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**Meeting name** BSC Panel

**Date of meeting** 8 September 2005

**Paper Title** ISSUE 17: 'REVIEW OF ELECTRICITY MARKET INFORMATION'

**Purpose of Paper** For Information

**Synopsis** Standing Issue 17 ('Issue 17') was raised on 4 May 2005 by National Grid ('the Transmission Company'), to consider potential improvements to the provision of system information to the market under the Balancing and Settlement Code (BSC). The Issue 17 Group ('the Group') met three times to consider Issue 17, and this paper summarises the Group's discussions. The Group concluded that there may be merit in progressing some of the changes proposed by Issue 17.

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## 1. BACKGROUND

1.1 National Grid is currently developing proposals to improve the flow of system information between itself and Transmission System Users under Operating Codes (OC) 1 and 2 of the Grid Code. Issue 17 has been raised by National Grid to consider the consequential impact of four of these proposals on BSC systems and documentation:

- Proposal 1 – Rationalisation of Grid Code System Zones and BMRS Zones;
- Proposal 2 – Publication of disaggregated Output Usable data;
- Proposal 3 – Rationalisation of reporting timescales; and
- Proposal 4 – Provision of additional demand information.

The overall aim of the proposals is to ensure that the system information provided by the Transmission Company gives the appropriate signals to the market, in order to enable better planning and 'self-balancing' by participants and to reduce the risk of negative margins on security of supply (i.e. to ensure that there is sufficient generation to meet demand).

1.2 All the data impacted by the Issue 17 proposals is currently submitted by the Transmission Company to either the Balancing Mechanism Reporting Agent (BMRA) or Balancing and Settlement Code Company (BSCCo) in accordance with Section Q of the BSC, and is published on either the Balancing Mechanism Reporting Service (BMRS) or BSC Website in accordance with Section V.

1.3 Proposals 1 and 4 impact data on the BMRS only. Some or all of the data impacted by Proposals 2 and 3 is currently located on the BSC Website, and two implementation approaches therefore exist for these proposals:

- Implementation Approach A – publish all data on the BMRS; or
- Implementation Approach B – retain current location of data.

1.4 Section 2 shows the indicative costs which would be incurred by the implementation of the Issue 17 proposals. An explanation of each of the proposals and their associated costs is provided in Section 3. The Group's conclusions are outlined in Section 4.

## 2. ESTIMATED IMPLEMENTATION COSTS

2.1 Table 1 shows the estimated BSC Agent and BSCCo implementation costs for the Issue 17 proposals (the full BSC Agent impact assessment is attached as Annex 3).

2.2 These estimates are based on the following assumptions:

- The changes would be implemented as a 'package', rather than individually, in order to minimise implementation costs; and
- The 'package' of changes would be implemented as a stand-alone release (note that if they were included in a release with other changes, the overall implementation costs would be reduced).

**Table 1 – Issue 17 indicative implementation costs**

		APPROACH A	APPROACH B
<b>BSC Agent Costs</b>	<b>Proposal 1</b>	£260,000	£260,000
	<b>Proposal 2</b>	£360,000	£0
	<b>Proposal 3</b>	£290,000	£100,000
	<b>Proposal 4</b>	£20,000	£20,000
	<b>Release costs</b>	£345,000	£260,000
	<b>TOTAL</b>	<b>£1,275,000</b>	<b>£640,000</b>
	<b>Lead time</b>	44 weeks	27 weeks
<b>BSCCo Costs</b>	<b>TOTAL</b>	<b>£71,500</b> 325 man days	<b>£80,300</b> 365 man days
	<b>Lead time</b>	52 weeks	35 weeks
	<b>OVERALL TOTAL</b>	<b>£1,346,500</b>	<b>£720,300</b>

2.3 The above costs include the necessary amendments to the BSC, Code Subsidiary Documents, BMRA Systems and documentation, the BSC Website, and ELEXON systems and documentation. They also include project overheads such as review cycles and system testing (note that these overheads would be reduced if the Issue 17 changes were included in a release with other changes).

2.4 The costs exclude the necessary amendments to Transmission Company systems (e.g. Balancing Mechanism, Demand Estimation and Forecasting systems). They also exclude the costs of delivering any BMRS hardware upgrades, which might be required to mitigate any deterioration in the performance of the Low Grade BMRS service as a result of the amended data. These potential costs would therefore need to be considered were any of the Issue 17 proposals to be progressed further.

### 3. PROPOSAL DETAILS AND COST BREAKDOWN

#### **Proposal 1: Rationalisation of Grid Code System Zones and BMRS Zones**

- 3.1 At present, five BMRS Zones are used for reporting 'short-term' Zonal day ahead Demand, Indicated Generation and Indicated Demand forecast values on the BMRS in accordance with Table V-1 of Annex V-1 of the BSC. In contrast, eight Grid Code System Zones (seven relating to England and Wales, plus an eighth Scottish zone) are used for reporting 'long-term' Zonal Output Usable data for 2-14 and 2-49 days ahead, 2-52 weeks ahead, and 1-2 and 3-5 years ahead, on the BSC Website in accordance with Table V-8.
- 3.2 Issue 17 initially proposed that the existing BMRS Zones should be used for all zonal data. However, the Group agreed that this would not be appropriate since moving from eight System Zones to five BMRS Zones would reduce the granularity of reporting. The Group noted that Annex X-1 of the BSC defines the BMRS Zones as 'the zones set from time to time by the Panel in consultation with the Transmission Company', and that changes to these zones therefore do not require a Modification Proposal. The Group suggested that it would be more appropriate to first increase the number of BMRS Zones to eight, and amend their constitution such that they matched the existing System Zones. This change could be initiated by the Panel and implemented via a Change Proposal. Following the geographical alignment of the two sets of zones, all Grid Code and BSC references to System Zones could then be replaced with the revised BMRS Zones via subsequent code modifications – giving consistent zonal reporting across all data.
- 3.3 However, after further consideration, the Group agreed that it would be more desirable for the Panel to undertake a wider review of the BMRS Zones, in order to ascertain industry views as to the most appropriate number and constitution of zones. These revised BMRS Zones (which might not necessarily match the existing eight System Zones) could then be used for all zonal data under the Grid Code and BSC.
- 3.4 BSCCo advised that the BMRS does not currently contain the underlying functionality to add additional zones without incurring significant system changes. The Group therefore requested that the BSC Agent provide an indication of the costs which would be incurred by increasing the number of BMRS Zones, both with and without the inclusion of such functionality. The following indicative costs were provided:

