Firm Frequency Response Market Information

Monthly Report

Jun-2013

Key points

This report is intended for tenders to be submitted in the next month for services starting on or after the month named in the report

The prices in submitted tenders are usually compared with the cost of alternative actions in the BM. Therefore, participants should note the historic volumes and prices provided for bid and offers, and mandatory frequency response holding.

Daytime period is from 07:00- 23:00 and Overnight is from 23:00 -07:00

Introduction

Firm Frequency Response (FFR) is a service through which balancing mechanism (BM) and non-BM participants commit to providing a given measure of response for a fee. The service is procured through a tender process ahead of BM timescales and competes with the mandatory response service offered by BM participants.

This report is intended to provide useful information to current and potential providers about the volume of response required, the likely periods over which it is required and the recent costs of obtaining frequency response through the mandatory market.

In May 2013, National Grid will procure frequency response in line with the principles laid out in the Assessment Principles. In principle, tendered prices are compared to the alternative costs buying mandatory response through the BM. Mandatory costs include the response holding costs, the bid and offer acceptance costs and the margin costs. More details on how these costs are considered during tender assessments are contained in our assessment principles.

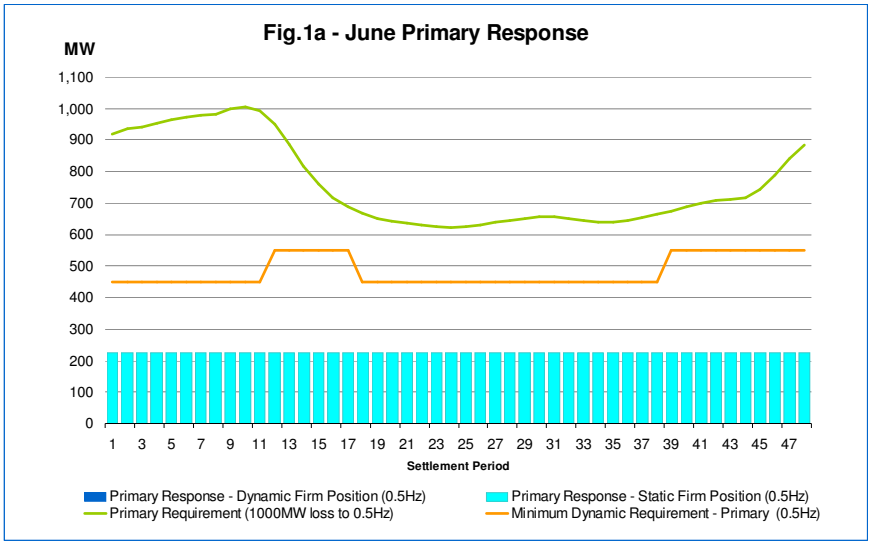
The next three pages of the report show the volumes of frequency response holding required. While the subsequent pages show the recent volumes and costs of response holding and bid and offer acceptances in the mandatory market.

