

## ASSESSMENT REPORT for Modification Proposal P220 'Provision of new data items for improving market information'

Prepared by: P220 Modification Group

**Date of Issue:** 8 February 2008  
**Reason for Issue:** For Panel Decision

**Document Reference:** P220AR  
**Version Number:** 1.0

**Proposed Modification P220** seeks to publish the following new data items on the Balancing Mechanism Reporting Service (BMRS):

- a) Out-turn and reference temperatures;
- b) Wind generation forecast;
- c) Instantaneous and half-hourly generation by fuel type (plus 'real-time' total demand out-turn and half-hourly Interconnector flows);
- d) Daily energy volumes transported across the Transmission System (based on Transmission System Demand); and
- e) Non-Balancing Mechanism (BM) Short Term Operating Reserve (STOR) Instructed Volumes.

Apart from the Non-BM STOR data, the items would be included in a BMRS 'Electricity Data Summary Page'.

**Alternative Modification P220** seeks to publish the same data items, except that the daily energy volumes would be based on Initial National Demand Out-Turn and would include additional trend data. It also proposes to publish a further item of 'real-time' Transmission System Frequency data.

### MODIFICATION GROUP'S RECOMMENDATIONS

The P220 Modification Group invites the Panel to:

- **AGREE a provisional recommendation that the Proposed Modification should not be made;**
- **AGREE a provisional recommendation that the Alternative Modification should not be made;**
- **AGREE a provisional Implementation Date for Proposed Modification P220 of 6 November 2008 if an Authority decision is received on or before 3 April 2008, or 25 June 2009 if the Authority decision is received after 3 April 2008 but on or before 23 October 2008;**
- **AGREE a provisional Implementation Date for Alternative Modification P220 of 6 November 2008 if an Authority decision is received on or before 3 April 2008, or 25 June 2009 if the Authority decision is received after 3 April 2008 but on or before 23 October 2008;**
- **AGREE the draft legal text for Proposed Modification P220;**
- **AGREE the draft legal text for Alternative Modification P220;**
- **AGREE that Modification Proposal P220 be submitted to the Report Phase; and**
- **AGREE that the P220 draft Modification Report be issued for consultation and submitted to the Panel for consideration at its meeting on 13 March 2008.**

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## SUMMARY OF IMPACTED PARTIES AND DOCUMENTS

As far as the Modification Group has been able to assess, the following parties/documents would be impacted by P220.

Please note that this table represents a summary of the full impact assessment results in Appendix 4.

Parties	Sections of the BSC	Code Subsidiary Documents
Distribution System Operators <input type="checkbox"/>	A <input type="checkbox"/>	BSC Procedures <input type="checkbox"/>
Generators <input checked="" type="checkbox"/>	B <input type="checkbox"/>	Codes of Practice <input type="checkbox"/>
Interconnectors <input checked="" type="checkbox"/>	C <input type="checkbox"/>	BSC Service Descriptions <input checked="" type="checkbox"/>
Licence Exemptable Generators <input checked="" type="checkbox"/>	D <input type="checkbox"/>	Party Service Lines <input type="checkbox"/>
Non-Physical Traders <input checked="" type="checkbox"/>	E <input type="checkbox"/>	Data Catalogues <input type="checkbox"/>
Suppliers <input checked="" type="checkbox"/>	F <input type="checkbox"/>	Communication Requirements Documents <input type="checkbox"/>
Transmission Company <input checked="" type="checkbox"/>	G <input type="checkbox"/>	Reporting Catalogue <input type="checkbox"/>
<b>Party Agents</b>	H <input type="checkbox"/>	<b>Core Industry Documents</b>
Data Aggregators <input type="checkbox"/>	I <input type="checkbox"/>	Ancillary Services Agreement <input type="checkbox"/>
Data Collectors <input type="checkbox"/>	J <input type="checkbox"/>	British Grid Systems Agreement <input type="checkbox"/>
Meter Administrators <input type="checkbox"/>	K <input type="checkbox"/>	Data Transfer Services Agreement <input type="checkbox"/>
Meter Operator Agents <input type="checkbox"/>	L <input type="checkbox"/>	Distribution Code <input type="checkbox"/>
ECVNA <input type="checkbox"/>	M <input type="checkbox"/>	Distribution Connection and Use of System Agreement <input type="checkbox"/>
MVRNA <input type="checkbox"/>	N <input type="checkbox"/>	Grid Code <input type="checkbox"/>
<b>BSC Agents</b>	O <input type="checkbox"/>	Master Registration Agreement <input type="checkbox"/>
SAA <input type="checkbox"/>	P <input type="checkbox"/>	Supplemental Agreements <input type="checkbox"/>
FAA <input type="checkbox"/>	Q <input checked="" type="checkbox"/>	Use of Interconnector Agreement <input type="checkbox"/>
BMRA <input checked="" type="checkbox"/>	R <input type="checkbox"/>	<b>BSCCo</b>
ECVAA <input type="checkbox"/>	S <input type="checkbox"/>	Internal Working Procedures <input type="checkbox"/>
CDCA <input type="checkbox"/>	T <input type="checkbox"/>	<b>BSC Panel/Panel Committees</b>
TAA <input type="checkbox"/>	U <input type="checkbox"/>	Working Practices <input type="checkbox"/>
CRA <input type="checkbox"/>	V <input checked="" type="checkbox"/>	<b>Other</b>
SVAA <input type="checkbox"/>	W <input type="checkbox"/>	Market Index Data Provider <input type="checkbox"/>
Teleswitch Agent <input type="checkbox"/>	X <input checked="" type="checkbox"/>	Market Index Definition Statement <input type="checkbox"/>
BSC Auditor <input checked="" type="checkbox"/>		System Operator-Transmission Owner Code <input type="checkbox"/>
Profile Administrator <input type="checkbox"/>		Transmission Licence <input type="checkbox"/>
Certification Agent <input type="checkbox"/>		
<b>Other Agents</b>		
Supplier Meter Registration Agent <input type="checkbox"/>		
Unmetered Supplies Operator <input type="checkbox"/>		
Data Transfer Service Provider <input type="checkbox"/>		

Definitions of the capitalised terms used in this document are provided in Section 8.

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# 1 EXECUTIVE SUMMARY

The key conclusions of the P220 Modification Group ('the Group') are outlined below.

The Group:

- **DISCUSSED** the areas raised by its Terms of Reference and **NOTED** the results of National Grid's background work through the Demand Side Working Group (DSWG) and its industry consultation prior to raising P220;
- **NOTED** that related Modification Proposal P219 (Reference 1) had also been raised by National Grid in the area of Balancing Mechanism Reporting Service (BMRS) data reporting;<sup>1</sup>
- **DEVELOPED** the BMRS display requirements for the Proposed Modification, refining these from those which had been provided in National Grid's original 'straw man';
- **DEVELOPED** an Alternative Modification to publish some additional related data items which were not specified in the Proposed Modification;
- **CONSIDERED** a potential further option for an Alternative Modification which would allow the BSC Panel ('the Panel') to agree future new BMRS data items without requiring a Modification Proposal, but **AGREED** not to progress this as part of P220;
- **COMMISSIONED** impact assessments from the Balancing Mechanism Reporting Agent (BMRA), the Transmission Company, BSCCo<sup>2</sup> and participants, and **NOTED** that the required Transmission Company and BMRA lead times were such that it would not be practicable to implement P220 prior to the November 2008 Release;
- **AGREED** recommended Implementation Dates for P220 of the November 2008 Release, with a fall-back of the June 2009 Release (noting that only critical changes will be delivered in the February 2009 Release due to the interaction with Project Isis);
- **NOTED** that the estimated combined BMRA/BSCCo implementation costs of the Proposed Modification and Alternative Modification were in the region of £135,000-£140,000 and £158,000-£162,000 respectively;
- **NOTED** that the estimated Transmission Company implementation costs of the Proposed Modification were in the region of £600,000, with any additional costs resulting from the Alternative Modification being under £20,000;
- **NOTED** that, whilst P219 and P220 were not contingent on each other, if simultaneous Authority decisions were made on both modifications prior to the P220 cut-off dates for implementation in the same release, this would achieve a saving of 20% off the combined costs of the two modifications for the BMRA/BSCCo and a £200,000 saving for the Transmission Company;
- **CONSIDERED** a potential additional requirement for a real-time BMRS flag in respect of the generation by fuel type data (which would flag if any of that data was incomplete), but **AGREED** by majority not to include this requirement in the P220 solution due to its significant impact on the implementation costs and lead time;<sup>3</sup>
- **ISSUED** an industry consultation (Reference 2) on the merits of P220, including specific questions on:
  - The benefits of the proposed data to respondents (whether qualitative or quantitative);

<sup>1</sup> Modification Proposal P219 'Consistency between forecast and out-turn demand'.

<sup>2</sup> The Balancing and Settlement Code Company (ELEXON).

<sup>3</sup> Further information regarding this option can be found in Section 6.5.

- Any potential confidentiality issues arising from the publication of the data; and
- The merits of including the real-time 'data incomplete' flag in the P220 solution;
- **AGREED a MAJORITY** view that the Proposed Modification **SHOULD NOT** be made – since, whilst a majority of members believed (to differing extents) that the Proposed Modification would better facilitate the achievement of Applicable BSC Objectives (b) and (c) when compared with the existing arrangements, a majority of members remained unconvinced that the potential benefits would outweigh the negative impact of the implementation costs on Objective (d); and
- **AGREED a MAJORITY** view that the Alternative Modification **SHOULD NOT** be made – since, whilst all members believed that the Alternative Modification would better facilitate the achievement of Applicable BSC Objectives (b) and (c) when compared to the Proposed Modification, a majority of members remained unconvinced that the potential benefits of the Alternative would outweigh the negative impact of the implementation costs on Objective (d).

A explanation of the background to P220 can be found in Section 2 of this Assessment Report. A high-level overview of the P220 solution is provided in Section 3, whilst further detail regarding the solution requirements for the Proposed Modification and Alternative Modification are provided in Sections 4 and 5 respectively. Copies of the draft legal text for the Proposed and Alternative Modifications can be found in Appendix 1. Further information regarding the Group's initial discussions of the areas set out in the P220 Terms of Reference is contained in Section 6, and a copy of the full Terms of Reference is provided in Appendix 2.

Table 1 below provides a very high-level summary of the potential benefits and disadvantages of P220 which were identified by respondents to the P220 Assessment Procedure consultation and/or by Modification Group members and attendees. Note that not all of the views shown were necessarily shared by all respondents or all of the Group.

**Table 1 – Summary of P220 potential benefits & disadvantages**

Area of P220 discussion	Benefits	Disadvantages
<b>Information transparency &amp; accessibility of data</b> <i>Applicable BSC Objective (c)</i>	Improved by publishing key data in a single location. Particular benefit for those without resources to derive data through existing means.	Data can already be obtained or derived elsewhere. Could undermine third-party data providers.
<b>Barriers to entry</b> <i>Applicable BSC Objective (c)</i>	Reduced 'information asymmetry'. Improved 'level playing field'.	Existing data is available to all – lack of P220 data not a barrier to entry. Not demonstrated that benefits outweigh costs.
<b>Market signals &amp; understanding</b> <i>Applicable BSC Objective (c)</i>	New Summary Page data enables market fundamentals to be drawn out and understood.	Data is a 'nice to have' but not imperative.
<b>Market behaviour</b> <i>Applicable BSC Objective (b)</i>	Improved forecasting and self-balancing. Increased participation in reserve services.	Benefits not quantified. Assumptions about changes in behaviour not proven.
<b>Cost-benefit</b> <i>Applicable BSC Objective (d)</i>	Difficult to quantify benefits, but will outweigh costs.	Benefits not quantified – outweighed by costs.

Further detail regarding the views of consultation respondents and the Group in respect of the merits of P220 can be found in Section 7. Copies of the responses to the industry consultation and impact assessment are contained in Appendices 3 and 4 respectively.

## 2 BACKGROUND

### 2.1 Overview of Balancing Mechanism Reporting Service

The BMRS provides electricity market participants with a wide range of operational and commercial information relating to the Balancing Mechanism. The BMRS is managed by the BMRA as a BSC Agent on behalf of BSCCo in accordance with Section V 'Reporting' of the Balancing and Settlement Code ('the Code'). A list of all the data currently published on the BMRS can be found within the Code as Table 1 of Annex V-1 'Tables of Reports'. This data is provided by the Transmission Company in accordance with Section Q 'Balancing Mechanism Activities', and definitions of the data items can be found in Annex X-2 'Technical Glossary' of the Code.

The data provided on the BMRS is available 24 hours a day, 365 days a year. There are two methods of receiving information from the BMRS as follows:

- The **BMRS High Grade Service** is a dedicated private communications network, over which the BMRA data is broadcast to subscribing participants as soon as it is available. The charts and tables accessed via the BMRS High Grade Service website are 'auto-refreshed' such that users receive near-real-time updates.<sup>4</sup> Participants who subscribe to the High Grade Service can also receive data through 'TIBCO' messaging as well as accessing the web pages (i.e. the data is 'pushed' to users). The High Grade Service is available to both BSC Parties ('Parties') and non-Parties at a charge payable to BSCCo.
- The **BMRS Low Grade Service** is a public website ([www.bmreports.com](http://www.bmreports.com)), which can be accessed by any internet user free of charge. Data is made available to the High Grade and Low Grade services at the same time, but participants using the Low Grade Service need to use the web page 'refresh' facility to retrieve the latest data as it becomes available (i.e. the data needs to be 'pulled' by users).

### 2.2 National Grid consultation on electricity market information

In the period following its October 2006 Operational Forum, National Grid has engaged with the industry regarding potential improvements to existing electricity market information. Initial views were gained by National Grid from the Electricity Operational Forum, the Demand Forecasting Seminar and the DSWG. A set of initial proposals were subsequently developed by National Grid and issued for industry consultation in August 2007 (Reference 3).

A key area discussed by the DSWG was the current lack of an electricity daily 'summary page' to provide key market information in a single place. It was noted that such a summary page has been available for the gas market from the National Grid website since 2005.<sup>5</sup> DSWG members suggested that a similar 'user friendly' page for electricity market information would be beneficial for demand-side participants and other infrequent BMRS users or smaller participants who might not have the resources to regularly search a variety of existing sources for such data. One of the options issued for consultation by National Grid was therefore the proposed introduction of an electricity data summary page, to be provided on the BMRS Low Grade Service public website. The data proposed to be published on this summary page was a mixture of existing data already published on the BMRS and new data which would be provided to the BMRA by National Grid in its role as the Transmission Company.

<sup>4</sup> At the time of the Group's consideration of P220, it noted that Change Proposal (CP) 1217 'Discontinuing the BMRS High Grade website' had been raised to give consideration to removing the auto-refreshing facility from the BMRS High Grade Service website, such that only one version of the BMRS website would be maintained (and which would be identical to the current Low Grade Service public website). The Group therefore considered the implications of P220 both with and without the future continuation of the High Grade Service website. Further details of the Group's discussions in this area can be found in Section 6.9 of this consultation document. Following the Group's final meeting, CP1217 was subsequently rejected by the Imbalance Settlement Group (ISG) on 29 January 2008. Further details can be found in ISG paper [84/01](#).

<sup>5</sup> The gas Daily Summary Report can be found at: <http://www.nationalgrid.com/uk/Gas/Data/dsr/>.

## 2.3 Creation of BMRS Electricity Data Summary Page

Following discussions with BSCCo, the BMRA and industry forums, National Grid's consultation document proposed a 3-phased approach for the introduction of an electricity data summary page as shown in Table 2. An indicative 'straw man' outlining the individual data items proposed to be published on the summary page in each phase was also provided as part of this consultation document (Reference 4).

**Table 2 – BMRS Summary Page approach**

Phase	Modification Proposal required?	Cost / Lead time	Delivery timescales
<b>"The 10% solution"</b> (A simple 'quick win' page of links to existing data and National Grid graphs)	No – as only links to existing data	Zero cost and minimal delivery time	A high-level Electricity Data Summary Page was implemented on the BMRS in July 2007 and can be found at: <a href="http://www.bmreports.com/dsr.htm">http://www.bmreports.com/dsr.htm</a>
<b>"The 60% solution"</b> (An actual summary page with graphs and summarised data, but only where the data is already available on the BMRS)	No – as only reformatting of existing data	c.£35,000, with a delivery time in the region of 6 months	Work on these aspects of the summary page is currently underway by BSCCo/BMRA for implementation during the first quarter of 2008
<b>"The 100% solution"</b> (A summary page containing new data items provided by National Grid in addition to existing data)	Yes – as includes new data items	Would be established during progression of the Modification Proposal	Would be established during progression of the Modification Proposal

The rationale for this phased approach was that those parts of the proposed summary page which related to existing BMRS data could be delivered relatively quickly and at low cost without requiring a Modification Proposal, whilst those that would involve new data items being published by the BMRA could require more significant expenditure and lead times as well as a modification to the Code.

Table 3 shows the number of respondents to National Grid's original consultation who supported the publication of those new data items which were subsequently taken forward as Modification Proposal P220 'Provision of new data items for improving market information' (P220).

**Table 3 – Results of National Grid consultation**

Data item	Consultation responses
<b>Out-turn/reference temperatures</b>	N/A – no specific question asked
<b>Wind generation forecast</b>	10 out of 11 respondents supported
<b>Generation by fuel type</b>	6 out of 11 respondents supported
<b>Daily energy volumes</b>	N/A – no specific question asked
<b>Non-BM STOR Instructed Volumes</b>	10 out of 11 respondents supported

In addition, 5 out of 11 respondents to National Grid's consultation supported the introduction of a BMRS Data Summary Page.

Following consideration of the full responses received to its consultation (Reference 5), National Grid raised P220 on 26 October 2007. For a more detailed description of the original Modification Proposal as submitted by National Grid ('the Proposer'), please refer to the P220 Initial Written Assessment (IWA, Reference 6).

### 3 SUMMARY OF MODIFICATION SOLUTION

This section outlines the solutions for the Proposed Modification and Alternative Modification as developed by the Modification Group.

#### 3.1 Proposed Modification

Proposed Modification P220 would publish the following new data items on the BMRS:

- a) Out-turn and reference temperatures;
- b) Wind generation forecast;
- c) Instantaneous and half-hourly generation by fuel type (plus 'real-time' total demand out-turn data and half-hourly Interconnector flows);
- d) Daily energy volumes transported across the Transmission System (based on Transmission System Demand); and
- e) Non-Balancing Mechanism (BM) Short Term Operating Reserve (STOR) Instructed Volumes.

These new data items would be provided to the BMRA by the Transmission Company. With the exception of the Non-BM STOR data, the new data items would also be added to the 'Phase 1' Electricity Data Summary Page (hereafter referred to as the 'Summary Page') which is already being developed for the publication of existing BMRS data. Table 4 shows the high-level BMRS publication requirements for the Proposed Modification.

**Table 4 – BMRS publication requirements for Proposed Modification**

Data item	New Summary Page graph	New Summary Page table	New 'current data' page	New 'historic data' page
Out-turn and reference temperatures	Yes (rolling 3 months)	No	No	Yes (rolling 6 months)
Wind generation forecast	Yes (D-1, D and D+1)	Yes (D and D+1)	Yes (D-1, D and D+1)	No*
Instantaneous generation by fuel type	No	Yes (current snapshot)	No	Yes (rolling 24 hours)
Half hourly generation by fuel type	Yes (rolling 24 hours)	Yes (rolling half hour and 24 hours)	No	Yes (rolling 3 months)
Real-time total demand out-turn	Yes (rolling 60 minutes)	No	No	Yes (rolling 48 hours)
Half-hourly Interconnector flows	Yes x 2 (Yesterday/Today)	No	No	Yes (rolling 30 days)
Daily energy volumes	Yes (rolling 3 months)	No	No	Yes (rolling 6 months)
Non BM-STOR Instructed Volumes	No	No	Yes (Yesterday/Today)	No

*\*Available separately as part of half-hourly generation by fuel type data.*

Further detail regarding the requirements for each of these new data items can be found in Section 4.



It should be noted that, consistent with the existing 'quick wins' page and planned 'Phase 1' additions, the P220 Summary Page would only be provided on the Low Grade Service public website, and not on the High Grade Service website. High Grade Service Users would be able to access the new data through the public site, as well as receiving the data through new TIBCO messages.

### 3.2 Alternative Modification

Alternative Modification P220 would publish all of the data items included in the Proposed Modification, except that the daily energy volumes would be based on Initial National Demand Out-Turn (INDO) and would include some additional trend data.

The Alternative Modification would also publish one further additional data item of 'real-time' Transmission System Frequency.

The additional data required by the Alternative Modification would be provided to the BMRA by the Transmission Company. It would be included in the BMRS Summary Page and new web pages on the Low Grade Service website, and would be provided to High Grade Service Users through TIBCO messaging. Table 5 shows the high-level BMRS publication requirements for the Alternative Modification.

**Table 5 – BMRS publication requirements for Alternative Modification**

Data item	New Summary Page graph	New Summary Page table	New 'current data' page	New 'historic data' page
Real-time System Frequency	Yes (rolling 60 minutes)	No	No	Yes (rolling 48 hours)
Out-turn and reference temperatures	As per Proposed Modification.			
Wind generation forecast	As per Proposed Modification.			
Instantaneous generation by fuel type	As per Proposed Modification.			
Half hourly generation by fuel type	As per Proposed Modification.			
Real-time total demand out-turn	As per Proposed Modification.			
Half-hourly Interconnector flows	As per Proposed Modification.			
Daily energy volumes	As per Proposed Modification, but based on INDO and with additional trend data.			
Non BM-STOR Instructed Volumes	As per Proposed Modification.			

Further detail regarding the requirements for each data item contained in the Alternative Modification can be found in Section 5.

## 4 DETAIL OF PROPOSED MODIFICATION SOLUTION

This section details the solution requirements agreed by the Modification Group for the Proposed Modification. An explanation of the Group's rationale for developing these requirements can be found in Section 6.

### 4.1 Out-turn and reference temperatures

The Transmission Company would be required to provide the BMRA with new daily temperature data for the previous day, as shown in Table 6.

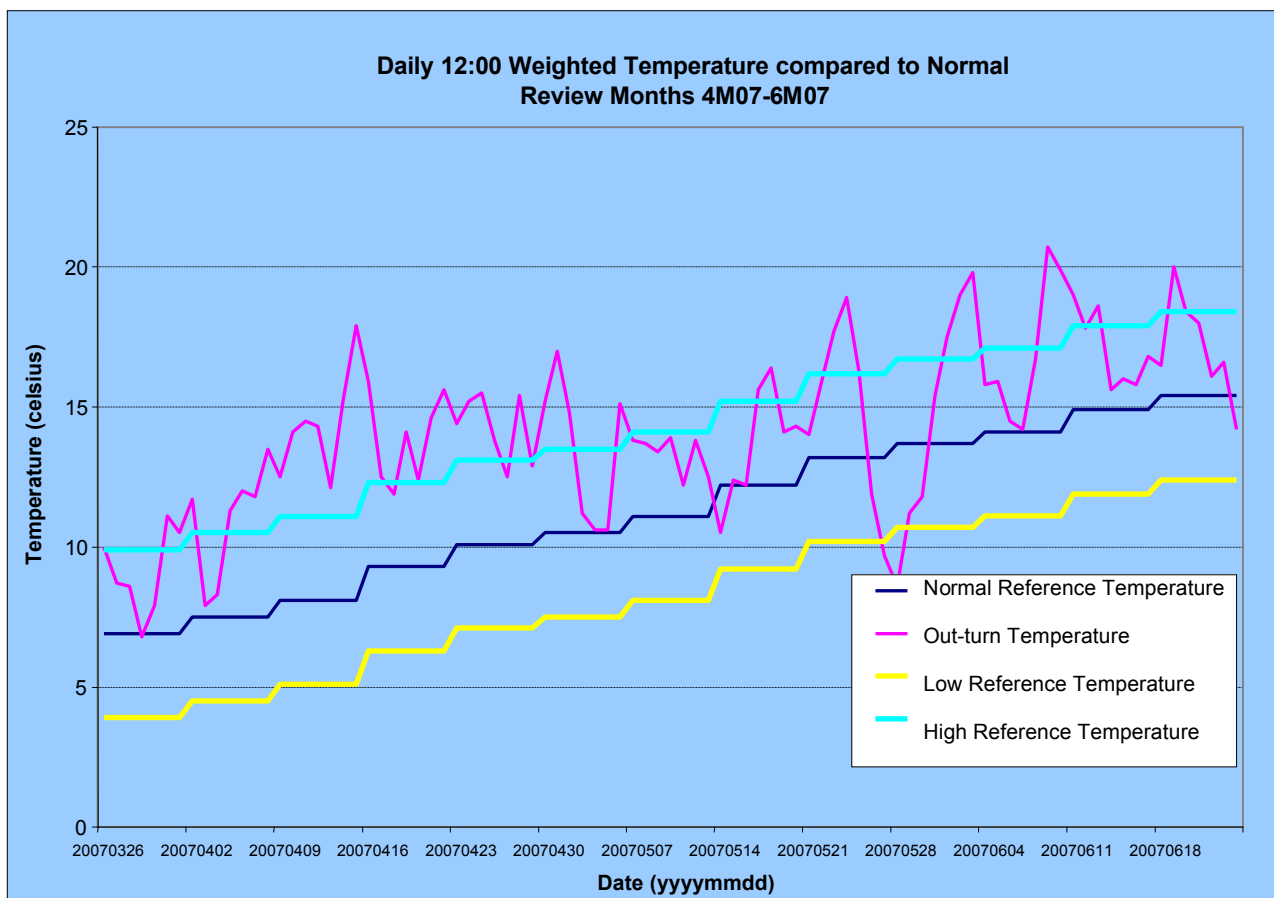
**Table 6 – New out-turn and reference temperature data**

Data Item	Submission Time	Description
Out-turn temperature	No later than 17:00 each day	The following data applicable for the day preceding the current day: the out-turn (i.e. actual) temperature for Great Britain (GB), expressed as a single degrees celsius value deemed to be representative of the temperature measured at midday.
Reference temperatures	No later than 17:00 each day	The following data applicable for the day preceding the current day: <ul style="list-style-type: none"> <li>a) The Normal Reference Temperature expressed as a degrees celsius value;</li> <li>b) The Low Reference Temperature expressed as a degrees celsius value; and</li> <li>c) The High Reference Temperature expressed as a degrees celsius value.</li> </ul>

Each different temperature data item (out-turn, Normal, Low, High) would be a separate daily GB figure.

The Code requirement would be for the High, Normal and Low Reference Temperature data to be submitted by the Transmission Company no later than 17:00 each day. However, in practice these new reference temperature data items would be provided to the BMRA as standing data at the beginning of each calendar year for all days in that year – although the BMRA would only publish the values a day at a time. This standing data would be provided to the BMRA as a 'comma-separated' (.csv) file in a format agreed between the BMRA and the Transmission Company. The BMRA would be required to manually extract and publish the data for each day. The out-turn temperature data file would be submitted by the Transmission Company to the BMRA on a daily basis.

The BMRA would be required to publish a new graph on the BMRS Summary Page in a format similar to that shown in Figure 1, containing all of the daily temperature data items listed in Table 6 over a rolling three-month period.

**Figure 1 – Summary Page display for new out-turn and reference temperatures**

(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

In addition, the BMRA would be required to publish historic values for this data for each day in the past rolling 6-month period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS and also via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

An explanation of the new data would be provided on the BMRS, including:

- Definitions of High, Normal and Low Reference Temperatures;
- Details of the data points used to derive the out-turn temperature as a composite variable (for example, these might be temperature measurement times 09:00, 10:00, 11:00 and 12:00);
- Clarifications of the times shown in the graph/spreadsheet (e.g. that '12:00' represents 12 noon);
- Details of the sample of different weather stations used by the Transmission Company to derive the temperature data; and
- Clarification that, if data from a particular weather station was unavailable on a given day, the Transmission Company would temporarily substitute this with data from another station.

These explanations/clarifications would either be added to the BMRS Help page, or would be provided via another method such as the use of local mouse-over pop-ups on the Summary Page. The precise format and wording would be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

## 4.2 Wind generation forecast

The Transmission Company would be required to provide the BMRA with new wind generation forecast data for the current day, day ahead and 2 days ahead, as shown in Table 7 below.

**Table 7 – New wind generation forecast data**

Data Item	Time	Description
Forecast wind generation (day, day ahead, and 2 day ahead values)	No later than 17:00 each day	<p>The following data applicable for the 48-hour period commencing at 21:00 on the current day (D) and ending at 21:30 on D+2:</p> <ul style="list-style-type: none"> <li>a) The forecast total generation across all Power Park Modules metered by the Transmission Company, in respect of those Settlement Periods for which the Transmission Company has forecast data;</li> <li>b) The time associated with each Settlement Period referred to in (a) above;</li> <li>c) The Total Metered Capacity for each Settlement Period referred to in (a) above, expressed as a total MW value of the Registered Capacity of all Power Park Modules metered by the Transmission Company.</li> </ul>

References within this Assessment Report to data or BM Units being 'metered by the Transmission Company' relate to the use of National Grid's own operational metering, which should not be confused with Settlement metering. The Transmission Company's operational metering is the equipment specified in CC6.5.6 of the Grid Code. Broadly speaking, this can be described as providing real-time measurements of voltage, current, frequency, active power, reactive power, wind speed indications of Plant status and alarms. Although not as final as the Metered Volumes used in Settlement, this data has the advantage of being available closer to real time – and therefore forms the basis of many of the P220 data items.

Note that the Transmission Company would only provide wind generation forecast data for a selection of Settlement Periods for each day, and not for every Settlement Period in the day. For example, data might be provided for 00:00, 05:00, 08:00, 12:00, 17:00 and 21:00. Since these data points might change in the future, the BMRA systems would be 'future-proofed' by being designed with the flexibility to receive a maximum of one forecast value every 30 minutes for every Settlement Period up to the end of D+2.

Since an updated set of 48-hour data would be provided by 17:00 each day, 3 different sets of forecast data would therefore apply to any given day (D) as follows:

- 1) The 'original' forecast data sent by 17:00 on D-2 which, in respect of the current day, would include those Settlement Periods between 00:00 and 21:00 inclusive for which the Transmission Company had forecast data relating to that day;
- 2) The 'revised' forecast data sent by 17:00 on D-1 which, in respect of the current day, would include all Settlement Periods between 00:00 and 24:00 on that day for which the Transmission Company had forecast data; and
- 3) The 'further revised' forecast data sent by 17:00 on D which, in respect of the current day, would include those Settlement Periods between 21:00 and 24:00 on that day for which the Transmission Company had forecast data.

## 4.2.1 BMRS Summary Page requirements

### 4.2.1.1 New Summary Page table

The BMRA would be required to publish a new table on the BMRS Summary Page in a similar format to Figure 2, containing the following data:

- 1) The Transmission Company's forecast of total 'peak' generation across all Power Park Modules which are metered by the Transmission Company, in relation to:
  - a) The current day (D); and
  - b) The day ahead (D+1),
 expressed as the highest MW value amongst the sample of Settlement Period forecast figures provided by the Transmission Company for the day concerned;
- 2) The time of day (i.e. time of the Settlement Period) associated with the 'peak' generation as defined under 1) above; and
- 3) The Total Metered Capacity associated with the 'peak' generation Settlement Period as defined under 1) and 2) above.

**Figure 2 – Summary Page display for new wind generation forecast data**

Thursday 19/07/2007	<u>Forecast Today</u>	<u>Forecast Tomorrow</u>
Time of Maximum Wind Generation:	12:00	17:00
Peak (Max) MW	<b>64</b>	<b>55</b>
Total Metered Capacity (MW)	870	870
<i>Data last updated: 19-Jul-2007 17:29:48</i>		

(Please note that the above table is indicative only, and has been produced using hypothetical data.)

The 'peak' values published by the BMRA for a given day would be the highest MW value amongst the sample of Settlement Period forecast figures provided by the Transmission Company for that day. For the avoidance of doubt, since the Transmission Company would not provide forecast values for each Settlement Period in the day, the published 'peak' value would not necessarily be a forecast of the true peak for that day.

The values shown in the table would be updated daily by the BMRA at the point at which revised forecast figures were submitted by the Transmission Company (which would be submitted no later than 17:00 each day). If the 'peak' values in the revised forecast data were different to the original values already in the table, these would overwrite the previous values. In addition, the calendar dates represented by 'today' and 'tomorrow' in the table would automatically change on the BMRS display at 00:00 each day. The table would therefore contain a time stamp, showing the date and time at which the data was last updated.