**Table 2 – Proposal 1 BSC Agent cost breakdown**

<b>PROPOSAL 1 REQUIREMENT</b>	<b>INDICATIVE BMRA COST</b>
<b>Add 3 BMRS Zones under existing functionality</b> (i.e. geographically align with existing 8 System Zones)*	<b>£210,000</b>
<b>Add 3 BMRS Zones plus flexible functionality for further zones in the future*</b>	<b>£260,000</b> (i.e. an extra £50,000)
<b>Add a further 3 BMRS Zones in the future using this functionality</b>	<b>£135,000</b> (i.e. saving of £75,000 compared to £210,000 without functionality)

\*Note that these costs are based on having eight BMRS zones, and would therefore increase if the review resulted in a higher number. All costs in this table are change-specific, and exclude potential release and hardware costs.

- 3.5 Some members of the Group considered that it would be desirable to include the functionality for further zones as part of any Issue 17 changes, in order to minimise the costs of introducing additional zones in the future. Other members were unconvinced that the additional functionality was necessary, since they believed that the revised zones were likely to remain robust for several years – but suggested that the need for the functionality could form part of the review consultation.

### **Proposal 2: Publication of disaggregated Output Usable data**

- 3.6 Zonal Output Usable and Total Output Usable data for 2-14 and 2-49 days ahead, 2-52 weeks ahead, and 1-2 and 3-5 years ahead, is currently published on the BSC Website as single MW values in accordance with Table V-8 of the BSC. The existing data therefore currently makes no distinction between different types of Output Usable, some elements of which may be more predictable than others.
- 3.7 Issue 17 proposes that the Total Output Usable MW values should be disaggregated into a 'stack' of constituent elements in order to provide improved information on plant availability, and to facilitate operational planning and 'self-balancing' by participants. Each element in this stack would represent a different form of Output Usable – for example, a split by thermal output/intermittent output/Interconnector import, by fuel/plant type, or by plant flexibility (e.g. baseload, mid-merit, peaking or intermittent). Zonal Output Usable data would not be disaggregated, to protect confidential information.
- 3.8 The Group agreed that disaggregating Output Usable data could potentially have benefits to Parties in terms of facilitating both short-term and long-term planning, since the right breakdown of the data could aid Parties in understanding current market conditions (e.g. if the market was particularly short on flexible plant). The Group agreed that it might therefore be desirable to consider this issue in more detail via a Modification Proposal.
- 3.9 Output Usable data is currently published on the BSC Website. Issue 17 suggests that, subject to the cost of moving the data, it might be desirable to publish Output Usable data on the BMRS so that all data is available in one location. There are therefore two possible implementation approaches for Proposal 2 – publishing the disaggregated Output Usable data on the BMRS (Implementation Approach A) or disaggregating the data in its existing location on the BSC Website (Implementation Approach B).
- 3.10 It is difficult to separate the individual costs of Proposal 2, since Proposal 3 also impacts Output Usable data. An effort breakdown of the two proposals by the activities they require (rather than by proposal) is therefore provided under Proposal 3 below. After considering this breakdown, the Group concluded that the costs of moving Output Usable data to the BMRS would outweigh the benefits of a single data location, and therefore agreed that it would be more appropriate to retain Output Usable data on the BSC Website under Implementation Approach B. The Group noted BSCCo's advice that the man effort of disaggregating Output Usable data on the BSC Website was likely to be of a small magnitude.

### **Proposal 3: Rationalisation of reporting timescales**

3.11 National Demand forecast and Surplus forecast data for 2-14 days ahead and 2-52 weeks ahead is currently published on the BMRS in accordance with Table V-1 of the BSC. Zonal Output Usable and Total Output Usable data for 2-14 and 2-49 days ahead, 2-52 weeks ahead, and 1-2 and 3-5 years ahead is currently published on the BSC Website in accordance with Table V-8. National Generating Demand Margin data for 2-14 days and 2-52 weeks ahead is also published on the BSC Website in accordance with Table V-8. Issue 17 argues that the current reporting timescales result in inconsistency and duplication of data (for example, the 2-14 day timescales are duplicated in the 2-49 day timescales).

3.12 Issue 17 proposes to rationalise the existing reporting timescales for this data by:

- Combining the current 2-14 day daily submissions and 2-49 day weekly submissions into a single 2-49 day daily submission;
- Replacing the requirement to report the data for 2-52 weeks ahead with the requirement to report the data for 8-52 weeks ahead; and
- Removing the requirement to report the data for 45 years ahead (but retaining the requirement to report the data for years 1-3 ahead).