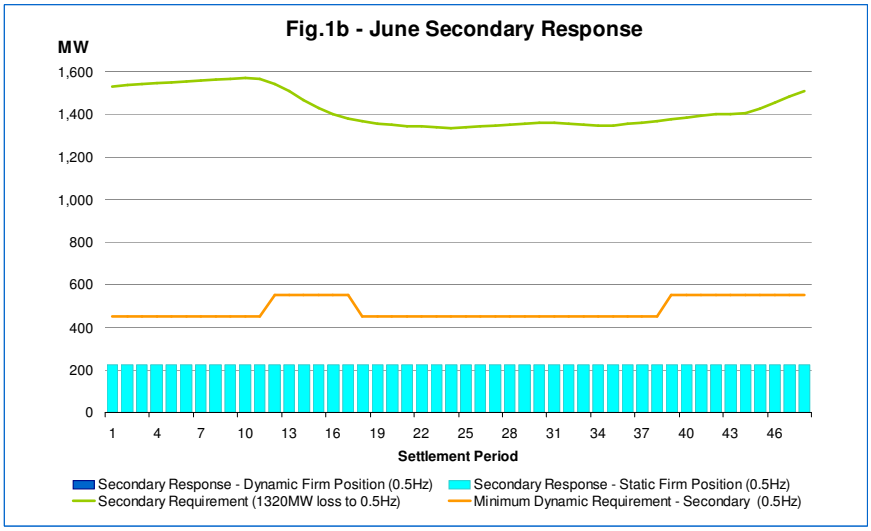
Highlights

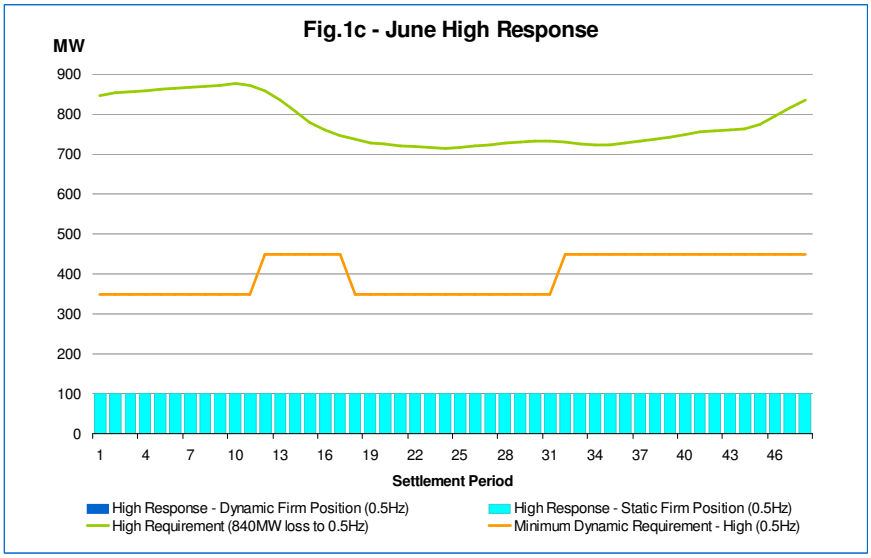
In April 2013, seven tenders were received offering frequency response from one BM unit and three demand side units. Five tenders from three demand-side units were accepted. Two BMU units have signed to proved the service until end of September 2013 and another BMU unit – until end of August 2013.

The FFR assessment principles and post-assessment tender report are available at:
http://www.nationalgrid.com/uk/Electricity/Balancing/services/frequencyresponse/ffr/

Settlement Period Requirement







Figures 1a to 1c show the forecast frequency response requirement for each settlement period in Jun-2013.

The expected response requirements shown in the following graphs are averaged for each day of the month. The requirements are estimated based on forecast demand for individual settlement periods.

It should be noted that the volume of frequency response required at weekends is slightly higher than during the week because of the lower demands experienced at weekends.

The green lines show the total response required to recover from a maximum frequency deviation of 0.5Hz. The primary response requirements are set for a 1000MW loss, secondary response for a 1320MW loss and high response for an 840MW demand loss.

The orange lines show the minimum dynamic response required at 0.5Hz deviation.

The bars in the graphs show the total contracted response which is expected to be available during the periods shown on the graph. The deep blue bars indicate the firm dynamic response and light blue bars represent firm static response.

Providers should note that dynamic response over the minimum dynamic level also contributes to meeting the total response requirement.

Daytime 12-Month Requirement

Figures 2a to 2c show the indicative daytime (07:00hrs - 23:00hrs) frequency response requirement for twelve months beginning Jun-2013.

The forecast response requirements shown in the following graphs are averaged for each day of the month and are calculated based on the forecast demand during settlement period 36. The volume of response required will vary over individual daytime settlement periods. The figures show the base/minimum values expected during the day.

