

Firm Frequency Response (FFR)

Market Information for Tenders for July 2011

National Grid wishes to highlight to participants its requirement for Firm Frequency Response. Participants are invited to note the inclusion of Figures 6 and 7 for this purpose, as well as the enhancement to the Price breakdown table on page 8.

Total Frequency Response Requirements

Our indicative daily Total Requirement for Frequency Response for the above month is shown by Settlement Period for weekdays, in Figure 1 and for Saturdays, Sundays and Bank Holidays, in Figure 2. The graphs show the requirement to a maximum frequency deviation of 0.5Hz for Primary for a 1000MW loss and 0.5Hz for Secondary for a 1320MW loss and 0.5Hz for High Response for an 840MW demand loss.

Indicative Total Response Requirement - Weekday

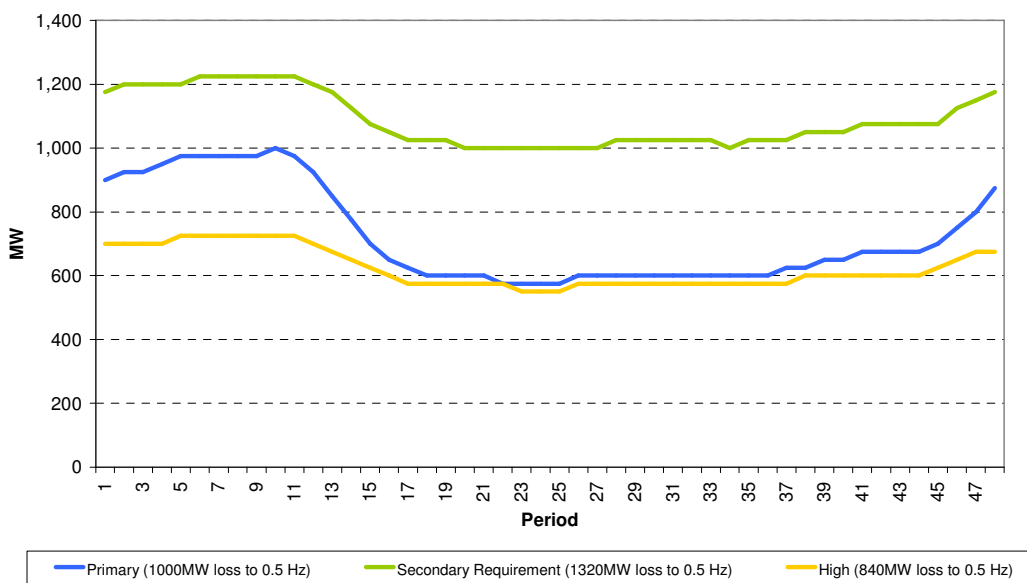


Figure 1

Indicative Total Response Requirement - Weekend