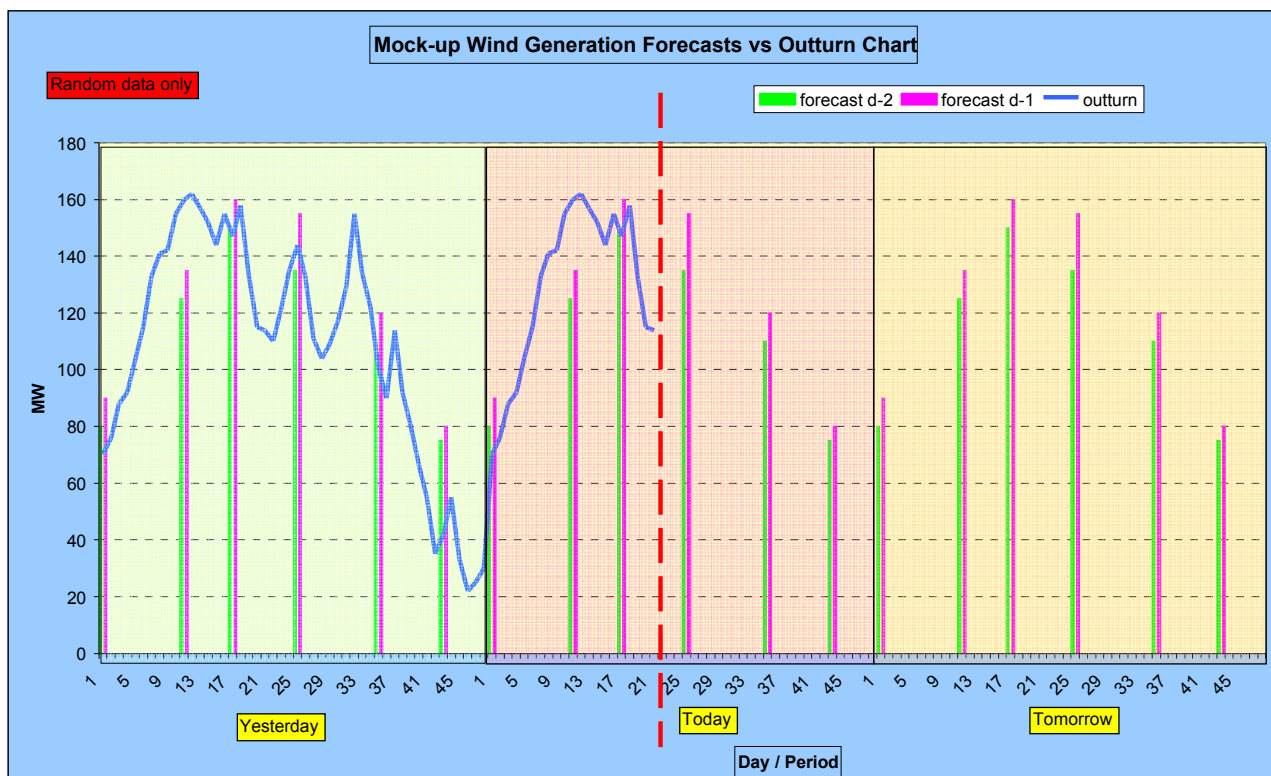
### 4.2.1.2 New Summary Page graph

In addition to the new table shown in Figure 2, the BMRA would also be required to publish a new graph on the BMRS Summary Page. This new graph would be published in a similar format to that shown in Figure 3, and would contain the following data items for the previous day, current day and day ahead (D-1, D and D+1):

- 1) The 'original' forecast data provided by the Transmission Company for each of these days in accordance with Section 4.2.1.1;
- 2) The 'revised' forecast data provided by the Transmission Company for each of these days in accordance with Section 4.2.1.1, received a day later than the 'original' forecast in (1) above;
- 3) The 'further revised' forecast provided by the Transmission Company for each of these days in accordance with Section 4.2.1.1, received a day later than the 'revised' forecast in (2) above and overwriting the earlier 'revised' forecast; and
- 4) The actual out-turn wind generation for each Settlement Period in each of these days (whether or not there was a forecast value associated with that Settlement Period).

Note that (4) would not require a new data item to be submitted by the Transmission Company specifically for the purposes of this data, since these values would be derived by the BMRA using the half-hourly out-turn by fuel type data provided by the Transmission Company separately under P220 (see Section 4.3.1).

**Figure 3 – New Summary Page display for wind generation forecast and out-turn data**



(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

The new graph would show a fixed, rather than a rolling, 3-day period – containing all Settlement Periods from Settlement Period 1 (00:00) on the previous day up to and including Settlement Period 48 (23:30) on D+1. The original and revised forecast data would be shown as two differently-coloured bars on the graph, whilst the out-turn data would be shown as a line. Original forecast data would always be shown for each of the 3 days, whilst revised forecast data (submitted daily) and out-turn data (submitted half-hourly) would be published as these data items were received by the BMRA.

Those Settlement Periods for which forecast data had not been provided by the Transmission Company would be left blank (i.e. they would not have bars associated with them). The graph would contain a time stamp, showing the date and time at which the graph was last updated.

Although the graph would run from 00:00 on D-1 to 24:00 on D+1, forecast data would always be submitted daily by the Transmission Company for a sample of Settlement Periods between 21:00 on D and 21:30 on D+2. As a result:

- The graph would always show 2 sets of forecast data (original and revised) for a sample of Settlement Periods between 00:00 and 24:00 for D-1;
- The graph would always show 2 sets of forecast data (original and revised) for a sample of Settlement Periods between 00:00 and 24:00 for D (although the 'revised' forecast figures for the sample periods between 21:00 and 24:00 would be updated following the Transmission Company's submission of updated data at 17:00 on D);
- Before 17:00 on D, the graph would only be able to show original forecast data for a sample of Settlement Periods between 00:00 and 21:30 for D+1;
- At 17:00 on D, the Transmission Company would submit a new set of data and the BMRS would then be able to display original forecast data for a sample of Settlement Periods between 21:30 and 24:00 for D+1, as well as revised forecast data for the sample periods between 00:00 and 24:00 on D.

Note that the Code would require the Transmission Company to submit the daily data updates 'no later' than 17:00. The above explanation is based on the assumption that the BMRA would receive updates at 17:00 each day; however, in practice the data could be received earlier.

#### **4.2.2 Other BMRS requirements**

As well as the above data, the BMRA would also be required to publish a table showing the values underpinning the Figure 3 graph for the previous day, current day, and day ahead. This table would not be published on the Summary Page itself, but would be made available on a separate new page of the BMRS and also via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

No further historic wind forecast data would be made available. However, a rolling 3 months of historic out-turn generation data for those Power Park Modules metered by the Transmission Company would be published separately under P220, as part of the half-hourly out-turn by fuel type data provided by the Transmission Company (see Section 4.3).

Finally, an explanation of the new wind data would also be provided on the BMRS – including the following:

- Details of the data points (i.e. Settlement Periods) for which the Transmission Company would provide wind generation forecast data for each day;
- Clarification that the 'peak' wind forecast table would be updated daily as revised forecast data is received by the BMRA;
- Clarification that, since the Transmission Company would not provide forecast values for each Settlement Period in a day, the 'peak' value published in the table would not necessarily be a forecast of the true peak for the day;
- An explanation of how and when the new wind forecast/out-turn graph would be updated (similar to that provided for Figure 3 in Section 4.2.1.2 above);
- Clarification that not all Settlement Periods shown in the graph would have associated forecast data;
- Clarification that each data item shown in both the table and graph would represent a single MW figure across all Power Park Modules metered by the Transmission Company;

- Clarification that the new wind generation forecast and out-turn data would therefore represent only a subset of total GB wind capacity, as it would exclude any wind generators which are not metered by the Transmission Company;<sup>6</sup>
- Clarification that the figures would be based on the Transmission Company's operational metering rather than BSC Settlement data;
- Clarification that if, for any reason, forecast data was not submitted by the Transmission Company then it would not be published on the BMRS;
- Definitions of Power Park Module and Total Metered Capacity; and
- An up-to-date list of all the Power Park Modules which are metered by the Transmission Company (for the avoidance of doubt, the out-turn values of individual Power Park Modules would not be published).<sup>7</sup>

These explanations/clarifications would either be added to the BMRS Help page, or would be provided via another method such as the use of local mouse-over pop-ups on the Summary Page. The precise format and wording would be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

### 4.3 Instantaneous and half-hourly generation by fuel type

The Transmission Company would be required to provide the BMRA with new 'instantaneous' and half-hourly out-turn generation data by fuel type, as shown in Table 8.

**Table 8 – New out-turn generation by fuel type data**

Data Item	Time	Description
Out-turn 'instantaneous' generation by fuel type (including Interconnector flows)	Every 5 minutes	<p>The out-turn total instantaneous generation, expressed as a MW 'snapshot' spot value for each of the following categories:</p> <ul style="list-style-type: none"> <li>a) Combined Cycle Gas Turbine (CCGT) Modules;</li> <li>b) Oil Plant;</li> <li>c) Coal Plant;</li> <li>d) Nuclear Plant;</li> <li>e) Power Park Modules metered by the Transmission Company;</li> <li>f) Pumped Storage Plant;</li> <li>g) Non Pumped Storage Hydro Plant;</li> <li>h) Open Cycle Gas Turbine (OCGT) Plant;</li> <li>i) External Interconnection flows from France to England;</li> <li>j) External Interconnection flows from Northern Ireland to Scotland; and</li> <li>k) Other (i.e. a single category containing any other generation not covered by (a)-(j) above).</li> </ul>

<sup>6</sup> A link would be provided on the BMRS Help page to the British Wind Energy Association (BWEA) website (<http://www.bwea.com>), which contains details of the total capacity across all currently operational wind farms in Great Britain.

<sup>7</sup> This would not require a new data item to be submitted by the Transmission Company, as the list would be taken from the BM Unit fuel-type categorisation spreadsheet provided by the Transmission Company for the out-turn generation data (see Section 4.3.3). The list would include the BSC BM Unit ID, National Grid's BM Unit ID and the name of the wind farm with which the BM Unit was associated.



Data Item	Time	Description
Out-turn 'half-hourly' generation by fuel type (including Interconnector flows)	No later than 15 minutes following the end of each Settlement Period	<p>The out-turn total generation expressed as an average MW value in that Settlement Period for each of the following categories:</p> <ul style="list-style-type: none"> <li>a) CCGT Modules;</li> <li>b) Oil Plant;</li> <li>c) Coal Plant;</li> <li>d) Nuclear Plant;</li> <li>e) Power Park Modules metered by the Transmission Company;</li> <li>f) Pumped Storage Plant;</li> <li>g) Non Pumped Storage Hydro Plant;</li> <li>h) OCGT Plant;</li> <li>i) External Interconnection flows from France to England;</li> <li>j) External Interconnection flows from Northern Ireland to Scotland; and</li> <li>k) Other (i.e. a single category containing any other generation not covered by (a)-(j) above).</li> </ul>

The fuel type of each BM Unit for both the 'instantaneous' and half-hourly out-turn data would be determined by the Transmission Company using data provided to it by generators under the Grid Code and as part of the production of its Seven Year Statement (SYS) and Winter Outlook Report. This categorisation would be based on the primary fuel type of each power station, such that all BM Units for a particular power station would be classed as having the same fuel type for the purposes of the data.<sup>8</sup>

The values published for the 'instantaneous' out-turn data would be single 'snapshot' spot values as polled and provided by the Transmission Company every 5 minutes. The half-hourly out-turn data would be single average figures for each fuel-type category in each Settlement Period. These values would be derived from the Transmission Company's operational metering rather than BSC Settlement data. Data would therefore only be provided in respect of generation which is metered by the Transmission Company (for example, it would not include all embedded generation).

### 4.3.1 New 'instantaneous' and half-hourly out-turn data by fuel type

#### 4.3.1.1 New Summary Page table

The BMRA would be required to publish a new table on the BMRS Summary Page in a similar format to that shown in Figure 4. The table would include a time stamp, showing when the data was last updated.

The table would include the following:

- 1) The most recent update of the 'instantaneous' out-turn generation data for each fuel-type category (as provided by the Transmission Company every 5 minutes), expressed as 'snapshot' MW spot values for each category;
- 2) The values of the total out-turn generation for each fuel-type category for the last half-hour (i.e. for the last complete Settlement Period, as submitted by the Transmission Company no later than 15 minutes after the end of each Settlement Period), expressed as average MW figures;

<sup>8</sup> For example, all BM Units of a power station whose main fuel type was 'CCGT', but which was also capable of running on distillate, would be categorised and reported as CCGT even during the periods when the station was temporarily running on distillate.

- 3) The total out-turn generation for each fuel-type category (as defined under (2) above) expressed as a percentage of the total average MW generation across all fuel-type categories for the last complete Settlement Period (these percentages would be calculated by the BMRA);
- 4) The values of the total MW out-turn generation for each fuel-type category for the previous rolling 24-hour period (to be calculated as MWh values by the BMRA by summing the average MW values provided under (3) across all 48 Settlement Periods in that 24 hours, and then dividing this total by two to derive a MWh value); and
- 5) The total out-turn generation of each fuel-type category (as defined under (4) above) expressed as a percentage of the total MWh generation across all fuel-type categories for the previous rolling 24-hour period (these percentages would be calculated by the BMRA).

**Figure 4 – Summary Page display for new ‘instantaneous’ out-turn data by fuel type**

<b>Generation By Fuel Type</b>						
<b>GB Generating Plant</b>	<b>Current</b>		<b>Last Half Hour (03:00-03:30)</b>		<b>Last 24 Hours (03:30-03:30)</b>	
	<b>MW</b>	<b>%age</b>	<b>MW</b>	<b>%age</b>	<b>MWh</b>	<b>%age</b>
CCGT	18137	42.1%	18274	42.4%	402038	41.4%
OCGT	1850	4.3%	1400	3.2%	37800	3.9%
Oil	0	0.0%	35	0.1%	385	0.0%
Coal	15315	35.6%	15625	36.3%	375321	38.6%
Nuclear	7308	17.0%	7155	16.6%	143128	14.7%
Power Park Modules (Wind)	189	0.4%	65	0.2%	2600	0.3%
Pumped Storage Plant	15	0.0%	145	0.3%	3423	0.4%
Non-PS Hydro Plant	15	0.0%	20	0.0%	488	0.1%
Other	0	0.0%	65	0.3%	1397	0.1%
<b>Interconnectors</b>						
French Interconnector	55	0.1%	125	0.3%	2250	0.2%
Irish Interconnector	152	0.4%	175	0.4%	2800	0.3%
<b>TOTAL</b>	<b>43036</b>	<b>100%</b>	<b>43084</b>	<b>100%</b>	<b>971630</b>	<b>100%</b>
<i>Data last updated: 19-Nov-2007 16:52:23</i>						

(Please note that the above table is indicative only, and has been produced using hypothetical data.)

The ‘Total’ generation value shown in Figure 4 would be derived by the BMRA as the sum of the total generation across all fuel-type categories, and the resulting value would be equivalent to Transmission System Demand (which includes Interconnector Exports, transmission losses, station load and some embedded generation). This overall total would be updated every 5 minutes along with the total values for each category.

In addition, the BMRA would be required to publish historic 5-minute-apart ‘snapshot’ values for the past rolling 24-hour period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS and also via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

Although the data provided by the Transmission Company to the BMRA would be its ‘raw’ operational metering data, which would include both positive and negative values, only positive or zero generation values for each fuel-type category would be published on the BMRS web pages for the above data (with the negative values being ‘filtered out’ by the BMRA). Where Interconnector Exports, station load or pumping resulted in the overall MW for a category being a negative ‘demand’ value, these negative values would not be published on the Summary Page display or additional web pages for the instantaneous or half-hourly generation by fuel type data. Instead, the values in these circumstances would be shown as zero.

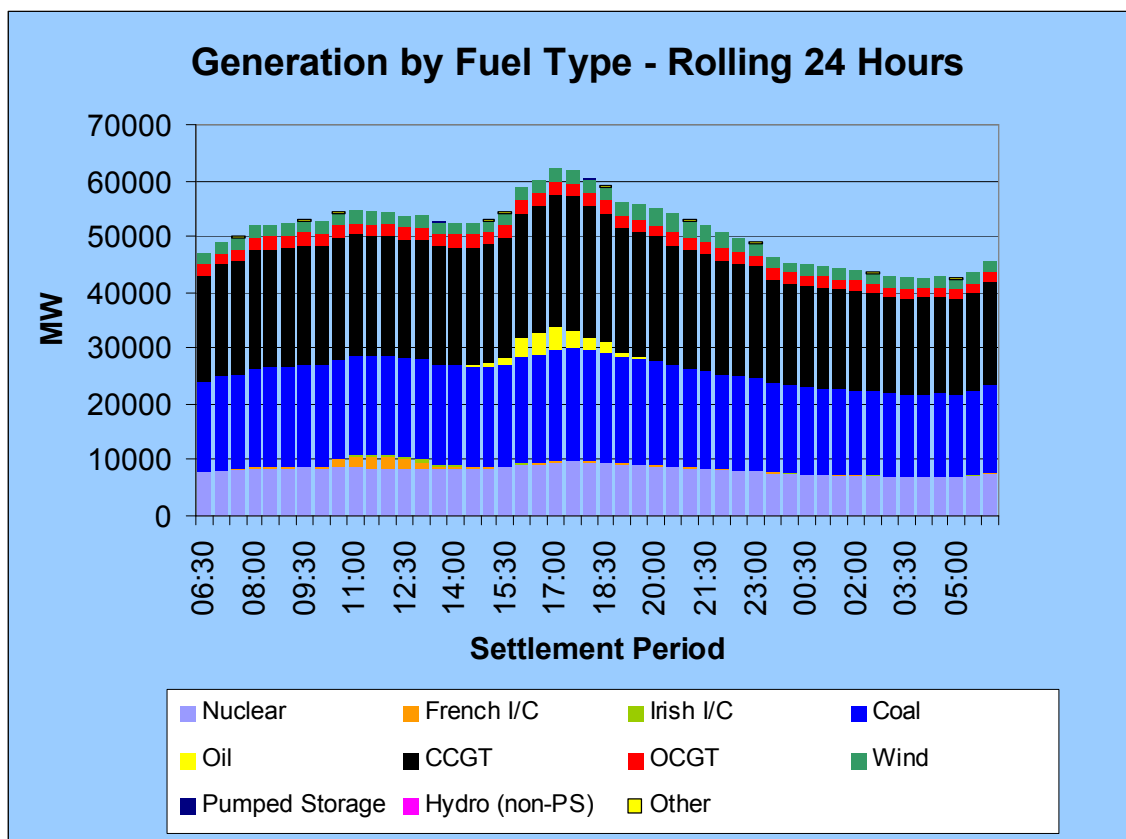
However, additional graphs showing both positive and negative Interconnector flows would be published separately under P220 (see Section 4.3.3 below). For this reason, a mixture of positive and negative Interconnector values would be provided to High Grade Service users through TIBCO messages, though only positive or zero values would be provided through TIBCO for the other fuel-type categories (with negative values being filtered out by the BMRA).

#### 4.3.1.2 New out-turn generation by fuel type Summary Page graph

As well as the table shown in Figure 4, the BMRA would be required to publish a new bar chart on the BMRS Summary Page, containing the average out-turn values for each different fuel-type category in each Settlement Period during the previous rolling 24-hour period. This would be published in a similar format to that shown in Figure 5.

As for the 'instantaneous' data above, only positive or zero values would be published on the BMRS Summary Page display or additional web pages for this data, with negative values being filtered out by the BMRA.

**Figure 5 – Summary Page display for new half-hourly out-turn data by fuel type**



(Please note that the above chart is indicative only, and has been produced using hypothetical data.)

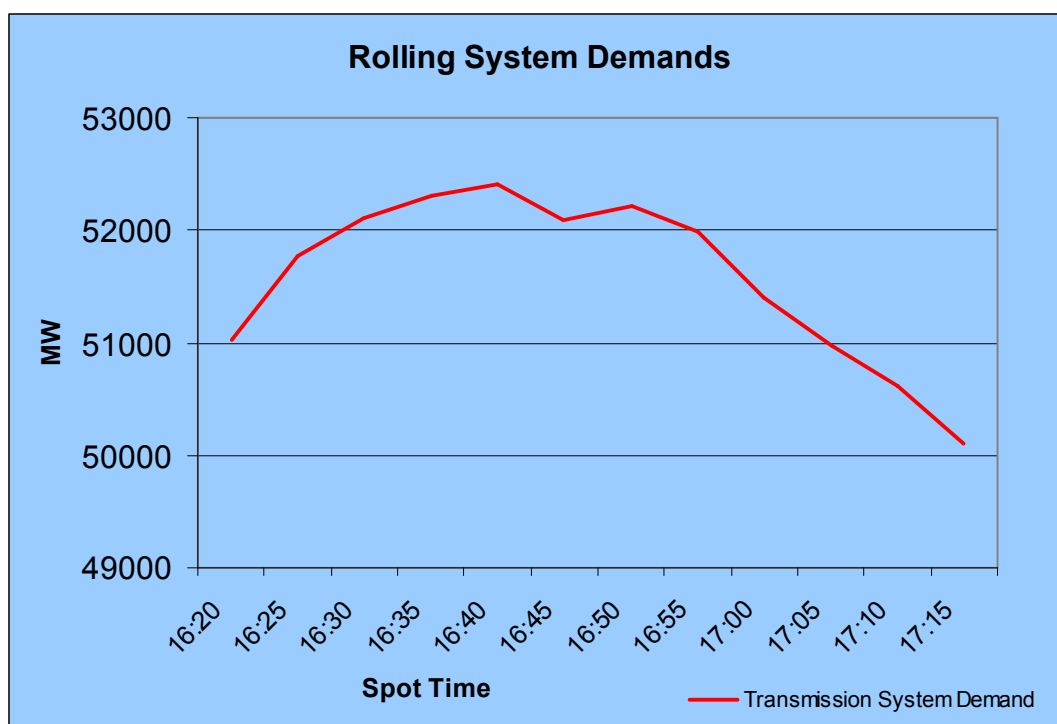
The BMRA would also be required to publish historic Settlement Period values for this data over a rolling three-month period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS as well as via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

### 4.3.2 New 'real-time' total demand out-turn data

The BMRA would be required to publish a new graph containing 5-minute-apart 'snapshot' MW values of Transmission System Demand, as derived from the 'instantaneous' out-turn data as described in Section 4.3.1.1 above. This graph would contain a single value for every 5 minutes in the past rolling 60-minute period, and would be published on the BMRS Summary Page in a similar format to that shown in Figure 6.

This graph would replace the 'real-time' demand graph which is currently available on the BMRS Summary Page as a 'framed' link to National Grid's website. The P220 graph would show lower-granularity data than is currently available from the National Grid graph (i.e. it would be updated every 5 minutes rather than every 15 seconds). National Grid would continue to separately publish the 15-second update graph on its own website outside of the BSC, and a normal web link to the National Grid website (rather than the existing 'framed' version of the graph itself) would be provided from the BMRS Summary page under P220 for participants who wished to view this higher-granularity data.

**Figure 6 – Summary Page display for new 'real-time' demand data**



(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

In addition, the BMRA would be required to publish historic 'snapshot' Transmission System Demand values for every 5 minutes over the past rolling 48-hour period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS as well as via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

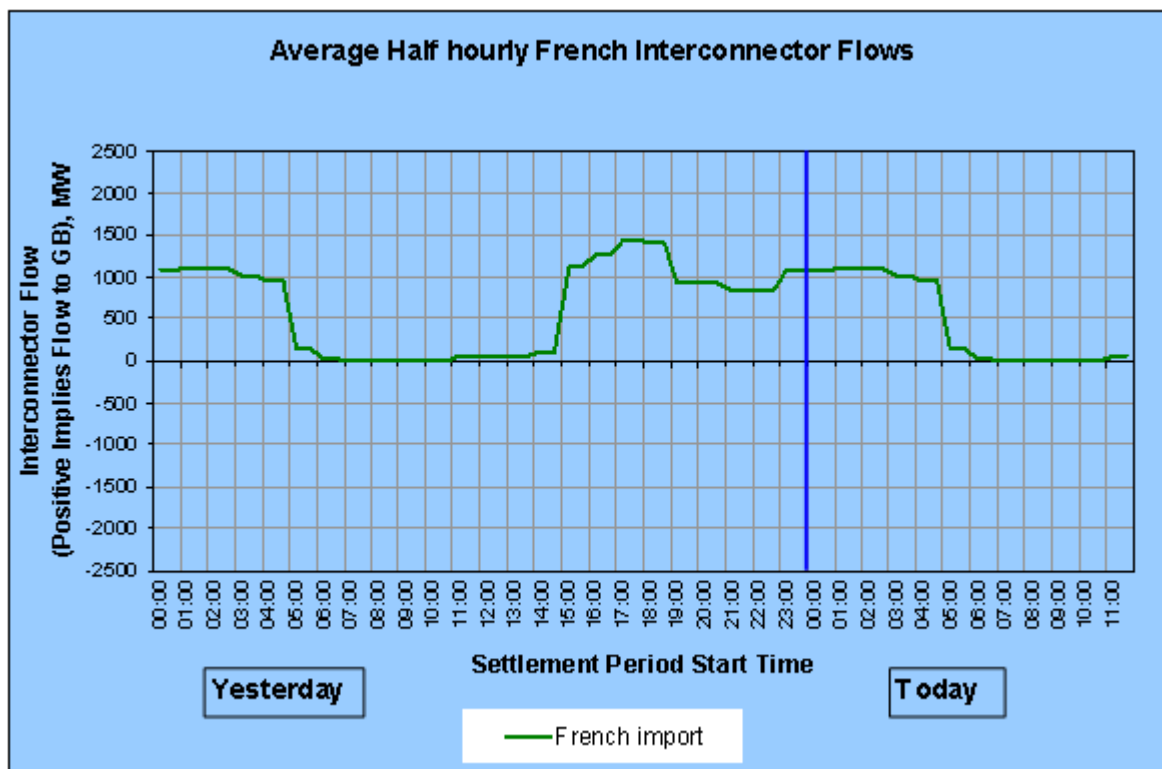
### 4.3.3 New Interconnector flow data

The BMRA would be required to publish two new graphs displaying flows across the French and Moyle Interconnectors respectively. These graphs would be published on the BMRS Summary Page, and would show the average MW flows across each of these Interconnectors for each Settlement Period during the previous day and as much of the current day as was available.

A new data item would not be required specifically for the purposes of these graphs, since the data would be taken from the half-hourly generation by fuel type values already provided by the Transmission Company under P220 (see Section 4.3.1). The graphs would be updated every half hour following the end of each Settlement Period, and would be published in a similar format to Figure 7 below (note that, whilst Figure 7 relates to the French Interconnector, a second identical graph would also be published for the Moyle Interconnector).

The graphs would show both positive (Import) and negative (Export) flows, and the values underpinning the graphs (whether positive or negative) would be provided to High Grade Service Users via TIBCO messaging as part of the half-hourly generation by fuel-type data. The graphs would also display the dates associated with 'Yesterday' and 'Today'.

**Figure 7 – Summary Page display for new Interconnector flow data**



(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

In addition, the BMRA would be required to publish historic half-hourly flow values (whether positive or negative) for the French and Moyle Interconnectors in every Settlement Period over the past rolling 30-day period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS as well as via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

#### 4.3.4 Other BMRS requirements

An explanation of the new data would be provided on the BMRS, including:

- Definitions of each fuel-type category used in the 'instantaneous' and half-hourly out-turn generation data;
- A definition of Transmission System Demand;
- Clarification that the fuel-type categorisation for the out-turn data had been undertaken by the Transmission Company using Grid Code data rather than the BM Unit registration data held by the Central Registration Agent (CRA) under the BSC;
- A list of all the BM Units which fell within each fuel type as categorised by the Transmission Company (this spreadsheet would be provided to the BMRA by the Transmission Company upon the registration/deregistration of any BM Unit, or upon any change in a BM Unit's categorisation);<sup>9</sup>
- Clarification that the out-turn and 'real-time' demand figures were based on the Transmission Company's operational metering rather than BSC Settlement data;
- Clarification of how negative values would be treated for the out-turn by fuel-type and Interconnector flow data;
- Details of the types of generation (e.g. biomass) which would be included in the 'Other' fuel-type category;
- Clarification that, if the data for one or more BM Units within a fuel-type category was incomplete, there would be no flag on the BMRS to indicate this – and that participants would therefore need to take their own view as to the reliance which could be placed on operational metering data (a one-off piece of analysis regarding the historic reliability of operational metering would be provided to help participants make this judgement);<sup>10</sup> and
- Clarification of the conventions used in the Interconnector flow graphs (e.g. that positive values would represent Imports to GB, whilst negative values would represent Exports from GB).

These explanations/clarifications would either be added to the BMRS Help page, or would be provided via another method such as the use of local mouse-over pop-ups on the Summary Page. The precise format and wording would be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

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<sup>9</sup> The spreadsheet would contain the BSC BM Unit ID, National Grid's BM Unit ID, the name of the power station, and the fuel type of that station. For the avoidance of doubt, the spreadsheet would not contain the out-turn values for individual BM Units.

<sup>10</sup> Note that the Group considered the potential inclusion of a requirement to publish a real-time 'data incomplete' flag in such circumstances, but agreed on balance not to progress this as part of P220. Further information regarding the Group's discussions in this area can be found in Section 6.5. A copy of the Proposer's analysis of the historic reliability of operational generation metering can be found in Appendix 5.

## 4.4 Daily energy volumes

The Transmission Company would be required to provide the BMRA with new daily energy volume data for the previous day, as shown in Table 9.

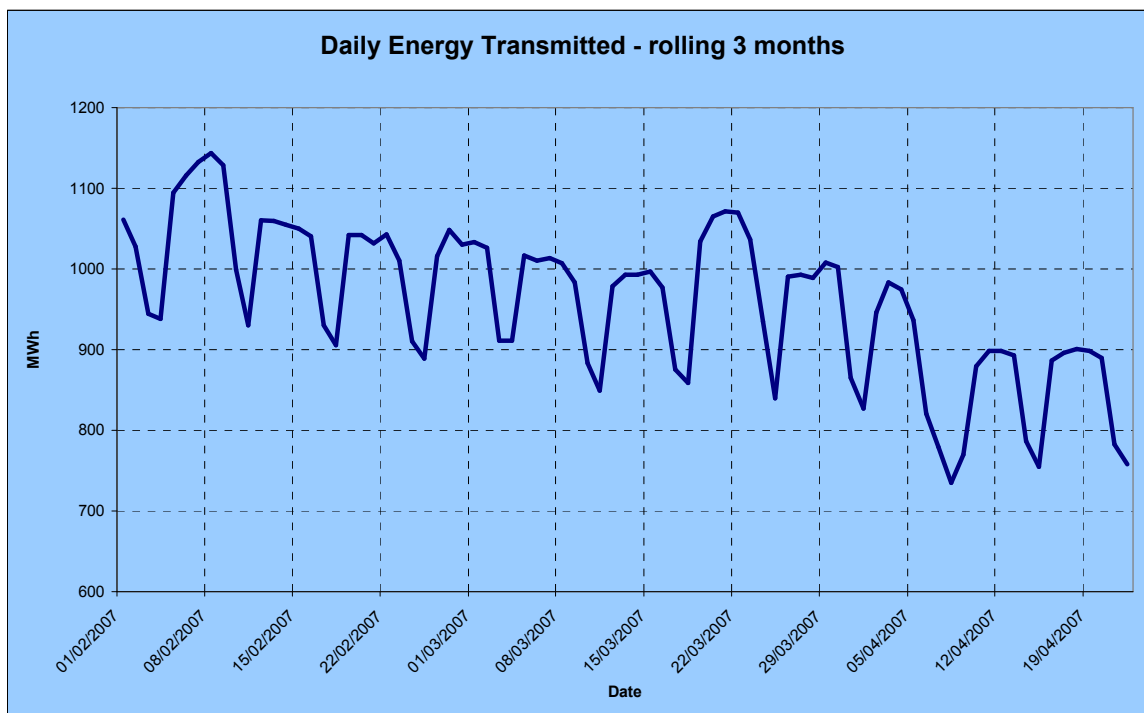
**Table 9 – New daily energy volume data**

Data Item	Time	Description
Out-turn energy	No later than 17:00 each day	The following data applicable for the day preceding the current day: the out-turn Transmission System Energy transmitted across the Transmission System, expressed in MWh.

The BMRA would be required to publish a new graph on the BMRS Summary Page in a similar format to that shown in Figure 8, containing daily volumes for a rolling three-month period.

In addition, the BMRA would be required to publish daily historic values for this data for a rolling 6-month period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS as well as via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

**Figure 8 – Summary Page display for new daily energy volume data**



(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

An explanation of the new data would be provided on the BMRS, including the following:

- Definitions of Transmission System Demand and Transmission System Energy; and
- Clarification that the daily energy volumes graph and spreadsheet would be derived from the Transmission Company's operational data rather than BSC Settlement data.

These explanations/clarifications would either be added to the BMRS Help page, or would be provided via another method such as the use of local mouse-over pop-ups on the Summary Page. The precise format and wording would be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

## 4.5 Non-BM STOR Instructed Volumes

The Transmission Company would be required to provide the BMRA with new half-hourly Non-BM STOR Instructed Volume data, as shown in Table 10.

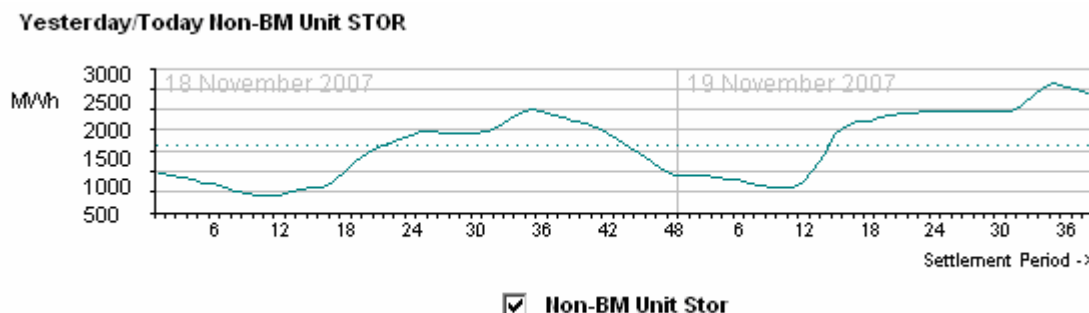
**Table 10 – New Non-BM STOR data**

Data Item	Time	Description
Non-BM STOR Instructed Volume	No later than 15 minutes following the end of each Settlement Period	The Non-BM STOR Instructed Volume for that Settlement Period.