The green lines show the total response required to recover from a maximum frequency deviation of 0.5Hz. The primary response requirements are set for a 1000MW loss, secondary response for a 1320MW loss and high response for an 840MW demand loss.

The orange lines show the indicative minimum dynamic response required at 0.5Hz deviation.

The bars in the graphs show the total contracted response which is expected to be available during the periods shown on the graph. The deep blue bars indicate the firm dynamic response and light blue bars represent firm static response.

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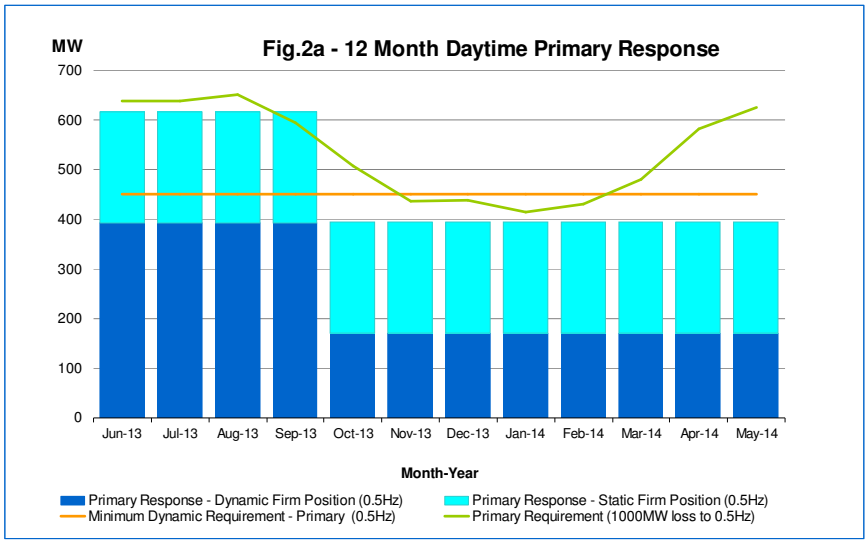
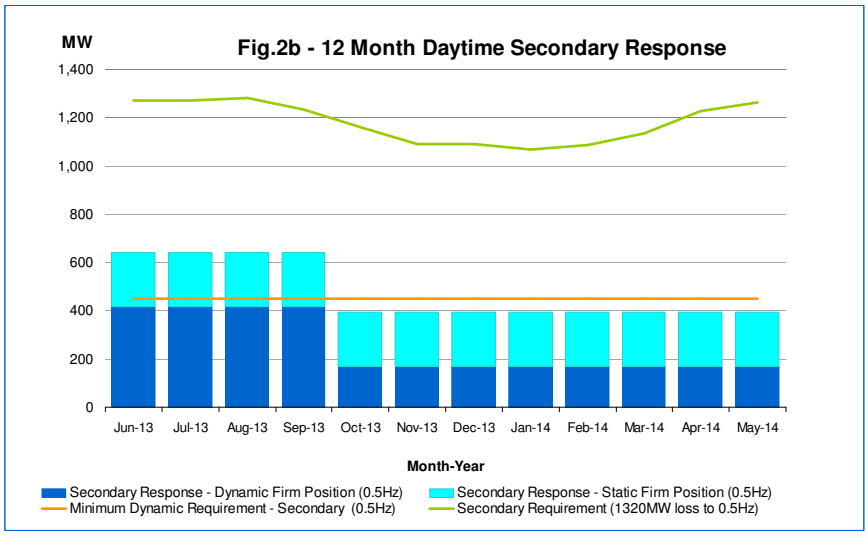
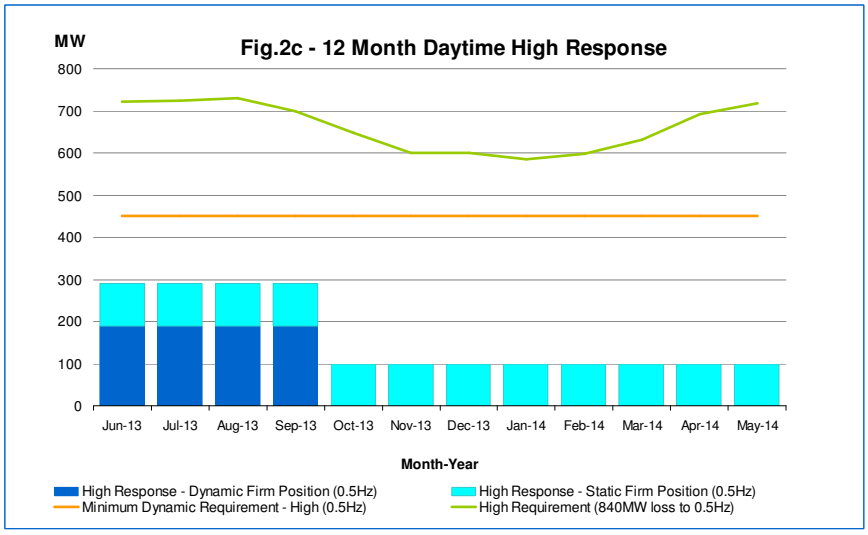
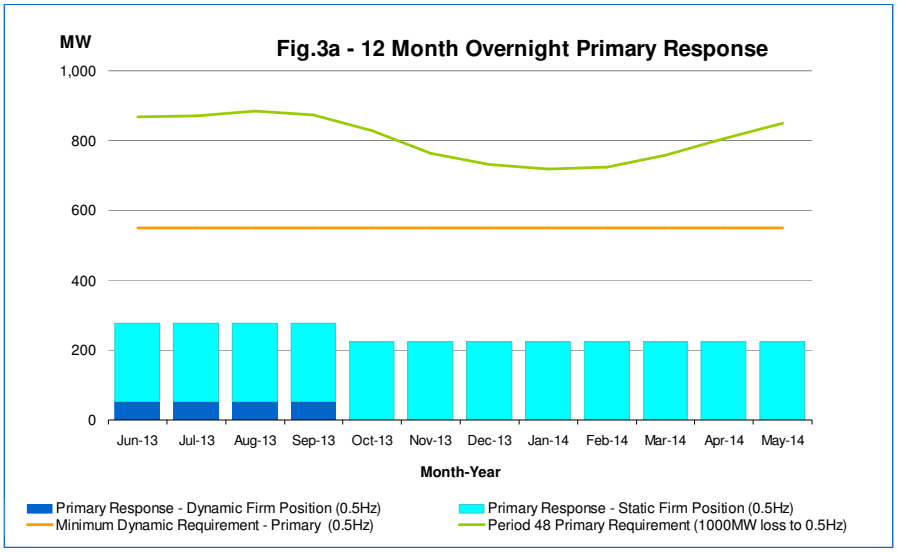
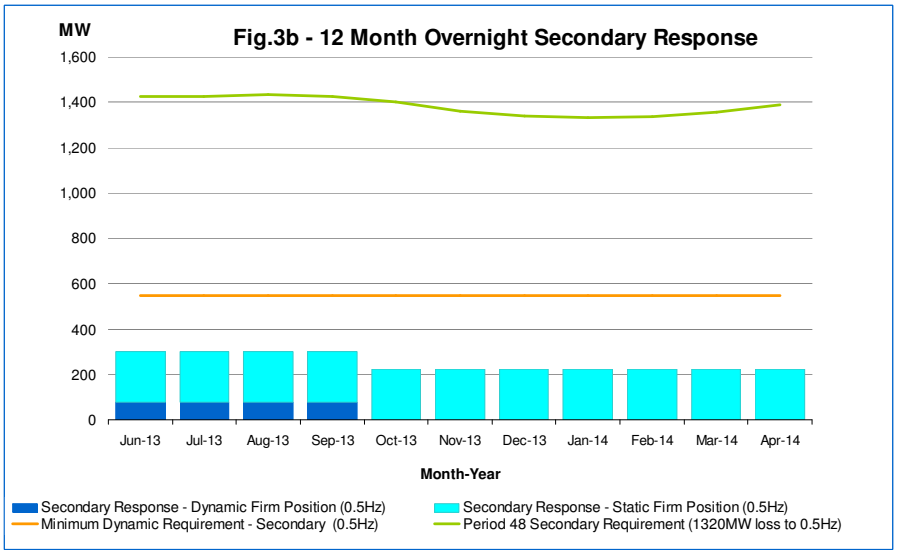