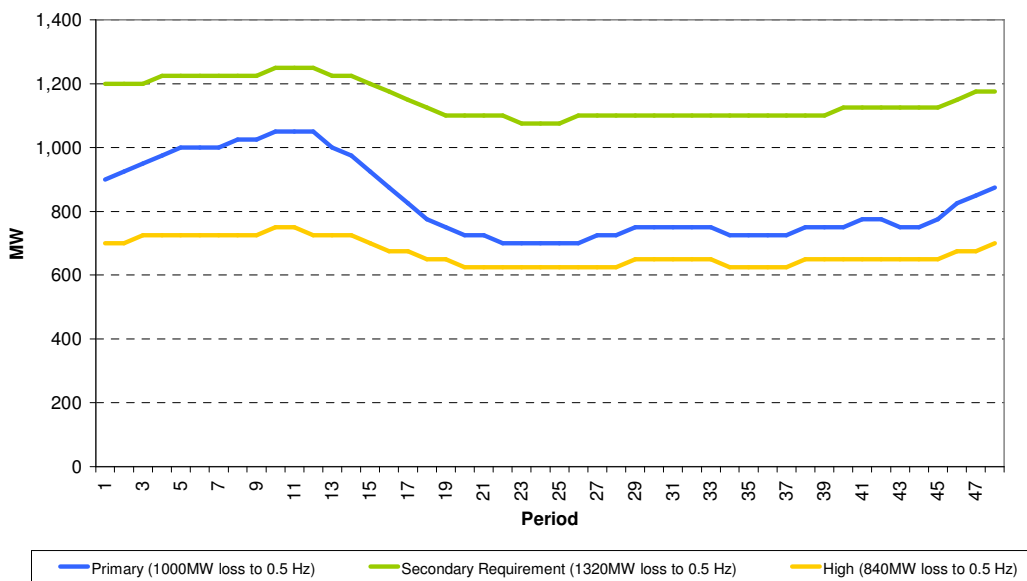


Figure 2

Minimum Dynamic Response Requirement

The indicative minimum required levels for Dynamic response are shown for Weekdays, Saturdays, Sundays and Bank Holidays in Figure 3. The levels are shown for delivery at 0.5 Hz deviation, although 0.2 Hz is the largest frequency deviation within normal operational range. The total amount of response delivered by Dynamic providers contributes to meeting the Total Response Requirement, Figures 1 and 2, above.

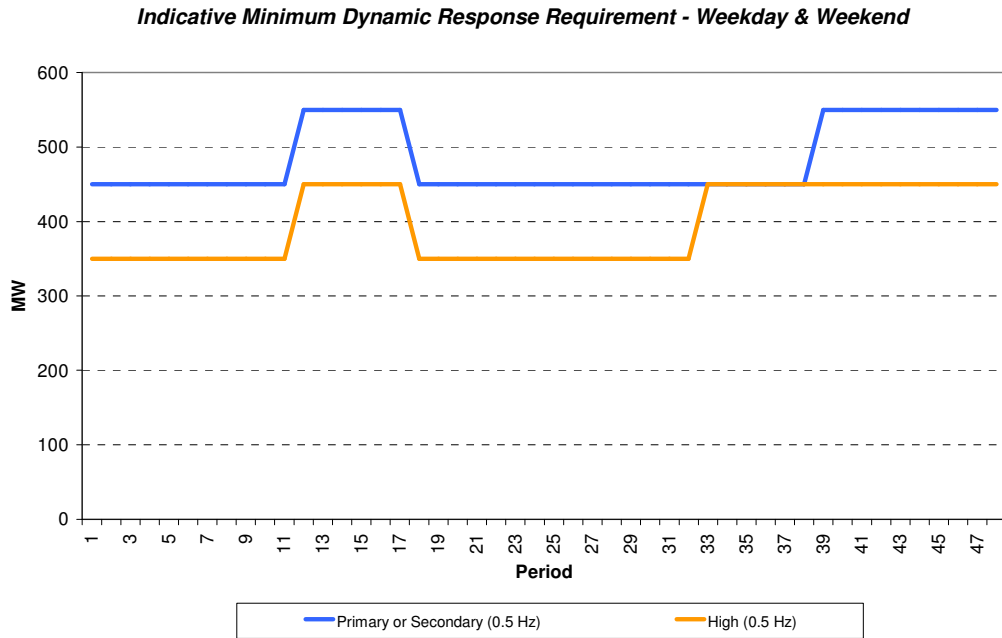


Figure 3

Maximum Non-Dynamic Response Level

The expected maximum level of Non-Dynamic Response is shown below for Weekdays, Figure 4, and for Saturdays, Sundays and Bank Holidays, Figure 5. The maximum level of Non-Dynamic Response achievable is the Total Response Requirement (at 0.5Hz) less the Minimum Dynamic Response Requirement delivery (at 0.5Hz as appropriate).

