

BSSG – 5 November 2007

Agenda

- ◆ Introductions
- ◆ Recap
- ◆ Frequency Response
- ◆ Reactive

Recap

- ◆ Aim of the working group
- ◆ Initial aim was to focus on frequency response
 - ◆ Number of issues identified
 - ◆ CAP158 raised
- ◆ A number of reactive issues identified (mainly with the tender assessment)

Frequency Response

- ◆ Information
 - ◆ Utilisation report
 - ◆ CAP158
 - ◆ Publication of utilisation volumes earlier
 - ◆ Amendment alternative consultation underway
 - ◆ Closes on 9 November 2007
 - ◆ Reporting of BOA costs
 - ◆ Currently report BOA volumes in the FFR Market Information Report
 - ◆ Request to publish BOA costs for the month
 - ◆ Aim to have draft for December report
 - ◆ Draft will be circulated to meeting participants

Frequency Response

- ◆ Information
 - ◆ Capability matrices
 - ◆ Need agreement from all parties to publish information
 - ◆ Agreed to consult with the industry to gain agreement
 - ◆ Finalising consultation document
 - ◆ Draft circulated when finalised
 - ◆ List of providers ‘included’ in FR assessment
 - ◆ Develop list of providers who are ‘considered’ when calculating FR requirements
 - ◆ Agreeing draft report format
 - ◆ Draft circulated when agreed (with draft information)

Frequency Response

- ◆ Information
 - ◆ Consultation responses
 - ◆ 11 responses received
 - ◆ Information presented at the last Ops Forum
 - ◆ A limited number of suggestions for additional information
 - ◆ Looking into the feasibility
 - ◆ Update can be found on:
<http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/>
 - ◆ Phase 1 – looking to implement – Q1 2008 (working with Elexon)
 - ◆ Phase 2 – new data items etc. - Summer 2008

FFR Tender Information

- ◆ Action to consider additional information for assessing FFR tenders that are agreed / rejected
- ◆ Currently reviewing the provision of information via each balancing services report. This will also cover inconsistent reporting across reports.
- ◆ Review aim to be complete by March '08

Frequency Response – Product Separation

- ◆ Frequency response products
 - ◆ Separate procurement of low and high response products (currently P&H or P&S&H)
 - ◆ Currently over procure certain products due to the method of procurement – rough approximation of over £5m pa
 - ◆ Considered potential to procure products separately
 - ◆ Procure low and high products

Frequency Response – Product Separation

- ◆ Separate low and high response products
 - ◆ The potential size of the problem

£M	Due to PSH constraint	Lower bound	Upper bound
Primary	2.58	1.935	3.23
Secondary	0.98	0.735	1.22
High	3.11	2.33	3.89
Annual cost estimate	6.67	5.00	8.34

Frequency Response – Product Separation

- ◆ National Grid is already able to procure separate products (e.g. low or high only)
 - ◆ Via FFR
 - ◆ Website has been updated to clarify this to participants
 - ◆ Some parties already signed up on this basis
 - ◆ Via a CSA
 - ◆ Where the design of the plant lends it to do other, non-mandatory services
 - ◆ Must still be able to provide and make available the mandatory service (if required by Grid Code)
 - ◆ Parties already signed up on this basis

Frequency Response – Product Separation

- ◆ Internal discussion suggested that the separation of response products would be difficult
- ◆ Providers would not be able to stop providing the reverse product
- ◆ Concern over applicability of capability matrices under ‘restricted’ operation
- ◆ Next steps?