3.13 Issue 17 argues that this rationalisation would have the following benefits under the BSC:

- Elimination of existing duplication for 2-14 day and 2-49 submissions;
- Reduction in workload for years 4 and 5;
- Simplification of published data;
- Creation of a longer view of the market (higher resolution data to 49 days);
- Earlier identification of potential problem days in the 15 to 49 day time frame, thus allowing greater scope to change outage periods and better self-balancing; and
- Increase in transparency.

3.14 National Demand forecast and Surplus forecast data is currently published on the BMRS, whilst Output Usable and National Generating Demand Margin data is published on the BSC Website. As for Proposal 2, there are therefore two possible implementation approaches for Proposal 3 – publishing all the rationalised data on the BMRS (Implementation Approach A) or rationalising the data in its current locations (Implementation Approach B). Note that, under Implementation Approach A, National Generating Demand Margin would be merged with the existing Surplus forecast data (i.e. added as a new data item within the Surplus file) to further reduce any duplication of information.

3.15 Since both Proposals 2 and 3 impact Output Usable data, it is difficult to separate the individual costs of each proposal. The table below therefore provides an indication of the proportional split in BSC Agent effort between the different aspects of the proposals:

**Table 3 – Proposals 2 & 3 BSC Agent effort breakdown**

<b>ACTIVITY</b>	<b>APPROACH A EFFORT</b>	<b>APPROACH B EFFORT**</b>
Moving Output Usable/National Generating Demand Margin data to BMRS	80%	N/A (retained on BSC Website)
Disaggregating Output Usable data	10%	N/A (retained on BSC Website)
Rationalising Output Usable/National Generating Demand Margin reporting timescales	0%*	N/A (retained on BSC Website)
Rationalising National Demand forecast & Surplus forecast data reporting timescales	10%	100%

\*Note that this would incur an additional 25% if it was omitted. This is due to the increased amount of data which would need to be moved from the BSC Website to the BMRS if the reporting timescales were not rationalised.

\*\*Note that the BSCCo implementation costs of Approach B are higher than for Approach A, since BSCCo would be responsible for disaggregating and rationalising the data on the BSC Website (see Table 1).

- 3.16 The Group noted that BSCCo currently retains historic Output Usable and National Generating Demand Margin data, and provides this free of charge to Parties on request. The Group noted that if this data was moved to the BMRS under Approach A, each request for historic data would be subject to the standard charge for obtaining files via the NETA Helpdesk.
- 3.17 Following consideration of the effort breakdown, the Group concluded that the costs of moving Output Usable and National Generating Demand Margin data to the BMRS would outweigh the benefits of a single data location, and therefore agreed that it would be more appropriate to retain this data on the BSC Website under Implementation Approach B.
- 3.18 However, the Group noted that Implementation Approach B would still require changes to BSCCo systems and BSC Website functionality in order to process the revised Output Usable and National Generating Demand Margin files, and to BMRA systems in order to amend the existing National Demand and Surplus forecast files. The Group remained unconvinced that the benefits of Proposal 3 would outweigh its implementation costs, since it believed the proposal to be a 'repackaging' of data that was already available to the market – but agreed that there was no reason in principle why a Modification Proposal should not be raised to consider the issue further.

#### **Proposal 4: Provision of additional demand information**

- 3.19 Day ahead National Demand and National Indicated Demand forecast data is currently published on the BMRS in accordance with Table V-1 of the BSC, and includes station transformer load, pump storage and Interconnector demand. Initial National Demand Out-Turn data is also published on the BMRS in accordance with Table V-1, but does not include station transformer load, pump storage and Interconnector demand.
- 3.20 Issue 17 initially proposed to reconcile these figures by publishing the forecast data without, and the out-turn data with, these aspects included. It was argued that this reconciliation would have the following benefits under the BSC:

- Provision of additional demand data which can be taken into account by participants when matching generation, thereby improving self-balancing;
- Reconciliation of forecast and out-turned demands;
- Potential reduction in National Grid's balancing actions if additional information leads to better self-balancing by participants; and
- Improved security of supply.

3.21 The Group noted the BSC Agent's assessment that this solution would require changes to existing file structures, and would thereby incur significant implementation costs of around £170,000. In light of these costs, the Group suggested that it would be more appropriate for the Transmission Company to simply amend the single MW value within the existing Initial National Demand Out-Turn file to include station transformer load, pump storage and Interconnector demand – since this approach would require no changes to system functionality, and would therefore incur reduced implementation costs of around £20,000 to amend BMRA Help Text and documentation. A Modification Proposal would still be required to amend the BSC definition of Initial National Demand Out-Turn.

3.22 The Group remained unconvinced that the benefits of Proposal 4 would outweigh these revised implementation costs, since it believed the proposed additional information could already be derived from existing data. However, the Group agreed that there was no reason in principle why a Modification Proposal should not be raised to consider the issue further.

3.23 Although Issue 17 additionally suggested that there might be merit in publishing confidence bands around the 'normal' peak demand forecasts and the associated temperatures (either minimum/maximum or average), this suggestion was not developed by the Group.

3.24 Some members of the Group argued that the introduction of 'real-time' demand reporting was essential in order to help Parties self-balance and forecast, thereby mitigating their exposure to cash-out prices. National Grid clarified that it is already undertaking work in this area independently of Issue 17, with the intention of making 'real-time' demand out-turn data available on the National Grid website by the end of September 2005. One member also considered it essential for National Grid to provide more information on Demand Control and Demand Reduction (e.g. which zone has been called and the volumes involved), but noted that this data would fall under the remit of the Grid Code rather than the BSC.