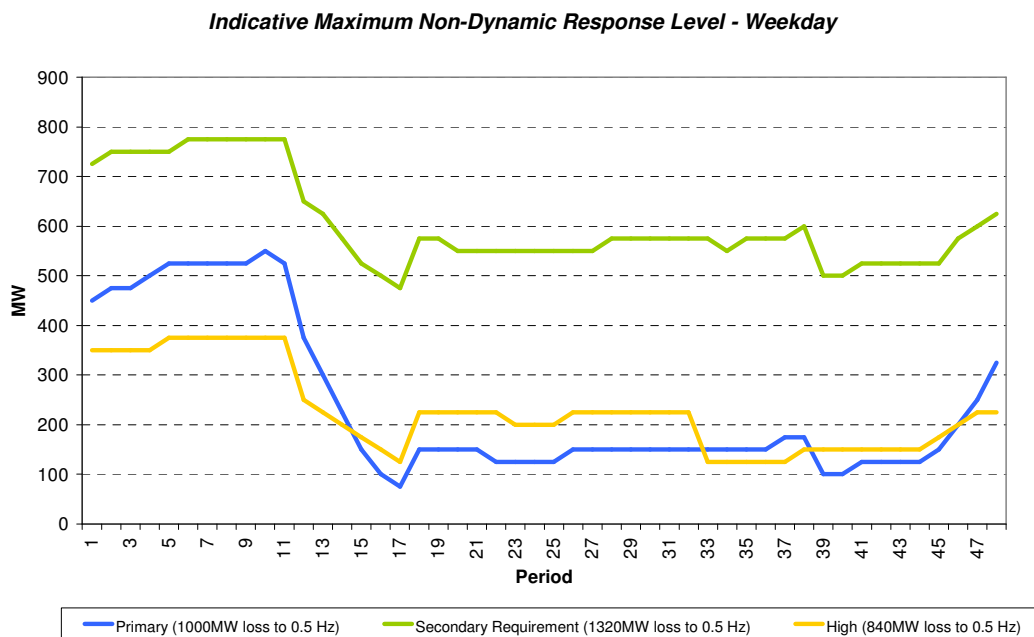


Figure 4

Indicative Maximum Non-Dynamic Response Level - Weekend

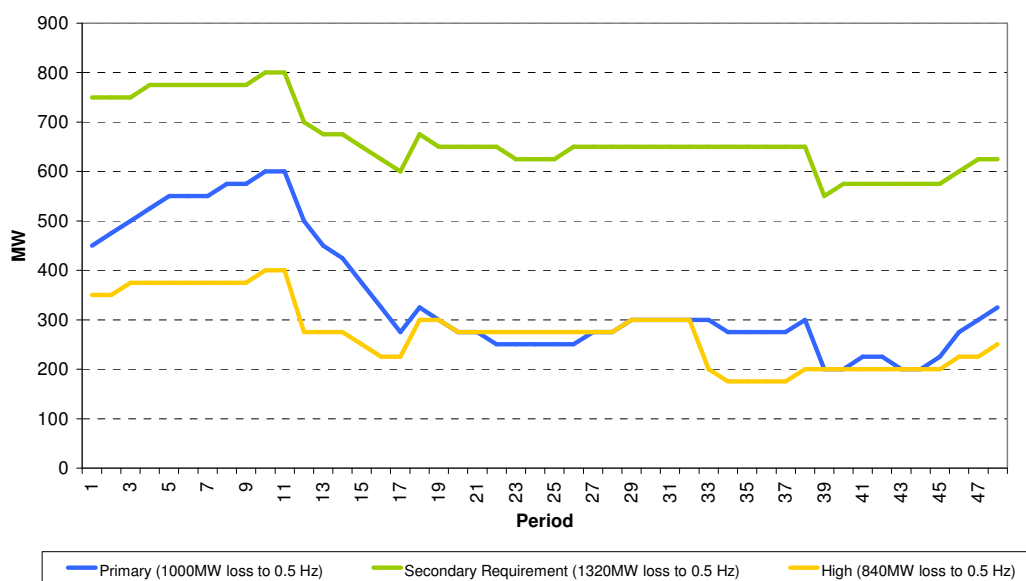


Figure 5

Balancing Mechanism instructions on Frequency Responsive plant

Figure 6, shows a post-event analysis of the volume of Bid Offer Acceptances instructed on Balancing Mechanism Units that were, in conjunction with the delivery of the BOA energy, also providing Frequency Response. This analysis covers **April 2011 and May 2011** on a daily basis. This data gives an indication of periods during which National Grid takes balancing actions which also contribute to the optimisation of the response holding across the system. However, readers should be aware that this is only indicative and actions may have been required for other reasons apart from (or as well as) Frequency Response optimisation (such as resolving energy imbalance or transmission system constraints).

Response BOA Summary for April 2011

Total Response Bid Cost	= £1,093,797
Total Response Bid Volume	= -428,543 MWh
Total Response Offer Cost	= £1,693,499
Total Response Offer Volume	= 52,383 MWh

Where

Response Offer Cost = Volume Offers x (Offer Price – Energy Reference Price)
 Response Bid Cost = Volume Bid x (Bid Price – Energy Reference Price)

Note: To produce the above numbers for publication by business day 18 the last few days of the month have been calculated using estimates.