Energy Pricing

- ◆ No further evaluation of this has been undertaken over and above CAP107
 - ◆ Use BP-1 to determine individual unit energy price
- ◆ CAP107 – NG stated the risks and complexities of introduction of BP-1
 - ◆ Need to assess the risk / benefits of the change
 - ◆ Assess whether current tool can accommodate or if a new tool is required

BSSG – Frequency Response HF at SEL

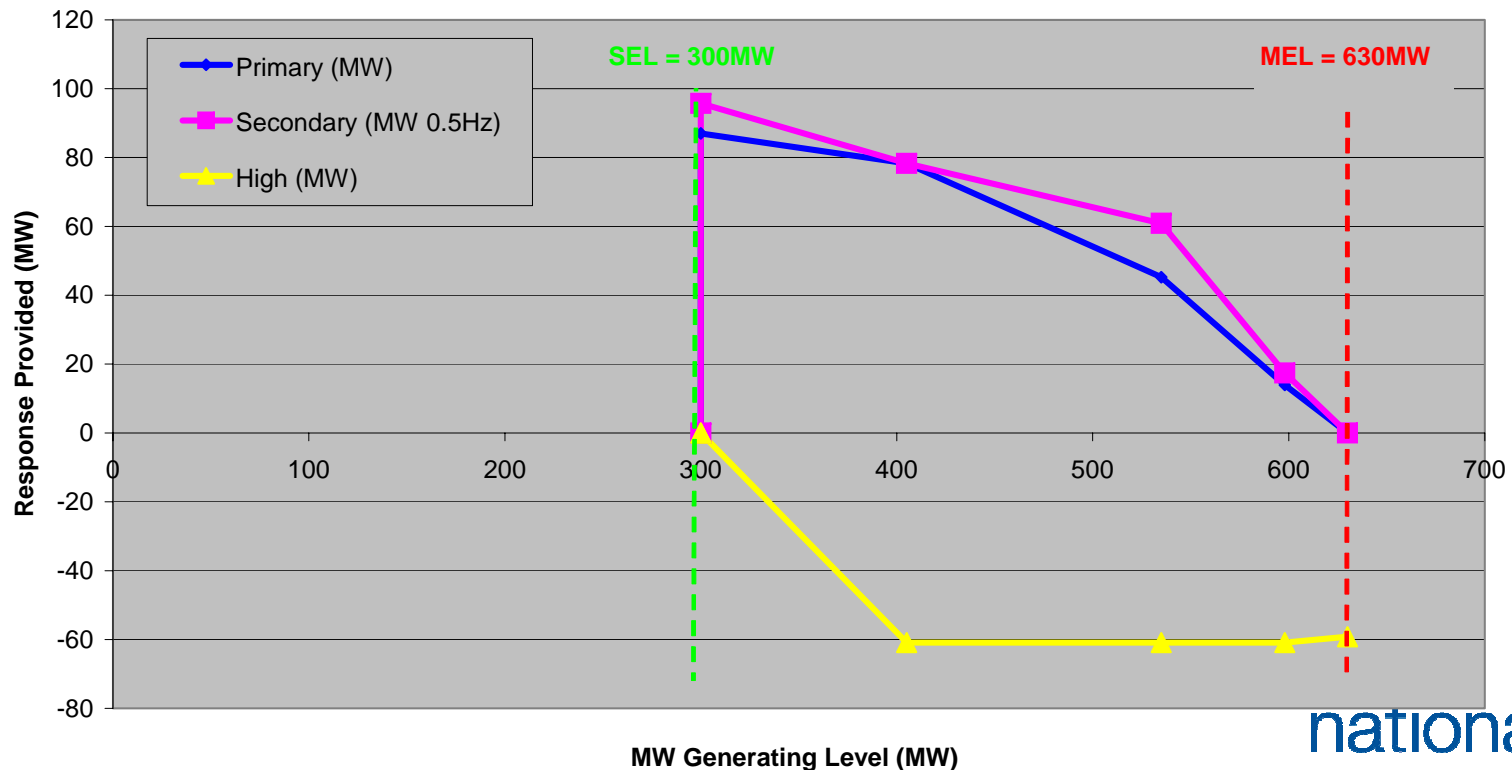
Frequency Response – HF at SEL capability

- ◆ Response capability curves are based on deload from MEL according to the CUSC
- ◆ For HF response where capability tends to zero at SEL this results in an incorrect capability **when MEL is reduced.**
- ◆ During periods of low demand (i.e. overnight) we find that if MEL is redeclared the HF curve is pushed through SEL resulting in an artificially high HF capability.
- ◆ Next slide shows an example:

Frequency Response – HF at SEL capability

- ◆ This shows a typical response capability curve. The P, S, H capabilities are anchored at MEL. This means that as MEL moves downwards the curves also move downwards. Next slide shows what happens to HF as MEL moves downwards....