The new data would be provided as a single value for each Settlement Period.

The Non-BM STOR data would not be published on the BMRS Summary Page. Instead, the BMRA would be required to create a separate new BMRS page containing the data. This page would include both a graph showing the Instructed Volume for each Settlement Period during the previous day and as much of the current day as was available, and a table containing the individual Settlement Period values underpinning this graph. The format of the new graph would be similar to that shown in Figure 9, and would show the dates associated with 'Yesterday' and 'Today'. The values given in the table would also be available as a .csv file download.

**Figure 9 – Summary Page display for new Non-BM STOR data**



(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

Participants would be able to request historic Non-BM STOR Instructed Volume data for any past Settlement Day occurring after the P220 Implementation Date, in line with the process for other existing BMRS data.<sup>11</sup>

An explanation of the new data would be provided on the BMRS, including a definition of Non-BM STOR Instructed Volumes. The precise format and wording of this explanation would be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

<sup>11</sup> The BMRA is required by its existing Service Description to make such historic data available for a minimum of one year, although in practice certain historic BMRS data is provided for longer periods.



## **5 DETAIL OF ALTERNATIVE MODIFICATION SOLUTION**

This section details the solution requirements agreed by the Modification Group for the Alternative Modification. An explanation of the Group's rationale for developing these requirements can be found in Section 6.

### **5.1 Out-turn and reference temperatures**

The requirements regarding the submission and publication of out-turn and reference temperature data would be identical to those for the Proposed Modification, as outlined in Section 4.1.

### **5.2 Wind generation forecast**

The requirements regarding the submission and publication of wind generation forecast data would be identical to those for the Proposed Modification, as outlined in Section 4.2.

### **5.3 Instantaneous and half-hourly generation by fuel type**

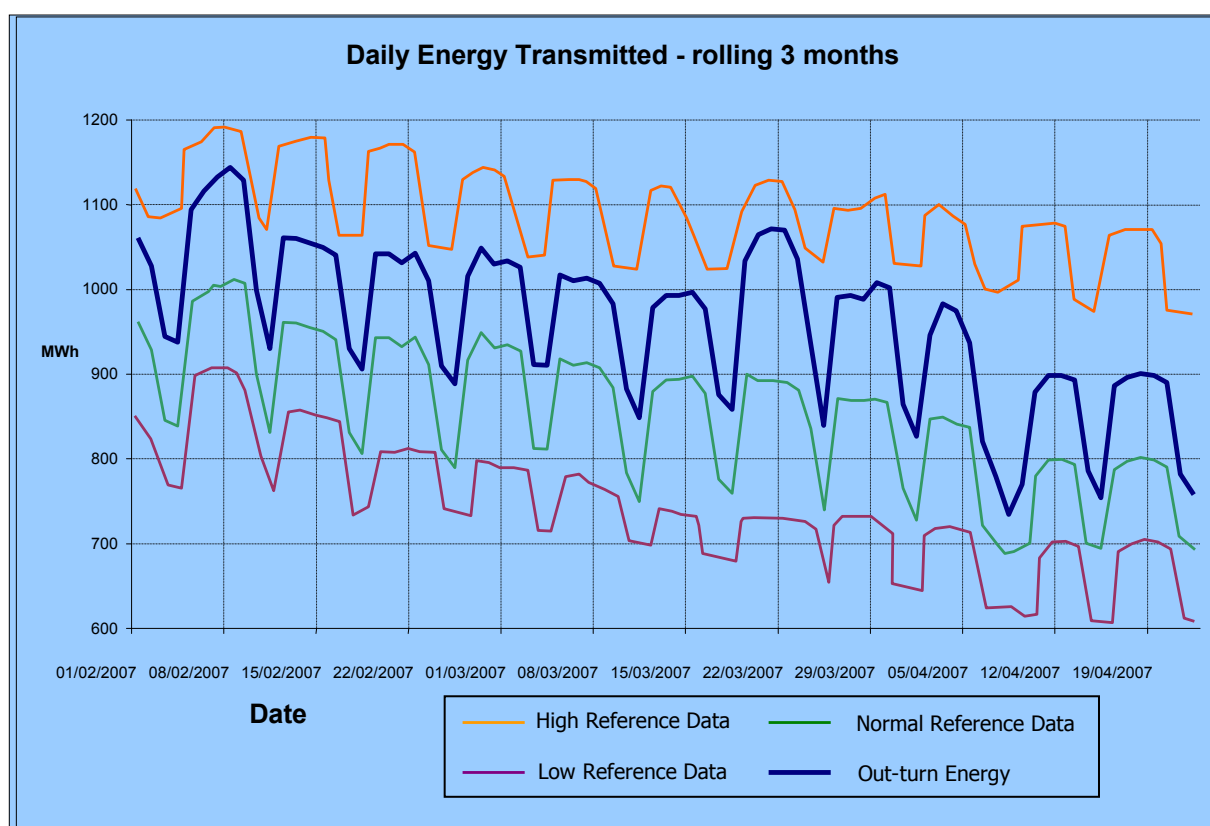
The requirements regarding the submission and publication of the 'instantaneous' and half-hourly generation out-turn by fuel type data (including 'real-time' demand and half-hourly Interconnector flows) would be identical to those for the Proposed Modification, as outlined in Section 4.3.

### **5.4 Daily energy volumes**

The requirements regarding the submission and publication of the daily energy volume data would be similar to those for the Proposed Modification, as outlined in Section 4.4. However, under the Alternative Modification, the data submitted by the Transmission Company would be based on INDO rather than Transmission System Demand. In addition, the Transmission Company would be required to submit additional new 'trend' data, containing details of the typical level of daily energy volumes transmitted across the Transmission System during 'normal', 'hot' and 'cold' years – such that these could be shown as 'tramlines' on the graph to compare against the current daily energy volumes.

The trend data would be submitted by the Transmission Company to the BMRA as standing data in a .csv file at the beginning of each calendar year for each day in that year. The format of this .csv file would be agreed between the BMRA and the Transmission Company. The BMRA would be required to manually extract and publish this data for each day.

The data would be published on a graph in a similar format to that shown in Figure 10 on the following page. The values underpinning the trend data 'tramlines' would also be included in the rolling 6-month history table for the daily energy volume data.

**Figure 10 – Summary Page format for additional new 'trend' energy volume data**

(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

An explanation of the trend data and the derivation of the energy volumes (i.e. that they were based on INDO) would be provided on the BMRS. The precise format and wording of this explanation would be agreed between the BMRA, Transmission Company and BSCCo during the implementation period for P220.

## 5.5 Non-BM STOR Instructed Volumes

The requirements regarding the submission and publication of Non-BM STOR Instructed Volume data would be identical to those for the Proposed Modification, as outlined in Section 4.5.

## 5.6 'Real-time' Transmission System Frequency

The Alternative Modification would also include one additional data item of 'real-time' Transmission System Frequency, which would not form part of the Proposed Modification.

Under the Alternative Modification, the Transmission Company would be required to provide the BMRA with the new Transmission System Frequency data as shown in Table 11.

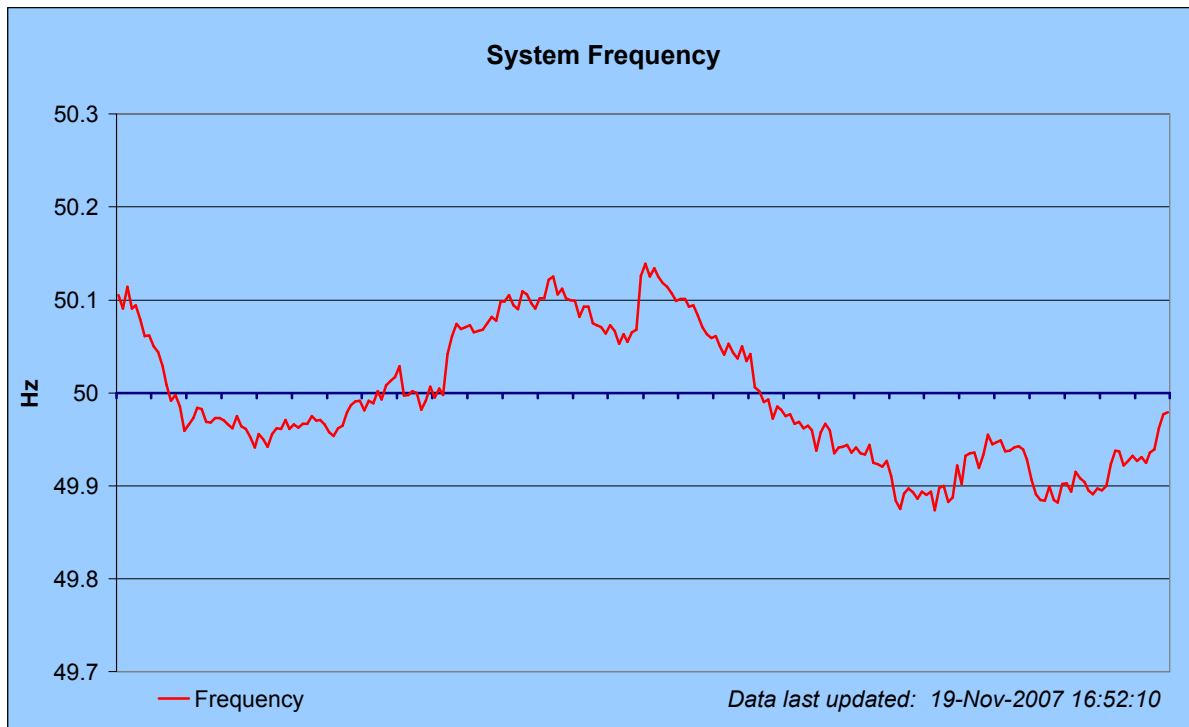
**Table 11 – New 'real-time' Transmission System Frequency data**

Data Item	Time	Description
Transmission System Frequency	Every 2 minutes	The Frequency of the Transmission System as measured by the Transmission Company, expressed as a hertz (Hz) value.

Although a data file would only be provided by the Transmission Company every 2 minutes, each file would contain a 'package' of Frequency values as measured every 15 seconds within that 2-minute period.

The BMRA would be required to publish a new Summary Page graph showing the Frequency data provided by the Transmission Company for the past rolling 60-minute period. This graph would be published on the BMRS Summary Page in a similar format to that shown in Figure 11. Although the graph would only be updated every 2 minutes (each time a new data file was received from the Transmission Company), it would display the Frequency data at a 15-second granularity as provided in those data files. The graph would include a time stamp, showing when the data was last updated.

**Figure 11 – Summary Page display for additional new 'real-time' Frequency data**



(Please note that the above graph is indicative only, and has been produced using hypothetical data.)

The new graph would replace the 'real-time' Transmission System Frequency graph which is currently available on the BMRS Summary Page as a 'framed' link to National Grid's website. Although the P220 graph would be updated less frequently than the current National Grid graph (i.e. it would be updated every 2 minutes rather than every 15 seconds), it would continue to display frequency values for every 15 seconds in the past hour. National Grid would continue to separately publish its more-frequently-updated graph on its own website outside of the BSC, and a normal web link to the National Grid website (rather than the existing 'framed' version of the graph itself) would be provided from the BMRS Summary page under P220 for participants who wished to view this more-frequently-updated data.

In addition, the BMRA would be required to publish the historic values underpinning the new BMRA graph for every 15 seconds over the past rolling 48-hour period. This data would not be published on the Summary Page itself, but would be made available as a table on a separate new page of the BMRS as well as via a .csv file download from that page. A link to this new page would be provided on the Summary Page.

An explanation of the additional new 'real-time' Frequency data would be provided on the BMRS. The precise format and wording of this explanation would be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

## **6 GROUP'S DISCUSSION OF AREAS RAISED BY ITS TERMS OF REFERENCE**

This Section 6 outlines the initial conclusions of the Modification Group regarding the areas set out in the P220 Terms of Reference. A copy of the full Terms of Reference can be found in Appendix 2.

### **6.1 Modification Group membership**

At its meeting on 9 November 2007, the Panel agreed that the P220 Modification Group should be formed from members of the Settlement Standing Modification Group (SSMG). However, the Panel requested that an invitation to be part of the P220 Group should also be extended to members of the DSWG. BSCCo subsequently issued this invitation to the DSWG via Ofgem, and two DSWG members participated in the P220 meetings as attendees. A full list of the P220 Group members and meeting attendees can be found in Appendix 2 of this Assessment Report.

The Group noted the comment by a respondent to the P220 Assessment Procedure consultation that the voting at the P220 Modification Group meetings appeared to have been conducted by SSMG members only, and that these members seemed to largely represent the 'Big 6' market participants. The respondent suggested that it would have been fairer if DSWG members had been temporarily provided with membership of the Group and voting powers, to avoid the perception that the Group's recommendation might be skewed in favour of the views of some participants.

The Group noted that, before membership of a Modification Group can be conferred on any person, Section F2.4.6 of the Code requires that person to confirm that they will be available for attend meetings of the Group for the duration of the Assessment Procedure, and to provide BSCCo with a letter from their employer which releases them temporarily from their duties as an employee in order to act as an impartial member of the Group. The P220 Group therefore noted that it was not possible to automatically confer voting membership on any person (other than the Proposer of a Modification Proposal and the Transmission Company, whom Section F entitles to appoint members).

P220 members disagreed with the suggestion that their recommendation on the Modification Proposal was intended to safeguard the interests of the 'Big 6'. The Group noted that both some SSMG members and some of the 'Big 6' participants had expressed support for P220. It was also noted that Section F2.4 of the Code requires Modification Group members to be selected for their experience and/or expertise in the subject matter of the Modification Proposal, and requires such members to act impartially and not to be representative of any particular person or class of persons. Members confirmed that they had therefore acted as independent experts and not on behalf of any 'constituency'. In line with this independent role, it was noted that the views expressed by some Group members in the P220 meetings were different to those given on behalf of their employer organisation during the Assessment Procedure consultation.

Members recognised that smaller participants generally had less resources with which to participate in the modification process. However, members confirmed that they were satisfied that significant efforts had been made to involve smaller participants in the progression of P220. It was noted that the invitation to DSWG members to attend the Group had outlined the difference between full membership and attendance, and had provided details of how DSWG members could become voting members of the Group (although BSCCo acknowledged that, with hindsight, it could have made more active efforts during the P220 meetings to encourage attendees to become members).

DSWG members and customer organisations were contacted by the Group via Ofgem and invited to respond to the P220 Assessment Procedure consultation. National Grid also hosted a web-based 'live meeting' for these participants in order to provide a summary of the modification and encourage their involvement in the consultation. In addition, the P220 consultation was advertised in ELEXON's weekly 'Newscast' publication, inviting responses from smaller Parties, new entrants and demand-side participants. The Group noted that several smaller participants and customer organisations had subsequently provided consultation responses for P220, and stressed that it appreciated the responses from these participants.

The Group noted that, whilst its overall recommendation to the Panel reflected the views of voting members, all arguments expressed by attendees and consultation respondents had been documented in the Assessment Report such that these could be considered by the Panel and the Authority. Members of the Group therefore confirmed that they were comfortable with the process followed in arriving at their recommendation for P220.

## **6.2 Scope of Group's discussions**

### **6.2.1 Proposed Modification Solution**

#### **6.2.1.1 *Proposer's indicative legal drafting***

The Group noted that the 'Description of Proposed Modification' section of the Modification Proposal for P220 listed the data items which would be submitted by the Transmission Company to the BMRA under the Proposed Modification. Indicative legal drafting for Section Q and Annex X-2 of the Code had been provided as part of the Modification Proposal – covering respectively the submission of the new P220 data by the Transmission Company to the BMRA, and the definitions of each new data item. The Group noted BSCCo's advice that it was not bound by the suggested drafting, providing that any refinements which it might make to this text for the Proposed Modification remained consistent with the 'Description of Proposed Modification' contained in the Modification Proposal. The Group also noted that it would be within the scope of the Proposed Modification to develop any further legal drafting which might be required to other Code sections (e.g. Annex X-1) in order to give effect to the solution outlined in the Modification Proposal.

In particular, the Group noted that the Modification Proposal was silent on how the new P220 data should be published on the BMRS – and that indicative drafting had not been provided by the Proposer for the changes which would be required to Table 1 of Annex V-1 in order to codify the BMRA's publication requirements. It noted BSCCo's advice that the Modification Proposal therefore left it open to the Group to agree the format in which the new data would be published on the BMRS under the Proposed Modification, and that this formed part of the Terms of Reference set by the Panel.

#### **6.2.1.2 *National Grid's original BMRS 'straw man'***

The Group noted that the Code requirements regarding the format for the submission and publication of the new P220 data would be relatively high level (for example, Table 1 of Annex V-1 only lists whether the publication format of each existing BMRS data item is graphic or tabular). The Group agreed that it did not wish the P220 Code legal drafting to be overly prescriptive regarding the format of the new data items, since this could be inflexible to future changes in BMRS technology and/or displays. The Group also supported BSCCo's suggestion that the precise file format in which the new data would be submitted to the BMRS should be agreed between the Transmission Company and the BMRA, since this would have no impact on any other participants.

However, the Group agreed that it was appropriate for it to develop detailed requirements for the new BMRS displays, even though these would not appear in the P220 Code legal text and would be located in lower-level BSC Agent documentation. The Group agreed that, as the aim of P220 was to improve market information for the benefit of participants, it was important to involve the industry in the development of the requirements for the new BMRS displays to ensure that these best met participant needs. The Group therefore agreed that its P220 solution (as documented in this Assessment Report) should be as specific as possible regarding how each data item would be displayed on the BMRS.

The Group noted that National Grid's original consultation (issued prior to the raising of P220) had included a 'straw man', containing indicative graphs and tables for the Summary Page display. The Group agreed to use this as a starting point for its P220 discussions. However, it noted that it was not bound by the straw man – since this was not explicitly referenced in the Modification Proposal, and the proposal itself was silent on the format of BMRS publication. The Group noted BSCCo's advice that it therefore had scope under the Proposed Modification to agree any changes to the straw man BMRS displays which the Group believed would better meet the needs of participants – providing that these changes were limited to refining the publication requirements for the original data items listed in the 'Description of Proposed Modification' section of the Modification Proposal.

During its discussions, a number of refinements to the original National Grid straw man were agreed by the Group for incorporation in the solution for the Proposed Modification. Details of the Group's discussions of, and rationale for, the changes to the original straw man can be found in Sections 6.3 - 6.7 below, whilst the Group's full solution requirements (including copies of the updated straw man graphs/tables which it developed) are contained in Section 4. A copy of the Code legal text for the Proposed Modification is provided in Appendix 1.

The Group agreed that it was important that the BMRS should provide a detailed explanation of the content of each data item, to reduce the potential for data being misinterpreted by participants. For each data item contained in the Proposed Modification, the Group therefore identified areas in which they believed explanatory text should be provided. Details of these areas are contained in Section 4, whilst the Group's rationale for its requirements can be found in Sections 6.3 - 6.7 below. The Group agreed that the exact wording of the new explanatory text should be agreed between the BMRA, the Transmission Company and BSCCo during the implementation period for P220.

### **6.2.2 Alternative Modification Solution**

The Group noted ELEXON's advice that the addition or removal of any data item from those listed in the 'Description of Proposed Modification' section of the Modification Proposal would need to be progressed as part of an Alternative Modification. The Group noted that the Assessment Procedure allowed it the scope to develop any Alternative Modification which it believed might better facilitate the achievement of the Applicable BSC Objectives when compared with the Proposed Modification, providing that this Alternative continued to address the issue or defect identified by the Proposer. The Group noted that the issue or defect identified within the Modification Proposal was broadly defined, in that it related to the current lack of a data summary page and the Proposer's belief that existing market information does not fully meet the needs of the industry. The Group noted that, if it so wished, it could develop an Alternative Modification which varied from the Proposed Modification in more than one respect.

The Group also noted that the Panel had instructed it (via its Terms of Reference) to consider a specific Alternative option for P220, whereby the Panel would be able to agree future new BMRS data without the need for a Modification Proposal. The Group noted BSCCo's advice that consideration of this option fell within the scope of the defect identified in the Modification Proposal.

Details of the different options which were considered for inclusion in an Alternative Modification can be found in Section 6.8. The Group's full solution requirements for the Alternative Modification (including copies of the updated straw man graphs/tables developed by the Group) are contained in Section 5. A copy of the Code legal text for the Alternative Modification is provided in Appendix 1.

### **6.2.3 Implementation Approach**

The Group considered a variety of potential implementation approaches for P220. Details of these, as well as the Group's recommended approach and resulting implementation costs, can be found in Section 6.9.

#### **6.2.4 Cost-Benefit Analysis**

The Group agreed that a key part of its assessment of P220 would be considering whether the benefits of the proposed data would outweigh the implementation costs of the proposal. The Group noted that, in this respect, it would be reliant on smaller Parties, new entrants and demand-side participants (e.g. customer organisations and DSWG members) to provide details of the benefits of the data to their organisations – since these participants were likely to be the main beneficiaries of P220. The Group therefore agreed to include targeted questions in this area as part of the P220 Assessment Procedure industry consultation, which was issued on 7 January 2008. A summary of the views returned by consultation respondents in this area, and the Group's discussion of these views, can be found in Section 7 of this Assessment Report. Copies of the full responses are provided in Appendix 3.

The Group also noted that, during its discussion of the P219 Assessment Report on 17 January 2008, the Panel had expressed concern that the Group had provided insufficient detail of the perceived benefits of P219 (either tangible or intangible) – and had returned P219 to the Group for an additional month's assessment, in order to allow an additional industry consultation to be conducted in this area. The Group noted that the P220 consultation had already been issued prior to the January Panel meeting. However, it was comfortable that the questions asked in this consultation sought to establish the benefits to participants of P220 – whether quantitative or qualitative. The Group also noted that (since P220 had been progressed through a 3-month Assessment Procedure in comparison to the 2-month timetable originally set by the Panel for P219) it had been able to conduct an impact assessment prior to issuing the consultation. As a result, consultation respondents had therefore been able to comment on the benefits of P220 in the knowledge of its implementation costs.

Following the Panel's discussions regarding P219, the P220 Group gave further consideration at its final meeting on 23 January 2008 to whether the benefits of the proposed P220 data could be quantified. The Group also endeavoured to provide as much qualitative information as possible regarding the potential benefits of P220. Full details of the Group's views in this area can be found in Section 7 of this Assessment Report.

### **6.3 Out-turn and reference temperatures**

#### **6.3.1 Group's initial discussions**

##### **6.3.1.1 Derivation and submission of temperature data**

The Group noted that the Modification Proposal proposed to publish daily out-turn (i.e. actual) temperature data against 'Normal', 'High' and 'Low' Reference Temperatures for comparison. The Group noted that the out-turn values would be published a day after the event, with the previous day's data being sent from the Transmission Company to the BMRA by 17:00 each day.

The Proposer advised that it was their intention that the Transmission Company would provide the Normal, High and Low Reference Temperature values as standing data in a spreadsheet at the beginning of each calendar year, rather than sending separate data files each day – as this approach would have the least impact on the Transmission Company's systems and processes. The Group noted that no changes would be required to the indicative legal text for Section Q to reflect this clarification, as either approach was compatible with the proposed Code requirement for the data to be submitted 'no later than' 17:00 each day.

A member noted that the explanatory text in National Grid's original straw man referred to both UK and GB temperatures, and queried which was represented by the proposed new data items. The Proposer clarified that all the new temperature data would be GB values, and not UK values as had been originally stated in the indicative legal drafting in the Modification Proposal. The Group agreed that this clarification would need to be incorporated in the final legal text.

Another member noted that the indicative legal drafting did not specify whether single or multiple out-turn temperature figures would be provided for an individual day, but that the original straw man explanatory text described this as being an 'average of all measured temperatures at 12:00 midday'. The Proposer clarified that a single out-turn temperature value would be provided for each day, and that this would be expressed as a composite variable value deemed to be representative of the temperature measured at midday. The Group agreed that this clarification would need to be incorporated in the final legal text.

The Proposer advised that, in reality, each daily out-turn figure would be the average of a number of different data points (for example, these might be the temperatures measured at 09:00, 10:00, 11:00 and 12:00). However, the Proposer clarified that their intention was that the P220 legal text would not specify the exact data points, thereby leaving the flexibility for these to be amended by the Transmission Company in the future if required.

A member queried how the temperature data would be derived by the Transmission Company. The Proposer clarified that the Transmission Company currently uses data from the Met Office for a sample of weather stations, and that this was unlikely to change in the near future. However, the Proposer advised that their intention was that the method of derivation would not be specified in the legal text, thereby leaving the flexibility for the Transmission Company to use a different source in the future if required. The member questioned what would happen if data from one particular weather station was unavailable. The Proposer clarified that, in practice, an algorithm would be used by the Transmission Company to temporarily substitute this with data from an alternative weather station. The Proposer confirmed that a large sample of weather stations would be used.

The Group agreed that all of the above clarifications should be incorporated into its solution for the Proposed Modification.

#### **6.3.1.2 BMRS display**

The Group noted the proposed format of the new temperature Summary Page graph which had been set out in Section 11 of National Grid's original straw, and which showed this data for a rolling three-month period. The Group agreed that the labels of the lines on the Summary Page graph should be amended to more precisely match the proposed new BSC definitions, but did not identify any other required changes to the original straw man BMRS display. The Group agreed with the suggestion of the straw man that historic data should be provided for a rolling 6-month period, and agreed that this should be provided on a separate web page as well as via a .csv download for consistency with other existing BMRS data. Details of the Group's full solution requirements for the new temperature data can be found in Section 4.1, including a copy of the Group's updated straw man graph which is provided as Figure 1.

The Group agreed that the BMRS should provide guidance to participants on how the new temperature data was derived, to reduce any potential for misinterpretation. A list of the areas which the Group believed should be covered by this guidance can be found in Section 4.1.

A member queried what would happen if data was not received by the BMRA from the Transmission Company for a particular day. BSCCo clarified that, should this occur, no update would be published for that day and that the BMRS would continue to show the graph/values for the previous day. The member questioned whether, in these circumstances, a flag should be provided on the BMRS alerting participants to that fact that the data had not been received. However, it was noted that this would not be normal practice for other existing BMRS data, and the Group agreed that there was no reason to treat the new temperature data differently. It was noted that the graph and historic data would show the date range covered, and that participants would therefore be able to establish whether data had yet been published for the current day.

#### **6.3.2 Areas arising from impact assessment**

No points regarding the proposed temperature data solution were raised during the P220 impact assessment, and no changes were therefore made to the solution prior to issuing the industry consultation.



### **6.3.3 Areas arising from Assessment Procedure consultation and Group's conclusions**

No specific comments were made by respondents to the P220 Assessment Procedure consultation regarding the Group's solution for the temperature data. As a result, the Group agreed that no changes to this area of its proposed solution were required.

Views were received from consultation respondents regarding the benefits of the proposed temperature data to participants. For further details of the benefits identified by respondents, and the Group's views regarding these potential benefits, please refer to Section 7 of this Assessment Report.

## **6.4 Wind generation forecast**

### **6.4.1 Group's initial discussions**

The Group noted that, for each day, the Modification Proposal proposed to publish:

- The forecast total 'peak' generation by Power Park Modules;
- The time associated with that 'peak' forecast; and
- The total Registered Capacity of Power Park Modules.

#### **6.4.1.1 Wind generation covered by proposed data**

A member queried whether the proposed forecast data covered all wind generation, since the indicative legal drafting provided in the Modification Proposal referred to the data being published for 'Power Park Modules'. The Proposer clarified that Power Park Module is already defined in the BSC (which refers to the Grid Code definition); however, not all Power Park Modules are metered by the Transmission Company. The Proposer advised that their intention was to only publish forecast data for those Power Park Modules which the Transmission Company metered, and that this would include some (but not all) embedded wind generation as well as all transmission-connected wind farms. The Group agreed that this was an important clarification which would need to be reflected in the final legal text for the Proposed Modification. The Group also agreed that it was essential that the BMRS display should carry a caveat that the data only represented a subset of total GB wind generation, to ensure that the data was not misinterpreted by participants who might use it as a basis for commercial decisions.

The Proposer also clarified their intention that the published forecast data would be a single MW figure across all Power Park Modules metered by the Transmission Company. The Group agreed to include this clarification in its solution for the Proposed Modification.

A member queried why it was not proposed to publish forecast data for all wind generation (including all embedded wind farms). The Proposer clarified that it would not be possible for the Transmission Company to provide forecast figures for any Power Park Modules which it did not meter. The Group noted that the British Wind Energy Association (BWEA) website provides details of the total GB wind capacity.<sup>12</sup> It agreed that, whilst capacity information was not the same as a generation forecast, the BMRS should provide a link to the BWEA site (although the Group agreed that a disclaimer should be added to the BMRS noting that the content of the BWEA site was outside the control of the BSC, and that the link was only provided for participants' information). BSCCo agreed to confirm with the BWEA that it would have no objections to the BMRS containing such a link, prior to it being published. One member noted that the Transmission Company now published an embedded generator MW register under the Connection and Use of System Code (CUSC) which contains capacity details for certain types of embedded generators,<sup>13</sup> and queried whether it would be more appropriate for the BMRS to link to this register. However, the Group concluded that this would not give a clear wind total – since the register was not limited to embedded wind generators, and the wind generation which it did include was only a subset of all embedded wind.

<sup>12</sup> See [www.bwea.com](http://www.bwea.com).

<sup>13</sup> See <http://www.nationalgrid.com/uk/Electricity/Codes/systemcode/tectrading/>.

### 6.4.1.2 Clarification of National Grid's original straw man

The Group noted the proposed format of the new wind data Summary Page table which had been set out in Section 18 of National Grid's original straw man, and which is reproduced below as Figure 12.

**Figure 12 – National Grid original wind forecast straw man table**

<u>Thursday 19/07/2007</u>	<u>Forecast Today</u>	<u>Forecast Tomorrow</u>
	12:00	12:00
Peak (Max) MW	<b>24</b>	<b>27</b>
Total Metered Capacity (MW)	870	

The Group agreed that the new Summary Page table should show forecast figures for the current day and the following day, as suggested in the straw man. One member queried what was meant by 'peak' in the context of the proposed data. The Proposer clarified that the Transmission Company would not provide forecast data for each Settlement Period within a day, but only for a sample of Settlement Periods. The highest value within that sample would therefore be deemed to represent the 'peak' forecast for that day. In National Grid's original straw man table in Figure 12, the 'peak' generation for the current day and day ahead has been forecasted as occurring during the 12:00-12:30 Settlement Period on both days. A member commented that the table should label the times shown as 'time of maximum peak generation' to avoid the potential for confusion. The Group agreed to incorporate these clarifications in its solution for the Proposed Modification.

A member noted that the original indicative legal text provided in the Modification Proposal referred to 'Registered Capacity' (which is defined in the Grid Code), but that National Grid's straw man table used the term 'Total Metered Capacity' (which is not currently defined in either the Grid Code or the BSC). The member queried which was the most appropriate term. The Proposer clarified that it was their intention to publish the total MW value of the Registered Capacity of all Power Park Modules metered by the Transmission Company. It was agreed that, for the purposes of P220, this should be newly-defined in the legal text as Total Registered Capacity. The Proposer clarified that the Transmission Company would provide Total Registered Capacity figures in respect of each Settlement Period for which it submitted forecast data.

### 6.4.1.3 Derivation of forecast data

A member queried how the new wind forecast data would be derived. The Proposer clarified that the data would be based on the Transmission Company's operational metering. The member noted that this would therefore be different from the values which would be obtained by aggregating the Final Physical Notifications (FPNs) of wind generators, and suggested that it would be more appropriate to base the proposed BMRS data on FPNs. The Group noted BSCCo's advice that this change could be incorporated within the scope of the Proposed Modification, since aggregate FPNs could be derived using existing BMRS data and would therefore not require an additional data item to be submitted by the Transmission Company. However, the Proposer advised that many of the operationally-metered wind generators being forecasted did not submit FPNs. The Proposer believed that a comparison of metered output against FPNs would therefore not be meaningful, and that using FPNs as a forecast of output for all operationally-metered wind would not be accurate. On balance, the Group agreed that its preference was to keep to the original operational metering data as suggested in the Modification Proposal, and the FPN option was therefore not considered further.

The Group noted that it was a general feature of P220 that the proposed new data would be based on the Transmission Company's operational metering, and that – whilst this would be less final than BSC Settlement data – it had the advantage of being available closer to real time. The member who had raised the suggestion of FPNs accepted this clarification, but noted that this would be a change from the historic purpose of the BMRS which has previously focused on the provision of Settlement data. The Proposer confirmed that it was their intention that the BMRS should become seen as the primary platform for the provision of close-to-real-time operational and commercial information relating to the Balancing Mechanism. The member supported this approach, but argued that it was important that the derivation of the data was made clear to participants in order to avoid any potential misinterpretation. The Group agreed that guidance in this area should be provided on the BMRS.