#### **4. CONCLUSIONS**

4.1 The Group concluded that there would be merit in progressing Proposal 1 by initiating a Panel review of the existing BMRS Zones. The Group noted that any resulting changes to the number or constitution of the BMRS Zones could be implemented via a Change Proposal, but that any subsequent replacement of the existing System Zones would require Grid Code and BSC modifications. BSCCo intends to present an initial suggested scope for the review of the BMRS Zones to a forthcoming BSC Panel meeting.

- 4.2 The Group concluded that there might also be merit in developing Proposal 2 in more detail via a BSC Modification Proposal. The Group agreed that if Proposal 2 was progressed, Implementation Approach B was the most appropriate solution. The Group noted that parallel changes would also be required to the Grid Code.
- 4.3 The Group remained unconvinced that there would be merit in progressing Proposals 3 and 4, but agreed that there was no reason in principle why Modification Proposals should not be raised in order to consider these issues further. The Group noted that if these proposals were taken forward under the BSC as Modification Proposals, they would also require parallel changes to the Grid Code. The Group agreed that if Proposal 3 was progressed, Implementation Approach B was the most appropriate solution.

### Kathryn Coffin

#### ELEXON Change Delivery

##### *List of enclosures*

Annex 1: Issue 17 membership

Annex 2: Issue 17 (attached as separate document)

Annex 3: Issue 17 BSC Agent impact assessment (attached as separate document)

#### ANNEX 1: ISSUE 17 MEMBERSHIP

Member	Organisation	18/05/05	28/07/05	24/08/05
Tom Bowcutt	ELEXON (Chair)	✓	✓	✓
Kathryn Coffin	ELEXON (lead analyst)	✓	✓	✓
Shafqat Ali	National Grid (Proposer)	✓	✓	✓
Neil Smith	E.ON	✓	✓	✓
Mark Manley	BGT	✓		✓
Terry Ballard	RWE Npower	✓		
Mark Thomas	RWE Trading		✓	✓
Man Kwong Liu	SAIC Ltd	✓		✓
Garth Graham	Scottish and Southern	✓	☎	✓
Rupert Judson	EDF Energy	✓	✓	
Chris Teverson	J Aron & Company	✓	✓	✓

Attendee	Organisation	18/05/05	28/07/05	24/08/05
Sophie Tolley	Ofgem	✓	✓	
Ijaz Rasool	Ofgem		✓	✓
Paul Brodrick	ELEXON (technical support)	✓	✓	✓
Chris Day	Barclays Capital		✓	



# Review of Electricity Market Information

A BSC Standing Issue for Discussion

## 1 Purpose of the Paper

NGC is currently developing proposals to improve information flows between Users and NGC within an industry Working Group set up by the Grid Code Review Panel. The Working Group is focussing on the exchange of operational information between Users and NGC in order to ensure the safe, secure and efficient operation of the Systems. Although the Terms of Reference of the Working excluded publication of this information to the wider market in order to provide market signals, the Working Group did recognise that the Grid Code proposals could have a consequential impact on the market information supplied via the BSC and published on the BMRS.

The purpose of this paper is to outline the potential impact of Grid Code proposals on the market information. This assessment could then be used for identifying specific changes to the BSC and the BMRS data. It is possible that the requirements for market signals could influence additional exchange of information under the Grid Code.

It is likely that the industry discussions on these proposals will take place simultaneously under the Grid Code and BSC governance processes.

After consultation with Elexon, NGC considers that the BSC-related industry discussions on this issue could be initiated by initially raising a BSC Standing Issue. Although this paper focuses on the consequential impact of Grid Code proposals on the market information, the BSC discussions could extend to other aspects of market information which are either intended to inform the state of the Transmission System or are covered in Sections Q and V of the BSC.

## 2 Background

In January 2004, NGC carried out a review of the operational information that it receives and disseminates to the market via a variety of routes. The ultimate aim of the review was to improve market signals by providing additional and clearer information to the market. The review identified a number of improvements to the existing processes which ranged from NGC's internal calculation methodologies, through data flows between NGC and Users, to the publication of information. The proposed improvements were approved by Ofgem via the Grid Code governance process and became effective on 11 October 2004.

NGC's proposals did not affect the BSC but the changes to the definitions of Output Usable (OU) and Forecast Demand did impact the data published on the BMRS (demand forecasts and surpluses) and Elexon's (OU and Generating Plant Demand Margin data) websites. A document summarising the 'improvement package' and its impact on the published data can be accessed on NGC's Industry Information website via the link [http://www.nationalgridinfo.co.uk/balancing/pdfs/remi\\_changes\\_for\\_winter\\_04-05\\_v1.0.pdf](http://www.nationalgridinfo.co.uk/balancing/pdfs/remi_changes_for_winter_04-05_v1.0.pdf)

More recently, NGC has presented further proposals to the industry via an industry Working Group. These are considered in section 3.

### 3 Impact of Grid Code Proposals on Market Information

The Grid Code proposals that are likely to have an impact on the market information can be summarised as follows:

1. Rationalisation of Grid Code System Zones and BMRS Zones
2. Publication of disaggregated Output Usable data
3. Rationalisation of reporting timescales
4. Provision of additional demand information

Sections 3.1 top 3.4 give further details of the above proposals, including the benefits of the individual proposals to NGC and the market and the potential impact on Users, as perceived by NGC.