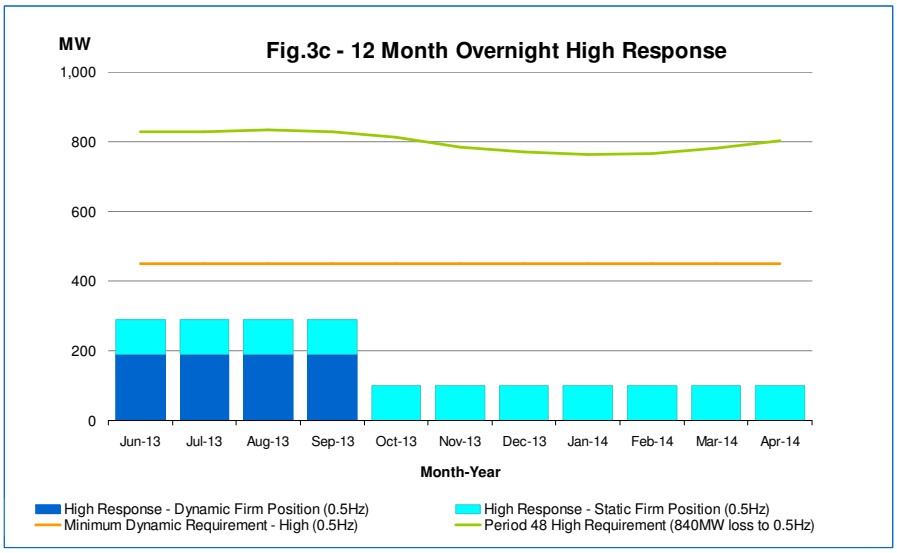




Overnight 12-Month Requirement







Figures 3a to 3c show the indicative daytime (23:00hrs - 07:00hrs) frequency response requirement for twelve months beginning Jun-2013.

The expected response requirements shown in the following graphs are averaged for each day of the month and are calculated based on the forecast demand for settlement period 48. The volume of response required will vary over individual overnight settlement periods. The figures show the base/minimum values expected overnight.

The green lines show the total response required to recover from a maximum frequency deviation of 0.5Hz. The primary response requirements are set for a 1000MW loss, secondary response for a 1320MW loss and high response for an 840MW demand loss.

The orange lines show the indicative minimum dynamic response required at 0.5Hz deviation.

The bars in the graphs show the total contracted response which is expected to be available during the periods shown on the graph. The deep blue bars indicate the firm dynamic response and light blue bars represent firm static response.

Providers should note that dynamic response over the minimum dynamic level also contributes to meeting the total response requirement.