Energy Reference Price

The Energy Reference Price is the volume weighted average of the submitted bids or offers available to resolve NIV ignoring plant dynamics. This does not include non-BM standing reserve prices, trades, PGBTS or SO-SO trades. The Energy reference Price is calculated for each settlement period individually as follows:

Short Market: All submitted Offers up to the value of NIV, Capped by MEL, unconstrained by dynamic parameters

Long Market: All submitted Bids on synchronised plant down to zero, includes Demand Side Bidders and unsynchronised units (e.g. DINO/FFES pumps), unconstrained by dynamic parameters

Average volume of BOAs on Frequency Responsive BM Units

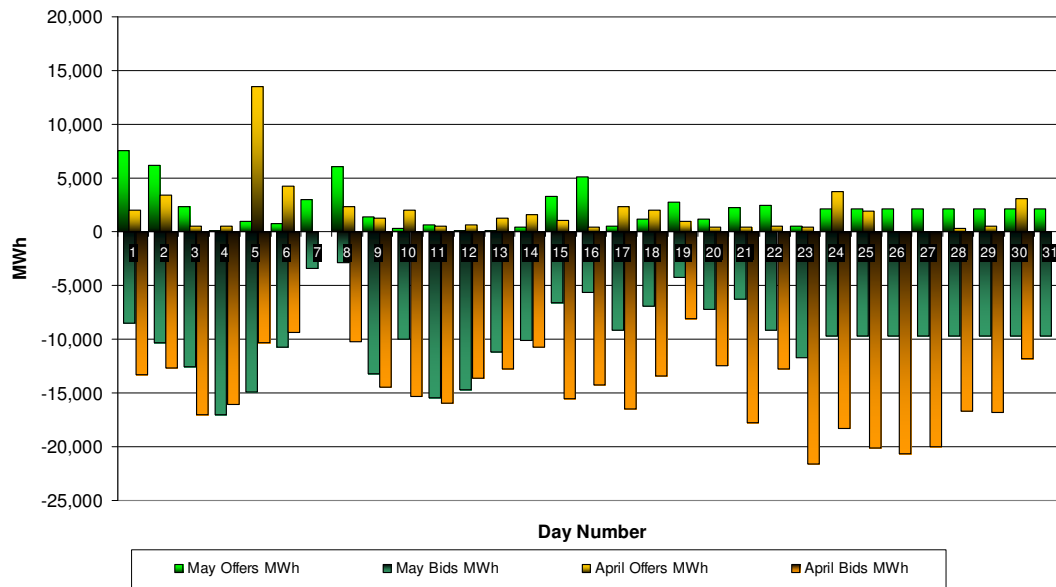


Figure 6

Figure 7 represents this data on a settlement period basis.

