,461 | -276,150 | -253,096 | -1,582,265 |
| BM | -62,096 | -178,527 | -100,473 | -276,150 | -215,876 | -1,582,265 |
| Forward Trade | 0 | 0 | 0 | 0 | -21,563 | 0 |
| SO-SO | -7,185 | 0 | -11,988 | 0 | -15,657 | 0 |
| Fast Reserve | 12,245 | 14,405 | 22,674 | 27,442 | 31,576 | 187,810 |
| BM | 12,245 | 14,405 | 22,674 | 27,442 | 31,576 | 187,810 |
| Absolute Response | 230,678 | 384,319 | 483,868 | 761,461 | 658,109 | 4,305,423 |
| BM | 230,678 | 384,319 | 483,868 | 761,461 | 658,109 | 4,305,423 |
| Unclassified BM | Unclassified BM | -131,436 | 0 | -311,426 | 0 | -356,853 |
| BM General | 14,938 | 0 | 35,916 | 0 | 43,153 | 0 |
| Non Delivery | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Reserve (Unwinding) | 279 | 0 | 727 | 0 | 873 | 0 |
| Ramping | -258 | 0 | -344 | 0 | -344 | 0 |
| SO-SO invoked by external party | 14,918 | 0 | 35,534 | 0 | 42,623 | 0 |
| Transmission Losses | 406,987 | 431,275 | 827,950 | 848,637 | 5,979,312 | 6,000,000 |

10. Glossary of Terms used in BSIS Tables

| | | |
|--------------------------|------------------------------|--|
| NIA | | The Net Imbalance Adjustment |
| Energy Imbalance | | |
| | 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 |
| Operating Reserve | | |
| | 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 |
| | UTUV (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 |
| BM Startup | | Optional service that allows BMUs to be warmed ready to synchronise in BM timescales and held in a state of hot-standby if required |
| STOR | | |
| | 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 |
| Constraints | | |
| | 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 |
| Footroom | | |
| | 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 |
| Fast Reserve | | |
| | 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 |
| Response | | |
| | 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 Energy | Ancillary service payments for the energy delivered when providing frequency response |
| | AS - Other Response | Ancillary service payments for firm response, and firm response energy, including part loaded response. |
| Reactive | | |
| | 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 |

| | | |
|----------------------------|---------------------------------------|---|
| Unclassified BM | | Actions not satisfying the specific criteria of any other category. |
| BM+AS General | | |
| | 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 |