#### 3.1 Rationalisation of System Zones and BMRS Zones

At present, the Grid Code System Zones are used for zonal data corresponding to longer timescales (> 2 days ahead) and BMRS Zones for zonal data corresponding to shorter timescales (< 2 days ahead). It is proposed that the BMRS Zones should be used across all timescales. Consequently, the System Zonal boundaries would become redundant and would be removed from both the Grid Code and the BSC. A key driver for proposing this change is to ensure that the whole market will have access to the same data at the same time; this will avoid the current position where some Generators have privileged access (time wise) to market data ahead of other participants

In accordance with paragraph 6.5.2 of the BSC Section Q, NGC currently provides the following data to BSCCo:

**Table 1**  
Current timescales for submission of OU and margin data

Parameter	Timescale	Resolution	Target submission time
Zonal Output Usable	2-14 day ahead	Daily peak half hour value	16:00 on each Business Day
	2-49 day ahead	Daily peak half hour value	17:00 on the last Business Day of the week
	2-52 week ahead	Weekly peak half hour value	17:00 on the last Business Day of the week
	1-2 year ahead	Weekly peak half hour value	Twice each year at about six month intervals
	3-5 year ahead	Weekly peak half hour value	Twice each year at about six month intervals
Generating Plant Demand Margin	2-14 day ahead	Daily peak half hour value	16:00 on each Business Day
	2-52 week ahead	Weekly peak half hour value	17:00 on the last Business Day of the week

If this proposal is implemented, the above zonal data will be provided for each BMRS Zone rather than each System Zone.

The zonal data in Table 1 (and the associated national data, as described in Q6.5.2) is currently published on the Elexon website. However, all the other data (both zonal and national) on generation, demand and margins/surpluses is published on the BMRS. Subject to a cost/benefit assessment, it might be desirable to publish all the data on the BMRS.

The benefits of this proposal to NGC and the market, and the potential impact on Users are summarised in Table 2.

**Table 2**  
Benefits of rationalisation of System Zones and BMRS Zones

<b>NGC Benefits</b>	<b>Market Benefits</b>	<b>Potential User impact</b>
<ul style="list-style-type: none"> <li>▪ Removes obligations from the Grid Code;</li> <li>▪ Removes requirements to provide privileged data;</li> <li>▪ Removes export/import calculations;</li> <li>▪ Makes Zonal data easier to understand;</li> <li>▪ Allows publication of all data via the BSC.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The whole market has access to the same data at the same time;</li> <li>▪ More control over future changes to the zonal boundaries;</li> <li>▪ Makes national and zonal surpluses easier to understand and easier to use.</li> </ul>	<ul style="list-style-type: none"> <li>▪ No System Zone-based zonal data for generators (all zonal data based on BMRS Zones and available from the BMRS).</li> </ul>

The implementation of this proposal would require the following:

- Changes to BSC for replacing references to System Zones with references to BMRS Zones;
- Changes to NGC's systems for data corresponding to longer timescales (> 2 day ahead);
- Changes to BMRS for data corresponding to longer timescales (> 2 day ahead).

### **3.2 Publication of disaggregated OU data**

This proposal affects the way the OU data will be displayed on the BMRS, rather than the content of OU. A key driver for proposing this change is to separate out different types of OU (e.g. thermal and intermittent output). The national and zonal OU data could be published for various timescales (from 2 day ahead to 5 year ahead) as a stack of 3 constituent elements, rather than a single block:

- OU for 'standard' BMUs;
- OU for intermittents;
- OU for Interconnectors.

The above categories may require further development. NGC invites industry views on the usefulness of the above categories and how the OU could be best disaggregated for maximum benefit to the market.

The benefits of this proposal to NGC and the market, and the potential impact on Users are summarised in Table 3.

**Table 3**  
Benefits of publication of disaggregated OU data

<b>NGC Benefits</b>	<b>Market Benefits</b>	<b>Potential User impact</b>
<ul style="list-style-type: none"> <li>▪ Allows publication of plant availability uncertainty which could reduce NGC's balancing actions if additional information leads to better self-balancing by Users.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Separating out the thermal (controlled) plant from wind and interconnector (NGC assumed) allows market participants to form own views on levels of wind generation and interconnector flows, and plan accordingly.</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>

This change would be dependent upon a modification to the BSC and subsequent changes to the BMRS and NGC's systems, although it does not require any Grid Code changes.

### 3.3 Rationalisation of reporting timescales

This proposal affects the timescales for two streams of data that NGC submits to BSCCo. The first data stream consists of Output Usable and Generation Plant Demand margin, and NGC's current obligations for submission of this data are outlined in paragraph 6.5.2 of the BSC Section Q. Table 4 summarises the current reporting timescales for this data stream. This data is currently published on the Elexon website.

The second data stream consists of Demand Forecasts and Surpluses, and NGC's current obligations for submission of this data are outlined in Table 1–BMRS (Annex V-1: Table of Reports) of the BSC Section V. Table 5 summarises the current reporting timescales for this data stream. This data is currently published on the BMRS.

**Table 4**  
Current reporting timescales, as per Section Q (paragraph 6.5.2)

Timescale	Data Set	Resolution	Target submission time
2-14 day ahead	Zonal Output Usable	Daily peak half hour value	16:00 on each Business Day
	Total Output Usable		
	Generating Plant Demand Margin		
2-49 day ahead	Zonal Output Usable	Daily peak half hour value	17:00 on the last Business Day of the week
	Total Output Usable		
2-52 week ahead	Zonal Output Usable	Weekly peak half hour value	17:00 on the last Business Day of the week
	Total Output Usable		
	Generating Plant Demand Margin		
1-2 year ahead	Zonal Output Usable	Weekly peak half hour value	Twice each year at about six month intervals
	Total Output Usable		
3-5 year ahead	Zonal Output Usable	Weekly peak half hour value	Twice each year at about six month intervals
	Total Output Usable		

**Table 5**  
Current Reporting Timescales, as per Section V (Annex V-1: Table of Report, Table 1 - BMRS)

Timescale	Data Set	Resolution	Target submission time
2-14 day ahead	National Demand Forecast - Daily (NDFD)	Daily peak half hour value	15:00 on each day
	Surplus - Daily (SPLD)		16:00 on each Business Day
2-52 week ahead	National Demand Forecast - Weekly (NDFW)	Weekly peak half hour value	15:00 on Thursdays
	Surplus - Weekly (SPLW)		17:00 on the last Business Day of the week

It is clear from Table 4 that not all the reporting timescales are mutually exclusive (e.g. 2-14 day timescale are duplicated in the 2-49 day timescales). A key driver for proposing changes to the current timescales is to remove any overlaps.