Historic Bids and Offers

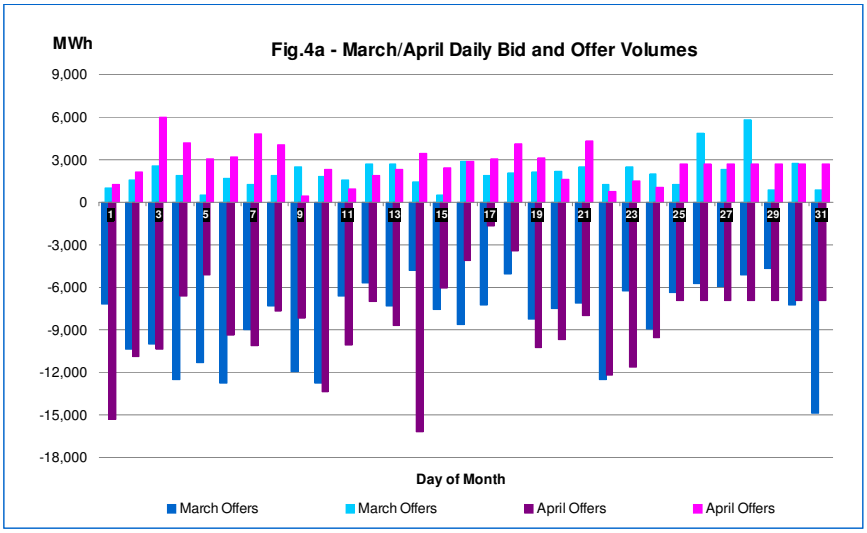
Figures 4a to 4c show the volume of Bid and Offer (BOA) instructions accepted by BM units that were, in conjunction with the delivery of the BOA energy, also providing frequency response.

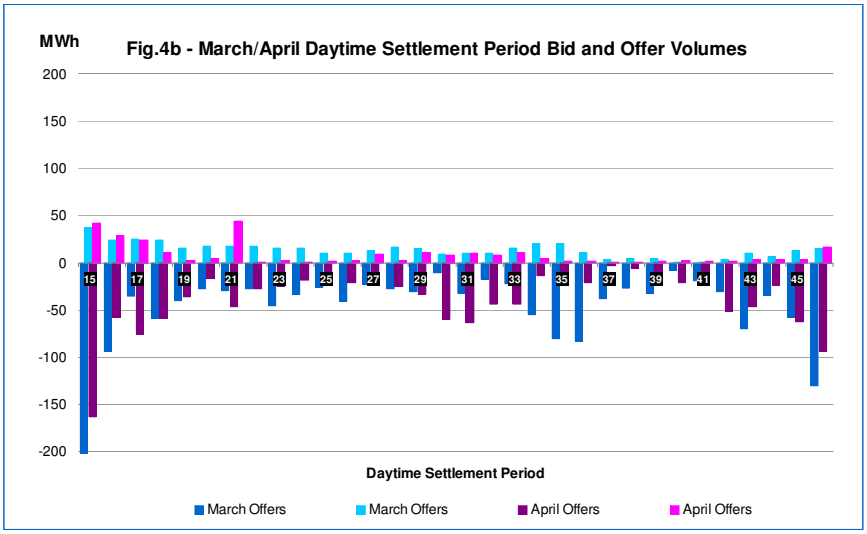
Figure 4a shows the volumes on a daily basis while figures 4b and 4c show the average daily volume for each settlement period. These figures are presented for March 2013 and April 2013.

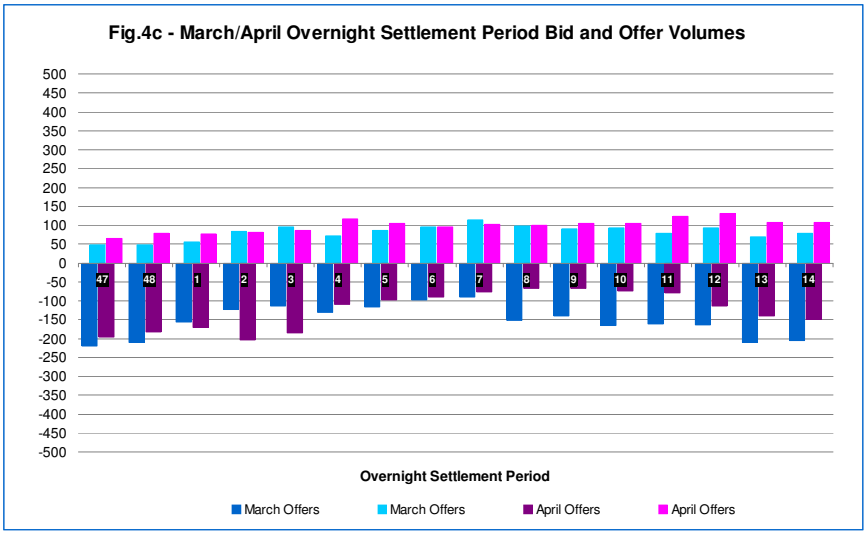
In order to publish this report by the 18th business day of April, figures for the last few days of April have been estimated. The actual figures for April will be published in the next market information report.