#### **6.4.1.4 Initial consideration of displaying forecast v. out-turn wind data**

One member stated that they were uncertain of the benefits of publishing wind forecast data – since they believed that wind generation was by its nature extremely difficult to forecast, that any 'instantaneous' peak could be very transient, and the actual out-turn was therefore likely to be very different. The member considered that the true peak out-turn was even less likely to match the original forecast if that forecast had only been derived from a small number of Settlement Periods. However, other members believed that there was demand from customers for this data, and that wind forecast information would become increasingly important to the market given the government's environmental priorities. The Proposer also noted that publication of the proposed wind forecast data had been supported by all but one respondent to its original consultation, and commented that publishing the data would aid participants in understanding the inherent variability of wind generation. The member commented that, if this aim was to be achieved, they believed it would be more useful to show actual out-turn data against the forecast values for comparison. Other members also agreed with this suggestion, and the Group therefore initially agreed that the BMRA should also be required to publish a 'history' table on a separate web page containing the following data for a rolling-seven-day period:

- 1) The Transmission Company's forecast of the total peak generation for each day across those Power Park Modules metered by the Transmission Company, expressed as an average MW value for the Settlement Period in which the peak generation was forecasted to occur;
- 2) The time of day (i.e. time of the Settlement Period) that the peak generation under 1) above was forecasted to occur;
- 3) The MW value of the actual level of generation across metered Power Park Modules during the time at which peak generation had originally been forecasted for that day (in order that this could be compared against the original forecast for that time); and
- 4) The actual time at which peak metered Power Park Module generation occurred during the day, as well as the MW value associated with that peak (noting that this time and value may be different from those under 3) above if the original forecast had been inaccurate).

The Group noted that 3) and 4) would not require new data items to be submitted to the Transmission Company specifically for the purposes of this data, since these items could be derived by the BMRA using the half-hourly out-turn by fuel type data which was already proposed to be published under P220 (see Section 4.3). The Group noted that, as such, this change could be incorporated within the scope of the Proposed Modification. BSCCo subsequently developed a straw man version of this table for discussion by the Group, which is reproduced as Figure 13.

**Figure 13 – BSCCo's straw man table for historic wind forecast/out-turn**

Wind Generation Seven Day History (Actual & Forecast)	Period with Maximum Forecast Wind Generation			Period with Maximum Actual Wind Generation		
	Time	Forecast MW	Actual MW	Time	Forecast MW	Actual MW
TUESDAY 2007-11-13	12:00	87	93	12:00	87	93
WEDNESDAY 2007-11-14	13:30	94	87	14:00	91	92
THURSDAY 2007-11-15	16:00	35	103	16:00	35	103
FRIDAY 2007-11-16	08:30	75	65	12:30	65	87
SATURDAY 2007-11-17	14:30	91	92	15:30	65	101
SUNDAY 2007-11-18	11:30	87	65	11:30	87	65
MONDAY 2007-11-19	12:00	85	77	14:00	77	83

#### **6.4.1.5 Clarification of forecast data points and range**

A member noted that the indicative legal drafting provided in the original Modification Proposal stated that the forecast data should be provided 'no later than 17:00 each day', and that this would contain figures for both the current day and the following day. Some members questioned the benefit of only providing the current day's forecast at 17:00 that day, when it would be too late for the market to act on that data. In addition, it was suggested that providing the next day's forecast at 17:00 on the previous day would also not leave much opportunity for the market to make any decisions on the basis of that forecast. The Group therefore queried whether it would be possible for the Transmission Company to provide the data at an earlier time each day, for example at 15:00 rather than 17:00.

The Proposer clarified that it might not be possible for the Transmission Company to provide each day's forecast data earlier than 17:00, although the proposed wording of the indicative legal drafting would allow it to do so if this subsequently proved feasible. However, the Proposer advised that, in practice, the Transmission Company would submit one data file each day, containing forecast figures for a number of data points within a rolling 48-hour period. This would avoid the need to send the data earlier in the day, since it would mean that the file would include figures for both the day ahead (D+1) and 2 days ahead (D+2) in addition to part of the current day. The Group noted that this clarification would need to be reflected in the final legal text. BSCCo advised that it believed this refinement to be within the scope of the Proposed Modification, since the reference to 'day and day ahead' forecast data in the Modification Proposal represented a suggestion only. The Group (including the Proposer) agreed with this view, and agreed to incorporate this clarification in its solution requirements for the Proposed Modification.

The Proposer clarified that it was their intention that the P220 legal text would not specify the exact data points which would be provided in the daily data file, thereby leaving the flexibility for these to be amended by the Transmission Company in the future if required. However, the Proposer advised that, in the period immediately following the implementation of P220, each daily data file would in practice contain forecast figures for the data points shown in Table 12 – since these matched the data points for which the Transmission Company already holds wind forecast data within its own systems.

**Table 12 – Wind forecast data points within each daily data file**

Current day (D)	Day ahead (D+1)	2 days ahead (D+2)
-	00:00	00:00
-	05:00	05:00
-	08:00	08:00
-	12:00	12:00
-	17:00	17:00
21:00	21:00	21:00

The Group noted that each data point would represent an individual Settlement Period (e.g. the 21:00 data point would represent the Settlement Period from 21:00-21:30). The Group noted that, under this approach, each data file would contain 13 data points from 21:00 on D up to and including 21:00 on D+2. The Group noted that a consequence of this would be that more than one set of forecast values would be provided in respect of any given day, with the latest figures overwriting previous values in the BMRS Summary Page table (Figure 12).

For example, in relation to the wind forecast for a Wednesday, the figures submitted at 17:00 on the Monday would be overwritten by the revised forecast figures submitted at 17:00 on the Tuesday. The value for 21:00 on the Wednesday would then also subsequently be overwritten with the revised value for that data point submitted at 17:00 on that day. The Group agreed that it was therefore important that the BMRS Summary Page display should carry a time stamp, showing when the data was last updated. The Group also agreed that guidance should be provided on the BMRS, explaining the data points used to derive the figures.

A member noted the Proposer's preference that the exact data points should not be included in the P220 legal text, and agreed that hard-wiring these in the Code would be inflexible. This member queried whether it was likely that the range of data points might change in the future, noting that this could have cost impacts for the BMRA. The Proposer confirmed that it was possible that the Transmission Company might revisit the appropriate number and range of data points at a future time. BSCCo therefore suggested that the BMRA impact assessment could consider the feasibility and cost of designing the supporting BMRS system changes with the flexibility to deal with future amendments. The Group agreed to ask a specific BMRA impact assessment question in this area.

#### **6.4.1.6 Further consideration of displaying forecast v. out-turn wind data**

Following the Proposer's clarifications regarding the contents of the proposed new wind forecast data files, the Group re-examined whether the historic forecast/out-turn straw man table shown in Figure 13 remained the most appropriate display for the data. The Group initially considered developing a variation of this table containing the forecast and out-turn figures for each data point; however, an attendee suggested that it would be more useful to display this comparison on a graph.

The Group agreed with this suggestion, and therefore subsequently replaced the suggested table in Figure 13 with a Summary Page graph developed by the Proposer which had not formed part of National Grid's original straw man. A copy of this graph (represented by Figure 3, and displaying both forecast and out-turn wind data for a 3-day period) can be found in Section 4.2 of this Assessment Report, along with a detailed explanation of its derivation. The Group agreed that this graph would supplement the 'peak forecast' Summary Page table shown in Figure 12.

The Group agreed that the new graph should display both forecast and out-turn data for the day preceding the current day (D-1), the current day (D) and the day ahead (D+1). Although the BMRA would also receive forecast data for 2 days ahead (D+2), it was noted that there would be little benefit in expanding the graph to include this – as the D+2 forecast data would only be published between 17:00 and 24:00, when participants were unlikely to be using the BMRS.

The Group considered whether to additionally display the Total Metered Capacity on the same graph for each forecast data point, but agreed on balance that this would overcomplicate the display since it would require the inclusion of a separate 'Y' axis with a different scale.

The Group agreed that the values underlying the new Summary Page graph should be published on a separate new BMRS web page, as well as being made available as a .csv file download. The Group agreed that, as 3 months' historic wind generation values would be published as part of the generation by fuel type data provided separately by the Transmission Company under P220 (see Section 4.3), it did not believe there to be any additional benefit in publishing the 7-day forecast/out-turn history suggested in National Grid's original straw man. The Group noted that both the introduction of the graph and the removal of the 7-day history requirement were within the scope of the Proposed Modification, since the Modification Proposal was silent how the new data should be displayed on the BMRS. The Group agreed to incorporate these refinements into its Proposed Modification solution.

#### **6.4.1.7 Other BMRS requirements**

The Group noted that National Grid's original straw man had included a 'List of Scottish Metered Wind farms'. A member queried why this did not cover the whole of GB. The Proposer advised that their intention was that the BMRS would publish an up-to-date list of all GB Power Park Modules which were metered by the Transmission Company. The Proposer clarified that the straw man had referred to Scotland simply because all the wind farms which it listed had been located there. The Group agreed that the wording of the original straw man was confusing, and that revised wording should be implemented in the final BMRS display.

The Group noted that a new data item was not required for the Transmission Company to submit the list of metered Power Park Modules to the BMRA specifically for use in the wind data display, since this list would be taken directly from the generation by fuel type data which would be submitted separately by the Transmission Company under P220. Further details regarding the derivation of this data can be found in Section 6.5.

The Group's full solution requirements for the new wind data can be found in Section 4.2, including copies of its revised straw man Summary Page display and details of the aspects of the data which it agreed required guidance on the BMRS.

#### **6.4.2 Areas arising from impact assessment**

The Group initially requested that the BMRA separately identify any additional costs which would be incurred by developing its systems with the underlying flexibility to handle future changes in the number of wind forecast data files or data points.

During the impact assessment, it was clarified between the BMRA and BSCCo that any future changes to this data would not exceed a maximum of one forecast value for every Settlement Period up to the end of D+2, and that any future data would be submitted at no less than 30-minute intervals. The BMRA confirmed that its system changes could easily be developed to contain these bounds.

As a result, the costs of developing this system flexibility were included in the overall costs provided for P220 and were not provided separately. Further details regarding the P220 costs can be found in Section 6.9.

No further changes were made to the Group's solution in this area prior to issuing the industry consultation.

### **6.4.3 Areas arising from Assessment Procedure consultation and Group's conclusions**

No specific comments were made by respondents to the P220 Assessment Procedure consultation regarding the Group's solution for the wind generation data. As a result, the Group agreed that no changes to this area of its proposed solution were required.

Views were received from consultation respondents regarding the benefits of the proposed wind data to participants. For further details of the benefits identified by respondents, and the Group's views regarding these potential benefits, please refer to Section 7 of this Assessment Report.

## **6.5 Instantaneous and half-hourly generation by fuel type**

### **6.5.1 Group's initial discussions**

The Group noted that the Modification Proposal proposed to publish 'instantaneous' and half-hourly generation, broken down into totals for different fuel types.

#### **6.5.1.1 Consideration of appropriate fuel-type categories**

The Group noted that the following fuel-type categories were suggested in the indicative legal drafting which had been provided in the Modification Proposal:

- CCGT Modules;
- Oil Plant;
- Coal Plant;
- Nuclear Plant;
- Power Park Modules;
- Pumped Storage Plant;
- Cascade Hydro Scheme;
- Open Cycle Gas Turbine Plant;
- External Interconnection flows from France to England;
- External Interconnection flows from Ireland to Scotland; and
- Other.

The Group noted that these did not precisely match the list of categories included in the 'Description of Proposed Modification' section of the Modification Proposal form, which referred to 'wind' rather than Power Park Modules and 'Hydro' rather than 'Cascade Hydro'. BSCCo advised that it was within the scope of the Proposed Modification for the Group to refine these categories should it so wish, since those listed in the Modification Proposal represented suggestions only. The Proposer agreed with this view.

The Group noted that the proposed fuel-type categories represented types of generating Plant which were either already defined in the Grid Code and/or BSC, or which were proposed to be newly-defined in the BSC under P220. A member queried whether the definition of 'Nuclear Plant' proposed by the indicative legal drafting ('a Power Station which uses nuclear energy to generate electricity') was technically accurate. The Proposer agreed to give further consideration to the most appropriate definition as part of the Transmission Company's impact assessment of P220.

Another member noted the variance between the 'Description of Proposed Modification' and indicative legal drafting in their use of categories relating to hydro generation. This member believed that, if the categories 'Pumped Storage Plant' and 'Cascade Hydro' were used as proposed in the indicative drafting, then this would mean that hydro generation which was not cascaded would only be captured in the 'Other' category along with very different types of generation such as biomass. However, if the categories 'Pumped Storage Plant' and 'Hydro' were used as suggested in the 'Description of Proposed Modification', this would effectively double-count Pumped Storage generation. The Group agreed that its preferred hydro categories would be 'Pumped Storage Plant' and 'Non Pumped Storage Hydro Plant', such that all hydro generation was reported separately to the 'Other' category without any double-counting. The Group agreed to include this refinement in its solution for the Proposed Modification, but noted that the term 'Non Pumped Storage Hydro' was not currently defined in either the BSC or the Grid Code and would therefore need to be defined in the P220 legal text. The Proposer agreed to provide a suggested definition as part of the Transmission Company's impact assessment response for P220.

The Group agreed with the other fuel-type categories suggested by the Modification Proposal. Neither the Proposer nor the Group anticipated that changes would be made to these eleven fuel-type categories in the foreseeable future. For this reason, the Group agreed that a requirement for the BMRA to develop flexibility regarding the number of categories which could be held in its systems did not need to form part of the P220 impact assessment.

#### **6.5.1.2 Frequency of 'instantaneous' data publication**

The Group noted that the Modification Proposal proposed to publish generation by fuel type data both 'instantaneously' and half-hourly following the end of each Settlement Period. The Group noted that the indicative legal drafting contained in the Modification Proposal referred to the instantaneous data being published 'as close to real time as practicable'. The Proposer noted that National Grid's original straw man had proposed that the data would be updated every minute, but that it was for the Group to agree the most appropriate frequency as part of its development of the Proposed Modification solution.

Some members of the Group stated that they were unsure of the benefits of publishing the 'instantaneous' data, given that it was already proposed to be published every half hour at the Settlement Period level. These members believed that half-hourly updates would be sufficient, and that the instantaneous data – whilst a 'nice to have' – could result in additional BMRA costs at little extra benefit to participants. One of these members considered that the proposed instantaneous data was also unnecessary since this information could already be derived from changes in Maximum Export Limit (MEL). These members therefore suggested that the requirement to publish the instantaneous data should be removed from the scope of P220. However, other members believed that the proposed data could be of benefit to customers, small Parties or new entrants to the market, who they viewed as being less likely than bigger players to have the level of knowledge needed to derive the data from other existing sources. The Group noted BSCCo's advice that any removal of the instantaneous data requirement would need to be progressed as part of an Alternative Modification, since it would remove one of the data items listed in the 'Description of Proposed Modification' and would therefore fall outside the scope of the Proposed Modification solution. On balance, the Group agreed not to consider this further as a potential option for an Alternative Modification. However, the Group noted that it could reconsider this position if required once the results of the impact assessment and consultation were known.



The Group noted that it therefore needed to agree the frequency of the 'instantaneous' generation by fuel type data for the Proposed Modification. Although it was noted that the Transmission Company's system received the operational metering data every 15 seconds, the Group agreed that 5-minute BMRS updates of this data would be sufficient. Members believed that any higher granularity might place a burden on the BMRS, whilst a lower granularity would leave little difference between the instantaneous and half-hourly data. An attendee noted that similar data files in the gas market are submitted and published every 6 minutes, containing three 2-minute values. However, for P220, the Group agreed that it would be sufficient for the Transmission Company to provide single 'snapshot' values every 5 minutes. The Group agreed that the table should contain a time stamp, showing when the data was last updated. These refinements were therefore incorporated into the Group's solution for the Proposed Modification.

### 6.5.1.3 BMRS display

#### a) Summary Page graph

The Group noted that Section 9 of National Grid's original straw man proposed to introduce a new Summary Page table containing the instantaneous generation by fuel type data, and a new Summary Page graph displaying the half-hourly data.

The Group agreed that the proposed graph should be revised in order to reflect its amendments to the fuel-type categories (see Section 6.5.1.1 above), and that the graph's scale should be in MW rather than GW in order to be more comparable with the instantaneous MW figures. Other than labelling the axes, the Group did not identify any further refinements which it believed were required to the graph. A copy of the Group's straw man graph is provided as Figure 5 in Section 4.3.1.2 of this Assessment Report.

The Group agreed with the suggestion of National Grid's original straw man that the values underlying the graph should be published for a historic rolling 3-month period, and agreed that these should be made available via a separate new BMRS page and .csv file download.

#### b) Summary Page table

With regard to the proposed format of the new Summary Page table for the instantaneous data, the Group noted National Grid's original straw man example as reproduced in Figure 14 below.

**Figure 14 - National Grid original straw man table for instantaneous fuel-type generation**

GB Generation (MW)	
Gas	20167
Oil	0
Coal	15315
Nuclear	7308
Renewables	209
Other	-1443
Interconnectors (MW)	
Ireland to Scotland	-225
France to England	152
GB Electricity Demand (MW)	41483
GB System Frequency (Hz)	50.04

The Group agreed that the table should be revised in order to reflect its agreed list of fuel-type categories against which the data would be published (see Section 6.5.1.1 above).

The Group noted that National Grid's original straw man table contained some negative generation values against the 'Other' and Interconnector categories. BSCCo queried whether it was the intention that these values should be published, since the straw man graph for the half-hourly data showed only positive values. The Proposer clarified that the negative values had been included in the original straw man in error, and that it was their intention to publish positive values only in both the 'instantaneous' table and half-hourly graph for the generation by fuel type data. The Group agreed to incorporate this refinement in its solution for the Proposed Modification.

An attendee commented that the proposed Summary Page table would be of benefit to the market, since they believed that (out of the proposed P220 data) this represented one of the more powerful additions to existing information. However, this attendee considered that the table would be even more beneficial if it was expanded to additionally show the generation of each fuel type as a percentage of total generation. The attendee suggested that, in addition to figures for the last 5 minutes, this information could be provided for both the last half hour and last 24 hours.

The Group noted that this change fell within the scope of the Proposed Modification, since the percentages and 24-hour information could be derived by the BMRA using the instantaneous and half-hourly MW values submitted by the Transmission Company. The Group agreed to include the suggested additional data in its Proposed Modification solution, and BSCCo subsequently developed an updated straw man table which was agreed by the Group. A copy of this table is provided as Figure 4 in Section 4.3.1.1 of this Assessment Report, along with a detailed explanation of how its contents would be derived.

The Group agreed with the suggestion in National Grid's original straw man that historic data for the 'instantaneous' values should be published for the past rolling 24-hour period, and agreed that these should be made available via a separate new BMRS page as well as a .csv file download. The Group noted that historic data for each half hour in the past rolling 24 hours would be provided separately in relation to the new Summary Page graph (see Section a) above).

### **c) 'Real-time' demand data**

A member noted that National Grid's original straw man Summary Page table in Figure 14 included a figure for 'GB Electricity Demand', and queried what this represented. The Proposer clarified that this represented the sum of the MW generation values across all fuel-type categories, and advised that this total would be equivalent to GB Transmission System Demand (which is already defined in the Grid Code, and which is proposed to be defined in the BSC under other P220 data items). The Group agreed that the BMRS display should refer to Transmission System Demand in order to reduce the potential for confusion, and that a definition of this term should also be provided on the BMRS.

The Proposer noted that it had been their original intention to include a graph showing 'real-time' Transmission System Demand on the BMRS Summary Page under P220. The Group noted that this was not mentioned in the Modification Proposal or the original straw man, and queried the rationale for its inclusion since the existing 'quick wins' summary on the BMRS already includes a real-time demand graph. The Proposer clarified that the existing BMRS graph is a 'framed link' to a graph which National Grid currently provides on its own website.<sup>14</sup> The Proposer advised that they believed the long-term maintenance of this framed link would not be robust, since there have been historic issues with the link failing or the data becoming unavailable due to a failure of National Grid's own systems. The Proposer stated that they therefore believed it would be preferable for the data to be provided directly to the BMRA by the Transmission Company, and for a BMRA graph to be published on the Summary Page as part of P220.

<sup>14</sup> The existing 'framed link' to the real-time demand graph is available on the BMRS Data Summary Page at: <http://www.bmreports.com/dsr.htm>. The actual version of the graph to which the BMRS link relates is currently published on National Grid's website at: <http://www.nationalgrid.com/uk/Electricity/Data/Realtime/Demand/Demand60.htm>.

The Group noted BSCCo's advice that the publication of a 'real-time' Transmission System Demand graph fell within the scope of the Proposed Modification, since it could be derived by the BMRA using the fuel type generation data without requiring the submission of an additional data item. The Group therefore agreed to incorporate this refinement as part of its Proposed Modification solution.

The Group noted that National Grid's 'real-time' demand graph is currently updated every 15 seconds. However, it considered that this frequency of data submission could place a burden on the BMRA, with a resulting negative impact on BMRS performance. In addition, the Group noted that the Transmission System Demand graph was intended to be derived from the 'instantaneous' generation by fuel type data, which it had agreed should be updated every 5 minutes (see Section 6.5.1.2). The Group therefore agreed that the graph should contain 5-minute-apart 'snapshot' MW values of Transmission System Demand (i.e. a single value for every 5 minutes in the period covered by the graph). The Group noted that National Grid's existing graph covered a rolling 60-minute period, and agreed that this approach was also appropriate for P220. A copy of the Group's straw man BMRS graph is included as Figure 6 in Section 4.3.1.1 of this Assessment Report. The Group agreed that historic 'snapshot' Transmission System Demand values would also be published for every 5 minutes over the past rolling 48-hour period, via a separate new BMRS web page and .csv file download.

The Group noted that, by agreeing to publish 5-minute snapshot values, the BMRA graph would show lower-granularity data than is currently available from the National Grid version. The Proposer clarified that National Grid would continue to separately publish the 15-second update graph on its own website outside of the BSC, and the Group agreed that a normal web link to the National Grid graph (rather than the existing 'framed' version of the graph itself) would be provided from the BMRS Summary Page under P220 for participants who wished to view this higher-granularity data. It was questioned whether it was still worthwhile publishing the data on the BMRS if National Grid would be continuing to publish its own higher-granularity graph; however, on balance the Group believed that there would be benefit in including this data as part of the P220 Proposed Modification. It was noted that this would also allow participants to view the values underlying the graph, which are not currently published.

The Group noted that National Grid's original straw man table in Figure 14 had also included a 'GB System Frequency' value. The Proposer clarified that it had been their intention to additionally include a 'real-time' Transmission System Frequency graph in the BMRS Summary Page under P220, such that this would replace the existing BMRS framed link to National Grid's Frequency graph in the same way as the 'real-time' demand data above. However, the Group noted that Transmission System Frequency data was not mentioned in the Modification Proposal, and that its inclusion fell outside the scope of the Proposed Modification since it would require an additional data item to be submitted by the Transmission Company. The Group therefore agreed to discuss the inclusion of 'real-time' Frequency data as a potential option for a P220 Alternative Modification. Further details of the Group's discussion of this option can be found in Section 6.8.

#### **6.5.1.4 Method for identifying BM Unit fuel types**

A member queried how the fuel type of different generators would be identified, and whether this would apply at a station or BM Unit level. The Group noted that one option would be for BSCCo to obtain this information for all new BM Units by adding a new section to the registration form in Balancing and Settlement Procedure (BSCP) 15 'BM Unit Registration' – although it was noted that further one-off analysis would be required to determine the fuel type of existing BM Units.

However, the Proposer clarified that their intention was that the categorisation of each BM Unit's fuel type should be undertaken by the Transmission Company, using data provided to it by generators under the Grid Code and as part of the production of National Grid's SYS and Winter Outlook Report. The Proposer advised that this categorisation would be based on the primary fuel type of the power station to which each BM Unit related. The Group supported this approach, but agreed that an explanation of the categorisation should be provided on the BMRS in order to reduce any potential for confusion amongst participants. Further details of the guidance which the Group agreed should be published can be found in Section 4.3 of this Assessment Report.

The Group noted that National Grid's original straw man had suggested that the BMRS would publish a list of the BM Units which fell within each fuel-type category, and agreed that this would be useful to aid the market in understanding the data. The Group agreed with the suggestion of the Proposer that this should be provided by the Transmission Company in the form of a spreadsheet, as this would have less impact on National Grid's systems. The Group noted that generation values for individual BM Units would not be published.

The Group therefore agreed to incorporate the above refinements into its solution for the Proposed Modification. The Group noted BSCCo's advice that this refinement would not require an Alternative Modification, since the spreadsheet would represent a more detailed publication breakdown on the BMRS of data items which were already contained in the 'Description of Proposed Modification' in the Modification Proposal form.

#### **6.5.1.5 Derivation of generation data**

A member queried how the generation values for each fuel-type category would be derived. The Proposer clarified that this data would be based on the Transmission Company's operational metering. The member noted that this would therefore be different from the values which would be obtained by aggregating BM Unit Metered Volumes. The Group noted that, whilst less final than BSC Settlement data, operational metering had the advantage of being available closer to real time. As with the proposed P220 wind data (see Section 6.4.1.3 above), the Group agreed that guidance concerning the derivation of the data should be published on the BMRS.

The Proposer also suggested that National Grid could use its Operational Forums to educate participants in how to interpret the new P220 data. The Group agreed that such education would be valuable.

#### **6.5.1.6 Consideration of potential confidentiality issues**

A member queried whether there might be any confidentiality issues if the Transmission Company was to use data provided to it under the Grid Code for purposes other than which it was originally intended – and, specifically, whether there would be any conflict with the provisions of Sections 57 and 58 of the Electricity Act 1989. The Group agreed to seek the views of the Transmission Company in this area as part of its impact assessment of P220.

Another member queried whether the use of fuel-type categorisations could give rise to wider confidentiality issues if it became possible to work out other Parties' positions from the data. For example, if only one of a small number of Plants in a given fuel category was running, participants might be able to work out the position of that one Plant. Similarly, if all but one of a small number of Plants in a category were owned by the same organisation, then it could be possible for that organisation to establish the position of the remaining Plant. The member considered that the only category in which this was likely to be a risk was that of Oil Plant, and suggested that this could be addressed by aggregating Oil Plant into the 'Other' category. The member also noted that potential confidentiality issues would only arise from the 'instantaneous' data, since the half-hourly values would be provided following the end of each Settlement Period and thereby too late for other participants to take actions based on that data.

An attendee commented that similar data had been published in the gas market under Uniform Network Code (UNC) modification proposal 006 'Publication of Near Real Time Data at UK Sub-Terminals'. The attendee therefore suggested that any views which had been expressed by the gas industry and the Authority regarding the confidentiality of this data might serve as a precedent for P220. BSCCo agreed to research the discussions under the UNC, and provide any relevant comparisons to the Group. Another member of the Group believed that the ability to derive the positions of others from publicly-available data was not necessarily inappropriate, since this could be taken to be a sign of a well-functioning competitive market.

The Group agreed to keep to its agreed set of fuel-type categories for the time being (including a separate category for Oil Plant). However, it agreed to include a specific question in the P220 industry consultation, seeking participant views on whether the publication of any of the proposed P220 data could have implications for confidentiality.

#### **6.5.1.7 Treatment of missing data and suggestion of real-time data completeness flag**

A member queried what would happen if data from an individual Plant or BM Unit was not available to the Transmission Company on a given day, or contained errors. The Proposer clarified that, as with the other P220 data items, it was their intention that in such circumstances the Transmission Company would simply send the operational metering data which was available to them at the time – and that this would not be subsequently corrected if it was later found to contain errors or missing values. The Proposer noted that any missing data would not be shown as a shortfall against demand, since its demand data is also based on operational metering.

However, the member considered that this involved the risk that participants would make decisions on the basis of the data without being aware that it was incomplete. This member therefore believed that a 'data incomplete' flag should be published on the BMRS in such circumstances. It was noted that any such flag would need to be based on real-time information provided by the Transmission Company, and that the 'general message' page of the BMRS was therefore unlikely to be sufficient for this purpose.

Other members of the Group and attendees remained unconvinced that such a flag was necessary. These members believed that the risk of missing/incomplete data was an inherent feature of using operational metering, which would be offset by the benefit of this data being available close to real time. These members considered that guidance should be provided on the BMRS regarding the derivation of the data, such that it would be for participants to take their own view as to the reliance which could be placed on that data. The Proposer suggested that the Transmission Company could provide the BMRA with some one-off statistics regarding the historic reliance of operational metering, and that these could be published on the BMRS in order to help participants make this judgement. A member agreed with this approach and considered that, providing participants were aware of the probability and nature of data errors, any decisions which they might on the basis of this data would be based on their own risk aversion and expectations of associated costs and benefits. The Group also noted the Proposer's advice that the Transmission Company would be unable to identify which specific data was missing (e.g. which BM Units were affected within a particular fuel-type category, and the volume of the 'missing' or erroneous generation), and believed that any flag would therefore be of limited usefulness to the market since it would only state that data for a given fuel-type category was incomplete.

However, the Group agreed to explore the likely costs to the BMRA and Transmission Company of including a requirement for a real-time 'data incomplete' flag, before making a definite decision as to whether to progress this as part of P220. The Group therefore agreed to ask a specific impact assessment question in this area.

## **6.5.2 Areas arising from impact assessment and Group's further discussions**

### **6.5.2.1 Fuel-type category definitions**

The Proposer clarified that, following the Transmission Company's impact assessment of P220, they continued to believe that the proposed definition of Nuclear Plant was appropriate. The Proposer suggested that the new definition of Non Pumped Storage Hydro should be 'a Power Station which uses water to generate electricity but does not include Pumped Storage Plant'.

The Group agreed with these proposed definitions, noting that they would need to be included in the final legal text. The Group noted that Pumped Storage Plant was already defined in the Grid Code.

These refinements were subsequently included in the documentation issued for industry consultation.

### **6.5.2.2 Consideration of additional Interconnector graphs & interaction with negative data**

During the impact assessment of P220, the Proposer clarified to BSCCo that, although only positive generation values would be published for the out-turn by fuel type data, its intention was to submit its 'raw' operational metering data to the BMRA containing a mixture of positive and negative values. Under this approach, the BMRA would be required to filter out any negative values. Where Interconnector Exports, station load or pumping resulted in the overall MW for a category being a negative 'demand' value, these negative values would therefore not be published on the Summary Page display or additional web pages for the 'instantaneous' and half-hourly generation by fuel type data – and would instead be shown as zero. The Group noted this clarification.

The Proposer also advised that their original intention had also been to include some additional BMRS Summary Page graphs under P220, showing the half-hourly average flows over the French and Moyle Interconnectors for the previous day and as much of the current day as was available. It was noted that these flows might be positive (where the Interconnector was Importing) or negative (where the Interconnector was Exporting). The Proposer provided the Group with some indicative graphs showing how this data might be displayed. The Proposer clarified that a similar graph had been included in Section 16 of National Grid's original straw man, but that as an oversight they had omitted to raise this during the Group's initial discussions. It was noted that National Grid's original straw man had only contained one Interconnector graph and had included 'winter peak day transfers' in addition to half-hourly flows. The Proposer clarified that they did not wish to progress the option of showing winter peak Interconnector transfer data under P220, but did wish to publish two graphs – one for each Interconnector – showing the half-hourly flows.

The Group noted that the Modification Proposal was silent on the publication of this additional data. However, the Group noted that the publication of this data would not require the submission of a new data item – since it could be derived from the 'raw' half-hourly generation by fuel-type data submitted by the Transmission Company, providing that the raw data contained a mix of positive and negative values. Under this approach, negative values would be filtered out by the BMRA for the 'instantaneous' and half-hourly generation by fuel-type data, but would be published as part of the separate Interconnector flow data. The Group noted BSCCo's advice that, as no new data item would be required, the additional Interconnector data could therefore be included within the scope of the Proposed Modification as a refinement to the BMRS display. The Group noted the advice of the BMRA and the Transmission Company that the inclusion of this data would not materially affect their implementation costs, and agreed that no further impact assessment of this option was therefore required. The Group agreed that there could be benefit in including the additional Interconnector data, and agreed to incorporate this in its solution for the Proposed Modification.

The Group agreed with the suggestion in National Grid's original straw man that historic half-hourly Interconnector flows (whether positive or negative) should be made available for a rolling 30-day period, via a separate BMRS web page as well as a .csv download. The Group discussed the most appropriate format for the High Grade Service TIBCO messages, agreeing that it would be efficient to have one set of TIBCO messages covering both the generation by fuel-type data and the Interconnector flows. The Group agreed that a mixture of positive and negative values should be provided through TIBCO messages for the two Interconnector fuel-type categories (French and Moyle), but that only positive or zero values should be provided through TIBCO for the other fuel-type categories.

The above refinements were subsequently included in the documentation issued for industry consultation. Details of the Group's full solution requirements for the Interconnector flow data, including the proposed Summary Page graph format, can be found in Section 4.3.3 of this Assessment Report.

#### **6.5.2.3 Clarification of BM Unit details in fuel-type spreadsheet**

BSCCo queried the most appropriate BM Unit details to provide as part of the BMRS spreadsheet showing which BM Units fell within which fuel type. It was noted that the list of Power Park Modules in Section 18 of National Grid's original straw man (which would be taken from the fuel-type spreadsheet) had appeared to include National Grid's ID for the BM Unit and the name of the power station to which it related.