For both sets of data streams in Tables 4 and 5, the proposed changes are as follows:

- Combine the current 2-14 day daily submission (daily resolution) and the current 2-49 day weekly submission (daily resolution) into a single 2-49 day daily submission (daily resolution).
- Remove the current 2-7 week requirement (weekly resolution) so that the weekly submission corresponds to 8-52 weeks (weekly resolution).
- Retain current requirements for years 1, 2 and 3;
- Remove current requirements for years 4 and 5.

The benefits of this proposal to NGC and the market, and the potential impact on Users are summarised in Table 6.

**Table 6**  
Benefits of rationalisation of reporting timescales

<b>NGC Benefits</b>	<b>Market Benefits</b>	<b>Potential User impact</b>
<ul style="list-style-type: none"> <li>▪ Reduces workload for years 4 and 5;</li> <li>▪ Eliminates duplication for 2-14 day and 2-49 day submissions;</li> <li>▪ Allows a longer view of higher resolution data.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Eliminates duplication and simplifies published data;</li> <li>▪ Allows a longer view of the market (higher resolution data to 49 days);</li> <li>▪ Allows earlier identification of potential problem days in the 15 to 49 day time frame, thus allowing greater scope to change outage periods and better self-balancing;</li> <li>▪ Greater transparency.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reduces generator workload for years 4 and 5 submissions;</li> <li>▪ Increases workload for 15-49 day daily, rather than weekly, submissions.</li> </ul>

The implementation of this proposal would require the following:

- Changes to the BSC for rationalisation of the reporting timescales;
- Changes to existing BMRS display screens for revised timescales;
- Possible development of new display screens for publication of OU-based data on the BMRS (which is currently published on the Elexon website);
- Changes to NGC's systems for submission of data to BMRA;
- [Changes to the Grid Code].

### **3.4 Provision of additional demand information**

For the 0 - 48 hours timescale, NGC currently publishes the national demand forecast which includes pump storage and interconnector exports. However, the published outturn demand ('INDO') does not include pump storage and interconnector exports, and it is currently not possible to reconcile the forecast and outturned demand figures.

In order to reconcile the forecast and outturned demand data, NGC proposes to publish the national demand forecast which does not include pump storage and interconnector exports, and the outturned demand which does include pump storage and interconnector exports. The proposals are summarised in Table 7.

**Table 7**  
Proposed provision of additional demand information

	<b>Publication frequency</b>	<b>Resolution</b>	<b>Information to be published</b>
0 - 48 hours forecast demand	half-hourly	half-hour	<ul style="list-style-type: none"> <li>✓ Demand <u>with</u> pump storage and interconnector exports (already published)</li> <li>✓ Demand <u>without</u> pump storage and interconnector exports</li> </ul>
Outturned demand	half-hourly	half-hour	<ul style="list-style-type: none"> <li>✓ INDO <u>with</u> pump storage and interconnector exports</li> <li>✓ INDO <u>without</u> pump storage and</li> </ul>

	Publication frequency	Resolution	Information to be published
			interconnector exports (already published)

The benefits of this proposal to NGC and the market, and the potential impact on Users are summarised in Table 8.

**Table 8**  
Benefits of provision of additional demand information

NGC Benefits	Market Benefits	Potential User impact
<ul style="list-style-type: none"> <li>▪ May reduce NGC's balancing actions if additional information leads to better self-balancing by Users;</li> <li>▪ Improved security of supply.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provides market participants with additional demand data which can be taken into account when matching generation, thereby improving self-balancing;</li> <li>▪ Allows reconciliation of forecast and outturned demands.</li> </ul>	<ul style="list-style-type: none"> <li>▪ None</li> </ul>

The implementation of this proposal would require changes to the BMRS screens which display the forecast and outturned demand for the 0 – 48 hour timescales.

In addition to the specific proposal outline above (which does not require significant changes to BMRS or any changes to the BSC), the demand forecast information could be improved by considering more fundamental changes to the published information. These include the publication of confidence bands around the 'normal' peak demand forecasts and the associated temperatures. This proposal is likely to involve significant IS costs and NGC would like industry views on its usefulness before carrying out any development work.

## 5 Conclusion and Recommendation

This paper has outlined a range of Grid Code proposals which could have an impact on the market information supplied via the BSC. The benefits of the proposals to both NGC and the market and the potential impact on Users, as perceived by NGC, have also been highlighted.

It is recommended that the issues highlighted by this paper are discussed under the governance of the BSC.