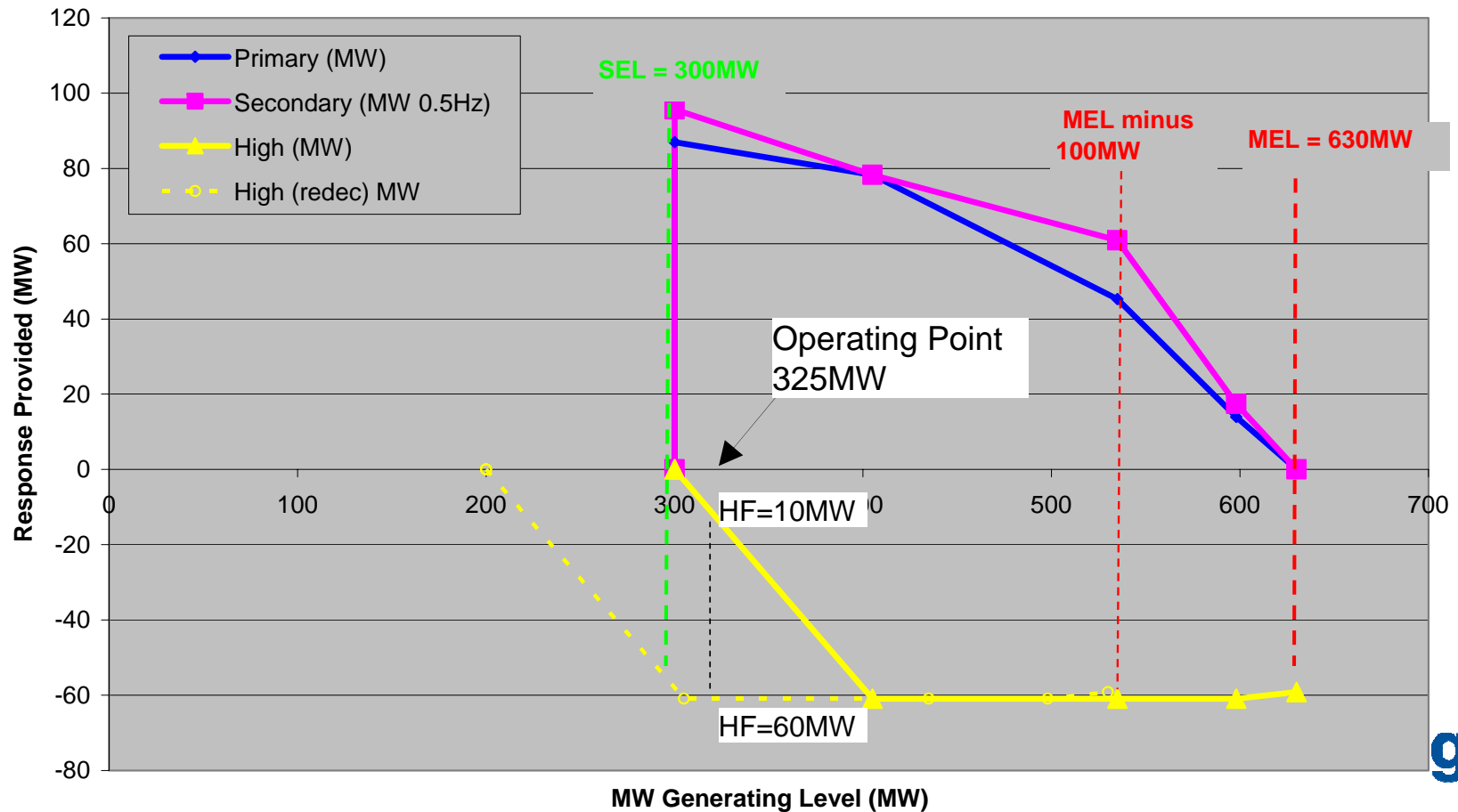
Typical 0.5 Hz Mode A Response Capability (x axis by MW Level)



Frequency Response – HF at SEL capability

- This graph shows what happens to the yellow HF curve as MEL is redeclared 100MW downwards. For an operating point of about 325MW the capability with MEL at 630 is the true 10MW. As MEL is redeclared the capability increases from 10MW to 60MW (the true HF capability is 10MW).

Typical Mode A Response Characteristic by MW Level



Frequency Response – HF at SEL capability

CUSC Financial Implications

- ◆ Financial Implications
 - ◆ Using post Cap047 information
 - ◆ Based on settlement payments where the load point is within 10MW of SEL (green in table below)
 - ◆ Sensitivity to load point has been checked
- ◆ In the last full financial year 06-07, it has been calculated that £2.65M of payments were made due to this issue:

Range	At SEL £M	Central (10MW) £M	Upper (20MW) £M
1 Nov 05 to 30 Sep 07	4.31	5.39	6.74
06-07 BSIS year	2.12	2.65	3.31
07-08 BSIS year (forecast Oct 07-Mar 08)	1.96	2.45	3.06

Frequency Response – HF at SEL capability

- ◆ We propose to anchor the HF curve only (not LF) to SEL rather than MEL.
- ◆ This would require a CUSC modification to Section 3.2.4 Balancing Services.

Reactive

Reactive Power

- ◆ Actions – National Grid initial thoughts
 - ◆ **Consider monthly tender process**
 - ◆ Would require Framework Agreement – more frequent tenders
 - ◆ Removes annual income certainty for generators
 - ◆ No certainty for National Grid under current incentive arrangements
 - ◆ Does not compliment National Grid requirement to deliver outage plan
 - ◆ **Consider improving indexation in the tender process**
 - ◆ Removes some of the purpose of tender process (e.g. price certainty)
 - ◆ Assessment process currently complex; increased price uncertainty of tender value would increase complexity resulting in the tender assessment period lengthened
 - ◆ Not in line with other tendered services e.g. FFR, Fast Reserve, STOR etc
 - ◆ Current process allows generator's not to sign agreement i.e. should there be rise in default prices
 - ◆ **Can assessment period be shortened**
 - ◆ Needs to be considered as part of the process review
 - ◆ Would require reducing tender pricing complexity – potentially detrimental to generator's incurred costs across reactive range

Reactive Power

- ◆ Actions – National Grid initial thoughts
 - ◆ **Consider monthly tender process**
 - ◆ Would require Framework Agreement – more frequent tenders
 - ◆ Removes annual income certainty for generators
 - ◆ No certainty for National Grid under current incentive arrangements
 - ◆ Does not compliment National Grid requirement to deliver outage plan
 - ◆ **Consider improving indexation in the tender process**
 - ◆ Removes some of the purpose of tender process (e.g. price certainty)
 - ◆ Assessment process currently complex; increased price uncertainty of tender value would increase complexity resulting in the tender assessment period lengthened
 - ◆ Not in line with other tendered services e.g. FFR, Fast Reserve, STOR etc
 - ◆ Current process allows generator's not to sign agreement i.e. should there be rise in default prices
 - ◆ **Can assessment period be shortened**
 - ◆ Needs to be considered as part of the process review
 - ◆ Would require reducing tender pricing complexity – potentially detrimental to generator's incurred costs across reactive range

Reactive Power

- ◆ National Grid internal reorganisation has delayed the development of this process
- ◆ When new lines of responsibility in place, National Grid minded to review the process
- ◆ Above actions will be considered further as part of review in 2008

- ◆ Views welcomes:
 - ◆ katharine.clench@uk.ngrid.com and/or craig.dyke@uk.ngrid.com