However, the Group considered that it would be difficult for participants to make use of the data unless the BSC BM Unit ID was also provided. The Group therefore agreed to refine its solution for the Proposed Modification such that the spreadsheet included the BSC BM Unit ID, National Grid's BM Unit ID, the name of the associated power station, and the primary fuel type of that power station. This refinement was included in the documentation issued for industry consultation.

#### **6.5.2.4 Further consideration of confidentiality issues**

The Proposer advised that, as part of its impact assessment of P220, the Transmission Company had investigated whether it might be in breach of Sections 57 and 58 of the Electricity Act 1989 in using fuel-type categorisation data provided to it by generators for purposes other than that for which the information had originally been envisaged.

The Proposer clarified that Section 57 of the Electricity Act 1989 had been repealed by the Utilities Act 2000 (Section 108, Schedule 8). The Utilities Act contains general provisions regarding confidentiality of data, and allows disclosure of information under certain circumstances (e.g. if this disclosure is made by a licence holder as a condition of its licence). The Transmission Company has a licence obligation to comply with the provisions of the BSC. The view of the Transmission Company was therefore that, as long as the submission and publication of the proposed P220 data was specified in the BSC through the P220 legal text, its provision of this data would be in accordance with the terms of its licence and would not constitute a breach of the Utilities Act. BSCCo advised that a specific obligation for the Transmission Company to provide the spreadsheet of BM Unit fuel types would be added to the P220 legal text, in order that there could be no question of a confidentiality breach in providing this data. The Group noted this advice.

Whilst the Group agreed that there did not appear to be any confidentiality restrictions on making the data available *per se*, one member reiterated their view that the proposed format of the instantaneous generation by fuel-type data might make it possible to work out the commercial positions of other market players – specifically in the case of Oil Plant. BSCCo noted that similar confidentiality issues did appear to have been raised under the gas market during the consideration of UNC modification proposal 006, although the gas changes had ultimately been approved by the Authority (suggesting that these issues had been resolved). BSCCo advised that, due to the volume of paperwork associated with UNC modification proposal 006, and its lack of familiarity with the gas data involved, it was difficult for it to make any direct comparisons with P220 – and suggested that it would be more appropriate for participants to identify any potential parallels as part of their responses to the P220 consultation.<sup>15</sup> The Group agreed with this approach.

The Group also noted that a specific question would be included in the consultation, seeking participants' views as to whether any of the proposed P220 data could have confidentiality implications. The Group noted that it would therefore be able to consider whether any changes were required to the proposed fuel-type data following its consideration of the consultation responses.

### **6.5.2.5 Further consideration of potential 'data incomplete' flag**

The Group noted the advice of the BMRA in its impact assessment that a requirement to publish a real-time 'data incomplete' flag on the BMRS for the generation by fuel type data would have only a minor impact on its development work – increasing its implementation costs by around 1-2% and its lead time by around one week. However, the Group noted the advice of the Transmission Company impact assessment that a requirement to develop such a flag would add to the Transmission Company's implementation costs by around £500,000 (an increase of over 80%) and would extend its required implementation timescales by 6 months. Further details regarding the BMRA and Transmission Company implementation costs can be found in Section 6.9.

A member queried the drivers behind the significant increase in Transmission Company costs and lead time if the flag were to be included. The Proposer clarified that the inclusion of the flag would impact a different National Grid system to the other data, thereby requiring a separate piece of development work. In addition, the impact would be on one of the Transmission Company's most critical systems and would therefore involve some complex testing.

This member stated that they believed the inclusion of such a flag to be crucial, and reiterated their views that without it participants might base commercial decisions on misinterpreted data. The member commented that, if the instantaneous figure for a particular fuel type was inconsistent with the aggregate MEL figures of the BM Units in that fuel type, this might naturally lead participants to infer that one or more units was not running – when in fact the discrepancy could be due to an operational metering failure. Other members were sympathetic to this view, believing that the lack of a flag might make participants less prepared to use the data. Another member and an attendee disagreed, reiterating their belief that it was for participants to judge how much reliance to place upon the data. The Proposer advised that they were confident that the data would be 99% accurate. However, the member who had originally raised the concern believed that 100% data accuracy would be needed if participants were to make commercial decisions on the basis of the information.

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<sup>15</sup> Documentation relating to UNC modification proposal 006 can be found on the Joint Office of Gas Transporters website at: [http://www.gasgovernance.com/Code/Modifications/ClosedMods/CM001\\_010/](http://www.gasgovernance.com/Code/Modifications/ClosedMods/CM001_010/).



The Proposer also advised that, in the event of an operational metering failure for a particular BM Unit, it was unlikely that zero figures would be entered into its systems since National Grid's control room would manually substitute the missing data with an estimated figure. A member expressed concern that the Transmission Company might be overwriting operational data. The Proposer clarified that this already happens under the existing arrangements – since the data feeds through into other key systems such as demand forecasting, and it is therefore important that realistic figures are used. In practice, any substituted estimates are based on discussion between the control room and the generator concerned. An attendee commented that they found this a very reasonable approach and that, if the data was robust enough for the Transmission Company to balance the Transmission System, they believed it should be reliable enough for participants' purposes. The Proposer advised that such manual substitution would be a very rare event – and that, out of 200 BM Units, there might be 1 or 2 (<1%) with estimated figures at any time.

A member queried whether there could be an alternative way of adding the flag without incurring such a high cost and lead time. For example, it was suggested that, if the Transmission Company was already substituting estimates in such circumstances, it might be possible for control room staff to insert a manual flag. The Proposer clarified that they had considered several different approaches, and that it was unlikely that a less-cost solution could be found.

BSCCo noted that, in addition to the likely increased cost, any additional lead time resulting from the inclusion of the 'data incomplete' flag would mean that it would not be possible to implement P220 until June 2009. It was noted that the timetable for a November 2008 implementation was very tight (see Section 6.9) – and that, even if the development time for the flag was reduced to an additional month, this extra lead time would still make a target of November 2008 unachievable. BSCCo therefore advised that, should the Group wish to include a requirement for a real-time flag, members would therefore need to justify the benefits of this flag against both any increased costs and the delay to the implementation of P220.

The Proposer considered that it would not be appropriate to progress the flag as part of P220, since they believed that it would not be in keeping with the original intention of the Modification Proposal. However, the Proposer suggested that this option could be considered as a separate change in the future, if it proved that there was significant value to be derived from such a flag following the implementation of P220 – and once participants had begun to use and understand the data in more detail.

On balance, the Group agreed not to include the flag requirement in its P220 solution for the time being, but to include a specific consultation question in this area. The Group noted that it would be able to reconsider whether to include the flag, following its consideration of the consultation responses and the Proposer's analysis of the reliability of operational metering. BSCCo noted that, if the Group did ultimately decide to progress the flag option, members would need to decide whether to include this in the Proposed Modification, Alternative Modification or both. BSCCo suggested that, whilst its inclusion could be argued to fall within the scope of the Proposed Modification, it believed it would be more appropriate to only add the flag to the Alternative solution due to its material impact on implementation costs and timescales – and since some Group members (including the Proposer) did not support its inclusion. The Group noted that this approach would allow the Authority the option to approve a less-cost solution for an earlier implementation if it believed that the inclusion of the flag was inappropriate. The Group agreed to consider this further after industry views had been sought through the consultation.

Following the Group's discussions, the Proposer subsequently provided further details of the reliability of, and substitution process for, operational generation metering. This analysis indicated that:

- The probability of a metering issue for a particular operational meter on a given day has historically been extremely low (in the order of a 1 in 1,000 chance);
- The volume of such issues have historically been small in size ( $\leq 25\text{MW}$ );
- Manual correction of the data by the control room takes place within minutes; and

- The corrected figures closely correspond to Settlement metering.

The full analysis was included in the documentation issued for industry consultation, and is reproduced as Appendix 5 of this Assessment Report. Details of the Group's discussion of the analysis can be found in Section 6.5.3.3 below.

### 6.5.3 Areas raised by Assessment Procedure consultation and Group's conclusions

This section summarises the views expressed by consultation respondents regarding the proposed solution for the generation by fuel type data, and the Group's conclusions following its consideration of the responses received.

Views were received from consultation respondents regarding the benefits of the proposed generation by fuel type data to participants. For further details of the benefits identified by respondents, and the Group's views regarding these potential benefits, please refer to Section 7 of this Assessment Report.

#### 6.5.3.1 Fuel-type categorisation solution

The Group noted that a respondent to the P220 Assessment Procedure consultation, who supported P220, had made a number of comments regarding the Group's proposed solution for categorising the fuel type of BM Units. The comments of the respondent in this area, and the Group's discussion of these comments, are shown in Table 13.

**Table 13 – Respondent's comments regarding fuel-type categorisation**

Comment	Group's response
<i>The respondent queried how the 'primary' fuel type of a power station would be ascertained for the purposes of the data, over what period this would be determined, and what would happen if the primary fuel type changed.</i>	<p>The Group noted that its agreed solution was that the Transmission Company would categorise the primary fuel type of each power station using data provided to it by generators under the Grid Code, and that this data is already used to report generation by fuel type for the purposes of National Grid's Seven Year Statement and Winter Outlook Report. All BM Units for a particular station would receive the same fuel-type categorisation, based on the primary fuel source used by that Plant.</p> <p>This categorisation would be maintained, in that the Transmission Company would have a BSC obligation (through the P220 legal text) to provide an up-to-date list of all BM Units falling within each fuel-type category – and would therefore be required to amend this list each time the primary fuel type of a Power Station changed. It was noted that the responsibility for categorising each BM Unit would lie with the Transmission Company, but that (by publishing which BM Units had been classed as which fuel type) Parties would have certainty over how each category was comprised.</p> <p>The Group therefore concluded that no amendments were required to its solution in this area. BSCCo subsequently contacted the respondent to clarify the rationale behind the Group's solution.</p>
<i>The respondent queried whether a separate additional fuel-type category should be included for Combined Heat and Power (CHP) Plant, as they did not believe it was appropriate for this potentially-large subset of generation to be included in the 'Other' category.</i>	<p>The Group discussed this suggestion, but noted that CHP Plant would fall within the 'CCGT' fuel-type category rather than 'Other' as suggested by the respondent. The Group did not believe that an additional CHP category was therefore required, and concluded that no amendments were required to its solution in this area.</p> <p>BSCCo subsequently contacted the respondent to clarify the Group's views. The respondent noted the Group's final conclusions in this area, but confirmed that their preference would have been for the reconsider the appropriate categorisations of CHP Plant.</p>

Comment	Group's response
<p><i>The respondent questioned whether the proposed definition of 'Non Pumped Storage Hydro Plant' as 'a Power Station which uses water to generate electricity but does not include Pumped Storage Plant' was appropriate, since they believed that this might unintentionally capture thermal plant which uses water to raise steam for the purposes of generating electricity.</i></p>	<p>The Group agreed that the definition of 'Non Pumped Storage Hydro Plant' should be amended to read 'a Power Station which uses the mechanical force of moving water as the primary source of energy but does not include Pumped Storage Plant'. The Group agreed that this would ensure that plant which uses steam in the generation of electricity would not be inadvertently included in this category. This change was subsequently incorporated within the P220 legal text.</p> <p>The respondent confirmed that they were happy with this change, although they noted that the definition might need to be amended in the future with the growth of offshore tidal generation.</p>
<p><i>The respondent noted that the P220 Assessment Consultation Document referred to the Interconnector between 'Scotland and Ireland', and believed that it would be more accurate to refer to 'Northern Ireland'.</i></p>	<p>The Group noted BSCCo's advice that this clarification would be incorporated within the P220 Assessment Report and legal text.</p>
<p><i>The respondent noted a typographical error in one section of the Assessment Consultation Document, which referred to the Interconnector between 'Scotland and France' rather than 'England and France'.</i></p>	<p>The Group noted that this typo would be corrected in the P220 Assessment Report.</p>
<p><i>The respondent considered that it was inappropriate for the fuel-type categories to be 'hard-wired' in the Code through the P220 legal text, and disagreed with the Group's conclusion that these categories were unlikely to change in the future.</i></p> <p><i>The respondent suggested that if, for example, further Interconnectors were to be developed, this would result in these Interconnectors being placed in the 'Other' category unless a Modification Proposal was raised to amend the categories.</i></p> <p><i>The respondent commented that the Group should therefore seek to build flexibility into BMRA systems to permit additional categories if required.</i></p>	<p>The Group noted that there were two considerations in this respect: the effort which would be required to amend the Code if the categories were 'hard-wired' in the legal text, and the cost of amending the Transmission Company's and BMRA's systems to introduce further categories in the future. Of these two factors, the Group considered that the costs of the second were likely to be the more significant.</p> <p><b>System flexibility</b></p> <p>The Group considered that introducing a P220 solution requirement for the Transmission Company and the BMRA to include the flexibility for a large number of fuel-type categories could potentially increase the implementation costs and/or lead time. The Group noted that, to establish the merits of this additional requirement, a further round of impact assessment and consultation would be required – and that this would not be possible in the time remaining before the P220 Assessment Report was due to be presented to the Panel. However, as a compromise solution, the Proposer and the BMRA suggested that, during implementation, they would seek to introduce as much system flexibility as was possible without increasing the overall cost and lead time of the project. The Group agreed that this was an appropriate approach.</p> <p><b>Code provisions</b></p> <p>The Group then considered whether the fuel-type categories should be 'hard-wired' into the Code. Some members initially suggested that this would be inflexible to future changes, and that the list of categories should be placed in a Balancing and Settlement Code Procedure (BSCP). However, the Group noted that there is no existing BSCP relating to the BMRS, and agreed that the effort which would be required to create one was likely to be disproportionate to what it was seeking to achieve. It was therefore suggested that an alternative governance arrangement could be to list the fuel-type categories within the Code, but include a Code provision allowing the Panel to review and amend these in the future if appropriate following an industry consultation. Some members considered that this represented the most efficient approach.</p> <p>However, other members noted the concerns that had been expressed by some consultation respondents regarding the potential for the generation by fuel type data to reveal participants' commercial positions (see below). These members considered that, given the potential confidentiality concerns regarding the breakdown of this data, there should be certainty over which categories would be used as well as a transparent debate over any potential future changes to these</p>

Comment	Group's response
	<p>categories. These members therefore believed that it was appropriate to 'hard-wire' the categories, such that any future changes would be fully assessed against the Applicable BSC Objectives via a Modification Proposal and presented to the Authority for decision. It was noted that, due to the potential confidentiality considerations, such a Modification Proposal was unlikely to fall within the remit of a self-evident 'housekeeping' change.</p> <p>A member suggested that the P220 legal text could provide the Panel with the ability to review the categories, but not to change them without a Modification Proposal being raised. However, other members considered that this would add little benefit. These members noted that the driver for changing the categories was likely to be advice from the Transmission Company that amended/new categories were required, and that this could be brought to the industry's attention through the Panel at any time without introducing a specific Code requirement for a periodic Panel review.</p> <p><b>Conclusion</b></p> <p>On balance, the Group agreed to retain its original solution, whereby the fuel-type categories would be 'hard-wired' in the Code and could only be changed by a Modification Proposal. The Group considered that the cost to BSCCo of progressing such a future proposal was unlikely to be significant in itself, and agreed that its chosen approach with respect to system flexibility would lessen the likely Transmission Company/BMRA implementation costs. However, the Group noted its preference that any future amendments to the categories should be implemented alongside other changes to BMRA and National Grid systems in order to avoid full stand-alone project costs being incurred.</p> <p>BSCCo subsequently contacted the respondent to clarify the Group's views. The respondent noted the Group's final conclusions in this area, but confirmed that their preference remained not to hard-wire the fuel-type categories within the Code.</p>

### 6.5.3.2 Potential confidentiality issues

The Group noted that a minority of respondents to the P220 Assessment Procedure consultation believed that the publication of the instantaneous outturn generation by fuel type data would give rise to confidentiality issues, by potentially revealing the commercial positions of some power stations where only a small number of BM Units fell into a particular category. One of these respondents stated that this information could be used to influence market prices and that this situation should therefore not be allowable under P220. Another respondent believed that publishing this information in an 'instantaneous' format could alter the way in which this form of information was used in the competitive marketplace. One respondent believed that the potential for commercial positions to be derived applied not only to Oil Plant, but to several of the other categories proposed by the Group.

A majority of consultation respondents did not believe that publication of the proposed P220 data items would give rise to any new confidentiality issues. Generally, these respondents did not provide supporting arguments for this view. However, one respondent stated that they did not believe that the confidentiality of any particular Party's commercial position would be exposed.

Another respondent considered that there might be a potential confidentiality issue regarding Plant 'trips', in that it might be possible to see Oil Plant trips more easily than those of coal or gas generators. However, this respondent reiterated the view previously expressed by some Group members that such trips can already be viewed by participants through the redeclaration of MEL values. This respondent considered that the implications of publishing the instantaneous generation by fuel type data were not so much an erosion of confidentiality (especially as no contracts were revealed), but rather an increase in market transparency.

On balance, the Group agreed not to make any amendments to its solution in this area as a result of the consultation responses – and agreed that its list of fuel type categories should therefore remain unchanged. The Group noted the majority support amongst respondents for publishing the instantaneous data, and the majority belief that this data would not be prejudicial to competition. One member reiterated their view that, by increasing transparency, the proposed data could actually promote greater competition (see Section 7 for further details of the Group's discussion of this potential benefit). Another member, who had originally expressed concern over the potential for the data to reveal individual Parties' positions, stated that they had subsequently changed their view since they noted that similar information is already published in the German electricity market. The Group considered the suggestion of one respondent that concerns over a single individual category such as oil could potentially be resolved by aggregating that fuel type into the 'Other' category. However, it noted that another respondent had expressed similar concerns with respect to the nuclear, hydro, pumped storage and OCGT categories. The Group therefore concluded that, if disaggregated generation data was to be published, then an inherent feature of this data was the potential for this disaggregation to reveal individual positions. The Group noted that the Authority would ultimately need to decide whether this was appropriate.

### **6.5.3.3 Potential inclusion of real-time 'data incomplete' flag**

The Group noted that a majority of respondents to the P220 Assessment Procedure consultation did not support the inclusion of a real-time 'data incomplete' flag for the generation by fuel-type data, due to the increased cost and/or delay in implementation which would result from this requirement.

One of these respondents commented that the expense of including the flag appeared to heavily outweigh the benefit. This respondent noted the analysis provided by the Transmission Company regarding the historic reliability of operational generation metering. From this, the respondent concluded that errors would be rare, and that manual correction of any errors would be quick and efficient. More fundamentally, the respondent argued that – providing participants were aware of the possibility or likelihood of meter errors – participants would still make rational commercial decisions which took this possibility into account. The respondent also believed that it was unlikely that participants would rely solely on the 'instantaneous' generation data for important commercial decisions, and that this would simply form part of a portfolio of available information.

Other respondents stated that they believed P220 should be progressed without the flag, since they considered that it was not desirable or efficient to delay the benefits arising from the proposed data. Some of these respondents considered that the flag option could be separately progressed as an additional future change, should this still be deemed of value once P220 had been implemented. One respondent stated that, having considered the Transmission Company's analysis, it did not believe that the failure to flag up some minor errors would significantly reduce the value or usefulness of the generation by fuel type data. Another respondent considered that the likely cost of amending the Transmission Company's systems was too much to pay for an intangible benefit. This respondent argued that the bar should be high for the imposition of additional balancing mechanism-associated costs. One respondent stated that, although they believed accurate data to be favourable, they believed that the benefit of having the data as soon as possible outweighed the low likelihood of having incorrectly reported data.

A minority of consultation respondents argued in favour of including the flag as a component of the P220 solution. One of these respondents argued that it would be incomprehensible to publish incorrect data without any form of notification for the user. This respondent noted the low probability of an error occurring, but considered that – if the data was to be provided in an attempt to encourage participants to improve their balancing position – this data should be sufficiently robust to be relied upon to make sound business decisions. The respondent considered that if a user of the data was unaware that a specific data point was incorrectly represented, this could have significant cost implications for them. The respondent therefore believed that it was imperative that the flag be included.

Another respondent commented that the absence of a flag might raise concerns that the data being published was misleading. This respondent considered that, if the information was being used to inform trading strategies, then this might result in an inefficient outcome. Some respondents who supported the inclusion of the flag noted the high level of Transmission Company costs quoted for its implementation, and believed that alternative lower-cost solutions should be investigated.

The Group discussed the arguments raised by consultation respondents in this area, with members generally reiterating their previous views as detailed in Sections 6.5.1.7 and 6.5.2.5 of this Assessment Report. Some members retained the belief that, if participants were to use the data as a basis for commercial decisions, then accuracy was important. However, the Proposer challenged the view that the data could be viewed as 'inaccurate' or 'incomplete' – noting that the Transmission Company's analysis advised that operational metering errors would be extremely rare and would be corrected by the control room within minutes. The Proposer noted that the flag would only indicate whether the data for a particular fuel-type category had been manually corrected, and queried whether the benefit of knowing this would outweigh the cost of its implementation.

Some members shared the view that a lower-cost way of delivering the flag functionality should be found. However, the Group noted that no lower-cost solution had been identified to date, and that any additional investigation of this possibility was likely to require an extension to the P220 Assessment Procedure. The Group noted that any extension to the P220 timetable would itself compromise the potential for a November 2008 implementation.

The Group noted that, even without the inclusion of the flag, there was a general question from a majority of members over whether the benefits of P220 outweighed its implementation costs. The Proposer stated that it was therefore difficult to see how the additional costs of the flag could be justified, unless an argument could be based that its inclusion would lead to an additional £500,000 benefit to the market. It was noted that those respondents in support of the flag represented some of the larger Parties, and that these respondents generally did not support P220 overall. It was suggested that this was because the instantaneous generation data was likely to be one of the most useful of the P220 data items for large Parties, with the result that they were especially concerned with its accuracy. One member considered that the lack of support for the flag from those respondents who were most in support of P220 suggested that these organisations would not actually be basing commercial decisions on the information. Further detail regarding the Group's discussions of the overall benefits of P220 to participants (including whether the data would lead to changes in commercial behaviour) can be found in Section 7. Notwithstanding these discussions, the Group noted the majority view of respondents that a flag should not be included. It agreed that it would not wish the Group's decisions regarding the solution to be viewed as a barrier to the approval of P220, or to the realisation of any potential benefits which might arise for the industry from the provision of un-flagged P220 data.

The Group therefore unanimously agreed not to include the flag in its final solution for P220, and to leave the potential for this to be brought forward as a separate change in the future.

## **6.6 Daily energy volumes**

### **6.6.1 Group's initial discussions**

#### **6.6.1.1 Derivation of daily energy volumes**

The Group noted that the Modification Proposal proposed to publish the 'daily energy volumes' (defined as daily out-turn Transmission System Energy) transmitted across the Transmission System. The Group noted that this data would be published a day after the event, with the previous day's data being sent from the Transmission Company to the BMRA by 17:00 each day.

A member queried how the Transmission System Energy values would be derived by the Transmission Company. The Proposer clarified that they would be based on Transmission System Demand as defined in the Grid Code, which is derived using the Transmission Company's operational metering and would therefore be less final than BSC Settlement data.

#### **6.6.1.2 BMRS display**

The Group noted the proposed format of the new daily energy volume Summary Page graph which had been set out in Section 17 of National Grid's original straw man, and which showed this data for a rolling three-month period. The Group noted that an additional graph had also been included in Section 17 of National Grid's original straw man, showing the daily energy volumes over the past month and the energy/temperature difference from 'normal' values for that period. The Group noted that this additional data was not mentioned in the Modification Proposal, and the Proposer clarified that it had not been their intention to include it in the P220 solution. However, some members suggested that it would be useful to add trend data to the daily energy volumes graph as 'tramlines', comparing the actual volumes with the typical volumes transmitted across the Transmission System during 'normal', 'hot' and 'cold' years. It was noted that this would require the Transmission Company to submit additional data items which were not specified in the Modification Proposal, and as such would be outside the scope of the Proposed Modification. The Group agreed to consider this suggestion as a potential option for an Alternative Modification. Details of the Group's further discussions of this option can be found in Section 6.8.1.2.

For the Proposed Modification, the Group therefore did not amend the proposed Summary page graph from that contained in National Grid's original straw man. The Group agreed with the suggestion of the straw man that historic data should be provided on a separate BMRS web page for a rolling 6-month period, and agreed that this should be provided on a separate web page as well as via a .csv download for consistency with other existing BMRS data. Details of the Group's full solution requirements for the new daily energy volume data under the Proposed Modification can be found in Section 4.4, including a copy of the straw man graph which is provided as Figure 8.

The Group agreed that the BMRS should provide guidance to participants on how Transmission System Demand is derived, to reduce any potential for misinterpretation. Details of the areas which the Group believed should be covered by this guidance can be found in Section 4.4.

#### **6.6.2 Areas arising from impact assessment**

No points regarding the daily energy volume data solution were raised during the impact assessment of the Proposed Modification, and no changes were therefore made to the solution prior to issuing the industry consultation.

#### **6.6.3 Areas arising from Assessment Procedure consultation and Group's conclusions**

The Group noted that a respondent to the P220 Assessment Procedure consultation had expressed the view that the energy volume data should be published at a half-hourly granularity rather than a single figure for the whole day as suggested in the original Modification Proposal. It was noted that this change in requirements might potentially increase the implementation costs and/or lead time for the Transmission Company, who would need to record and provide the data at this granularity. The Group noted that, in order to fully establish the merits of this potential change to the solution, a further round of impact assessment and consultation would be required – and that this would not be possible in the time remaining before the P220 Assessment Report was due to be presented to the Panel. On balance, the Group agreed not to amend its solution in this area.

The respondent also stated that it was important to ensure that the proposal to publish the P220 daily energy volume data did not mean that any existing demand information was removed, and that it was imperative that the same basis of data was used for the daily energy volumes as the existing demand forecast. The Group noted that these comments appeared to be based on a misunderstanding of the proposed data, since P220 did not propose changes to any existing data items and only to publish additional new data. The Group believed that no changes to its solution were therefore required in this area.

BSCCo subsequently contacted the respondent to clarify their concerns. The respondent noted that no existing data would be removed by P220, but considered that the basis of the energy volume data should be consistent with that of the existing demand forecast. BSCCo suggested that this was linked to a separate issue (which was outside the scope of P220), in that currently the basis of the demand forecast data provided by the Transmission Company varies at different times of the day and cannot be compared directly with the existing out-turn data. Taken in isolation, the proposed P220 daily energy volume data would therefore only be comparable with existing forecast data at certain times of day. However, the respondent noted that this issue would be resolved by the approval of related Modification Proposal P219.

Views were received from consultation respondents regarding the benefits of the proposed daily energy volume data to participants. For further details of the benefits identified by respondents, and the Group's views regarding these potential benefits, please refer to Section 7 of this Assessment Report.

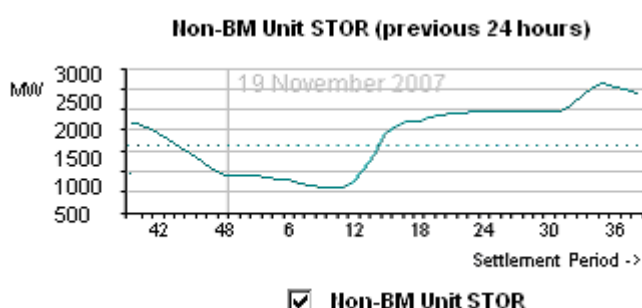
## 6.7 Non-BM STOR Instructed Volumes

### 6.7.1 Group's initial discussions

The Group noted that the Modification Proposal proposed to publish Non-BM STOR Instructed Volumes for each Settlement Period. The Group noted that the Modification Proposal stated that the Non-BM STOR Instructed Volumes would not be published on the Data Summary Page, and that this data had therefore not formed part of National Grid's original straw man. The Group noted that, other than specifying that it would not form part of the Summary Page, the Modification Proposal was silent as to how the data should be published on the BMRS.

BSCCo initially proposed that the new Non-BM STOR Instructed Volume data should be published in tabular form with an accompanying .csv file download, either on the existing Balancing Services Adjustment Data (BSAD) web page or via a new BMRS web page. The Group's preference was for the data to be published on a new page. The Group also considered that there would be benefit in publishing the data in graphic as well as tabular/.csv form. The Group subsequently developed a straw man graph showing Non-BM STOR Instructed Volumes for a rolling 24-hour period, which is reproduced as Figure 15 below.

**Figure 15 – BSCCo's original straw man graph**





One member stated that they were uncertain of the benefit in publishing the Non BM-STOR Instructed Volume data. The Proposer noted that all but one respondent to National Grid's original consultation had supported its publication, and other members believed the data would give the benefit of increased transparency of the demand-side actions taken by the Transmission Company. However, this member considered that it might be of more use to participants if the Non-BM STOR Instructed Volumes were shown against actual settled/historic out-turn for comparison. Another member similarly suggested that the Non-BM STOR data could be shown against a trend line representing how much Instructed Volume had historically been used. It was noted that either of these approaches would require the Transmission Company to submit additional data items which were not specified in the Modification Proposal, and as such would be outside the scope of the Proposed Modification. The Group therefore agreed to consider these suggestions as a potential option for an Alternative Modification. Details of the Group's further discussions of this option can be found in Section 6.8.1.3.

The Group agreed that no separate history page was required, and that participants should be able to request historic Non-BM STOR Instructed Volume data for past Settlement Days in line with the process for other existing BMRS data. The Group agreed that the BMRS should provide guidance to participants on how the new Non-BM STOR data was derived, to reduce any potential for misinterpretation. Details of the areas which the Group believed should be covered by this guidance can be found in Section 4.5.

#### **6.7.2 Areas arising from impact assessment and Group's further discussions**

During the impact assessment of P220, both the Transmission Company and the BMRA clarified to BSCCo that they believed it would be more appropriate for the Non-BM STOR Instructed Volumes graph to display data for a fixed 2-day period (i.e. the previous day and as much of the current day as was available) rather than a rolling 24-hour period. The BMRA and Transmission Company believed that, since the Non-BM STOR data would not be published on the Summary Page, this would give consistency with the format of other non-Summary Page BMRS data.

The Group noted this advice, and agreed to update its straw man graph and its solution requirements to include this refinement prior to issuing the industry consultation. Details of the Group's full solution requirements for the new Non-BM STOR Instructed Volume data can be found in Section 4.5, including a copy of the updated graph which is provided as Figure 9.

#### **6.7.3 Areas arising from Assessment Procedure consultation and Group's conclusions**

No specific comments were made by respondents to the P220 Assessment Procedure consultation regarding the Group's solution for the Non-BM STOR Instructed Volume data. As a result, the Group agreed that no changes to this area of its proposed solution were required.

Views were received from consultation respondents regarding the benefits of the proposed data to participants. For further details of the benefits identified by respondents, and the Group's views regarding these potential benefits, please refer to Section 7 of this Assessment Report.

## 6.8 Options considered for an Alternative Modification

### 6.8.1 Group's initial discussions

The Group considered the following potential options for inclusion in an Alternative Modification:

- 1) The addition of the ability for the Panel to agree new BMRS data items without requiring a Modification Proposal;
- 2) The addition of new data items to the proposed daily energy volume data, showing 'tramline' trend data for 'normal', 'hot' and 'cold' years for comparison with the daily out-turn volumes;
- 3) The addition of new data items to the proposed Non-BM STOR Instructed Volume data, showing the Non-BM STOR data against either:
  - a) Actual settled/historic out-turn; or
  - b) A trend line representing how much Instructed Volume had historically been used, and
- 4) The addition of a new data item to the scope of P220, such that 'real-time' Transmission System Frequency data would also be published on the BMRS.

All of these options were considered as potential additions to the 'base' solution already developed by the Group for the Proposed Modification. The Group's discussions of each of these potential Alternative options are detailed in Sections 6.8.1 and 6.8.2 below. Following its discussions, the Group has agreed to progress options (2) and (4) only as part of an Alternative Modification for P220.

#### 6.8.1.1 Panel ability to agree future BMRS data

##### a) Background

The Group noted that it had been requested by the Panel to consider a potential Alternative Modification for P220 which would allow the Panel to agree future BMRS data items without requiring a Modification Proposal.

The Group noted that, during discussions at the DSWG prior to the raising of P220, it had been questioned whether a Modification Proposal was necessary to deliver new data items on the BMRS. However, the Proposer and BSCCo had considered that, under the current BSC governance arrangements, progressing the delivery of new data items via a Modification Proposal could have the following advantages compared to delivering these changes outside of the Code:

- The Code is silent as to whether data other than that already set out in Section V could be made available on the BMRS. However, making additional data available outside of the Code could be considered to be contrary to the intention of Section V, since this explicitly lists all the data which is currently published on the BMRS.
- The Code contains provisions to the effect that:
  - Each Party irrevocably and unconditionally consents to the publication on the BMRS of the data set out in Section V;
  - No warranties or representations are given in respect of the accuracy or completeness of such data; and
  - No Trading Dispute can be raised as a result of the provision of the data.

These protections would not be afforded to any additional data which might be published on the BMRS outside the Code.

- Making additional data available on the BMRS outside of the Code would not provide Parties, the Panel or the Authority with a formal opportunity to consider the costs of the required BMRS changes and whether the benefits of publishing such data would outweigh these costs (i.e. whether the changes would better facilitate the achievement of the Applicable BSC Objectives).