# NETA Change Form

<b>Title</b>		<b>Version No.</b>
Issue 17 – Review of Electricity Market Information		0.2
		<b>LogicaCMG Reference</b>
		ICR681
<b>ELEXON Reference</b>	<b>Date CP Received</b>	<b>Date IA Issued</b>
Issue 17	1 August 2005	10 August 2005
<b>LogicaCMG Contact Name</b>	<b>Baseline for Impact Assessment</b>	
	Issue 17 Logica Memo 01.08.05.doc	
<b>Price Breakdown</b>		
<b>Item description</b>	<b>Remarks</b>	<b>Price (ex VAT)</b>
<b>Indicative Price (development only, no hardware included)</b>	<b>Approach A Approach B</b>	£ 1,275,000 £ 640,000
<b>Price Tolerance</b>		N/A as indicative
<b>Justification for Price Tolerance</b>		
N/A		
<b>Project Duration (for development work only)</b>		Approach A - 44 weeks Approach B - 27 weeks
<b>Cut Off Date for Inclusion in Specified Release (if applicable)</b>		
N/A		
<b>Operational Price (e.g. per annum or event) (ex VAT)</b>		£0
<b>Rationale</b>		
N/A		

<b>Annual Maintenance Price (ex VAT)</b>	£0
<b>Rationale</b>	
The Annual Maintenance Price is zero under the agreement commencing on 1 January 2005.	

<b>Validity Constraints</b>	
<ul style="list-style-type: none"> <li>• Price and duration are for the development of the software changes only. Any necessary hardware upgrade is excluded.</li> <li>• Price includes no provision for indexation beyond 1 April 2006</li> <li>• Price and duration assume that this change is developed in isolation and the effects of other changes are excluded.</li> <li>• No allowance is included for the final solution being different from the baseline.</li> <li>• No allowance is included for supporting Release Audit activities. Any effort will be charged at contracted T&amp;M rates</li> <li>• No allowance is included for supporting ELEXON assurance activities. Any effort will be charged at contracted T&amp;M rates</li> <li>• No allowance is included for End to End/Participant Testing activities. Any effort will be charged at contracted T&amp;M rates</li> <li>• No allowance is included for Walkthrough activities. Any effort will be charged at contracted T&amp;M rates</li> <li>• No allowance is included to support ELEXON in parallel run testing activities</li> <li>• No allowance is included for interface testing with NGC</li> </ul> <p>The validity period for this quote is 30 days and the offer is based on the following payment schedule:</p> <ul style="list-style-type: none"> <li>• LogicaCMG will invoice 30% on receipt of Purchase Order or authorised start of work, 30% on completion of first build phase, 30% on live implementation and 10% on successful completion of the Success Criteria or one month after live implementation, whichever is sooner</li> </ul>	
<b>Authorised Signature</b>	<b>Date Signed</b>



<b>Requirements and Solution</b>
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<b>Brief Summary of Change</b>
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Issue 17 contains four proposals and asks for two basic approaches to be considered in the Impact Assessment, which are:

Approach A - All data becomes hosted on the BMRA

Approach B - All data remains hosted as it currently exists (i.e. some on BMRA and some on ELEXON Web Site)

The "Issue 17 Logica Memo 01.08.05.doc" from ELEXON to LogicaCMG requested further costs/clarification on the solutions presented in ICR681 v0.1 as described below:

**Proposal 1 'Rationalisation of Grid Code System Zones and BMRS Zones'**

Assess the following requirements:

- Increasing the number of BMRS Zones from 5 to 8, whilst at the same time delivering the flexible functionality to add further additional zones in the future (i.e. 5+3+functionality)
- Cost of then adding a further 3 BMRS Zones (i.e. 8+3) at a future date using this functionality.

**Proposal 2 'Publication of disaggregated Output Usable data' combined with Proposal 3 'Rationalisation of reporting timescales'**

Assess solutions 2A(i) and 3A(i) and provide an indication of the split between the following aspects of the solutions:

- Moving Output Usable (OU)/Generating Plant Demand Margin (GPDM) data to BMRA.
- Disaggregating OU data.
- Rationalising OU/GPDM data reporting timescales.
- Rationalising National Demand forecast and Surplus forecast data reporting timescales.

**Proposal 4 'Provision of additional demand information'**

Assess the following requirements:

The Issue 17 Group has agreed that no changes should be made to the existing file structures, and that the single MW value within the existing Initial National Demand Out-Turn (INDO) file would instead be amended by NGC to include pump storage and Interconnector demand. There will therefore be no impact on any BMRS files, although changes to the Help Text may be required.

<b>LogicaCMG's Proposed Solution</b>
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For each of the Approach/Proposal combination, the revised solution proposed is listed below.

**Approach A**

**Proposal 1: Rationalisation of Grid Code System Zones and BMRS Zones**

This redesign of the BMRA allows it to be more flexible for future zone changes.

The tasks involved are:

- Modify the Pictorial representation to show new map and to report new zone details
- Modify Web Site Map and Help Text to include additional zones
- Modify TIBCo publishers and Web Page functionality to automatically adapt to configurable zone definitions

**Proposal 2: Publication of disaggregated Output Usable data**Solution 2A(i)

This solution will add new flows:

- New flows will be loaded. The form of this data is unlike existing forecast data so new loaders and DB tables required to support them
- New TIBCo Publishers required
- New HTML templates and Servlets to generate new forecast data web pages (with graphs) data tables and CSV file download for Daily, Weekly and Yearly forecast data
- New PL/SQL modules will be required
- Modify Web Site Map and Help Text to include new web pages
- The System Related Data Publishing Performance report will be updated to include the new data type

**Proposal 3: Rationalisation of reporting timescales**

Some of the data is currently hosted on the BMRA and remainder of the data is currently hosted on the ELEXON Web Site.

Solution 3A(i)

This solution will add new flows:

- The form of the new flows is unlike existing forecast data so new loaders are required to support them
- New TIBCo Publishers required
- New HTML templates and Servlets to generate new forecast data web pages (with graphs) data tables and CSV file download for Daily and Weekly forecast data
- New PL/SQL modules will be required
- Modify Web Site Map and Help Text to include new web pages
- The System Related Data Publishing Performance report will be updated to include the new data type

And amend existing flows:

- The increase in the size of reporting period will require changes to the HTML and Servlets to match these changes, as well as to the PL/SQL procedures that support the web page changes
- Modify Web Site Map and Help Text to include new reporting details

**Proposal 4: Provision of additional demand information**

The revised solution reduces the tasks to:

- Modify Web Help Text to include new data details
- Update IDD and URS documents

The following table gives an indication of the split of development costs across the proposals in Approach A and provides a comparison with those provided for ICR681 v0.1.

	v0.1 Approach A	v0.2 Approach A
Proposal 1	£210,000	£260,000
Proposal 2	£280,000	£360,000
Proposal 3	£180,000	£290,000
Proposal 4	£170,000	£20,000
Release Costs	£310,000	£345,000
Total	£1,150,000	£1,275,000

An indication of the proportional split between the different aspects of the combined Proposal 2 and Proposal 3 is given below:

Moving Output Usable/Generating Plant Demand Margin data to BMRA.	80%
Disaggregating OU data.	10%
Rationalising OU/GPDM data reporting timescales.	0% **
Rationalising National Demand forecast and Surplus forecast data reporting timescales.	10%

\*\* Note This would incur an additional 25% cost if it is omitted. This is due to the increased number of web forms required if the timescales are not rationalised.

An indicative change specific cost for an additional 3 BMRS Zones using the flexible functionality defined in Proposal 1 would be £135,000 (excluding potential release and hardware costs).

### **Approach B**

#### **Proposal 1: Rationalisation of Grid Code System Zones and BMRS Zones**

The data is currently hosted on the BMRA, so this solution is the same as for Approach A.

#### **Proposal 2: Publication of disaggregated Output Usable data**

The data is currently hosted on the ELEXON Web Site, so there is no impact for Approach B.

#### **Proposal 3: Rationalisation of reporting timescales**

Some of the data is currently hosted on the BMRA and remainder of the data is currently hosted on the ELEXON Web Site.

#### **Solution 3B(i)**

This solution will amend existing flows:

- The increase in the size of reporting period will require changes to the HTML and Servlets to match these changes, as well as to the PL/SQL procedures that support the web page changes
- Modify Web Site Map and Help Text to include new reporting details

#### **Proposal 4: Provision of additional demand information**

The data is currently hosted on the BMRA, so the solution is the same as for Approach A.

The following table gives an indication of the split of development costs across the Proposals in Approach B and provides a comparison with those provided for ICR681 v0.1.

	v0.1 Approach B	v0.2 Approach B
Proposal 1	£210,000	£260,000
Proposal 2	£0	£0
Proposal 3	£100,000	£100,000
Proposal 4	£170,000	£20,000
Release Costs	£270,000	£260,000
Total	£750,000	£640,000

An indicative change specific cost for an additional 3 BMRS Zones using the flexible functionality defined in Proposal 1 would be £135,000 (excluding potential release and hardware costs).

Deviation from ELEXON's Solution / Requirements							
None							
Operational Solution and Impact							
<p>The operational performance of the Low Grade BMRA will be impacted by the additional load produced by both Approach A and Approach B. This will require the processing power of the BMRA to be increased by the replacement of the NETA Central Systems hardware. It is noted that future BMRA hardware replacement is being discussed as part of the Technology Refresh.</p> <p>Any consideration for hardware costs has been excluded from this assessment.</p>							
Testing Strategy							
Unit	X	Change Specific	X	End to End			
Module	X	Operational Acceptance	X	Participant Testing			
System	X	Performance		Parallel Running			
Regression		Volume		Deployment/ Backout	X		
Other:							
Validated Assumptions							
None							
Outstanding Issues							
<p>The following assumptions have been made:</p> <p><u>Proposal 2</u></p> <ul style="list-style-type: none"> <li>The stack data will all be displayed on a single graph (i.e. the values are of a similar scale so that they can be displayed together)</li> </ul> <p><u>Proposal 3</u></p> <ul style="list-style-type: none"> <li>The week number reported in the flow is calculated in same way as for existing flows</li> <li>On the graph, only the week number is displayed on the time axis as per existing weekly forecast data graphs</li> </ul>							
Changes to Service							
Services Impacted							
	BMRA	CDCA	CRA	ECVAA	SAA	TAA	Other
Software	X						
IDD Part 1 (Docs)	X						
IDD Part 1 (S'Sheet)							
IDD Part 2 (Docs)	X						
IDD Part 2 (S'Sheet)	X						
URS	X						
SS	X						

DS	X						
MSS							
OSM							
LWIs							
RTP	None						
Comms	None						
Other	None						
<b>Nature of Documentation Changes</b>							
<b>Nature / Size of System Changes</b>							
Large							
<b>Deployment Issues, e.g. Outage Requirements:</b>				BMRA outage required Initial forecast data loading			
<b>Impact on Service Levels:</b>				See Operational Solution and Impact			
<b>Impact on System Performance:</b>				See Operational Solution and Impact			
<b>Responsibilities of ELEXON</b>							
<ul style="list-style-type: none"> <li>• Within reasonable levels, ELEXON will make available appropriate staff to assist LogicaCMG during the development of this change</li> <li>• ELEXON is responsible for liaising with NGC for the interface flows</li> </ul>							
<b>Acceptance Criteria</b>							
This is covered by the acceptance criterion 2 in the "CVA Program – Release Acceptance Criteria" document for the Feb03 Release.							
<b>Any Other Information</b>							
This assessment does not include any impact on the BMRA Bulk Data Extractor functionality.							
<b>Attachments</b>							
Issue 17 Logica Memo 01.08.05.doc							