The settlement period figures show a profile of bid and offer acceptances over the day. It indicated that more bids were taken in the daytime periods compared to the overnight periods.

The Bid and Offer volumes presented in Figures 4a to 4c are indicative only. Actions may have been required for other reasons apart from, or as well as, frequency response optimisation. For example, bid and offer instructions may have also been required to resolve energy imbalance or system constraints.







Key dates in May 2013

In May 2013, National Grid will procure frequency response following the principles laid out in the Assessment Principles.

Tenders from eligible service providers for firm frequency response should be submitted by **Wednesday 01/05/2013**(1st business day) for all tenders.

National Grid will notify service providers of the outcome of the tender assessment by **Friday 17/05/2013** (12th business day).

For successful tenders, National Grid will notify nominated windows, following assessment by **Tuesday 21/05/2013** (14th business day).

Mandatory Response Costs

Response Bid and Offer Volume and Cost	March 2013 (Actual)	April 2013 (Estimate)
Total Response Bid Cost	**4.32 £m**	**3.22 £m**
Total Response Bid Volume	258,903 MWh	257,402 MWh
Total Response Offer Cost	**1.05 £m**	**1.32 £m**
Total Response Offer Volume	63,669 MWh	81,080 MWh

Response Holding Volume and Cost			
01/03/2013 Price band (£/MW/h range)	Primary Volume (MWh)	Secondary Volume (MWh)	High Volume (MWh)
0 to 2	50,341	207,539	140,488
2 to 4	146,883	27,913	0
4 to 6	81,237	261	349,457
6 to 8	70,102	0	84,703
Greater than 8	17,710	12,616	87,889
Total Volume	**366.3 GWh**	**248.3 GWh**	**662.5 GWh**
Cost	**1.54 £m**	**0.36 £m**	**3.53 £m**
Total Frequency Response Holding Volume			**1277.1 GWh**
Total Frequency Response Holding Cost			**5.43 £m**
01/04/2013 Price band (£/MW/h range)	Primary Volume (MWh)	Secondary Volume (MWh)	High Volume (MWh)
0 to 2	53,363	205,780	117,206
2 to 4	164,720	48,494	0
4 to 6	46,046	0	284,298
6 to 8	80,564	0	104,800
Greater than 8	27,623	365	111,358
Total volume	**372.3 GWh**	**254.6 GWh**	**617.7 GWh**
Cost	**1.48 £m**	**0.26 £m**	**3.46 £m**
Total Frequency Response Holding Volume			**1244.6 GWh**
Total Frequency Response Holding Cost			**5.21 £m**

*This table is also provided in excel format on the website.

Calculation of Bid and Offer acceptance costs
Response offer cost = Volume Offers x (Offer Price – ERP)
Response bid cost = Volume Bid x (Bid Price – ERP)

ERP (Energy Reference Price) is the volume weighted average of the submitted bids or offers used to resolve net imbalance volume (NIV) ignoring plant dynamics. It does not include non-BM standing reserve prices, trades, PGBTS or SO-SO trades. The Energy reference Price is calculated for each settlement period.

For a short market, the price is calculated using all submitted offers up to the value of NIV, capped by MEL. For a long market, the price is calculated using all submitted bids on synchronised plant down to zero, including demand side bidders and unsynchronised units (e.g. DINO pumps). All prices do not factor in plant dynamics.