The Group noted that some Panel Members had expressed frustration at what they perceived as the inefficiencies of sending the changes proposed by P220 through the BSC's Modification Procedures – and that the Panel had therefore suggested that the BSC governance arrangements as set out in the Code should be changed, in order to allow the Panel to agree future BMRS data items without requiring a Modification Proposal. The Group noted the suggestion that this could result in greater efficiency, whilst addressing the above concerns by keeping the BMRS under overall Code governance. In accordance with its Terms of Reference, the Group therefore considered whether to progress the introduction of such revised governance arrangements as part of a P220 Alternative Modification.

## **b) Group's discussion**

The Group agreed that it would not be appropriate for the Panel to agree changes to the BMRS without first establishing the implementation costs of such changes. The Group also agreed that it was essential that any new BMRS data was only implemented following a consultation with Parties on the merits of the changes – as Parties would pay the resulting implementation costs, and any BMRS changes could also impact Parties' own systems.

The Group also agreed that the Panel would be likely to need support from BSCCo, the Transmission Company, the BMRA and wider industry experts in developing the precise submission and publication requirements for any new BMRS data (for example, to establish the most appropriate file formats and BMRS display). The Group agreed that, as BMRS data is provided for the benefit of market participants, it was important to keep participants involved in the development of the solution to ensure that this best met BMRS users' needs.

Given this, the Group believed that any process which was developed for the Panel to agree new BMRS data without a Modification Proposal would need, as a minimum, to include:

- Development of the solution (potentially including the convening of an 'expert group');
- An impact assessment (to establish costs); and
- An industry consultation.

On balance, the Group was of the view that the duration of this process was unlikely to be materially shorter or more efficient than the normal Modification Procedures, noting that the maximum time saving was likely to be around one month.

Moreover, there was a view from some members that the BSC's Modification Procedures remained the most appropriate process under which to consider potential new BMRS data. These members argued that these procedures allow full transparency in the development of any solution, and in the assessment of the costs and benefits of new data against the Applicable BSC Objectives. One member noted that allowing the Panel to agree new BMRS data could remove the Authority from its current decision-making role, depending on the precise process which was developed. An attendee commented that, in the gas market (which the Panel had suggested was more efficient in its reporting arrangements) all material reporting changes are routed through the formal modification process. Some members highlighted the refinements which the Group had been able to develop for the P220 Proposed Modification to better meet the needs of BMRS users, and believed that these justified the decision to send P220 through the Assessment Procedure.

The Group regarded the introduction of new BMRS data as being more material than simple 'housekeeping' changes, since it could result in costs and impacts for Parties. However, the Group noted that changes to the way in which existing BMRS data (i.e. that already set out in Section V) is displayed on the BMRS did not require a Modification Proposal, as had been demonstrated in the work that was being undertaken on 'Phase 1' of the BMRS Summary Page by BSCCo, the BMRA and the Transmission Company. The Group noted that there was therefore an existing ability to progress more minor BMRS changes efficiently and expeditiously.

The Group noted that there were also other options which it was considering including in an Alternative Modification for P220, and which sought to 'fine-tune' the way in which the proposed P220 data would be published on the BMRS such that the new display would be the optimal one to meet participant needs. Again, some members believed that the fact that the Group had been able to identify such improvements justified the use of the Assessment Procedure. The Group was also of the view that including the option for the Panel to agree new BMRS data in its P220 Alternative Modification could detract from what the other Alternative options were trying to achieve, and noted that (if this new ability was not supported by the industry or the Authority) this ran the risk that the whole Alternative might be rejected. However, this was a secondary argument against progression of such a Panel ability, since members generally believed that the Modification Procedures continued to be the most appropriate route for considering new BMRS data. The Group noted that, if any Party felt strongly about the issue, they would have the ability to raise a new Standing Issue or Modification Proposal to consider alternative BMRS governance arrangements.

#### **6.8.1.2 Additional daily energy volume data**

The Group considered a potential option for an Alternative Modification which would publish some additional trend data associated with the daily energy volumes. The Group agreed that, as well as displaying the daily energy volumes transported across the Transmission System, it would be useful to include additional 'tramlines' on the BMRS Summary Page graph – comparing the actual volumes with the typical volumes transmitted across the Transmission System during 'normal', 'hot' and 'cold' years. The Group noted that additional legal text would need to be developed for this aspect of the Alternative Modification, including definitions of the trend data items. The Group agreed that historic figures for the trend data should be included in the rolling 6-months' history for the daily energy volumes.

The Group agreed with the Proposer's suggestion that the additional trend data should be submitted to the BMRA as standing data in a spreadsheet, since this would have least impact on the Transmission Company's systems and processes. BSCCo developed a straw man graph showing the additional tramlines against the daily energy volumes. This graph was subsequently agreed by the Group, and can be found as Figure 10 in Section 5.4 of this consultation document.

The Proposer advised that the Transmission Company might have difficulty in providing the trend data in respect of Transmission System Demand (which was the original basis for the daily energy volumes under the Proposed Modification), and suggested that an alternative solution would be to provide the trend data against INDO instead. The Group agreed that its preference was for the data to be based on Transmission System Demand, but agreed that the Transmission Company should explore the feasibility of both options further as part of its impact assessment of P220.

#### **6.8.1.3 Additional Non-BM STOR data**

The Group considered a potential option for an Alternative Modification whereby the Non-BM STOR Instructed Volume data would be shown against either actual settled/historic out-turn or a trend line representing how much Instructed Volume had historically been used. However, the Transmission Company advised that it would only be able to provide this additional out-turn/trend data to the BMRA eight weeks in arrears, and the Group agreed that this would significantly diminish its usefulness to the industry.

On balance, the Group therefore agreed not to progress this option further under P220. However, it agreed with the Proposer's suggestion that National Grid should consider other ways of making such data available outside of the BSC.

#### **6.8.1.4 Additional Transmission System Frequency data**

The Group considered a potential option for an Alternative Modification which would publish an additional graph on the BMRS Summary Page showing 'real-time' Transmission System Frequency data, as measured by the Transmission Company in hertz. The Proposer advised that such a graph had been included in Section 10 of National Grid's original straw man, but clarified that they had inadvertently omitted to reference this additional data item in the Modification Proposal.

The Group queried the rationale for including this requirement, noting that the existing 'quick wins' summary on the BMRS already includes a real-time Frequency graph. The Proposer clarified that the existing BMRS graph is a 'framed link' to a graph which National Grid currently provides on its own website.<sup>16</sup> The Proposer advised that they believed the long-term maintenance of this framed link would not be robust, since there have been historic issues with the link failing or the data becoming unavailable due to a failure of National Grid's own systems. The Proposer stated that they therefore believed it would be preferable for the data to be provided directly to the BMRA by the Transmission Company, and for a BMRA graph to be published on the Summary Page as part of P220. It was noted that this would also allow participants to view the values underlying the graph, which are not currently published.

The Group noted that National Grid's 'real-time' Frequency graph is currently updated every 15 seconds. However, it considered that this frequency of data submission could place a burden on the BMRA, with a resulting negative impact on BMRS performance. Some members initially suggested that it would be sufficient for the BMRS to publish single 'snapshot' Frequency values which were submitted by the Transmission Company every 5 minutes, for consistency with the 'real-time' demand data included in the Proposed Modification. Other members suggested that this would be too infrequent, and suggested the use of 2-minute snapshots. However, the Proposer noted that this would still be lower-granularity data than is currently available from the National Grid graph, and believed that 2-minute snapshots might not give a meaningful picture of Frequency changes. The Proposer therefore suggested a compromise solution, whereby data files would only be sent and published every 2 minutes (to avoid overloading the BMRS) but would contain a 'package' of Frequency figures which were 15 seconds apart (thereby preserving the current granularity of data although updating it less frequently). The Group agreed with this suggestion. The Group noted that National Grid's existing graph covered a rolling 60-minute period, and agreed that this approach was also appropriate for P220. A copy of the Group's straw man BMRS graph is included as Figure 12 in Section 5.6 of this Assessment Report.

The Proposer clarified that National Grid would continue to separately publish its own version of the graph on its own website. The Group agreed that a normal web link to the National Grid graph (rather than the existing 'framed' version of the graph itself) would be provided from the BMRS Summary Page for participants who wished to view this more-frequently-updated data. It was questioned whether it was still worthwhile publishing the data on the BMRS if National Grid would be continuing to maintain its own graph, and one member also queried the benefit of the data if it was not provided instantaneously. However, on balance, a majority of members believed that there would be benefit in including this data in an Alternative Modification for P220. The Group noted that additional legal text would need to be developed for this aspect of the Alternative Modification.

The Group agreed that historic Transmission System Frequency values should also be published for every 15 seconds over the past rolling 48-hour period, via a separate new BMRS web page and .csv file download. Further details regarding the Group's solution requirements can be found in Section 5.6.

<sup>16</sup> The existing 'framed link' to the real-time Frequency graph is available on the BMRS Data Summary Page at: <http://www.bmreports.com/dsr.htm>. The actual version of the graph to which the BMRS link relates is currently published on National Grid's website at: <http://www.nationalgrid.com/uk/Electricity/Data/Realtime/Frequency/Freq60.htm>.

### **6.8.2 Areas arising from impact assessment and Group's further discussions**

The Group noted the impact assessment responses for the Alternative Modification, including the required implementation costs and lead time as set out in Section 6.9.

The Group noted the advice of the Transmission Company in its impact assessment response that it would not be feasible to provide trend data against daily energy volumes based on Transmission System Demand. The Proposer clarified that this was because it would not be able to undertake a meaningful weather correction for Interconnectors under Transmission System Demand, since Interconnector flows are not weather-correlated. However, the Proposer clarified that the Transmission Company would be able to provide the trend data if the daily energy volumes were based on INDO, since this does not include Interconnectors. The Group therefore agreed to base its solution for the Alternative Modification on the INDO approach – noting that the Proposed Modification would still show volumes based on Transmission System Demand without any trend lines. The Group noted that this would need to be reflected in the legal text for the Alternative Modification. This refinement was also subsequently included in the documentation issued for industry consultation.

The Group briefly considered showing two sets of volumes on the Alternative Modification graph in addition to the trend data: one set based on INDO, and one based on Transmission System Demand for comparison. BSCCo queried whether this might overcomplicate the display. It was also noted that this suggestion would require an additional data item to be submitted by the Transmission Company containing volumes based on Transmission System Demand. BSCCo advised that, providing the data item submitted contained only one set of volumes, the choice of whether these were based on INDO or Transmission System Demand would not make a difference to the BMRA or Transmission Company's implementation costs. However, if two sets of volumes were required to be submitted and published, this had the potential to increase costs. On balance, the Group therefore agreed not to progress this suggestion further. Instead, the Group agreed that the BMRS should contain an explanation of the derivation of the data to avoid the potential for misinterpretation by participants.

The Group noted that no points regarding the proposed 'real-time' Transmission System Frequency data were raised during the impact assessment of P220, and the Group agreed that no further changes were required to its Alternative Modification solution in this area.

The Group noted that it was possible that respondents to the Assessment Procedure consultation might identify further data items which had not been considered by the Group or by National Grid in its previous consultation, but which respondents believed should be included in P220. The Group noted that it was scheduled to discuss the consultation responses at its final meeting for P220 on 23 January 2008, after which the Assessment Report would be prepared for submission to the Panel on 8 February 2008. The Group therefore agreed that it would have very limited scope to consider the potential inclusion of any additional data without seeking an extension to the Assessment Procedure from the Panel, and noted that the Panel had expressed its desire for P220 to be progressed expeditiously.

The Group therefore agreed to restrict its assessment to those data items upon which the consultation was conducted, noting that the aim of P220 was to implement the data which had originally been the subject of National Grid's own consultation and discussion by the DSWG. However, the Group agreed that it should not prevent participants from highlighting any additional data which they believed should be published – so that any such suggestions, whilst outside the scope of its P220 assessment, could be noted by the Panel. The Group also noted that participants could use the Standing Issue process to give consideration to any further data items if appropriate.

One member queried whether it would be possible for additional information on Interconnector trades to be published as part of the Alternative Modification. However, the Proposer and other members of the Group believed that this would be outside the scope of P220 – since such data would be commercial rather than operational in nature, would impact different Transmission Company systems (potentially requiring a longer implementation), and would therefore require a different scope of assessment by the Group. On this basis, and by majority, the Group therefore agreed not to progress this suggestion further under P220.

### **6.8.3 Areas raised by Assessment Procedure consultation and Group's conclusions**

This section summarises the comments of consultation respondents regarding the solution for the Alternative Modification, and the Group's conclusions following its consideration of the responses received. Views were also received from consultation respondents regarding the benefits to participants of the data contained in the Alternative Modification. For further details of the benefits identified by respondents, and the Group's views regarding these potential benefits, please refer to Section 7 of this Assessment Report.

The Group noted that a respondent to the P220 Assessment Procedure consultation had commented on the solution for the daily energy volume data under the Alternative Modification. These comments were identical to those raised by the respondent regarding this data under the Proposed Modification, and details of the Group's discussion in this area can therefore be found in Section 6.6.3. In addition, BSCCo subsequently contact the respondent to clarify the Group's rationale for the different basis of the energy volume data under the Alternative (i.e. that trend data could only be provided in respect of INDO rather than Transmission System Demand). BSCCo noted that the respondent's comments appeared to be linked to a separate issue outside the scope of P220, in that currently the basis of the demand forecast data provided by the Transmission Company varies at different times of the day and cannot be compared directly with the existing out-turn data. Taken in isolation, the daily energy volume data under the Alternative Modification would therefore only be comparable with existing forecast data at certain times of day. However, P219 seeks to publish two sets of forecast data – one based on Transmission System Demand, and one based on INDO. The respondent noted that, if both P219 and P220 were approved, the P220 daily energy volume data would therefore be fully consistent with one set of the published demand forecast regardless of whether the energy volumes were based on Transmission System Demand (P220 Proposed Modification) or INDO (P220 Alternative).

The Group noted that the same respondent had stated that, whilst they welcomed in principle the additional data contained in the Alternative Modification, they were mindful of the costs and any potential delay in implementation. The respondent considered that if the costs and/or delay were substantial, then they would prefer to implement the Proposed Modification rather than the Alternative. The Group noted that these comments appeared to be based on a misunderstanding of the costs and lead times presented in the consultation documentation, as the lead times for both the Proposed and Alternative Modifications were identical. The Group noted that the combined BMRA/BSCCo/Transmission Company costs of the Alternative were in the region of £40,000 higher than those of the Proposed Modification, and did not believe this to be an excessive increase given the overall level of cost.<sup>17</sup> BSCCo subsequently contacted the respondent to clarify the Alternative Modification costs and lead times.

Another consultation respondent noted that the Group had discussed the possibility of publishing within-day Interconnector trades, but had concluded that this was outside the scope of P220. This respondent stated that they would strive to introduce this proposal through a different avenue.

No further comments were made by respondents regarding the Alternative Modification solution, and no other options for an Alternative Modification were suggested during the consultation. The Group therefore agreed that no changes were required to the solution for the Alternative.

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<sup>17</sup> See Section 6.9 for further details regarding the P220 implementation costs.

## **6.9 Implementation approach and costs**

### **6.9.1 Group's initial discussions**

#### **6.9.1.1 Potential Implementation Dates**

The Group noted the desire of the Proposer that P220 should be implemented as expeditiously as possible. The Group accepted BSCCo's advice that, as the final Modification Report for P220 would not be submitted to the Authority until the beginning of the third week of March 2008, it would not be possible to include the modification as part of the June 2008 Release. The Group noted that the first standard release in which P220 could be implemented would be November 2008, with the following available release then being June 2009 (since the Panel has noted that only critical changes will be delivered in the February 2009 Release due to its interaction with Project Isis).<sup>18</sup>

However, BSCCo suggested that, given the desire of the Proposer and the Panel to expedite P220 as far as possible, consideration should be given in the impact assessment to the feasibility of implementing P220 earlier than November 2008 as a stand-alone release. The Group noted that, in practice, this approach would mean that implementation would take place on a date some time between July-October 2008. The Group considered that the costs of a stand-alone implementation were likely to be higher, and questioned whether these additional costs would outweigh the savings of a few months in lead time. It was also noted that the feasibility of a stand-alone implementation approach would be dependent on the development timescales required by the BMRA and the Transmission Company to make the necessary changes to their systems. However, the Group agreed to explore the implications of this approach in more detail through the impact assessment.

#### **6.9.1.2 Interaction with P219**

The Group noted that P219 had also been raised by National Grid in the area of BMRS reporting. The Group noted that the two modifications were not contingent upon each other, and could be implemented separately if required. However, the Group agreed that there were likely to be savings in implementation costs for the BMRA and the Transmission Company if the modifications were implemented in parallel. The Group therefore agreed that any such cost savings should be identified as part of the P220 impact assessment.

#### **6.9.1.3 Approach to provision of historic P220 data**

The Group noted that P220 proposed to provide 'history' pages on the BMRS containing historic values for the new data items introduced by the modification. The Group noted the advice of the BMRA that all of the P220 historic data requirements could be met through existing BMRS functionality. However, it was noted that there were two options regarding how the historic data could be provided, as follows:

- 1) Full historic data would be provided from the Implementation Date onwards (e.g. for a data item with a rolling 6-months history under a 6 November 2008 implementation, historic data would be provided on the Implementation Date for the period 6 May – 6 November 2008);
- 2) Historic data would not be provided on the Implementation Date itself, and would only be compiled gradually from that date onwards as the data became available (e.g. for a data item with a rolling 6-months history under a 6 November 2008 implementation, the full range of 6 months' data for this item would only become available on 6 May 2009).

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<sup>18</sup> The existing contracts for the operation and development of the Central Volume Allocation (CVA), Supplier Volume Allocation (SVA) and Funds Administration Agent (FAA) expire at the end of March 2009. The procurement of ongoing BSC Agent services from April 2009 is the subject of BSCCo's Project Isis. Further information regarding the interaction between Isis and the standard BSC release timetable for Modification Proposals and CPs can be found in Panel paper 130/13 at: [http://www.elexon.co.uk/documents/BSC\\_Panel\\_and\\_Panel\\_Committees/BSC\\_Panel\\_Meetings\\_2007\\_-\\_130\\_-\\_Papers/130\\_13\\_Isis\\_impact\\_on\\_BSC\\_Releases\\_v1.0.doc.pdf](http://www.elexon.co.uk/documents/BSC_Panel_and_Panel_Committees/BSC_Panel_Meetings_2007_-_130_-_Papers/130_13_Isis_impact_on_BSC_Releases_v1.0.doc.pdf).



The Group agreed that the P220 impact assessment should explore the relative costs and efficiencies of these approaches to the BMRA and the Transmission Company.

#### **6.9.1.4 Interaction with CP1217**

The Group noted that CP1217 separately proposed to remove the BMRS High Grade Service website such that the same public website would be used for both Low Grade Service Users (via the normal internet) and High Grade Service Users (via the private High Grade network). The Group noted that CP1217 did not propose to remove the existing TIBCO functionality for High Grade Service Users, which would continue if the CP was approved.

For the purposes of the P220 impact assessment, the Group agreed that the BMRA should estimate the costs of the modification based on the assumption of the continuation of the High Grade Service website (since this represented the existing baseline). However, the Group agreed that the BMRA should separately estimate whether there would be any savings in the P220 implementation costs if the requirement to publish the P220 data on the High Grade site was removed.

#### **6.9.1.5 Format of P220 TIBCO messages**

The Group noted that the new P220 data items would be published via TIBCO messaging for High Grade Service users as well as via the Summary Page and other new BMRS web pages. The Group agreed that, as part of its impact assessment for P220, the BMRA should indicate how comparable these new messages would be to the existing TIBCO functionality.

### **6.9.2 Results of impact assessment**

#### **6.9.2.1 Central implementation costs**

The tables on the following page show the central costs to the BMRA and BSCCo of implementing P220 in the November 2008 Release or the June 2009 Release. Separate tables are provided for the Proposed Modification and the Alternative Modification. Note that the costs shown in these tables exclude any cost savings which would be achieved by implementing P220 in parallel with P219. An explanation of the cost terms used in these tables can be found on the BSC Website.<sup>19</sup>

If P219 and P220 were implemented in the same release, it is estimated that this would deliver a 20% reduction in the combined central costs of the two modifications.<sup>20</sup> Further information on these cost savings can be found in Section 6.9.3. There would be no difference in the required P220 implementation lead time were it to be delivered in the same release as P219.

There would be no ongoing operational costs for either the BMRA or BSCCo as a result of P220.

Due to the implementation lead times required by both the BMRA and the Transmission Company, the Group agreed that it would not be feasible to implement P220 prior to November 2008. For this reason, 'stand-alone' BMRA/BSCCo costs are not provided in the tables. Further details of the required lead times can be found in Section 6.9.3.

<sup>19</sup> [http://www.elexon.co.uk/documents/Change\\_and\\_Implementation/Modifications\\_Process\\_-\\_Related\\_Documents/Clarification\\_of\\_Costs\\_in\\_Modification\\_Procedure\\_Reports.pdf](http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf). The term 'service provider' relates to both BSC Agent and non-BSC Agent service provider and software costs.

<sup>20</sup> Note that details of the P219 implementation costs can be found in Section 6.9.4. For an explanation of the P219 costs, please refer to the P219 Assessment Report (Reference 1).

### PROPOSED MODIFICATION CENTRAL IMPLEMENTATION COSTS

		November 2008 Release	June 2009 Release	Tolerance
<b>Service provider cost</b>	Development, testing & deployment	£107,600	£121,700	+/- 30%
	Porting	£19,400	N/A	+/- 30%
	Total service provider cost	£127,000	£121,700	+/- 30%
<b>Implementation cost</b>	External audit	Nil	Nil	N/A
	Design clarifications	Nil	Nil	N/A
	Additional resource costs	Nil	Nil	N/A
	Additional testing & audit support costs	Nil	Nil	N/A
<b>Total demand-led implementation cost</b>		£127,000	£121,700	+/- 30%
<b>ELEXON implementation resource cost</b>		57 man days £12,540	57 man days £12,540	+/- 10%
<b>Total implementation cost</b>		<b>£139,540</b>	<b>£134,240</b>	<b>+/- 30%</b>

### ALTERNATIVE MODIFICATION CENTRAL IMPLEMENTATION COSTS

		November 2008 Release	June 2009 Release	Tolerance
<b>Service provider cost</b>	Development, testing & deployment	£129,250	£144,800	+/- 30%
	Porting	£20,150	N/A	+/- 30%
	Total service provider cost	£149,400	£144,800	+/- 30%
<b>Implementation cost</b>	External audit	Nil	Nil	N/A
	Design clarifications	Nil	Nil	N/A
	Additional resource costs	Nil	Nil	N/A
	Additional testing & audit support costs	Nil	Nil	N/A
<b>Total demand-led implementation cost</b>		£149,400	£144,800	+/- 30%
<b>ELEXON implementation resource cost</b>		57 man days £12,540	57 man days £12,540	+/- 10%
<b>Total implementation cost</b>		<b>£161,940</b>	<b>£157,340</b>	<b>+/- 30%</b>

### **6.9.2.2 Explanation of BSCCo impacts, costs and lead times**

The impact on BSCCo would be limited to project-managing the required BSC System and documentation changes for P220. In addition to general project administration, this would include:

- Overseeing integration testing by the BMRA and Transmission Company (requiring additional lead time over and above that required by the BMRA and the Transmission Company to undertake their own development and testing);
- Overseeing any required participant testing (to be undertaken following integration testing and therefore requiring additional lead time); and
- Providing any other necessary support to participants, the BMRA and the Transmission Company during the implementation period.

The costs to BSCCo would be identical regardless of whether the Proposed Modification or Alternative Modification was approved, or whether P220 was implemented in the November 2008 or June 2009 Release.

Details of BSCCo's required lead time can be found in Section 6.9.3. This lead time would be identical for both the Proposed and Alternative Modifications, and would also be the same regardless of whether the P220 was implemented in parallel with P219.

Further details of the documentation changes which would be required to support P220 can be found in Appendix 4.

### **6.9.2.3 Explanation of BMRA impacts, costs and lead times**

#### **a) Impact**

The BMRA would be required to amend and test its systems in order to publish the new P220 data. This would include amendments to the BMRS Summary Page display, the creation of supporting new BMRS pages, amendments to the underlying BMRA system functionality, and the creation of new TIBCO messages.

The BMRA confirmed that the new TIBCO messages would be comparable in structure and style to other existing TIBCO messages, and that no new TIBCO functionality would be required.

#### **b) Costs**

Ongoing BSC Agent services are currently the subject of a procurement exercise through BSCCo's Project Isis. It should be noted that the targeted release dates for P220 interact with the cutover to both new BMRA systems and the service provider chosen through the procurement.

Of the BMRA testing, deployment and development costs shown in the 'central costs' tables above, £25,000 of the November 2008 figure and £50,000 of the June 2009 figure therefore represent BSCCo's estimates of the chosen service provider costs. The tolerance given in the tables reflects the degree of uncertainty associated with these costs.

The difference between the costs for November 2008 compared with June 2009 is due to the different interaction of these releases with the Isis project timescales. A November 2008 implementation would require the P220 changes to be implemented in existing BMRA systems and then ported to the new system. For June 2009, the changes would be implemented directly into the new system and thus no porting costs would be incurred. However, as a result there is greater uncertainty regarding the June testing, deployment and development costs, since more of these activities would be undertaken by the chosen service provider. This is reflected in the higher estimate for these costs in June.

The existing service provider implementation costs for the Alternative Modification would be approximately 15% higher than those of the Proposed Modification, due to the inclusion of the additional Transmission System Frequency data item and the requirement to display additional daily energy volume trend data under the Alternative.

The BMRA confirmed that the two potential approaches to the provision of historic data under P220 would not materially affect its implementation costs.

### c) Costs by data item

Table 14 provides a high-level breakdown of the P220 BMRA costs, showing the proportion of BMRA costs which would be attributable to each group of data items under the Proposed and Alternative Modifications.

It should be noted that, as the BMRA's testing and release costs would be spread over the entire solution, removal of one or more data items would increase the cost of the remaining items. The figures contained in the table are therefore purely indicative, and were provided to aid the Group in understanding the relative BMRA effort for each group of data.

**Table 14 – BMRA cost breakdown**

P220 data item	% of Proposed Modification costs	% of Alternative Modification costs
Out-turn & reference temperatures	22%	17%
Wind generation forecast	17%	14%
Instantaneous and half-hourly generation by fuel type	21%	17%
Daily energy volumes	17%	19%
Non-BM STOR Instructed Volumes	23%	18%
'Real-time' Transmission System Frequency	N/A	15%

The above breakdown demonstrates that the BMRA implementation costs would be fairly evenly split across the proposed P220 data items.

### d) Lead time

The BMRA would require a maximum of 5.5 months' implementation lead time from the point of Authority decision to the beginning of integration testing with the Transmission Company and BSCCo, in order to develop the required BMRA system changes and carry out its own testing. This BMRA development and isolated testing would be conducted in parallel with the Transmission Company's own system development and testing.

The lead times provided by the existing service provider varied slightly according to the choice of release or whether the Proposed or Alternative Modification was chosen, and are shown in Table 15. The required BMRA lead time would be identical regardless of whether P220 was implemented in parallel with P219.

**Table 15 – BMRA lead time (from Authority decision to start of integration testing)**

Required BMRA lead time for:	November 2008 Release	June 2009 Release
Proposed Modification:	20 weeks	13 weeks
Alternative Modification:	24 weeks	18 weeks

### e) Interaction with CP1217

The BMRA confirmed that, if CP1217 was approved such that the separate High Grade Service website was discontinued, this would save between 6-7% of the P220 costs and around 2 weeks of lead time.

The potential for cost savings in this area would be small, since the majority of the P220 data would be published on the Low Grade Service website (noting that the Electricity Data Summary Page would be available only from the Low Grade site).

Following the Group's final meeting for P220, CP1217 was rejected by the ISG. Further information can be found in Section 6.9.4 below.

### f) Interaction with real-time 'data incomplete' flag

The BMRA confirmed that, if a requirement for a real-time 'data incomplete' flag were to be added to the solution for the generation by fuel type data, this would increase its implementation costs by 1-2% from those shown in the tables above and would extend its required lead time by around one week.

#### 6.9.2.4 Explanation of Transmission Company impacts, costs and lead times

The P220 implementation costs and lead time which would be incurred by the Transmission Company are shown in Table 16.

**Table 16 – Transmission Company costs and lead time**

Transmission Company:	Proposed Modification	Alternative Modification
Costs:	£600,000*	Any difference in cost is likely to be in the order of under £20,000
Lead time (from point of Authority decision to start of integration testing):	5.5 months	5.5 months

\* £100,000 of this cost is already being incurred by the Transmission Company in initiating feasibility assessment work for P220 and P219, and the Transmission Company continues to be incurring initiation costs at this time.

The Transmission Company's costs and lead times would include the development and testing of amendments to several of the Transmission Company's operational systems, as well as required documentation changes. These Transmission Company changes would be conducted in parallel with the BMRA's own system development and testing. Note that the lead time shown in Table 16 was clarified from that provided in the Transmission Company's original impact assessment response, following further discussion with BSCCo regarding the required testing activities for P220.

The required Transmission Company lead time would be identical regardless of whether the Proposed Modification or Alternative Modification was approved, or whether P220 was implemented at the same time as P219. However, were P220 to be implemented in parallel with P219, this would deliver a saving of £200,000 off the combined costs to the Transmission Company of the two modifications. Further detail regarding these cost savings can be found in Sections 6.9.3 and 6.9.4.

The Transmission Company advised that the above costs and lead times were based on the assumption that an additional requirement to provide a real-time 'data incomplete' flag for the out-turn by fuel type data would not be included in the P220 solution. The Transmission Company confirmed that the inclusion of a requirement for such a flag would increase its implementation costs from those shown above by £500,000 (80%) and its required lead time by 6 months.

The Transmission Company considered that providing full historic data for P220 prior to the Implementation Date (for publication on that date) would be an onerous requirement with associated cost implications. The Transmission Company suggested that either that all historic data should only be completed after the Implementation Date as it became available, or that (as a compromise) only full historic values for the standing data such as Reference Temperatures would be made available at the point of deployment.

A copy of the full Transmission Company impact assessment is provided as Attachment 4 to this Assessment Report.

#### **6.9.2.5     *Explanation of participant impacts, costs and lead times***

Six responses were received to the Party and Party Agent impact assessment of P220. Of these, three respondents indicated that the introduction of the new BMRS data items would have an impact on their systems.

Two of these three respondents stated that the impact and any resulting cost would be minor. The other respondent advised that its costs would be in the region of £30,000. The implementation lead times requested by impacted respondents ranged from one to three months from the point of Authority decision, and were therefore well below the lead times required by the BMRA and the Transmission Company.

Copies of the full participant impact assessment responses are provided as Attachment 5 to this Assessment Report.

### **6.9.3     *Group's further discussions***

#### **6.9.3.1     *Participant impact assessments***

The Group noted the responses received to the impact assessment of P220. An attendee expressed surprise that P220 would have an impact on participants. BSCCo advised that it was likely that those participants who loaded BMRS data into their own systems (either through website 'data scraping' or TIBCO) would need to amend these systems in order to use the P220 data. The attendee requested this be clarified with the respondents who had noted a system impact. The attendee also suggested that such changes to participant systems were optional, and should therefore not be counted as a P220 cost.

The respondent who had indicated a cost of £30,000 to amend their systems subsequently clarified to BSCCo that they would need to 'warehouse' the new P220 data as it was received through TIBCO feeds, and then adapt it into a format in which it could be used within their own systems. This respondent noted that, whilst they would not be required to do this by the Code, they would be unable to use the new P220 data unless these activities were undertaken. The respondent therefore believed that it was appropriate to record the costs of their system changes as part of the P220 implementation costs.

#### **6.9.3.2     *Approach to historic data***

The Group agreed that providing full historic data on the P220 Implementation Date would be an onerous requirement on the Transmission Company, and would give rise to practical difficulties as the systems which the Transmission Company would use to accumulate this historic data would not go live until the Implementation Date. BSCCo queried whether there might also be issues of retrospectivity in publishing historic data for days prior to the Implementation Date, since the Code ability to publish the data would not come into force until that day.

The Group agreed that there would be little additional benefit in publishing full historic data on the Implementation Date, and agreed that such data would therefore only be published gradually after implementation as it became available.

### **6.9.3.3     *Lead time and Implementation Date***

The Group noted that the lead time required by the Transmission Company to develop its system changes from the point of an Authority decision to the start of integration testing was 5.5 months. The Group noted that the lead time required by the BMRA for the same activities varied according to the solution and release, but agreed to use the maximum BMRA lead time of 5.5 months for simplicity in its consideration of Implementation Dates (given that this was no longer than the Transmission Company lead time, and since the BMRA's and Transmission Company's system development would be undertaken in parallel).

BSCCo clarified that these lead times would include 'isolated' testing by the BMRA and the Transmission Company of their own system changes. However, the Group noted that, once this isolated testing had been completed, further integration testing managed by BSCCo would be required in order to confirm whether the two sets of systems were able to communicate correctly with each other (i.e. whether the new P220 data items could be transmitted from the Transmission Company's systems, successfully received by the BMRA systems, and correctly displayed on the BMRS). Following this integration testing, BSCCo clarified that it would use a small sample of participants to test the new TIBCO functionality. The Group noted BSCCo's advice that the P220 implementation period needed to allow sufficient lead time to fix and retest any bugs which might be found during the integration and/or participant testing.