Average volume of BOAs on Frequency Responsive BM Units

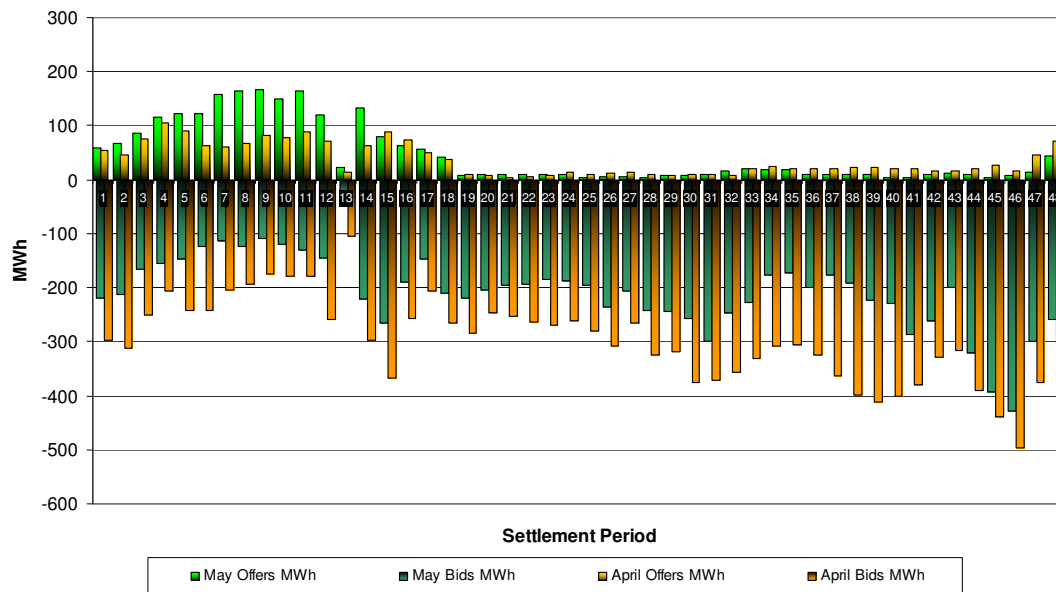


Figure 7

Note: To produce the above charts for publication by business day 18 the last few days of the month have been calculated using estimates.

Indication of Firm Contract Position

Figure 8a below shows the aggregated firm position that National Grid has already procured, and expects to be available, for weekdays for the month ahead through a combination of static and dynamic providers. Figures 8b and 8c shows the same for the year ahead for daytimes of the week and night times of the week, respectively.

** In line with the Procurement Guidelines if we consider that there is insufficient competition in the provision of a Balancing Service we shall contract for such provision on a negotiated bilateral basis. Full details are available on the National Grid website.*