The gantt chart in Figure 17 on the following page shows the critical path for a November 2008 implementation. The Group noted BSCCo's advice that the crucial date in this plan was 16 September 2008, when BSCCo would need to begin integration testing. The Group noted that the proposed implementation period for a November 2008 deployment would allow only a short period of time (around 11-12 Working Days) for the Authority to make its decision on P220. However, the Group noted BSCCo's advice that it had compressed its integration/participant testing timescales into a shorter period than it would usually allow – and that it would not be possible to reduce these further, as doing so would not allow adequate time to address any bugs which might arise from the testing.

The Group noted that the required lead time would be identical regardless of whether the Proposed Modification or Alternative Modification was approved, or whether P220 was implemented in parallel with P219.

**Figure 17 – Critical path for November 2008 implementation**

Taking into account the required lead times, the Group therefore provisionally agreed to recommend the following Implementation Dates for both the P220 Proposed Modification and Alternative Modification:

- 6 November 2008 if an Authority decision is received on or before 3 April 2008; or
- 25 June 2009 if an Authority decision is received after 3 April 2008 but on or before 23 October 2008.

The Group agreed that it was not necessary to compress the testing activities for a June 2009 implementation in the same way as for November 2008, since the Authority would have much longer to make a decision for implementation in the June 2009 Release. The Group noted that a slightly longer implementation lead time had therefore been allowed for June 2009.



#### 6.9.3.4 Interaction with P219

The Group noted that the following Implementation Dates were being recommended separately for P219:

- 6 November 2008 if an Authority decision is received on or before 29 May 2008; or
- 25 June 2009 if an Authority decision is received after 29 May 2008 but on or before 15 January 2009.

The Group noted that the longer Authority decision-making timescales for P219 reflected its shorter implementation lead time, and gave the potential for the modifications to be implemented in different releases should the Authority consider this to be appropriate (or should the Authority be unable to make its P220 decision by 3 April 2008).

**However, BSCCo advised that, if the Authority wished to achieve the cost savings of implementing P219 and P220 in parallel, it would need to make its decisions on both modifications by the P220 cut-off dates.**

The Group noted that if either the P219 or P220 decisions were received after 3 April 2008 for the November 2008 Release, or after 23 October 2008 for the June 2009 Release, these cost savings would be lost. The Group agreed that, in practice, the Authority would therefore need to make simultaneous decisions on both modifications if it wished to achieve the savings. The interaction between the proposed P219 and P220 Implementation Dates is shown in more detail in Table 17 below.

**Table 17 – Interaction between P219 and P220 Implementation Dates**

Authority decision cut-off date for:	P220 in isolation	P219 in isolation	P220 and P219 in parallel (to achieve cost savings)
November 2008 implementation:	3 April 2008	29 May 2008	3 April 2008
June 2009 implementation:	23 October 2008	15 January 2009	23 October 2008

The Group noted that, to achieve the cost savings, simultaneous decisions on both modifications should be issued either:

- By 3 April 2008; or
- After 29 May 2008 but before 23 October 2008,

in order to ensure that both P219 and P220 were implemented in parallel in the same release.

#### 6.9.3.5 Interaction with 'real-time' flag option

The Group noted that its initial recommended Implementation Dates had been agreed on the basis that an additional requirement for a real-time 'data incomplete' flag for the generation out-turn by fuel type data would not be included in the P220 solution. The Group noted that including this additional requirement would mean that a November 2008 Implementation Date would no longer be feasible.

## **6.9.4 Areas raised by Assessment Procedure consultation and Group's conclusions**

### **6.9.4.1 Implementation approach**

The Group noted that all respondents to the P220 Assessment Procedure consultation who expressed a view had supported its recommended Implementation Dates for P220. One of these respondents commented that, whilst the P220 data should be published as soon as practically possible, delivery of the data should take place as part of a scheduled release.

The Group noted that its decision not to include the real-time 'data incomplete' flag within the P220 solution (see Section 6.5.2.5) would address the concerns of a majority of respondents concerning the delay in implementation and cost increase that this would cause. The Group noted that the implementation costs of P220 therefore remained unchanged from those shown above, and agreed that no amendments were required to its recommended Implementation Dates.

The Group noted that several respondents had commented on the desirability of implementing P219 and P220 in parallel in order to achieve cost savings. The Group reiterated that, in order to achieve these savings, simultaneous decisions would be required from the Authority for both modifications. The Group noted that one consultation respondent had questioned the feasibility of the tight timescales for a November 2008 implementation, and agreed that the period allowed for an Authority decision would be very short. However, the Group noted the view expressed by many consultation respondents that these timescales should be met if possible in order to allow earliest delivery of any benefits. One respondent commented that a November implementation would save costs, allow the benefits of P220 to be available in winter 2008/09, and maximise the benefits of the publication of the data. Another respondent echoed this view, and stated that with increasing complexity and volatility in the market (due to such factors as the European Union Emissions Trading Scheme and the Large Combustion Plant Directive) the earliest possible implementation was essential.

### **6.9.4.2 Implementation costs**

A majority of members of the Group shared the concern expressed by some consultation respondents regarding the high level of implementation costs for P220. The Group noted that one respondent had stated that it was important to ensure that reporting systems were suitably robust, in order that future BMRS changes would be less expensive. BSCCo advised it had recently undertaken significant work with the BMRA to deliver more flexible and cheaper methods of implementing changes to the BMRS, following concerns expressed by the industry over the historic level of BMRS costs (for example, those quoted during 2005 as part of Standing Issue 17).<sup>21</sup> The Group noted the efforts that had been made to reduce BMRS costs, and clarified that their primary concern was with regard to the level of Transmission Company costs. The Proposer noted that National Grid's systems were designed to have high resilience and reliability, and that this was not always compatible with flexibility. The Proposer also advised that the Transmission Company's implementation costs for P220 were comparable with other similar-sized changes to its systems. The Group noted that National Grid's systems were due to be upgraded in 2010/11, and suggested that consideration be given to introducing greater flexibility as part of this upgrade in order to reduce the costs of future changes.

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<sup>21</sup> Issue 17 'Review of Electricity Market Information' (Panel paper number 96/001(e), dated 8 September 2005). Issue 17 was the most recent industry-raised proposal to significantly amend existing data and add new data to the BMRS. Pre-2006 papers are no longer published on the BSC Website; however, copies of this paper can be requested via the ELEXON Helpdesk.

It was queried whether the Transmission Company's implementation costs were a relevant consideration for the Group, since these costs would not be recovered under the BSC. The Group noted the comment of a consultation respondent that the Transmission Company's costs should not be considered as a new additional cost or as part of system maintenance and development, since allowance for such costs are made within its Transmission Owner Price Control. The respondent also believed that National Grid Transco had recently totally upgraded the Daily Gas Summary Page without any mention of the costs involved. These views were reiterated by an attendee during the Group's discussions.

BSCCo noted that Section F2.8 and Annex F-1 of the Code require Modification Groups to establish any implementation costs to the Transmission Company, and to report these to the Panel and the Authority.<sup>22</sup> The Proposer advised that Ofgem would ultimately decide whether the Transmission Company's P220 implementation costs could be recovered from the industry as part of its Price Control, but that it was likely that the money would be recouped through Balancing Services Use of System (BSUoS) charges. The Proposer also clarified that the recent costs of upgrading the gas summary page would be similarly recouped from the industry. Members of the Group therefore believed that it was appropriate to consider the Transmission Company's P220 implementation costs under Applicable BSC Objective (d), since they believed that these costs were relevant to the efficient implementation and administration of the balancing arrangements.

The Group noted that the Transmission Company's impact assessment indicated that it would have already incurred £100,000 in feasibility assessment work for P219 and P220 by the time that Authority decisions were received for these modifications. The Proposer clarified that it was necessary to undertake this work now if it was to achieve a November 2008 implementation. The Group noted that a similar £100,000 cost had been shown against P219, and queried whether this gave a total of £200,000 already spent. The Proposer clarified that the £100,000 which would be incurred prior to an Authority decision would be shared across both Modification Proposals. However, this £100,000 had been shown separately against each proposal's 'stand-alone' costs – since, if only one of the two modification was approved, the full £100,000 would still have been incurred.

BSCCo noted that this £100,000 would have been incurred by the Transmission Company even if neither of the proposals was approved, and suggested that this could be considered to represent a 'sunk' cost. It therefore queried whether it was appropriate to show this as part of the P220 implementation costs, since this might imply that the money could be saved if the proposals were rejected. The Group noted that the decision whether to include this figure within the implementation costs was also relevant to its cost-benefit analysis of P220, since it would effectively require an extra £100,000 benefit to the industry to be identified. However, a member stated that whilst this £100,000 was likely to be recovered from the industry were both P219 and P220 to be approved, it was not certain that Ofgem would agree to allow these costs through the Price Control if one or more of the modifications were rejected. This member believed that, should P219 and/or P220 be rejected, it would be questionable whether these costs had been 'reasonably and prudently' incurred by the Transmission Company and should be recouped from participants. The member therefore did not believe that it was appropriate to show this as a 'sunk' cost to the industry. The other Group members concurred with this view. The Group therefore agreed that the £100,000 'feasibility and assessment' costs should continue to be separately shown as part of both the P219 and P220 implementation costs. Table 18 shows the differences in Transmission Company costs with and without the inclusion of this element.

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<sup>22</sup> Section F2.8.4 also requires a Modification Group to have regard to these costs when formulating its views as to whether a Modification Proposal would better facilitate the achievement of the Applicable BSC Objectives.

**Table 18 – Further explanation of Transmission Company costs**

National Grid delivery costs <sup>23</sup>	Delivery approaches			
	Stand-alone costs including 'F&A' element	Stand-alone costs excluding 'F&A' element	Combined P219/P220 costs including 'F&A' element	Combined P219/P220 costs excluding 'F&A' element
P219	£300,000	£200,000	£600,000	£500,000
P220	£600,000	£500,000		

The Group noted that the savings of implementing P219 and P220 in parallel were equivalent to the total implementation cost of P219. However, it noted that these represented savings in project overheads due to similarities between aspects of the development work for P219 and P220, which would be spread across the costs of both modifications. The Group noted that it would therefore not be accurate to describe the savings as effectively delivering P219 at zero cost. The Group also noted that, whilst the potential cost-savings were relevant information to be noted in the Assessment Report (in order to bring them to the attention of the Authority when making its decision), the Group and the Panel were required by the Code to make their recommendations on P220 based on its costs and benefits in isolation of P219 and in comparison with the existing arrangements.

#### **6.9.4.3 Interaction with CP1217**

The Group noted that a consultation respondent had expressed concern that, at times of rota disconnections or similar electricity supply disruption, media and public interest in BMRS data (e.g. demand forecast and real-time generation out-turn) could result in a vast surge of 'hits' on the BMRS. The respondent believed that this could result in either a much slower service for BMRS users, or even a failure of the entire service. Given the operational importance of the BMRS to participants, the respondent suggested that consideration should be given to having a password-protected 'mirror' or 'shadow' site for the Low Grade BMRS service which could be utilised only by participants at times of BMRS stress or failure.

The Group agreed that this issue fell outside the scope of P220. BSCCo subsequently contacted the respondent to clarify their concerns. The respondent advised that their arguments related to the potential removal of the High Grade BMRS website as proposed by CP1217. BSCCo clarified that this CP had subsequently been rejected by the ISG, and that this rejection had been due partly to concerns over potential Low Grade site performance in emergency situations.<sup>24</sup> BSCCo queried whether the respondent was comfortable that the continuation of the existing High Grade website addressed their concerns, or whether they had been suggesting a different type of service to that which already exists. The respondent confirmed that they believed the continuation of the existing High Grade site would be sufficient in this area.

<sup>23</sup> For an explanation of the P219 costs, please refer to the P219 Assessment Report.

<sup>24</sup> For further details, please refer to ISG paper [84/01](#).

## 7 ASSESSMENT OF MODIFICATION AGAINST APPLICABLE BSC OBJECTIVES

This section details the views expressed by consultation respondents and Modification Group members regarding the potential benefits of P220, and identifies the Applicable BSC Objectives which respondents and the Group believed to be relevant to these potential benefits. In addition, it provides an explanation of the Group's rationale in arriving at its final recommendation to the Panel.

Please note that this section focuses on the Group's final views following its consideration of the industry consultation responses. For a description of the Group's previous initial views prior to conducting the consultation, please refer to the P220 Assessment Consultation document.

### 7.1 Summary of overall views of consultation respondents

Table 19 below provides a high-level summary of the overall potential benefits and disadvantages of P220 as cited by respondents to Questions 1-3 of the P220 Assessment Procedure consultation. These have been summarised thematically in order to avoid duplication, and have been grouped in relation to the Applicable BSC Objective(s) most frequently referenced by respondents in these areas (not all consultation respondents referred to specific Applicable BSC Objectives).

Note that not all of the views shown were necessarily shared by all respondents.

**Table 19 – Summary of respondents' overall views on merits of P220**

Area of discussion as raised in consultation responses	Benefits identified by respondents	Disadvantages identified by respondents
<b>Information transparency and accessibility of data</b>  <i>Applicable BSC Objective (c)</i>	<p>P220 would improve the transparency and accessibility of data by publishing it in a single Summary Page location – promoting competition.</p> <p>This would have particular benefit to small participants, customers and other occasional BMRS users who do not have the resource to derive this data through other existing sources.</p>	<p>The proposed P220 data can already be obtained or derived from other existing sources – and P220 would have no benefit for those participants who have already invested the resources to do so.</p> <p>The provision of the proposed data could potentially undermine other commercial providers of such data.</p>
<b>Barriers to entry</b>  <i>Applicable BSC Objective (c)</i>	<p>By improving accessibility of key data, P220 would reduce the information asymmetry whereby only larger participants have the resources to access the data through existing sources – helping to create a 'level playing field' and promoting competition.</p>	<p>It has not been sufficiently demonstrated that the benefits in this area outweigh the costs.</p> <p>The benefits are likely to be realised by only a very limited number of participants, and therefore would be very small.</p>
<b>Market signals and understanding</b>  <i>Applicable BSC Objective (c)</i>	<p>P220 would improve participants' understanding of market trends and signals by drawing these out in the Summary Page data – promoting competition.</p>	<p>The proposed P220 data is a 'nice to have' but not imperative – it has not been sufficiently demonstrated that the benefits in this area outweigh the costs.</p>

Area of discussion as raised in consultation responses	Benefits identified by respondents	Disadvantages identified by respondents
<b>Market behaviour</b> <i>Applicable BSC Objective (b)</i>	<p>Through improved understanding of market fundamentals, P220 would lead participants to make more informed commercial decisions – potentially improving their self-balancing and thereby the efficient operation of the Transmission System.</p> <p>P220 would allow participants to more effectively manage electricity market costs, risks and opportunities.</p>	<p>The benefits of improved market behaviour have not been quantified, but are unlikely to outweigh the costs.</p> <p>It is unlikely that P220 would deliver material financial benefits to the Transmission Company.</p>
<b>Cost-benefit</b> <i>Applicable BSC Objective (d)</i>	<p>Although it is difficult to quantify the benefits of the above, they are likely to outweigh the one-off cost of implementation in the longer term.</p> <p>The Transmission Company implementation costs would be covered by its Price Control – therefore question whether these should be considered as an additional cost.</p>	<p>In the absence of detailed and/or quantified benefits, it cannot be demonstrated that these outweigh the high implementation costs.</p>

The above summary table does not distinguish between the Proposed Modification and Alternative Modification, but represents an overall summary of respondents' views regarding P220 as a whole. All respondents who expressed a view believed that the Alternative Modification would better facilitate the achievement of the Applicable BSC Objectives when compared with the Proposed Modification. However, those respondents who did not believe that P220 would better facilitate the achievement of the Applicable BSC Objectives when compared with the existing baseline gave consistent arguments against both the Proposed Modification and Alternative Modification.

For further details regarding the views of respondents, and the Group's discussion of these views, please refer to Sections 7.3 and 7.4 below. Copies of the full responses received to the P220 Assessment Procedure consultation can be found in Appendix 3.

## 7.2 Detailed arguments of respondents regarding potential benefits

Table 20 below summarises the views of respondents to Question 4 of the P220 Assessment Procedure consultation regarding the specific potential benefits of each of the proposed P220 data items. No respondents referred to any of the Applicable BSC Objectives in support of these views. Note that not all respondents provided views in this area.

**Table 20 – Summary of respondents’ arguments regarding specific benefits of P220 data**

P220 data item(s)	Benefit?	
	Yes	No
<b>Outturn and reference temperatures</b> ( <i>Proposed and Alternative Modification</i> )	<ul style="list-style-type: none"> <li>• Could be useful for participants who do not have the resources to gather this data from other existing sources;</li> <li>• Will benefit consumers as information to input into their assessment of likely peak electricity demand levels;</li> <li>• Publishing recent temperature trends may assist in any demand-management decisions for costs such as Triads;</li> <li>• Over time, would be able to build picture of how temperature affects generation and demand;</li> <li>• This information is already frequently used in the gas market.</li> </ul>	<ul style="list-style-type: none"> <li>• Already have access to ample meteorological information (e.g. through <a href="http://www.metcheck.com">www.metcheck.com</a>);</li> <li>• Existing public availability of data makes it difficult to justify the cost.</li> </ul>
<b>Wind generation forecast</b> ( <i>Proposed and Alternative Modification</i> )	<ul style="list-style-type: none"> <li>• Would be used in forecasting demand and generation;</li> <li>• Would be used in day-ahead trading to help form expectations of market length and other participants’ positions;</li> <li>• Will become increasingly important to the industry as wind capacity increases and becomes a larger part of generation mix;</li> <li>• Allows participants to see risk of wind generation not occurring as forecasted;</li> <li>• Would provide signals for reserve / helps market know when reserve likely to be needed;</li> <li>• Wind generation may in future affect prices – making data valuable;</li> <li>• Gives view of accuracy of Transmission Company’s wind forecasting (and whether unpredictability of wind leads to inefficient balancing actions) – knowing peak less useful than knowing profile;</li> <li>• Would promote understanding of likely System Operator balancing actions due to relationship between temperature and demand.</li> </ul>	<ul style="list-style-type: none"> <li>• Already have access to ample meteorological information (e.g. through <a href="http://www.metcheck.com">www.metcheck.com</a>);</li> <li>• Existing public availability of data makes it difficult to justify the cost.</li> </ul>

P220 data item(s)	Benefit?	
	Yes	No
<b>Instantaneous and half-hourly generation by fuel type, including 'real-time' total demand out-turn and half-hourly Interconnector flows</b> ( <i>Proposed and Alternative Modifications</i> )	<ul style="list-style-type: none"> <li>Instantaneous data would further analysis of within-day market – enabling better understanding of market fundamentals/dynamics;</li> <li>In longer term, may help market to understand trends and signals;</li> <li>Would allow participants to carry out more accurate and close-to-real-time analysis (e.g. of plant availability);</li> <li>Would aid understanding of impact of fuel utilisation on market prices;</li> <li>Would assist environmental impact analysis;</li> <li>Would highlight relative prices of input fuels and performance of generation types (more interesting than of specific business use);</li> <li>Would allow participants to make judgements about own commercial positions and make more informed commercial decisions;</li> <li>Only large parties currently have resources to derive this data from other existing sources.</li> </ul>	<ul style="list-style-type: none"> <li>Half-hourly generation data is already on BMRS, and can be aggregated by fuel-type post-event;</li> <li>Instantaneous data is a 'nice to have' but not imperative.</li> </ul>
<b>Daily energy volumes based on Transmission System Demand</b> ( <i>Proposed Modification only</i> )	<ul style="list-style-type: none"> <li>Taken with other data, will be helpful in forecasting required generation;</li> <li>Forecast data is key to making an assessment of how supply may be achieved in the market.</li> </ul>	<ul style="list-style-type: none"> <li>Of limited usefulness, since operationally-metered data would not match actual Settlement volumes.</li> </ul>
<b>Daily energy volumes based on INDO</b> ( <i>Alternative Modification only</i> )	<ul style="list-style-type: none"> <li>Could help understand market conditions – e.g. a small niche Supplier with a view of their market share could perform a cross-check of their contracted energy against their fraction of the contracted energy transported;</li> <li>Knowing the trends increases the value of the data as will help market prepare for changes in demand.</li> </ul>	<ul style="list-style-type: none"> <li>Of limited usefulness, since operationally-metered data would not match actual Settlement volumes.</li> </ul>
<b>Non-BM STOR Instructed Volumes</b> ( <i>Proposed and Alternative Modifications</i> )	<ul style="list-style-type: none"> <li>May be used in demand forecasting;</li> <li>Promotes understanding and transparency of demand-side actions.</li> </ul>	<ul style="list-style-type: none"> <li>Would only use if feed into BMRS and BSAD was instantaneous.</li> </ul>
<b>'Real-time' Transmission System Frequency</b> ( <i>Alternative Modification only</i> )	<ul style="list-style-type: none"> <li>May allow participants in short-term market to act on trips before the redeclaration of MEL;</li> <li>Helps to tell participants about state of Transmission System;</li> <li>Placing Frequency data fully on the BMRS is more robust than the existing 'framed link', and will ensure its high availability.</li> </ul>	<ul style="list-style-type: none"> <li>Already available on National Grid's website – inclusion on BMRS provides little advantage.</li> </ul>

For details of the Group's discussion of these views, please refer to Sections 7.3 and 7.4 below. Copies of the full responses received to the P220 Assessment Procedure consultation can be found in Appendix 3.



## **7.3 Group's discussion of potential benefits (qualitative and quantitative)**

### **7.3.1 Information transparency and accessibility of data**

The Group noted the view of a large majority of consultation respondents that P220 would improve the transparency and accessibility of electricity market data, and that this would promote competition. The Group noted the view of some respondents that information transparency represented a fundamental requirement of an open and effective competitive market. The Group noted that these respondents included representative organisations of large users and customers, who the Proposer identified as the main potential beneficiaries of P220.

All members of the Group supported the general principle of data transparency in furtherance of competition. However, the Group agreed that enhanced transparency and/or accessibility in itself was not a sufficient case for change, since it needed to be demonstrated that the benefit of the new P220 data to the industry outweighed the costs of its provision. For further details regarding the Group's consideration of the cost-benefit of P220, please refer to Section 7.3.4 below.

The Group agreed with the view of consultation respondents that, by providing key operational data in a single location (the BMRS Summary Page), P220 would provide an accessibility benefit to those participants who did not currently derive the data from other sources. The Group agreed that the primary beneficiaries of P220 were likely to include:

- Smaller Parties;
- New entrants;
- Demand-side participants;
- Customers; and
- Other occasional BMRS users (e.g. energy consultancies or areas of the industry such as those operating in management, finance or risk) who might use the BMRS as a general information tool.

The Group noted the view of one consultation respondent that P220 would provide a small positive benefit to Parties (mainly small Parties), in allowing them to simplify their data-gathering processes and thereby to operate more efficiently. Another respondent considered that new entrants to the electricity market would benefit greatly from the increased availability of data on an accessible public platform under P220. Both respondents cited improvements to competition in support of these views.

BSCCo noted that some consultation respondents (generally representing larger Parties) had indicated that there would be little benefit for their organisations in the areas of transparency or accessibility, since they had already invested in obtaining this data from other existing sources. BSCCo therefore sought the views of the Group as to whether P220 would deliver benefits to larger participants. Members noted that the majority of the P220 data could already be derived elsewhere. For example:

- Temperature and wind forecast data can already be obtained from sources such as the Met Office;
- Half-hourly generation values are already published post-event on the BMRS, and participants can therefore choose to undertake their own aggregation of this data into different fuel-types (including wind) using BM Unit details;
- Although instantaneous generation by fuel-type data is not currently published, similar information can be derived from changes in MEL or FPN values which are already published on the BMRS; and
- 'Real-time' demand and Transmission System Frequency are already published on the BMRS as 'framed' links to this data on National Grid's own website.

A majority of members considered that the proposed P220 data would therefore be of limited usefulness to those participants who had already invested resources in obtaining similar information through other existing sources. BSCCo questioned whether this was the case, and suggested that publishing the P220 data could remove the need for these Parties to continue to expend such resource in the future. For example BSCCo queried whether, if participants currently entered into paid contractual arrangements with third parties for the provision of the existing data, P220 would deliver cost savings to these participants by providing them with this information at zero cost and removing the need for such contracts. However, a majority of members believed that P220 would not alter participants' existing data-pulling processes, but would simply provide additional data to compare with what they already had. These members believed that it would therefore not be accurate to describe P220 as delivering data-accessibility savings for these participants.

The Proposer suggested that if some participants already invested resource in obtaining similar data, this data must be of value to these organisations – and BSCCo queried whether it was possible to quantify this value. However, other members of the Group believed that such quantification was not possible, since the resource involved comprised part of these participants' day-to-day activities and/or part of wider contracts for data services which they held with third party providers. For the same reason, these members did not believe that it was possible to quantify the risk to these Parties of not having the P220 data – since, if P220 was rejected, such Parties would continue to rely on their existing information sources.

The Proposer noted that the existing data, whilst similar to that which would be published under P220, was not exactly comparable. In addition, the Proposer advised that Non-BM STOR Instructed Volumes are not currently published at a half-hourly level as would be delivered by P220. BSCCo noted that the Transmission Company, in its consultation response, had stated that replacing the existing 'framed' links to real-time demand and Transmission System Frequency on the BMRS with full copies of this data would improve the robustness of this data, thereby better facilitating its transparency and accessibility. BSCCo also noted that some consultation respondents representing larger Parties, who already derived similar data elsewhere, had identified benefits to their organisations which they believed would arise from certain P220 data items. The Group agreed that some of the P220 data items (in particular, the proposed wind generation forecast and instantaneous generation by fuel type data) could be of benefit to larger Parties. However, a majority of members believed that these benefits would be limited. Further detail regarding the Group's discussion of the perceived benefits of P220 can be found in Sections 7.3.2-7.3.4 below.

BSCCo noted the comment of one consultation respondent that the publication of the proposed P220 data could undermine other commercial providers of data. Some members were not convinced that this was the case, noting that only very aggregated GB data would be provided by P220. In addition, the Group considered that any impact on such third-party providers was not directly relevant to competition in the generation, supply, sale or purchase of electricity – and agreed that this was therefore not a relevant consideration in its assessment of P220 against the Applicable BSC Objectives.

Ultimately, the Group was divided regarding the likely extent of transparency and accessibility benefits under P220. In addition, there were mixed views within the Group as to whether P220 could be said to reduce barriers to entry for any participants (see Section 7.3.2 below).

### 7.3.2 Barriers to entry

The Group considered the view of several consultation respondents that P220 would reduce barriers to entry. It noted that one respondent believed there to be an existing 'information asymmetry' in the market, which discriminated against those participants who did not have the knowledge or resource to locate, derive and use the proposed P220 data through other existing sources. This respondent considered that this effectively allowed those participants with access to existing data to create an 'information barrier to entry' which hindered competition. Another respondent considered that providing the P220 data would promote a 'level playing field' within the market, and would therefore reduce existing barriers to entry.

The Group discussed the views expressed by respondents in this area. Some members disagreed that P220 would reduce barriers to entry. These respondents noted that the existing data was publicly or commercially available to any participant who wished to invest the resource to obtain it, and disputed the implication of one respondent that some participants were being deliberately excluded from receiving this data. Similarly, these members noted that the proposed P220 data would be made available equally to all participants. The Proposer noted that it was typically the larger participants who had the knowledge and resources to obtain similar data from existing sources. However, other members noted that larger Parties paid the majority of the costs of funding the provision of this existing data in the market.

The Proposer queried whether there was a barrier to entry in the sense that the costs of obtaining data from existing sources would form part of a new entrant's start-up costs. An attendee noted that a credible investment case was necessary to participants wishing to enter the market, and suggested that provision of the P220 data would be a helpful tool in forming this case. The Proposer suggested that, if the P220 data was provided at zero cost at the point of entry, then start-up costs would be lowered. Other members disagreed and argued that the costs of obtaining market data were likely to be insignificant against other market-entry costs such as the requirements of the BSC's registration processes. These members also noted that all market participants would pay towards the cost of providing the P220 data as part of BSC or BSUoS charges. However, the Proposer commented that, for smaller participants, these 'smeared' costs were likely to be far smaller than those which such participants would incur in directly obtaining existing data from a variety of sources or through a third-party provider.

BSCCo queried whether the barriers to entry identified by consultation respondents were financial, and suggested that they appeared to relate more to market information, knowledge and understanding. An attendee agreed, and believed that respondents were alluding to the transparency and parity of information across the market. It was noted that, during the DSWG's meetings, some DSWG members had commented that they found opportunities for further involvement in the electricity market to be limited by its opaqueness. BSCCo noted that there were a variety of types of market within the electricity industry (for example, generation, supply and distribution), but that P220 had been informed in part by DSWG members' stated difficulties in locating data to help them participate in the demand-side market and be sufficiently empowered and informed customers.

The Proposer stated that they believed the consultation responses had highlighted a perception that there was a lack of transparency of data, with views expressed that it was beyond the resources of smaller participants to utilise existing data when this was spread across a variety of platforms. The Proposer believed that this could be considered to represent a barrier to full involvement in the market (and potentially a barrier to entry), and argued that any incremental improvement in this area could give a benefit. The Proposer advised that National Grid had made efforts to publicise existing sources of data through the DSWG meetings, its Operational Forums and web meetings – but that the view received from participants at these forums was that this data was too difficult to locate, was not user-friendly, or did not provide the precise information which they required. The Proposer reiterated that the P220 Summary Page data was aimed largely at marginal BMRS users.

The Group remained split as to whether P220 might lower barriers to entry. Those members who believed that there would be no effect in this area stated that they were not necessarily disputing the potential for P220 to give rise to benefits for participants, but that they did not believe that these would affect the ease of entry to the market.

### **7.3.3 Market understanding and behaviour**

The Group noted the view of a majority of consultation respondents that publication of the intended P220 data would deliver greater understanding of market fundamentals by participants, and that this would promote competition. Generally, the Group agreed that there would be a benefit in this area, but was divided as to whether the extent of this benefit would be sufficient to outweigh the P220 implementation costs.

The Group unanimously agreed that P220 would only deliver a net benefit if it altered participants' behaviour in ways which delivered efficiencies to the market, and if the resulting efficiencies (for example, improved self-balancing) were greater than the costs of providing the data. The Group therefore considered the specific benefits identified by consultation respondents in respect of the individual P220 data items, as summarised in Table 20 above. This section outlines the additional arguments made by the Group in relation to respondents' perceived benefits.

A majority of members considered that, whilst arguments had been put forward by respondents that the proposed data would be useful and a 'nice to have', it had not been sufficiently demonstrated that use of the data would alter participants' commercial decisions and market behaviour. These members considered that, whilst many respondents had argued that P220 would lead to improved self-balancing, their responses had not demonstrated how this would be achieved in practice through using the data – making it difficult to establish the extent of any potential improvement.

The Proposer argued that the proposed wind generation data would be useful in demand-forecasting, by highlighting the potential intermittency of wind generation as well as when reserve requirements would be high. The Proposer considered that this data would therefore allow participants to more efficiently plan (and price) opportunities for reserve participation, leading to a more efficient market outcome. Similarly, the Proposer considered that publication of Non-BM STOR Instructed Volumes could encourage greater demand-side participation, by delivering greater transparency regarding the Transmission Company's utilisation of reserve. The Proposer noted that the Transmission Company undertakes three reserve tenders a year, and suggested that the publication of the Non-BM STOR data would create greater opportunities for participants to bid for reserve provision and to submit more reflective prices – since the data would highlight when the reserve of other participants was being used. The Proposer believed that this could ultimately lead to increased participation in reserve services.

The Proposer also considered that the day-ahead wind generation forecast data could allow participants to take an improved view of cash-out risk, by helping them establish the likely market length and total imbalance position. The Proposer believed that this would enable participants to better manage the risk of imbalance. The Proposer also noted that the Non-BM STOR actions taken by the Transmission Company could reduce demand, and suggested that providing information regarding these actions would therefore be useful to participants in undertaking demand forecasting and understanding overall market length. It was suggested by the Proposer that the instantaneous generation by fuel-type data would allow participants to understand, identify and act upon Plant trips and other step-changes in generation (especially when used in conjunction with existing MEL and FPN data). For the other data items, such as the proposed temperature data or daily energy volumes, the Proposer considered that this would allow participants to undertake more accurate demand-forecasting by demonstrating the link between past and future events.

Taken together as a whole, the Proposer therefore believed that P220 would lead to practical opportunities for participants to act on the proposed data in ways which might lead to more efficient market operation. The Proposer considered that use of the data could enable improved commercial decisions and self-balancing by participants – potentially helping to reduce the overall level of imbalance in the market. The Proposer believed that the fact that some participants were already prepared to derive similar data from other existing sources demonstrated that these participants believed this type of data to be of practical use.

Another member of the Group stated that they believed there would be no single P220 data item which would change market behaviour. This member believed that P220 would provide additional data which would form part of a portfolio of information used by participants when making commercial decisions. However, this respondent agreed with the view of the Proposer that P220 would deliver benefits in the areas outlined above. In addition to the arguments above (which primarily related to the efficient operation of the Transmission System), an attendee stated that they also believed that the new P220 data would allow consumers to take a more informed view of the market – and thereby of the potential for savings through changing Suppliers and tariffs. The attendee believed that this would promote competition in the sale and purchase of electricity. The attendee also advised that two large UK electricity customers had expressed an interest to them regarding use of the P220 data. Another attendee suggested that the P220 data could benefit Parties by enabling them to develop more innovative contracts, noting the view of one consultation respondent that this would be the case.

However, other members of the Group remained unconvinced that any of the proposed new P220 data items would lead to changes in market behaviour and/or improved self-balancing by participants. One of these members stated that they found it difficult to see how the data could lead to improved within-day trading. An attendee commented that the existing summary page in the gas market enabled participants to take a 5-minute view at the beginning of each day regarding the position of the market and prices, to inform their decisions for the day. The attendee clarified that, whilst they were aware of a variety of existing sources of electricity market data, they found such data difficult to locate and use. However, a member noted that gas represented a within-day market. This member considered that a single 'snapshot' of electricity market data at a given point in time would not be representative of the likely changes throughout the remainder of that day. Another member supported this view. The member also believed that most small Suppliers were unlikely to have the 24-hour resources required to trade close to real time, and that the P220 data would therefore be of limited usefulness to such Parties. This member argued that commercial decisions for the majority of electricity market participants related to their ability to forecast market imbalance and the likely resulting cash-out prices. Other members agreed, and believed that it had not been proven that P220 would improve Parties' trading strategies.

One member noted that, with the exception of the wind generation forecast, the majority of the P220 data would be post-event. This member stated that it was therefore difficult to see how this could affect decisions and help Parties to trade out imbalances in real time, and believed that ex-ante data would be required if this was to be achieved. This member also argued that the wind forecast data would be of very limited benefit, since aggregated GB figures were unlikely to be meaningful given the variability of wind. This member believed that local forecast data would be needed if such data was to form part of participants' trading strategies.

The Proposer advised that the Department for Environment, Food and Rural Affairs (DEFRA) had expressed an interest in the proposed generation by fuel type data, as being helpful to its consideration of potentially publishing daily emissions figures. However, other members were unconvinced that this was relevant to their consideration of P220 against the Applicable BSC Objectives.

In summary, the Group remained divided over the extent of any benefits which would accrue to participants as a result of P220. Details of the Group's consideration of whether the potential benefits were sufficient to outweigh the implementation costs can be found below.

### 7.3.4 Cost-benefit

All members of the Group agreed that they supported provision of transparent information at a reasonable cost, providing that the provision of such data could be demonstrated as delivering a net overall benefit to the industry.

The Proposer believed that the case for change had been made through the detailed qualitative arguments expressed by respondents to the industry consultation. The Proposer believed that, in the long-term, these benefits would be sufficient to outweigh the one-off implementation costs of P220. Another member of the Group supported this view. This member believed that it was difficult to identify specific benefits until the data was made available and began to be used by participants. However, they considered that the absence of further detail in this area should not be construed as representing the absence of an overall benefit. The member considered that even small information benefits (in terms of man hours saved and better understanding) were likely to outweigh the implementation costs when applied to large numbers of participants throughout the industry.

However, a majority of members believed that the case for change had not been sufficiently proven, since they believed that it had not been demonstrated how the benefits identified by respondents would be realised. These members argued that, whilst they were prepared to accept the views of a majority of respondents that there could be benefits to their organisations, many of the benefits which had been identified were based on assumptions of changes in market behaviour which they believed had not been quantified or proven.

#### 7.3.4.1 *Parallels with UNC006 and potential benefits to consumers*

BSCCo noted that several smaller participants, who did not normally respond to consultations on Modification Proposals, had taken the time to provide detailed arguments in support of P220. It was noted that several respondents had referred to UNC Modification Proposal 006, which had sought to introduce increased transparency of information regarding gas terminal flows. One of these respondents argued that UNC006 had provided similar market fundamentals reporting, and had proved to be highly useful and an example of where participants had benefited significantly from such information dissemination. The Transmission Company, in its consultation response, noted that Ofgem's Regulatory Impact Assessment (RIA) in relation to UNC006 had estimated the net benefit of the gas information as being in the range of £82.87m to £122.46m (taking into account IT costs of £1.4m). This response therefore considered that the benefits ascribed to information provision were often larger than initially thought. Another respondent considered that Ofgem's RIA and decision letter in relation to UNC006 had highlighted real benefits from improved information transparency in the areas of more efficient system operation, sharper economic signals to participants, and increased long-term liquidity.

One respondent noted that smaller players, new entrants and end-users had been asked to provide a cost-benefit analysis. The respondent considered that it was very difficult to assess this, as they had previously noted in the context of UNC006. However, the respondent argued that lack of a cost-benefit analysis should not be a reason to oppose the implementation of P220. The respondent noted that views had been expressed by large users that the implementation costs of UNC006 outweighed its benefits, but that Ofgem had ultimately approved that proposal believing that it would increase the efficiency of the market. The respondent believed that this decision had been justified, with large numbers of participants using the gas information daily. Finally, the respondent considered that – although it was difficult to make a cost-based assessment – they believed fundamentally that improved information would lead to a more efficient market, which would establish real quantitative benefits in due course. The respondent believed that consumers would benefit through lower prices from reductions in costs of system operation and increased competition. The respondent argued that an assumed saving of only £0.5/MWh through the implementation of P220 would lead to savings of approximately £7.5m for the chemical sector alone.

The Group noted that parallels drawn by respondents between P220 and UNC006. Some members considered that the UNC006 changes had been more radical than what they perceived to be the 'incremental' changes proposed by P220, and believed that any benefits of P220 were therefore likely to be substantially less. One member commented that UNC006 had been intended to increase transparency of gas data such that it matched the level of information provided in the electricity market – suggesting that there was already significant transparency of electricity data. The Proposer agreed that the benefits of P220 were likely to be lower than UNC006, but believed that even a small proportion of the cost-benefit quoted by Ofgem for UNC006 would be a significant figure for the electricity industry. The Proposer noted that they did not expect any material financial benefits to accrue to the Transmission Company as a result of P220. However, they noted that the value of the electricity market was around £30bn per annum, and therefore believed that even small changes to improve market function leveraged against such a large overall cost could have a positive effect.

The Group noted the view of one consultation respondent that a fundamental requirement of an open competitive market was the provision of information which would allow energy buyers to make more informed decisions. This respondent considered that, increasingly, changes in the market mean that buyers are expected to fix their prices far more frequently than annually. In order to do this, the respondent believed that it was imperative for buyers to have access to the basic information regarding market drivers. The respondent suggested that, without such information, the market was opaque. The respondent acknowledged the concerns over the P220 implementation costs, and believed that the financial benefit to consumers was impossible to quantify. However, they believed that this benefit would be substantial – arguing that only fractional savings in the cost of energy would be needed to outweigh the costs of providing the data. This view was reiterated by an attendee at the meeting.

#### **7.3.4.2 Quantification of benefits**

Overall, the Group concluded that it was unable to quantify the extent of the P220 benefits to the market and remained divided over whether these benefits would outweigh the implementation costs. Some members believed that the case for change had been demonstrated by the qualitative arguments of consultation respondents. However, a majority of members believed that the benefit figures quoted by respondents had been based on assumptions of savings or changes in behaviour which had not been proven. One of these members argued that, for them, the key question was whether P220 would lead to a change in the level of overall market imbalance through changes in Parties' trading strategies. This member believed that it remained unproven that such a change would occur.

Despite these views, the Group agreed that (whilst it might not be able to quantify the net benefit of P220) it could be useful to attempt to quantify the materiality of the 'burden of proof' faced by those participants who supported the modification. The following three examples were suggested by individual Group members, attendees and/or BSCCo as potential ways of quantifying the changes in market behaviour which would be needed in order to outweigh the P220 implementation costs. No particular weight was given to one approach over another. The Group noted that all of these approaches were ultimately based on unproven assumptions.

**Example 1 – % reduction in imbalance charges required to outweigh P220 implementation cost****What Percentage Reduction in Imbalance Charges is Required to Recover the Cost of P220 Within Five Years?**

Note that this model is based on the following highly conservative assumptions:

- that the total imbalance charge will remain constant (implying it's reducing in real terms); and
- that the first imbalance savings will materialise a year after the investment is made

Total imbalance cost in first year (£m):	158
Discount rate:	5%
Net present value of imbalance savings (£m):	£684.06

	P220
Cost (£k)	750
%age:	0.11%

In this example, a 0.11% reduction in imbalance charges would be required over 5 years in order to offset the P220 implementation costs over that period.

**Example 2 – Reduction in cost of I&C spend required to outweigh P220 implementation cost****What Percentage Reduction in Cost of Industrial & Commercial Energy Spend is Required to Recover the Cost of P220 Within One Year?**

Note that this model is based on the assumption of an average price of £40/MWh

Total annual demand (TWh):	100
Total annual value of Industrial & Commercial market (£m):	4000
P220 implementation cost (£m):	0.75
% Saving required on I&C energy spend to recover P220 cost in 1 year:	0.02
£/MWh Saving required on I&C energy spend to recover P220 cost in 1 year:	0.80

In this example, a saving of 0.02% or £0.80/MWh would be required over one year in order to offset the P220 implementation costs.

**Example 3 – Attempt to quantify benefit of greater participation in Non-BM STOR provision****Financial benefit of the potential for the P220 Non-BM STOR data to encourage more participation in this service**

Improved transparency about how the Non-BM STOR service is used will contribute to giving the service a higher level of awareness, and allow service providers to better understand their opportunity to provide the service.

It is subjective on just how much this effect could lead to more service providers taking part in the Non-BM STOR service provision. However, if it is assumed that another 5 MW of provision was encouraged into service at the margin, then the benefit to consumers based on National Grid's latest market report gives a benefit of about £70,000 a year.

This is based on a price differential in the last tender round of approximately £3/MWh over 3861.5 hours (the amount of hours National Grid expect to use the service for), multiplied up for the 5 MW's worth.



## 7.4 Group's final recommendation to the Panel

This section outlines the final overall views of the Group regarding the merits of P220 against the Applicable BSC Objectives.

A majority of members believed that neither the Proposed Modification nor the Alternative Modification would better facilitate the achievement of the Applicable BSC Objectives overall when compared with the existing Code baseline. **The MAJORITY view of the Group was therefore that both the Proposed Modification and the Alternative Modification SHOULD NOT be made.**

The arguments of members in respect of the Alternative Modification were identical to those for the Proposed Modification, though on balance the Group unanimously believed that the Alternative Modification would better facilitate the achievement of the Applicable BSC Objectives when compared with the Proposed Modification.

A summary of the Group's views can be found in Table 21 below.

**Table 21 – Summary of Group's overall views of P220 against Applicable BSC Objectives**

View as to whether P220 better facilitates:	Yes	No	Neutral
Applicable BSC Objective (a):	-	-	<b>Unanimous</b>
Applicable BSC Objective (b):	<b>Majority</b>	-	Minority
Applicable BSC Objective (c):	<b>Majority</b>	-	Minority
Applicable BSC Objective (d):	-	<b>Majority</b>	Minority
Proposed Modification overall compared with existing baseline:	Minority	Minority	<b>Majority</b>
Alternative Modification compared with Proposed Modification:	<b>Unanimous</b>	-	-
Alternative Modification compared with existing baseline:	Minority	Minority	<b>Majority</b>

A **MINORITY** of members believed that P220 **WOULD** better facilitate the achievement of the Applicable BSC Objectives overall. These members believed that the benefits which would accrue under Objectives (b) and (c) had been proven by the qualitative arguments put forward by consultation respondents, and that these benefits would be sufficient to outweigh the P220 implementation costs. These members did not believe that the implementation costs were so large that they would have a negative impact on Objective (d), and were therefore neutral regarding this Objective.

A **MAJORITY** of members believed that P220 **WOULD NOT** better facilitate the achievement of the Applicable BSC Objectives overall. Of these, one member believed that there would actually be an overall negative impact on the Objectives. This member argued that any benefits under Objectives (b) and (c) would be limited, and would be outweighed by the detrimental effect of the implementation costs on Objective (d) such that P220 would be worse than the existing baseline.

The remaining members considered that P220 would have a neutral effect on the Applicable BSC Objectives overall. These members clarified that this was not due to any deficiencies in the Group's assessment of P220, but simply that they were unable to state that the benefits would outweigh the costs. These members acknowledged the strong arguments of some consultation respondents in favour of P220, but considered that these remained based on unproven assumptions. These members concluded that, whilst they did not believe that P220 would be worse than the existing arrangements, they were unable to demonstrate that it would better facilitate the achievement of the Applicable BSC Objectives. On this basis, these members noted that a 'neutral' vote in this context counted as a recommendation in favour of retaining the status quo.

All members believed that Applicable BSC Objective (a) was not relevant to its consideration of P220, since they believed that publication of the proposed data would have no impact on the ability of the Transmission Company to discharge its licence obligations.

## 8 TERMS USED IN THIS DOCUMENT

Other acronyms and defined terms take the meanings defined in Section X of the Code.

Acronym/Term	Definition
CHP	Combined Heat and Power.
Coal Plant	A Power Station which uses coal as the primary source of fuel.
CP	Change Proposal.
Combined Cycle Gas Turbine (CCGT)	Has the meaning as defined in the Grid Code (Reference 7).
CUSC	Connection and Use of System Code.
DSWG	Demand Side Working Group.
External Interconnection	Has the meaning as defined in the Grid Code.
Frequency	Has the meaning as defined in the Grid Code.
Gas Turbine Unit	Has the meaning as defined in the Grid Code.
High Reference Temperature	The daily average GB temperature which was exceeded on 12% of days during a 30 year historic period.
ISG	Imbalance Settlement Group.
IWA	Initial Written Assessment.
Low Reference Temperature	The daily average GB temperature which was exceeded on 88% of days during a 30 year historic period.
Non-BM STOR Instructed Volume	Volume of Short Term Operating Reserve instructed outside of the Balancing Mechanism in order to increase generation or reduce demand.
Non Pumped Storage Hydro Plant	A Power Station which uses water to generate electricity but does not include Pumped Storage Plant.
Normal Reference Temperature	The daily average GB temperature which was exceeded on 50% of days during a 30 year historic period.
Nuclear Plant	A Power Station which uses nuclear energy to generate electricity.

Acronym/Term	Definition
Oil Plant	A Power Station which uses oil as the primary source of fuel.
Open Cycle Gas Turbine Plant (OCGT)	Plant consisting of one or more Gas Turbine Units which are not part of a Combined Cycle Gas Turbine Module.
Operational metering	The equipment specified in CC6.5.6 of the Grid Code which provides real-time measurements of voltage, current, frequency, active power, reactive power and wind speed indications of Plant status and alarms.
P219	Modification Proposal P219 'Consistency between forecast and out-turn demand'.
Power Station	Has the meaning as defined in the Grid Code.
Pumped Storage Plant	Has the meaning as defined in the Grid Code.
Registered Capacity	Has the meaning as defined in the Grid Code.
Short Term Operating Reserve (STOR)	A balancing service procured by the Transmission Company and which has the meaning as defined in National Grid's Procurement Guidelines (Reference 8).
SSMG	Settlement Standing Modification Group.
SYS	National Grid's Seven Year Statement.
Total Metered Capacity	The total MW value of the Registered Capacity of all Power Park Modules metered by the Transmission Company.
Transmission System Demand	Has the meaning given to the term GB Transmission System Demand in the Grid Code.
Transmission System Energy	The integral with respect to time of Transmission System Demand.
UNC	Uniform Network Code.

## 9 DOCUMENT CONTROL

### 9.1 Authorities

Version	Date	Author	Reviewer	Reason for Review
0.1	01/02/08	Kathryn Coffin	Richard Clarke, John Lucas, Jamie Anavi, P220 Modification Group	For review
1.0	08/02/08	Change Delivery		For Panel decision

## 9.2 References

Ref.	Document Title	Owner	Issue Date	Version
1	Assessment Report for Modification Proposal P219 'Consistency between forecast and out-turn demand' <a href="http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=239">http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=239</a>	BSCCo	07/02/08	2.0
2	Assessment Consultation for Modification Proposal P220 'Provision of new data items for improving market information' <a href="http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=240">http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=240</a>	BSCCo	07/01/08	1.0
3	Electricity Market Information: Consultation on Potential Developments <a href="http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/">http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/</a>	National Grid	01/08/07	N/A
4	Electricity Daily Summary Page Strawman development <a href="http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/">http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/</a>	National Grid	N/A	N/A
5	National Grid Electricity Market Information Consultation: Conclusions Report <a href="http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/">http://www.nationalgrid.com/uk/Electricity/Data/electricitymarketinfo/</a>	National Grid	15/10/07	N/A
6	Initial Written Assessment for Modification Proposal P220 'Provision of new data items for improving market information' <a href="http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=240">http://www.elexon.co.uk/changeimplementation/ModificationProcess/ModificationDocumentation/modProposalView.aspx?propID=240</a>	BSCCo	02/11/07	1.0
7	Grid Code: Glossary and Definitions <a href="http://www.nationalgrid.com/NR/rdonlyres/5DFDEFEB-DDBC-4381-8DE5-4B2087AC6AC8/18438/GD_i3r21_entire.pdf">http://www.nationalgrid.com/NR/rdonlyres/5DFDEFEB-DDBC-4381-8DE5-4B2087AC6AC8/18438/GD_i3r21_entire.pdf</a>	National Grid	20/12/06	Issue 3
8	Procurement Guidelines <a href="http://www.nationalgrid.com/NR/rdonlyres/2643DEB7-377B-41F3-93C7-3AB85E729507/16053/PGsv80effectivefrom01apr07final.pdf">http://www.nationalgrid.com/NR/rdonlyres/2643DEB7-377B-41F3-93C7-3AB85E729507/16053/PGsv80effectivefrom01apr07final.pdf</a>	National Grid	01/04/07	8.0

## APPENDIX 1: DRAFT LEGAL TEXT

BSCCo has developed draft legal text for P220. A copy of the draft text for the Proposed Modification is provided as Attachment 1, whilst a copy of the text for the Alternative Modification is provided as Attachment 2.

The draft legal text contains some revisions/additions to the indicative drafting originally provided by the Proposer in the Modification Proposal, in order to reflect the Group's agreed solution. For an explanation of the changes made, please refer to the Group's discussions as documented in Section 6 of this report.

The Group reviewed the draft legal text by correspondence. Responses were received from all but one member. These members confirmed that the draft text delivered its intended solution.

## APPENDIX 2: PROCESS FOLLOWED

Copies of all documents referred to in the table below can be found on the BSC Website at: [ELEXON - Modification Proposal P220](#).

Date	Event
26/10/07	Modification Proposal raised by National Grid
09/11/07	IWA presented to the Panel
13/11/07	First Assessment Procedure Modification Group meeting held
20/11/07	Second Assessment Procedure Modification Group meeting held
28/11/07	Requirements Specification issued for BSC Agent impact assessment
29/11/07	Request for Party/Party Agent impact assessments request issued
29/11/07	Request for Transmission Company analysis issued
29/11/07	Request for BSCCo impact assessment issued
12/12/07	BSC Agent impact assessment response returned
12/12/07	Party/Party Agent impact assessment responses returned
12/12/07	BSCCo impact assessment returned
13/12/07	Transmission Company analysis returned
17/12/07	Third Assessment Procedure Modification Group meeting held
07/01/08	Assessment Procedure consultation issued
21/01/08	Assessment Procedure consultation responses returned
23/01/08	Fourth Assessment Procedure Modification Group meeting held
14/02/08	Assessment Report presented to the Panel


### ESTIMATED COSTS OF PROGRESSING MODIFICATION PROPOSAL<sup>25</sup>

<b>Meeting Cost</b>	£1,750 (based on sharing one meeting with P219)
<b>Legal/Expert Cost</b>	Nil
<b>Impact Assessment Cost</b>	£12,000
<b>ELEXON Resource</b>	56 man days (equivalent to £16,170)

These costs are unchanged from those provided in the P220 IWA and Assessment Procedure consultation document.

<sup>25</sup> Clarification of the meanings of the cost terms in this appendix can be found on the BSC Website at the following link: [http://www.elexon.co.uk/documents/Change\\_and\\_Implementation/Modifications\\_Process\\_-\\_Related\\_Documents/Clarification\\_of\\_Costs\\_in\\_Modification\\_Procedure\\_Reports.pdf](http://www.elexon.co.uk/documents/Change_and_Implementation/Modifications_Process_-_Related_Documents/Clarification_of_Costs_in_Modification_Procedure_Reports.pdf).

**MODIFICATION GROUP MEMBERSHIP**

Member	Organisation	13/11	20/11	17/12	23/01
Richard Clarke	ELEXON (Chair)	Y	N	Y	Y
Justin Andrews	ELEXON (Alternate Chair)	N	Y	N	N
Kathryn Coffin	ELEXON (Lead Analyst)	Y	Y	Y	Y
Shafqat Ali	National Grid (Proposer's Representative)	Y	Y	Y	Y
Bill Reed	RWE npower	Y	Y	Y	Y
Ben Sheehy	E.ON	Part	N	Y	Y
Stephen Carter	EDF Energy	Y	Y	Y	Y
Laura Jeffs	Centrica	Y	Y	Y	Y
Gary Henderson	Scottish Power	N		Y	Y

Attendee	Organisation	13/11	20/11	17/12	23/01
John Lucas	ELEXON (Technical Support)	Y	Y	N	Part
Jamie Anavi	ELEXON (Technical Support)	Y	N	Y	Y
Paul Auckland	National Grid	Y	Y	Y	Y
Chris Rogers	National Grid	Y	N	N	N
Richard Price	National Grid	N	Y	Y	Y
Andy Howden	LogicaCMG	Y	Y	Y	Y
Mark Gribble	LogicaCMG	Y	N	Y	N
Andrew Wallace	Ofgem	Y	Part	Y	Y
Irene Babs-Jonah	Ofgem	Y	N	N	Y
Garth Graham	SSE	Y	N	N	N
Paul Savage*	energywatch	Y	Part	N	N
Eddie Proffit*	Major Energy Users Council	Part	N	Y	Part
Sebastian Eyre	BSC Panel	N	N	N	Part

*\*Member of Demand Side Working Group*

## MODIFICATION GROUP TERMS OF REFERENCE

Modification Proposal P220 will be considered by the P220 Modification Group (which will be formed from the Settlement Standing Modification Group, with an invitation for attendance also extended to the Demand Side Working Group), in accordance with the SSMG's Terms of Reference and this Appendix.

### **P220 – Provision of new data items for improving market information**

#### Assessment Procedure

- 1.1 The Modification Group will carry out an Assessment Procedure in respect of Modification Proposal P220 in accordance with Section F2.6 of the Code.
- 1.2 The Modification Group will produce an Assessment Report for consideration at the BSC Panel Meeting on 14 February 2008.
- 1.3 The Modification Group shall consider and/or include in the Assessment Report as appropriate:
  - The appropriate submission format and times for each proposed new data item, and whether the data would be compiled by the Transmission Company or BSCCo (to be established prior to requesting any BMRA impact assessment);
  - The appropriate format – e.g. graphic or tabular – in which each proposed new data item would be published on the BMRS (both for the proposed summary page and for any individual supporting web pages or TIBCO messages which may be required);
  - The central implementation costs of P220 to the Transmission Company, BMRA and BSCCo – including any potential cost savings which might arise from a parallel implementation with Modification Proposal P219 (to be established via impact assessment prior to issuing the industry consultation);
  - Any Alternative Modification which (in the majority view of the Modification Group) would better facilitate the achievement of the Applicable BSC Objectives in relation to the issue or defect identified in the Modification Proposal, when compared with the Proposed Modification – including consideration of:
    - An Alternative Modification which would allow the BSC Panel to agree future changes to BMRS data without requiring a Modification Proposal;
  - Recommended Implementation Date(s) for P220, taking into account any potential interaction with (and cost implications resulting from) Project Isis; and
  - Recommended legal drafting for P220 - having reviewed the suggested drafting included in the Modification Proposal for Section Q and Annex X-2 of the Code, and having developed any additional/amended drafting which may be required (e.g. for Section V or Annex X-1).

### **APPENDIX 3: RESULTS OF ASSESSMENT PROCEDURE CONSULTATION**

11 responses (representing 50 Parties and 2 non-Parties) were received to the P220 Assessment Procedure consultation.

A summary of the consultation responses is provided in the table on the following page. Note that the numbers shown in the table represent the number of respondents in support of each view, and not the number of Parties or non-Parties represented by those respondents.

Numbers recorded in the 'Other' column of the table indicate that either:

- The respondent did not express a specific view regarding this question;
- The respondent expressed an uncertain view such as 'maybe'; or
- The respondent's view was unclear from their response.

Details of the arguments made by respondents can be found in Sections 6 and 7, along with the Modification Group's consideration of these arguments. Full copies of the consultation responses are attached as a separate document, Attachment 3.



## Summary of P220 Assessment Procedure consultation responses

\* represents that the view of one respondent was initially unclear, but was subsequently clarified with BSCCo.

Q	Consultation question	Yes	No	Neutral	Other
1	Do you believe that Proposed Modification P220 would better facilitate the achievement of the Applicable BSC Objectives when compared with the current Code baseline?	8	2	1	0
	Please give rationale stating relevant objective(s).	See Section 7 of Assessment Report			
2	Do you believe that Alternative Modification P220 would better facilitate the achievement of the Applicable BSC Objectives when compared with the Proposed Modification?	10*	0	0	1
	Please give rationale stating relevant objective(s).	See Section 7 of Assessment Report			
3	Do you believe that Alternative Modification P220 would better facilitate the achievement of the Applicable BSC Objectives when compared with the current Code baseline?	8	2	1	0
	Please give rationale stating relevant objective(s).	See Section 7 of Assessment Report			
4	For each group of proposed new P220 BMRS data items, please indicate in a reasonable level of detail how the provision of this information would or would not be of benefit to your organisation.  For example, this might include details of any business processes in which you would use the new data, and how the new data might or might not:	See Section 7 of Assessment Report			
	<ul style="list-style-type: none"> <li>Improve the efficiency of these processes;</li> <li>Give the ability to make more informed commercial decisions; and/or</li> <li>Improve self-balancing.</li> </ul> <p>Where possible, please tie the details provided back to the arguments expressed in respect of the Applicable BSC Objectives under Qs 1-3 above.</p> <p>If able, participants are also invited to quantify any identified benefits and resulting cost savings.</p>				
5	Do you support the inclusion in the P220 solution of a real-time 'data incomplete' flag for the generation by fuel type data (as described in Section 6.5 of the consultation document), given that this would significantly increase the Transmission Company's implementation costs and lead time?	2	7	0	2

Q	Consultation question	Yes	No	Neutral	Other
	<p>Please give rationale and, where possible, link these views to the Applicable BSC Objectives.</p> <p>If 'yes', please provide details of how the additional benefits of including this flag would outweigh the delay in implementation and increased costs (e.g. how the flag would enable you to gain additional value from the P220 data).</p>	See Section 6.5.3.3 of Assessment Report			
6	<p>Do you believe that publication of any of the new BMRS data contained in the Proposed Modification or Alternative Modification could give rise to any confidentiality issues?</p> <p>Please give rationale and state relevant data items. Where possible, please link these views back to the arguments expressed in respect of the Applicable BSC Objectives under Qs 1-3 above.</p>	1	7	0	3
7	<p>Do you support the Modification Group's initial recommendation that, if approved, P220 should be implemented in the November 2008 Release with a fall-back of the June 2009 Release? (note that, if the real-time 'data incomplete' flag was included in the solution, a November 2008 implementation would no longer be feasible).</p> <p>Please give rationale.</p>	10	0	0	1
8	<p>Do you believe there are any alternative solutions that the Modification Group has not identified and that should be considered? (please note that, whilst the Modification Group is unlikely to be able to consider the inclusion of further new data items under P220, respondents are still invited to identify any additional data requirements here which they believe should be considered separately to P220 in the future).</p> <p>Please give rationale for the proposed alternative solution(s), including how these might better facilitate the achievement of the Applicable BSC Objectives when compared with the Proposed Modification and Alternative Modification developed by the Group.</p>	0	10	0	1
9	<p>Does P220 raise any issues that you believe have not been identified so far and that should be progressed as part of the Assessment Procedure?</p> <p>Please give rationale.</p>	1	8	0	2
10	Are there any further comments on P220 that you wish to make?	6	5	0	0
		See Sections 6.1, 6.9.4.2, 6.9.4.3 and 7 of Assessment Report			

## APPENDIX 4: RESULTS OF IMPACT ASSESSMENT

An impact assessment has been undertaken by BSCCo in respect of all BSC systems, documentation and processes. The following have been identified as being impacted by P220.

### a) Impact on BSC Systems and processes

BSC System / process	Potential impact of P220
BMRS	<p>Changes would be required to the system interfaces that transmit data from the Transmission Company to the BMRA, in order to send and receive the new data items proposed by P220.</p> <p>Changes would also be required to the BMRS display and underlying BMRA systems in order to make the new data items available to participants via the website and (for High Grade Service users) the TIBCO messaging service.</p>

Further details regarding the BMRA impacts, costs and lead times can be found in Section 6.9.2 of this Assessment Report.

### b) Impact on BSC Agent contractual arrangements

None anticipated, since the provisions of new data items would be covered by the terms of the existing BMRA contract.

### c) Impact on Transmission Company

Changes to Transmission Company systems and processes would be required in order that the new data items could be developed and submitted to the BMRA. Changes would also be required to National Grid's 'BMRS & SAA Interface Specification', which sets out the format in which data is provided by the Transmission Company to the BMRA.<sup>26</sup> The new file formats for P220 would need to be agreed between the Transmission Company and the BMRA.

A more detailed summary of the costs and lead time of P220 to the Transmission Company can be found in Section 6.9.2. A full copy of the Transmission Company's impact assessment is attached as a separate document, Attachment 4.

### d) Impact on BSC Parties and Party Agents

Parties and non-Parties who currently use the BMRS High Grade Service would be able to receive the new P220 data items via the BMRS website and/or TIBCO messaging. Parties and non-Parties using the BMRS Low Grade Service would be able to access the new data via the public website. Parties who feed BMRS data into their own systems might therefore need to amend these systems to take account of the new P220 data items.

Further details regarding the costs and lead times of P220 to participants can be found in Section 6.9.2. Copies of the individual Party and Party Agent impact assessment responses are attached as a separate document, Attachment 5.

<sup>26</sup> The BMRA & SAA Interface Specification is not a BSC Configurable Item, but is owned by the Transmission Company and is published on the National Grid website at: <http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/associateddocs/>.

**e) Impact on BSCCo**

Area of business	Potential impact of P220
Change implementation management	<p>BSCCo would be required to manage the implementation of P220, including:</p> <ul style="list-style-type: none"> <li>Overseeing the BMRA's system development/testing and documentation changes;</li> <li>Overseeing integration testing of the BMRA and Transmission Company's amended systems;</li> <li>Conducting participant testing of the new BMRS functionality (e.g. the new TIBCO messages); and</li> <li>Updating the Code and impacted Code Subsidiary Documents/Configurable Items.</li> </ul>
BM Unit registration	There would be no ongoing operational impact on BSCCo's working procedures, as the identification of the fuel type of each generator BM Unit would be undertaken by the Transmission Company prior to sending the new out-turn generation data to the BMRA.
Support to BSC Auditor	The BSC Auditor audits the BMRA against the publication requirements set out in the Code. If P220 was approved, BSCCo would therefore need to advise the Auditor of the Code's amended reporting requirements. However, there would be no impact on the BSC Audit process itself.

Details of the costs and lead time of P220 for BSCCo can be found in Section 6.9.2.

**f) Impact on Code**

Code Section	Potential impact of P220
Section Q 'Balancing Mechanism Activities'	New provisions would be required to describe the new data items submitted by the Transmission Company to the BMRA, and the timings of these submissions.
Section V 'Reporting', Annex V-1 'Reports': Table 1 'BMRS'.	The new data items would need to be added to this table, which lists all data published on the BMRS along with the frequency and format of this data.
Annex X-1 'General Glossary'	New defined terms would need to be added to this section.
Annex X-2 'Technical Glossary'	New defined terms would need to be added to this section.

**g) Impact on Code Subsidiary Documents**

Document	Potential impact of P220
BMRA Service Description	Changes to the BMRA Service Description would be required to reflect the BMRA's receipt and publication of new data items under P220.

There would be no impact on any BSCPs, as the identification of the fuel type of each generator BM Unit would be undertaken by the Transmission Company prior to sending the new out-turn generation data to the BMRA.

### h) Impact on Core Industry Documents and other documents

P220 would have no impact on any Core Industry Documents – since it seeks to use terms which are either already defined in the BSC or the Grid Code, or which would be newly-defined in the BSC only.

### i) Impact on other Configurable Items

Document	Potential impact of P220
Logica Interface Definition and Design (IDD) Part 1	Changes to these documents would be required to reflect the BMRA's receipt and publication of new data items under P220.
Logica IDD Part 2	
BMRA Design Specification	
BMRA Manual System Specification	
BMRA Operating Services Manual	
BMRA System Specification	
BMRA User Requirements Specification (URS)	

### j) Impact on BSCo Memorandum and Articles of Association

No impact.

### k) Impact on governance and regulatory framework

No impact.

## APPENDIX 5: ANALYSIS OF OPERATIONAL METERING RELIABILITY

In response to a request from the Group (see Section 6.5), National Grid undertook analysis into the reliability of generation operational metering. This analysis was provided to the industry as part of the Assessment Procedure consultation documentation, and is included as Attachment 6 to this Assessment Report.

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