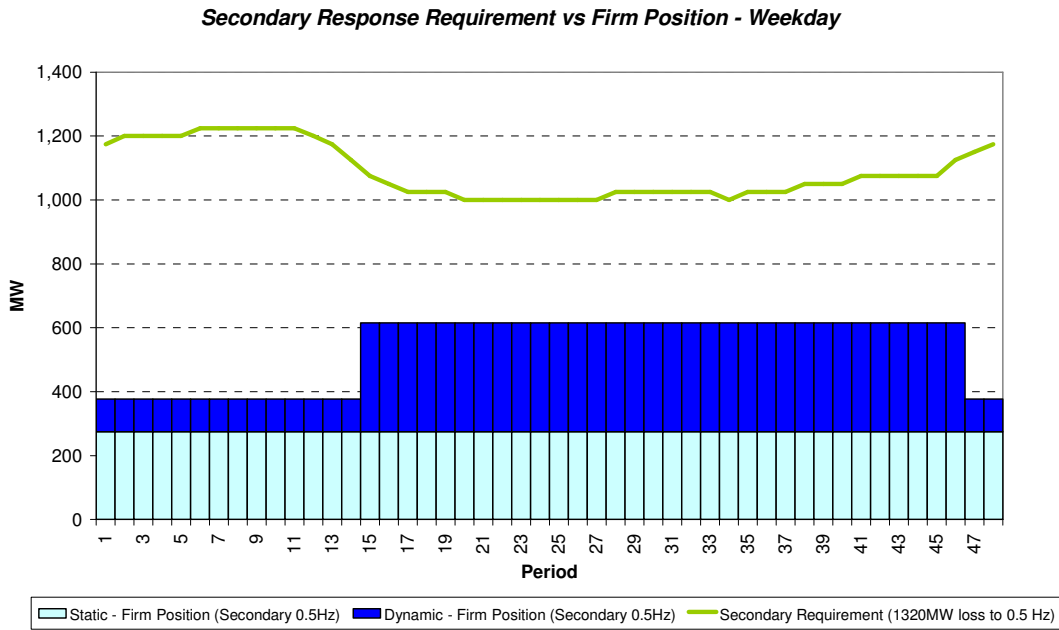


Figure 8a

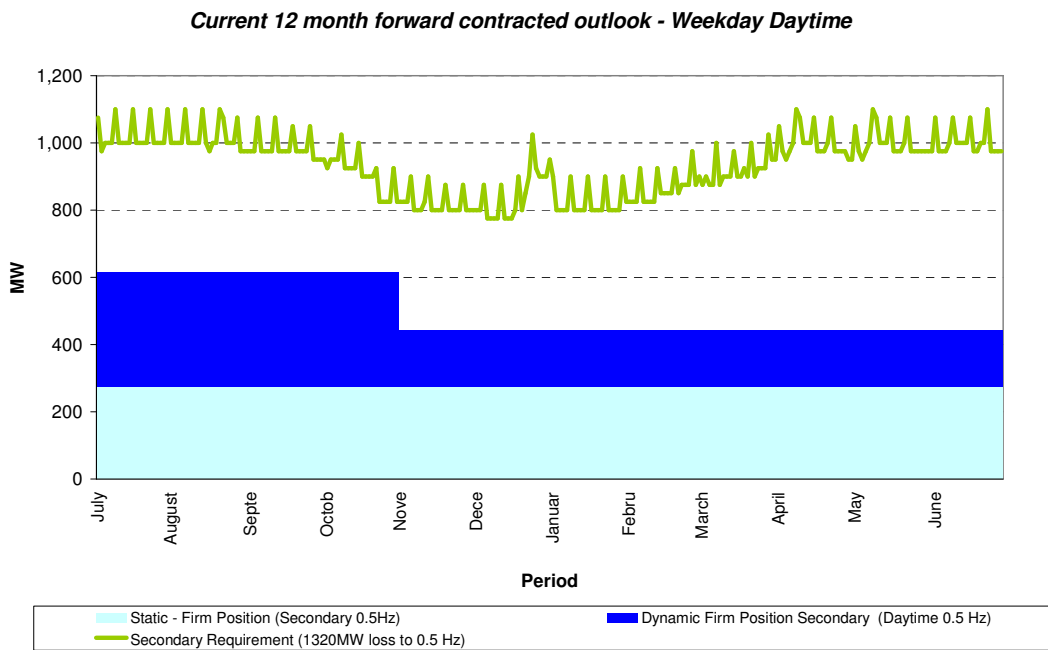


Figure 8b

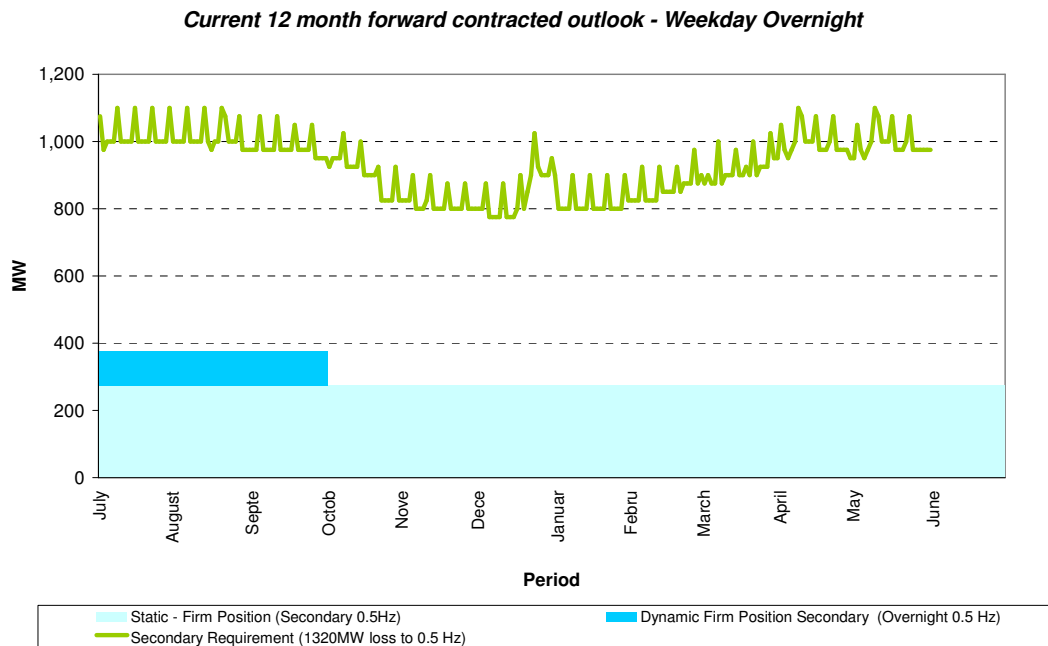


Figure 8c

Figure 9a below shows the aggregated firm position that National Grid has already procured, and expects to be available, for weekends for the month ahead through a combination of static and dynamic providers. Figures 9b and 9c shows the same for the year ahead for daytimes of the weekend and night times of the weekend, respectively.

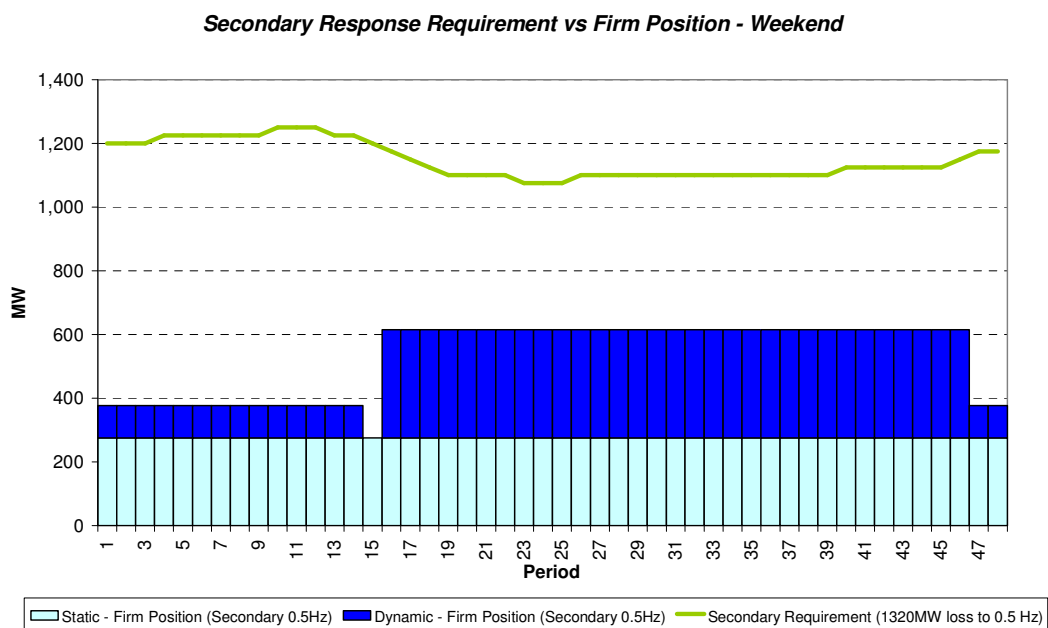


Figure 9a

Current 12 month forward contracted outlook - Weekend Daytime

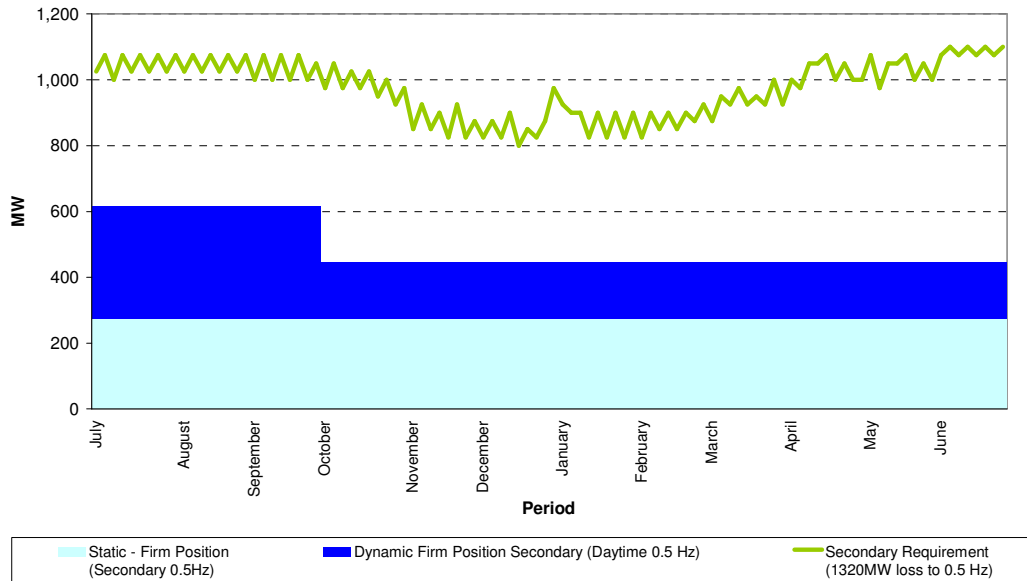


Figure 9b

Current 12 month forward contracted outlook - Weekend Overnight

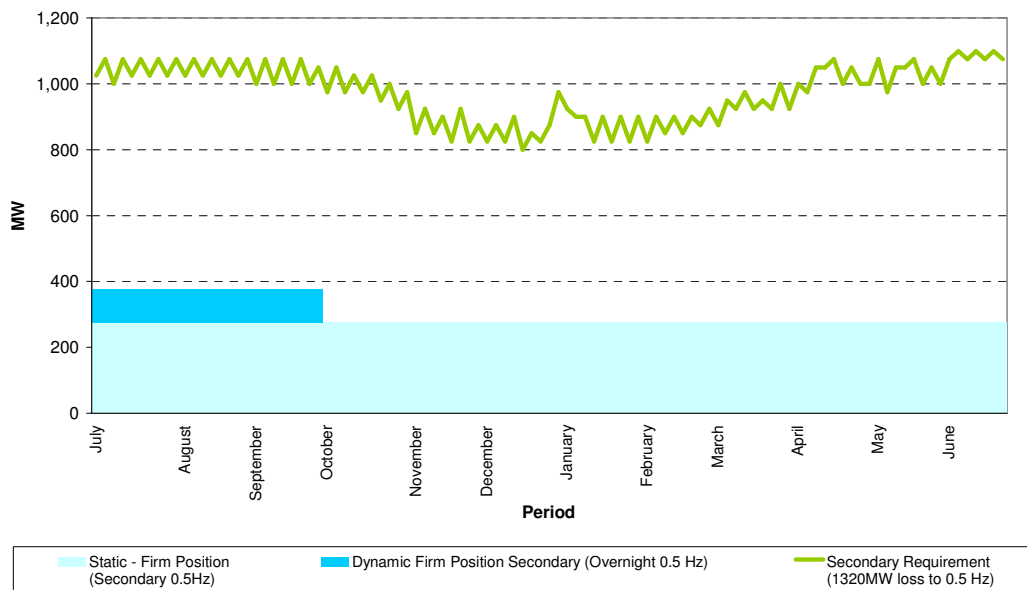


Figure 9c

In line with the Procurement Guidelines if we consider that there is insufficient competition in the provision of a Balancing Service we shall contract for such provision on a negotiated bilateral basis. Full details are available on the National Grid website.

The total volumes for Frequency Response holding on Mandatory service providers are **1,204 GWh** for **April 2011** and **1,177 GWh** for **May 2011**, and break down into price bands as follows:

apr 2011	Primary	Secondary	High
Price band (£/MW/h range)	Volume (MWh)	Volume (MWh)	Volume (MWh)
Greater than 8	13,160	1,682	28,957
6 to 8	11,197	2,648	96,731
4 to 6	60,669	1,136	388,066
2 to 4	236,715	40,960	0
0 to 2	57,311	236,636	27,978
Totals	379.1 GWh	283.1 GWh	541.7 GWh
Costs	£1.31 m	£0.51 m	£3.14 m
Total Frequency Response Holding Volume			1,204 GWh
Total Frequency Response Holding Cost			4.96 £m

may 2011	Primary	Secondary	High
Price band (£/MW/h range)	Volume (MWh)	Volume (MWh)	Volume (MWh)
Greater than 8	10,498	1,564	35,519
6 to 8	21,753	5,339	71,841
4 to 6	86,999	1,616	391,304
2 to 4	221,138	55,540	57
0 to 2	52,644	192,744	28,368
Totals	393.0 GWh	256.8 GWh	527.1 GWh
Costs	£1.62 m	£0.48 m	£2.86 m
Total Frequency Response Holding Volume			1,177 GWh
Total Frequency Response Holding Cost			4.96 £m

Note: To produce the above numbers for publication by business day 18 the last few days of the month have been calculated using estimates.

Please note that the MW/h units of payment are defined in the CUSC and do not relate to the units of 0.5Hz Primary, Secondary and High Response as quoted for the requirements, above.

For **July 2011**, Frequency Response Requirements are anticipated to be in line with the forecast Figures 1 – 5, above. National Grid will procure in line with the principles laid out in the Assessment Principles. Tenders from eligible Service Providers for Firm Frequency Response should be submitted by **Wednesday 1st June 2011** (1st business day – for Single month and Long term tenders) or **Friday 3rd June 2011** (3rd business day – for Short term tenders). National Grid will notify Service Providers of the outcome of the tender assessment by **Tuesday 14th June 2011** (10th business day). For successful tenders, National Grid will notify nominated windows, following assessment, by **Tuesday 21st June 2011** (15th business day).

Tenders should be sent by post for the attention of:

Bea Ennim
Network Operations
National Grid plc
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA