



**National Grid**

**National Grid Reactive Market Report**  
**Eleventh Tender Round for Obligatory and**  
**Enhanced Reactive Power Services**  
**for**  
**Contracts Effective from 1<sup>st</sup> April 2003**

Prepared by

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**6<sup>th</sup> May 2003**

## Executive Summary

This report describes the 11<sup>th</sup> tender round evaluation process for reactive market contracts commencing 1<sup>st</sup> April 2003. It includes the prices and reactive capability data of the successful tenders. The report also includes metered Mvarh utilisation from all eligible service providers for the period 1<sup>st</sup> October 2002 to 31<sup>st</sup> March 2003. Estimates of the reactive contribution of the National Grid Transmission System for the same period are also included.

National Grid evaluated all the tenders received against economic purchase and technical performance criteria in accordance with the agreed terms of the market mechanism. On 17<sup>th</sup> January 2003, tenderers were notified of the results of their respective tenders. The main points are as follows:

- On 29<sup>th</sup> November 2002 ('Market Day') tenders were received from 59 BM Units representing 32 stations from 20 Generating Companies. All were in respect of the Grid Code Obligatory Reactive Power Service (ORPS) only. No tenders were received from non-BM Unit providers.
- Tenders received were for a duration of 12, 18 or 24 months.
- Tenderers included portfolio, independent and embedded generating companies.
- Of the 59 tenders evaluated, National Grid offered Market Agreements to 31, of which 30 proceeded to contract.
- 6 of the 30 agreements signed were at power stations that have subsequently closed (Drakelow and High Marnham).
- Therefore as at 1<sup>st</sup> April 2003 there are a total of 55 BM Units from a possible 148 on Reactive Market Agreements (24 from this tender round 11, and 31 from earlier tender rounds).

The next 'Market Day' for receipt of tenders for Market Agreements commencing on 1<sup>st</sup> October 2003, is 30<sup>th</sup> May 2003. Invitation To Tender (ITT) packs for this so called tender round 12, have been available on the website since 4<sup>th</sup> April 2003.

BM Units with contracts commencing 1<sup>st</sup> April 2003 cannot be re-tendered until the 13<sup>th</sup> tender round, commencing 1<sup>st</sup> April 2004, at the earliest, in accordance with the 12 month minimum contract duration.

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## 1. Introduction

- 1.1 This market report provides information and results of the tender evaluation process, and describes the contractual position for the provision of Reactive Power Services to the National Grid Transmission System as at 1<sup>st</sup> April 2003.
- 1.2 National Grid manages the voltage of the supergrid system, to meet Transmission Licence requirements for secure and stable power transmission and to ensure quality of supply to customers. Voltages are largely determined by the flows of reactive power on the system. National Grid ensures that reactive power resources are provided on a local basis to meet the constantly varying needs of the system and that there is sufficient reactive power reserve available to meet contingencies.
- 1.3 Generating Units provide Reactive Power Capability, and have the ability to vary their reactive power output as a requirement of the Grid Code. The power system itself has inherent reactive power gains and losses, which vary in accordance with changes in real power flows and voltage. National Grid installs reactive compensation plant in parts of the system where there is insufficient generator reactive capability to meet licence requirements, and where voltages cannot be regulated effectively or economically by other means.
- 1.4 Dynamic reserves of reactive power are essential for system operation. National Grid values reactive capability as it gives rise to increased confidence in the availability of a post-fault service. Although the capability element of the Default Payment Mechanism (DPM) has ceased, National Grid still seeks capability based market agreements to ensure post fault reserves are maintained.
- 1.5 The eleventh tender round has been undertaken to secure such capability based market agreements from 1<sup>st</sup> April 2003. The service definitions, requirements and contract terms may be found in the Connection & Use of System Code (CUSC), the Grid Code and the ITT (Invitation to Tender) Pack. These can be accessed via National Grid's industry website at:  
[www.nationalgrid.com/uk/indinfo](http://www.nationalgrid.com/uk/indinfo)

## 2. Tender Process

- 2.1 On 29<sup>th</sup> November 2002, National Grid held the 11<sup>th</sup> Reactive Power Market Day. This enabled any potential provider that fulfilled the qualification criteria specified in Schedule 3 of CUSC to tender for a Market Agreement.
- 2.2 Tenderers may elect to choose the term of their tender from a minimum period of 12 months and thereafter in 6 month increments (e.g 12, 18, 24, 30, 36 months etc.).
- 2.3 Tenderers submitting tenders for periods greater than 12 months are able to include indexation criteria on the tendered prices.
- 2.4 Tenderers may tender for either the ORPS and/or the Enhanced Reactive Power Service (ERPS), as defined in CUSC Schedule 3.
- 2.5 National Grid welcomes longer-term tenders and tenders offering ERPS. However the value of such contracts may change from year to year as system reactive needs evolve.
- 2.6 Potential tenderers comprise of the following:
- Generators required to provide the minimum Grid Code ORPS and already in receipt of the default payment arrangements, wishing to tender alternative payment terms for ORPS.
  - Generators that have a reactive capability in excess of that which it is obliged to provide as the ORPS, known as the "Grid Code Plus Enhanced Reactive Power Service".
  - Any other eligible Service Provider able to offer other plant or apparatus which can generate or absorb reactive power, known as ERPS. The only requirement is that these Service Providers must fulfil the market qualification criteria and be capable of making their capability available for use by National Grid<sup>1</sup>.

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<sup>1</sup> In the first instance any such provider interested in offering such a service should contact National Grid before submitting a tender

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### 3. Tenders Submitted

- 3.1 A total of 59 discrete tender submissions were received, representing 20 generating companies and 32 power stations. All tenders were for BM Units offering the Grid Code ORPS service only, with contract duration of 12, 18 and 24 months.
- 3.2 Tenders were received from both portfolio, independent and embedded generating companies. No tenders were received from non-BM providers.
- 3.3 Of the tenders received, all sought reactive capability biased payments in addition to utilisation payments.
- 3.4 All tenders were compliant with the submission criteria specified in CUSC Schedule 3.

### 4. Tender Assessment

- 4.1 Tender assessment was carried out in accordance with evaluation criteria specified in Appendix 6 of CUSC Schedule 3. Details of this are more fully described in Appendix 6 of this report.
- 4.2 This assessment included input from the Reactive Power Capability in Appendix B of the ITT Pack. The purpose of this index is to provide an indication of the reactive requirement in each of the zones defined. These requirements are based on the historic need for Reactive Power in the zones and any planned changes to National Grid's Transmission System (or the generation and demand connected to it), that are likely to affect the zonal reactive requirement.
- 4.3 Tenders were assessed via a process, which considers the following:
  - economics (i.e. cost of market compared with default),
  - the intrinsic capability value of the tendered reactive service (against the alternative of National Grid reactive assets);
  - a number of other criteria, for example how competitive the utilisation price is, and what incentive the Generator is placing on themselves to maintain the reactive capability.

Please refer to CUSC Schedule 3, Appendix 6 for full details on the qualification and evaluation criteria.

## 5. Tender Observations

- 5.1 All tenders were seeking capability worth. As in the previous tender round some generators had made incremental changes in the balance between capability and utilisation prices in the light of their experience from previous rounds. Some had completely restructured their tenders changing the balance between capability (both available and synchronised) and utilisation charges. Most generators continue to attempt to extract the majority of their income through capability charges.
- 5.2 A continuing feature from previous tender rounds was the continued use of combinations of available and synchronised capability prices. Synchronised capability is more useful to us than available capability, but our valuation of the two differs for high-merit (i.e. base load) and for low-merit (i.e. peaking) plant. For high-merit plant, use of a synchronised capability price, as against a price on available capability, exposes the Generator to the technical risk of plant failure. It also exposes National Grid to the uncertainty of the plant's commercial availability. On average National Grid sees fairly low value in this style of tender. For low-merit plant, the reactive capability is of much more value to the system when the plant is synchronised and the hours of running may be more at National Grid's control than the Generator's. Under such circumstances National Grid may be happy to award a tender to plant with a relatively high price for synchronised capability, if this enables the Generator to lessen their price for available capability.
- 5.3 This tender round, as with previous ones, has taken into account our views on expected utilisation of generating plant in the energy market. This also included our view on possible closures.
- 5.4 A number of tenderers appeared to be exploring price sensitivities across BM units (within a station).
- 5.5 No tenders were received for enhanced capability.

## 6. Assessment Results

- 6.1 Of the 59 tenders evaluated, National Grid offered Market Agreements to 31, of which 30 proceeded to contract.
- 6.2 The acceptance rate was 31 from the 59 tenders received or 53%. This acceptance rate is similar to the last tender round of 56% and higher than the last comparable tender round 9 of 42%.
- 6.3 The range of assessment outcome is shown in figure 1 below. A number of tenders were unattractive, in that they sought capability payments significantly above expectations of default payments and National Grid's value of capability.

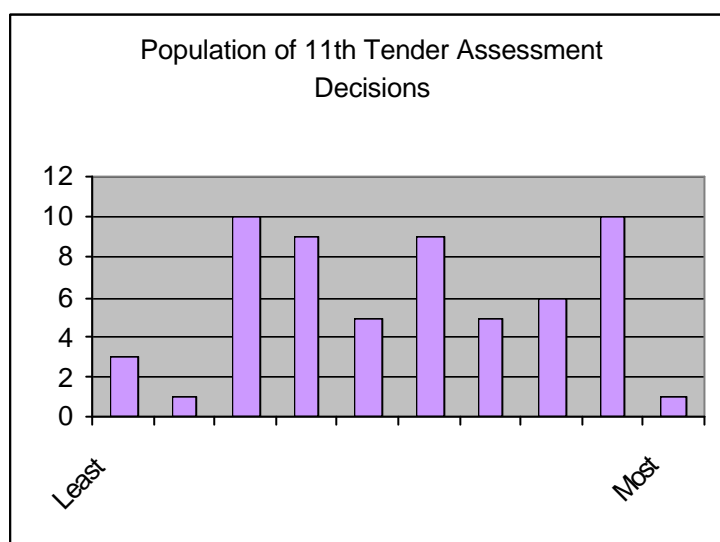


Figure 1

- 6.4 A complete list of all generator BM Units as at 1 April 2003 is given in Appendix 2. This list includes a record of which BM Units are on market agreements and which are on the DPM. Whether or not they will be in a position to tender in round 12 depends upon their existing contractual status. Appendix 3 provides a list of BM Units on Market Agreements applicable as at 1<sup>st</sup> April 2003 showing when the agreements will terminate. Appendix 7 shows the geographic distribution of BM Units on market and default agreements.
- 6.5 Details of the successful tenders that proceeded to contract commencing 1<sup>st</sup> April 2003 are listed in Appendix 4. Please note that these details include contracts that were signed for Drakelow and High Marnham and which have subsequently been closed.

## 7. Comparisons with previous Tender Rounds

7.1 Figure 2 below shows the percentage participation of eligible BM units for all tender rounds since the commencement of the Reactive Power Market.

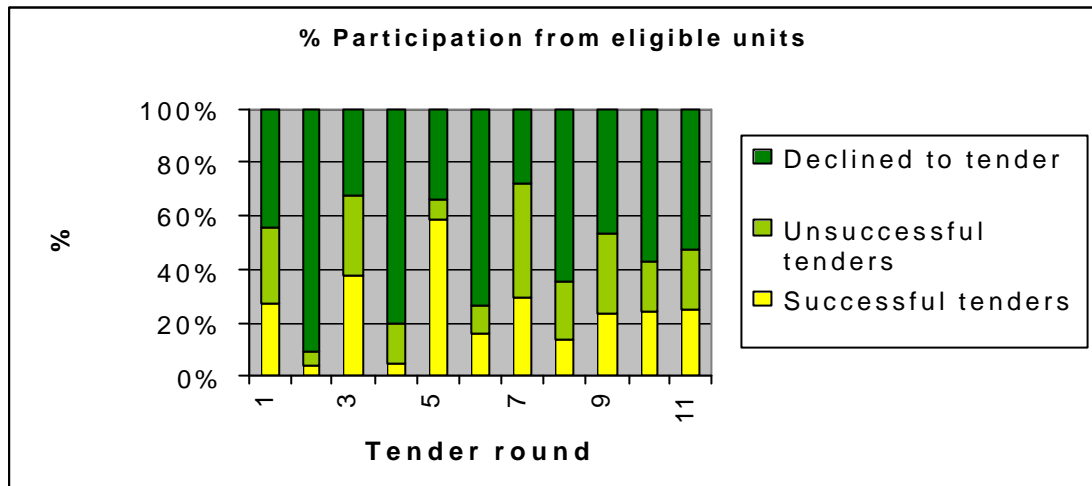


Figure 2 (Source: Appendix 1)

7.2 Figure 3 shows the % participation of eligible units for all tender rounds. Tender round 11 is comparable with tender rounds 1, 3, 5, 7 and 9, as all occur at the same start of 1<sup>st</sup> April each year.

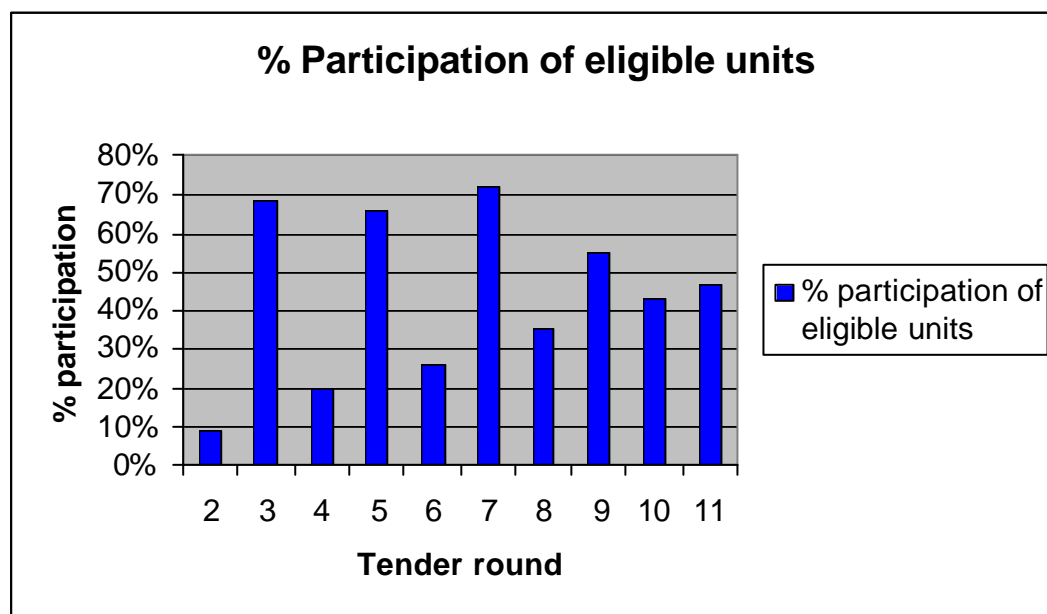


Figure 3 (Source: Appendix 1)

7.3 The success rate of eligible participants in tender round 11 is very similar to the immediately previous tender round 10 and higher than the previous similar tender round 9. Figure 4 shows the success rates for all tender rounds since the commencement of the Reactive Power Market.

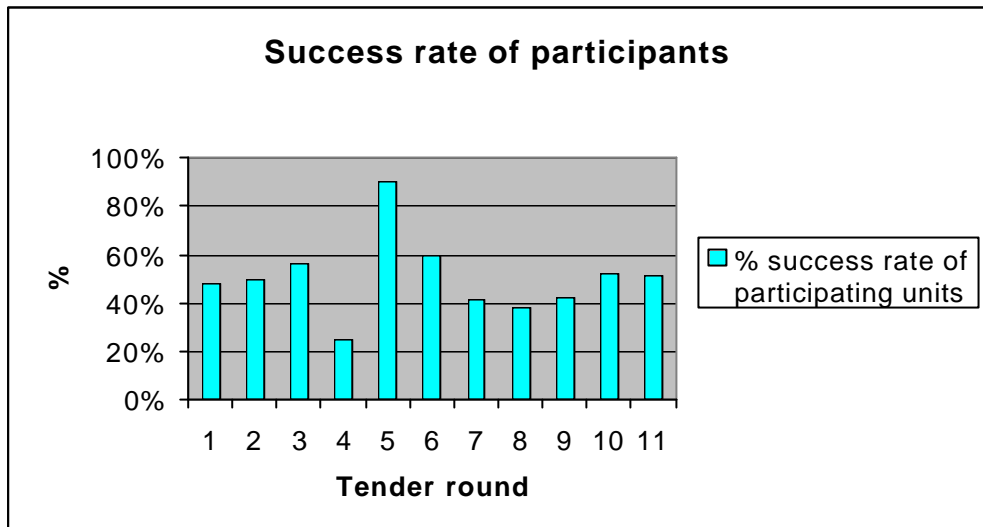


Figure 4 (Source: Appendix 1)

7.4 From 1<sup>st</sup> April 2003 there are a total of 55 BM Units on a Reactive Power Market Agreement, 4 from tender round 9, 27 from tender round 10 and 24 from this tender. This information is shown in figure 5 in percentage terms.

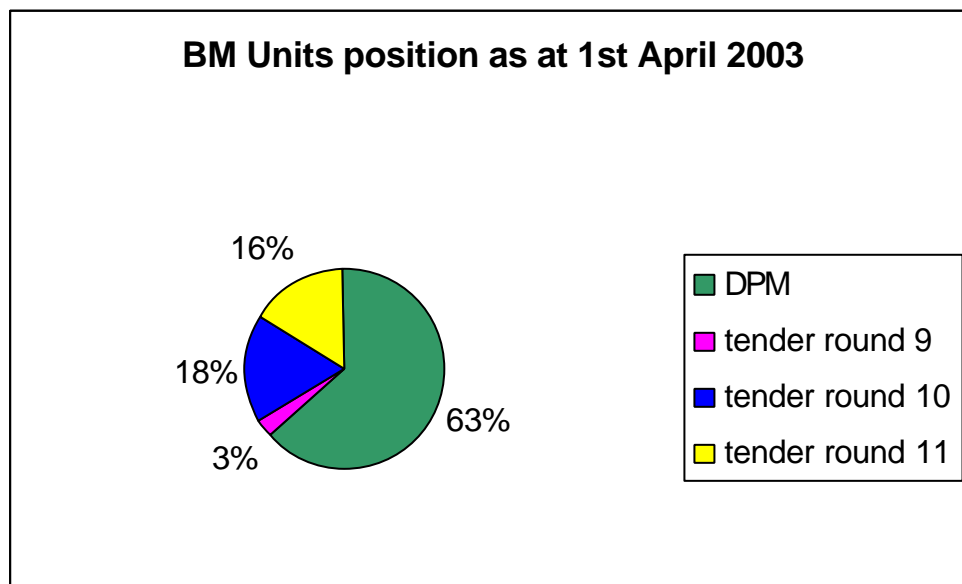


Figure 5 (Source: Appendix 2)

7.5 Figure 6 shows the percentage of BM Units on a Market Agreement as at 1<sup>st</sup> April 2003 on a region basis.

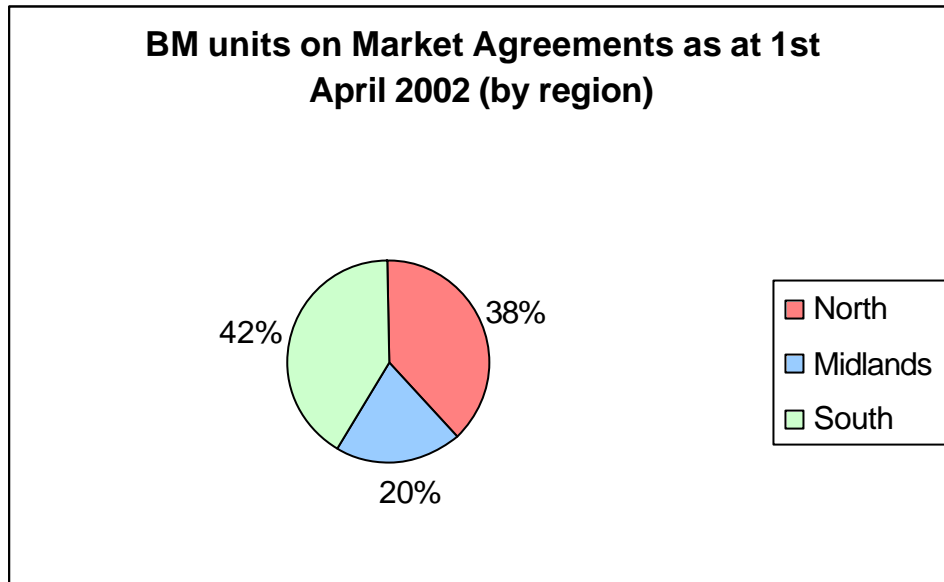


Figure 6 (Source: Appendix 2)

7.6 Figure 7 shows the % of total available lagging capability that has been contracted via Market Agreements since the commencement of the Reactive Power Market.

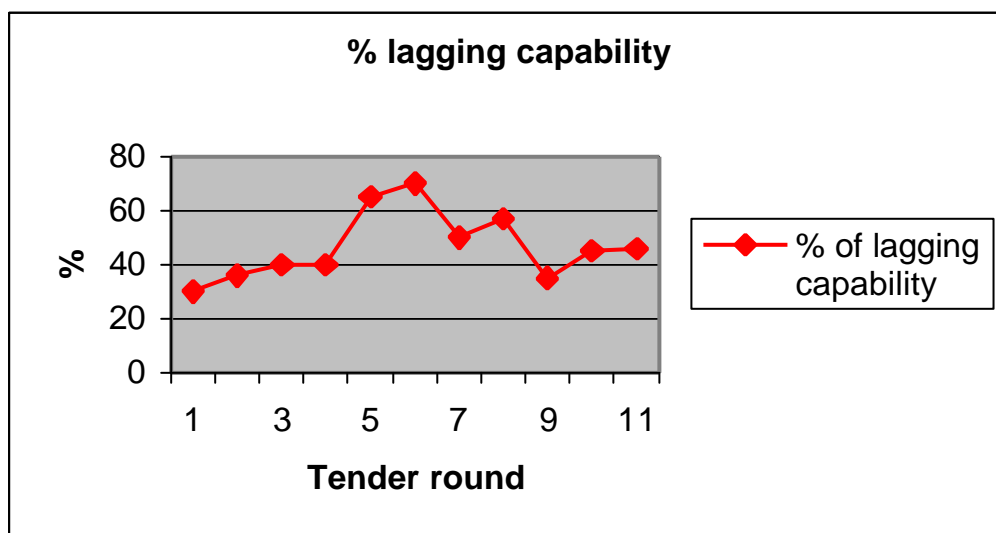


Figure 7 (Source: Appendix 1)

## 8. Generating Unit Reactive Mvarh Utilisation

- 8.1 This section summarises a six-month breakdown of reactive metered genset utilisation for the period 1<sup>st</sup> October 2002 to 31<sup>st</sup> March 2003.
- 8.2 Table 1 shows the Mvarh utilisation volumes (lead plus lag) for all eligible BM Units on a monthly basis. A breakdown by individual BM Unit for the period October 2002 to March 2003 is provided in Appendix 5.

### Utilisation Volume (Mvarh)

Month	DPM	Market Agreements	Total = Market Agreements + DPM
Oct-02	1,148,450	1,231,781	2,380,231
Nov-02	1,099,494	1,154,390	2,253,884
Dec-02	1,158,295	1,138,489	2,296,784
Jan-03	1,228,133	1,293,861	2,521,994
Feb-03	1,109,559	1,206,233	2,315,792
Mar-03	946,388	1,012,325	1,958,713
<b>Total</b>	<b>6,690,319</b>	<b>7,037,079</b>	<b>13,727,398</b>

Table 1 - Summary of Generator Reactive utilisation Oct 02 – Mar 03

- 8.3 Table 2, on the next page, shows six monthly utilisation totals since 1996, sorted by the Seven Year Statement defined regions - North, Midland and South.
- 8.4 The volumes set out in table 2 refer to all BM Units eligible for a reactive utilisation payment. Mvarh lag and Mvarh lead are calculated according to the aggregation methodology described within Appendix 2 of CUSC Schedule 3 and also within the companion document "Methodology Document for the Aggregation of Reactive Power Metering" by which reactive utilisation payments are made.

	NORTH		MIDLANDS		SOUTH		TOTAL		
	lead	lag	lead	lag	Lead	lag	lead	Lag	lead + lag
<b>Apr 96 - Sep 96</b>	2.86	9.79	0.37	1.94	1.49	2.29	4.72	14.02	18.74
<b>Oct 96 - Mar 97</b>	2.72	12.71	0.36	3.07	1.74	2.72	4.82	18.50	23.32
<b>Apr 97 - Sep 97</b>	2.89	8.65	0.41	1.60	1.87	1.77	5.17	12.02	17.19
<b>Oct 97 - Mar 98</b>	2.78	10.67	0.31	3.07	1.54	2.01	4.63	15.75	20.38
<b>Apr 98 - Sep 98</b>	1.96	7.68	0.44	2.02	1.85	1.51	4.25	11.20	15.45
<b>Oct 98 - Mar 99</b>	1.71	9.54	0.36	2.07	1.65	1.66	3.76	13.48	17.24
<b>Apr 99 - Sep 99</b>	1.77	7.25	0.37	1.52	1.27	1.40	3.40	10.20	13.60
<b>Oct 99 - Mar 00</b>	1.98	10.45	0.27	2.13	1.35	2.19	3.60	14.77	18.37
<b>Apr 00 - Sep 00</b>	1.44	6.31	0.48	1.69	1.59	1.32	3.51	9.32	12.83
<b>Oct 00 - Mar 01</b>	1.52	7.40	0.40	2.72	1.48	1.73	3.40	11.85	15.25
<b>Apr 01 - Sept 01</b>	1.80	4.59	0.50	1.76	1.94	1.18	4.24	7.53	11.77
<b>Oct 01 - Mar 02</b>	1.70	5.79	0.58	3.07	1.50	1.78	3.79	10.65	14.44
<b>Apr 02 - Sep 02</b>	1.59	4.70	0.52	0.95	1.76	1.20	3.87	6.85	10.72
<b>Oct 02 - Mar 03</b>	1.71	5.73	0.47	2.51	1.53	1.78	3.71	10.02	13.73

*Table 2 – Generator Reactive Utilisation (Tvarh) by region*

- 8.5 The reduction over the last 6 years is attributable to more distributed generation and lower power flows across the system has resulted in a reduction in reactive losses on the supergrid and hence the reactive utilisation required from generation.

## 9. Estimates of the reactive contribution of the National Grid Transmission System October 2002 to March 2003

9.1 National Grid is required by CUSC Schedule 3 to 'use all reasonable endeavours' to provide estimates of the Mvarh absorption and generation by the National Grid transmission system for the six-month period ending 31<sup>st</sup> March 2003.

9.2 This has been approached in two stages:

- The net reactive utilisation (Tvarh) of the National Grid system has been derived from the difference between the reactive output of generating units and the reactive demand at Grid Supply Points (GSPs). This is given in Table 3 where the accuracy of the data is consistent with the underlying meter readings.
- The net Tvarh described above has been broken down by National Grid system component and is shown in Table 4. It should be noted that this information is based on estimates and operational records only.

Component (Tvarh)	Oct-02	Nov-02	Dec-02	Jan-03	Feb-03	Mar-03	6 monthly Total
Generation Lead	-0.58	-0.58	-0.64	-0.62	-0.61	-0.68	-3.71
Generation Lag	1.81	1.67	1.65	1.90	1.71	1.28	10.02
Net Reactive Demand at GSPs	5.95	6.03	5.53	6.26	6.24	5.49	35.50
Net National Grid System	4.72	4.94	4.52	4.98	5.14	4.89	29.19

Table 3 - Net National Grid System Effect

9.3 The simple reactive balance found in Table 3 can be described by the equation:

$$|\text{Generation Net Tvarh}| = |\text{Net Reactive Demand at GSPs Tvarh}| - |\text{Net NGC System Tvarh}|$$

For example, for January 2003,  $(1.90 - 0.62 = 6.26 - 4.98)$ . From Table 3 it can be seen that the Tvarh contribution from generation is small compared with the other components of the equation.

9.4 The generation figures are a national monthly summation of the Settlements figures

given in Appendix 5. At this stage, the data in table 3 may be subject to amendment, via accruals or any outstanding disputes.

9.5 The 'net reactive demand at GSP' figures have been derived from operational records. The figure shown is net, i.e. lagging demand minus leading demand, and in this case is lagging in each month. This figure represents the net effect of the consumer demand plus the LV losses minus the LV gain.

9.6 The more detailed breakdown found in Table 4 can be described by the following equation:

- $\text{Generation Net Tvarh} = \text{Net Reactive Demand at GSPs} - \text{HV network shunt gain (BV}^2\text{)} + \text{HV network series loss (I}^2\text{X)} + \text{SGT series loss (I}^2\text{X}_t\text{)} - \text{Shunt capacitor gain} - \text{net SVC output} + \text{Shunt reactor loss.}$

Component (Tvarh)	Oct-02	Nov-02	Dec-02	Jan-03	Feb-03	Mar-03	6 month total
MSC	2.09	2.11	2.04	2.41	2.35	2.11	13.11
Shunt Reactor	-1.77	-1.52	-1.96	-1.64	-1.26	-1.76	-9.91
SVC generation	0.13	0.11	0.14	0.12	0.12	0.11	0.73
SVC absorption	-0.15	-0.13	-0.13	-0.14	-0.13	-0.13	-0.81
HV network shunt gain	9.07	8.92	9.56	9.63	9.58	9.33	56.09
HV network series losses	-2.57	-2.41	-2.74	-2.84	-3.21	-2.61	-16.38
SGT series losses	-2.08	-2.14	-2.39	-2.56	-2.31	-2.16	-13.64
<b>Net NGC System Utilisation</b>	4.72	4.94	4.52	4.98	5.14	4.89	29.19
<b>Generation Lead</b>	-0.58	-0.58	-0.64	-0.62	-0.61	-0.68	-3.71
<b>Generation Lag</b>	1.81	1.67	1.65	1.90	1.71	1.28	10.02
<b>Net Demand at GSPs</b>	5.95	6.03	5.53	6.26	6.24	5.40	35.50

Table 4 - Indicative breakdown of Net National Grid System Effect

9.7 The figures in Table 4 are estimates and provide an indication of the likely national reactive energy balance within the system.

Points to note when considering Table 4 include:

- HV gain varies due to circuit switching, outages and system operating voltage
- HV losses are driven by active power flows across the system
- Supergrid transformer series reactive losses are predominantly driven by local distribution company demand
- Switching of MSCs (Mechanically Switched Capacitors), SVCs (Static Var Compensator) and shunt reactors is determined by operational security requirements.

## **10. Exceptional Reactive Power Requirements**

- 10.1 CUSC Schedule 3, paragraph 5 (Statutory and Regulatory Obligations) enables National Grid to contract outside of the Reactive Power Market tender process in specific circumstances for the provision of exceptional reactive power services. National Grid is required to publish details of circumstances surrounding this in the preceding six month period. During the period 1<sup>st</sup> October 2002 – 31<sup>st</sup> March 2003 no such services were required by National Grid for the provision of voltage support.

## **Appendices**

**Appendix 1 - Comparisons with previous Tender Rounds**

Tender Round	Tender Round Start date	Eligible Units able to tender	No. of BM/Non BM Unit tenders Received	ORPS	ORPS + ERPS	12 month duration	>12 months duration	Successful Gensets Offered market agreements	Successful Gensets signing market agreements	% total Mvar lagging capability with market agreements
1	1 Apr 1998	154	85	76	9	85	0	41	41	~30%
2	1 Oct 1998	113	10	10	0	9	1	5	5	~36%
3	1 Apr 1999	150	102	102	0	102	0	75	57	~40%
4	1 Oct 1999	99	20	20	0	14	6	5	5	~40%
5	1 Apr 2000	151	99	98	1	97	2	98	89	~65%
6	1 Oct 2000	58	15	15	0	15	0	9	9	~70%
7	1 Apr 2001	145	104	104	0	104	0	43	43	~50%
8	1 Oct 2001	111	39	39	0	39	0	17	15	~57%
9	1 Apr 2002	138	76	76	0	68	8	32	32	~35%
10	1 Oct 2002	123	52	52	0	48	4	29	27	~45%
11	1 Apr 2003	125	59	59	0	57	2	31	30	~46%

**Appendix 2 - BM Units position at 1<sup>st</sup> April 2003**

**North**

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
1	BRGG_01Z	DPM	24	DRAXX09G	DPM	48	HRTL_01Z	Market 10
2	CDCL_01Z	Market 11	25	DRAXX10G	DPM	49	HRTL_02Z	Market 10
3	CNQPS01Z	Market 10	26	DRAXX12G	DPM	50	KEAD_01Z	DPM
4	CNQPS02Z	Market 10	27	EGGPS01Z	DPM	51	KILNS01Z	DPM
5	CNQPS03Z	Market 10	28	EGGPS02Z	DPM	52	KILLP01Z	DPM
6	CNQPS04Z	Market 10	29	EGGPS03Z	DPM	53	KILLP02Z	DPM
7	COTPS01Z	DPM	30	EGGPS04Z	DPM	54	ROCK_01Z	DPM
8	COTPS02Z	DPM	31	FELL_01Z	DPM	55	ROOS_01Z	Market 10
9	COTPS03Z	DPM	32	FERR_01Z	DPM	56	SCCL_01Z	DPM
10	COTPS04Z	DPM	33	FERR_02Z	DPM	57	SCCL_02Z	DPM
11	DEEP_01Z	Market 11	34	FERR_03Z	DPM	58	SCCL_03Z	DPM
12	DINO_01Z	DPM	35	FERR_04Z	DPM	59	SHBA_01Z	DPM
13	DINO_02Z	DPM	36	FFES_01Z	DPM	60	SHBA_02Z	Market 11
14	DINO_03Z	DPM	37	FFES_02Z	DPM	61	TESI_01Z	DPM
15	DINO_04Z	DPM	38	FFES_03Z	DPM	62	TESI_02Z	DPM
16	DINO_05Z	DPM	39	FFES_04Z	DPM	63	WBUPS01Z	Market 11
17	DINO_06Z	DPM	40	FIDL_01Z	DPM	64	WBUPS02Z	Market 11
18	DRAXX01Z	DPM	41	FIDL_02Z	DPM	65	WBUPS03Z	Market 11
19	DRAXX02Z	Market 10	42	FIDL_03Z	DPM	66	WBUPS04Z	Market 11
20	DRAXX03Z	DPM	43	FIDL_04Z	DPM	67	WYLF_01Z	DPM
21	DRAXX04Z	Market 10	44	HEYM101Z	Market 10	68	WYLF_02Z	DPM
22	DRAXX05Z	DPM	45	HEYM102Z	Market 10	69	WYLF_03Z	DPM
23	DRAXX06Z	Market 10	46	HEYM207Z	Market 10	70	WYLF_04Z	DPM
			47	HEYM208Z	Market 10			

**Midlands**

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
71	CORB_01Z	Market 11	78	PETEM01Z	DPM	85	RUGPS06G	DPM
72	DERW_01Z	Market 10	79	RATS_01Z	Market 11	86	RUGPS07G	DPM
73	GYAR_01Z	DPM	80	RATS_02Z	Market 11	87	SIZB_01Z	Market 11
74	IRNPS01Z	Market 11	81	RATS_03Z	Market 9	88	SIZB_02Z	Market 11
75	IRNPS02Z	Market 11	82	RATS_04Z	Market 9	89	SIZEA01Z	DPM
76	KLYNA01Z	DPM	83	RUGPS06Z	DPM	90	SIZEA02Z	DPM
77	LBAR_01Z	DPM	84	RUGPS07Z	DPM	91	SUTB_01Z	Market 11

**South**

	<b>BM Unit</b>	<b>Contract</b>		<b>BM Unit</b>	<b>Contract</b>		<b>BM Unit</b>	<b>Contract</b>
92	ABTHB07Z	Market 11	111	DIDC_04G	DPM	130	KINO_03Z	Market 10
93	ABTHB08Z	Market 11	112	DNGB_21Z	Market 11	131	KINO_04Z	Market 10
94	ABTHB09Z	Market 11	113	DNGB_22Z	Market 11	132	LITTD01G	DPM
95	AESB_01Z	DPM	114	DUNGA01Z	DPM	133	LITTD02G	DPM
96	BARK_02Z	DPM	115	DUNGA02Z	DPM	134	LITTD03G	DPM
97	BARK_11Z	Market 11	116	DUNGA03Z	DPM	135	LITTD01Z	Market 10
98	COSO_01Z	DPM	117	DUNGA04Z	DPM	136	LITTD02Z	Market 10
99	COWE_01Z	DPM	118	EECL_01Z	DPM	137	MEDP_01Z	DPM
100	COWE_02Z	DPM	119	FAWL_03Z	Market 11	138	OLDS_01Z	DPM
101	DAMC_01Z	DPM	120	FAWN_01Z	DPM	139	OLDS_02Z	DPM
102	DIDC_01Z	Market 10	121	FIFO_13Z	DPM	140	RYHPS01Z	Market 11
103	DIDC_02Z	DPM	122	FIFO_14Z	DPM	141	SEAB_01Z	Market 10
104	DIDC_03Z	DPM	123	FIFO_15Z	DPM	142	SEAB_02Z	Market 10
105	DIDC_04Z	Market 10	124	GRAI_01Z	Market 9	143	SHOS_01Z	DPM
106	DIDCB05Z	DPM	125	GRAI_04Z	DPM	144	TAYL_02Z	Market 9
107	DIDCB06Z	DPM	126	HINB_07Z	Market 10	145	TAYL_03Z	Market 11
108	DIDC_01G	DPM	127	HINB_08Z	Market 10	146	TILBB08Z	DPM
109	DIDC_02G	DPM	128	KINO_01Z	Market 10	147	TILBB09Z	DPM
110	DIDC_03G	DPM	129	KINO_02Z	Market 10	148	TILBB10Z	DPM

**Notes :**

Market 9 refers to those contracts commencing 1<sup>st</sup> April 2002

Market 10 refers to those contracts commencing 1<sup>st</sup> October 2002

Market 11 refers to those contracts commencing 1<sup>st</sup> April 2003

Eligible BM Units are those of reactive capability, leading or lagging greater than 15 Mvar at the commercial boundary, and the further stipulations stated in CUSC Schedule 3. There are to date, no market contracts for Enhanced Capability.

**Appendix 3 - Reactive Market Agreement status at 1<sup>st</sup> April 2003**

<b>New Contracts Commencing on 1<sup>st</sup> April 2003</b>			
	<b>Company</b>	<b>BM Unit ID</b>	<b>Contract Expiry Date</b>
1	Barking Power Limited	BARK_11Z	31/03/04
2	British Energy	DNGB_21Z	31/03/04
3	British Energy	DNGB_22Z	31/03/04
4	British Energy	SIZB_01Z	31/03/04
5	British Energy	SIZB_02Z	31/03/04
6	Corby Power Limited	CORB_01Z	31/03/04
7	Cottam Development Centre Ltd	CDCL-1	31/03/04
8	Deeside Power Development Co Ltd	DEEP_01Z	31/03/04
9	Humber Power Limited	SHBA_02Z	31/03/04
10	Innogy plc	ABTHB07Z	31/03/04
11	Innogy plc	ABTHB08Z	31/09/04
12	Innogy plc	ABTHB09Z	31/03/05
13	Innogy plc	FAWL_03Z	31/03/04
14	Powergen UK plc	DRKPS09Z*	31/03/04
15	Powergen UK plc	DRKPS10Z*	30/03/04
16	Powergen UK plc	HMRPS01Z*	31/03/04
17	Powergen UK plc	HMRPS02Z*	31/03/04
18	Powergen UK plc	HMRPS03Z*	31/03/04
19	Powergen UK plc	HMRPS05Z*	31/03/04
20	Powergen UK plc	IRNPS01Z	30/03/04
21	Powergen UK plc	IRNPS02Z	30/03/04
22	Powergen UK plc	RATS_01Z	30/03/04
23	Powergen UK plc	RATS_02Z	31/03/04
24	Powergen UK plc	TAYL_03Z	31/03/04
25	Scottish Power plc	RYHPS01Z	31/03/04
26	Sutton Bridge Power	SUTB_01Z	31/03/04
27	West Burton Limited	WBUPS01Z	31/03/04
28	West Burton Limited	WBUPS02Z	31/03/04
29	West Burton Limited	WBUPS03Z	31/03/04
30	West Burton Limited	WBUPS04Z	31/03/04

Note: \* These BM Units are located at Station which have closed before 1<sup>st</sup> April 2003

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<b>Contracts Continuing on 1<sup>st</sup> April 2003</b>			
	<b>Company</b>	<b>BM Unit ID</b>	<b>Contract Expiry Date</b>
1	AES Drax Ltd	DRAXX02Z	30/09/03
2	AES Drax Ltd	DRAXX04Z	30/09/03
3	AES Drax Ltd	DRAXX06Z	30/09/03
4	British Energy	HEYM101Z	30/09/03
5	British Energy	HEYM102Z	30/09/03
6	British Energy	HEYM207Z	30/09/03
7	British Energy	HEYM208Z	30/09/03
8	British Energy	HINB_07Z	30/09/03
9	British Energy	HINB_08Z	30/09/03
10	British Energy	HRTL_01Z	30/09/03
11	British Energy	HRTL_02Z	30/09/03
12	Derwent Cogeneration	DERW_01Z	30/09/03
13	Innogy plc	DIDC_01Z	30/09/03
14	Innogy plc	DIDC_04Z	30/09/03
15	Innogy plc	LITTD01Z	30/09/03
16	Innogy plc	LITTD02Z	30/09/03
17	Lakeland Power Ltd	ROOS_01Z	30/09/03
18	Powergen UK plc	CONQ_01Z	31/03/04
19	Powergen UK plc	CONQ_02Z	30/09/03
20	Powergen UK plc	CONQ_03Z	31/03/04
21	Powergen UK plc	CONQ_04Z	30/09/03
22	Powergen UK plc	GRAI_01Z	30/09/03
23	Powergen UK plc	KINO_01Z	31/03/04
24	Powergen UK plc	KINO_02Z	30/09/03
25	Powergen UK plc	KINO_03Z	31/03/04
26	Powergen UK plc	KINO_04Z	30/09/03
27	Powergen UK plc	RATS_03Z	30/09/03
28	Powergen UK plc	RATS_04Z	30/09/03
29	Powergen UK plc	TAYL_02Z	30/09/03
30	Seabank Power Limited	SEAB_01Z	30/09/03
31	Seabank Power Limited	SEAB_01Z	30/09/03

**Appendix 4 - Successful tender details for contracts commencing  
1<sup>st</sup> April 2003**

Company Name: Barking Power Ltd			Station Name: Barking (Module 1)			
Genset ID: BARK_11Z			Contract Period: 12 months			
Nominated GRC: 405 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead:	Q2Lead:	Q1Lead:	Q1Lag:	Q2:Lag	Q3:Lag
	203	90	50	75	90	136
Available Capability Prices (£/Mvar/h)	CA3Lead:	CA2Lead:	CA1Lead:	CA1Lag:	CA2Lag:	CA3Lag:
	0.090	0.060	0.040	0.050	0.070	0.110
Synchronised Capability Prices (£/Mvar/h)	CS3Lead:	CS2Lead:	CS1Lead:	CS1Lag:	CS2Lag:	CS3Lag:
	0.000	0.000	0.000	0.000	0.000	0.000
Utilisation Prices (£/Mvarh)	CU3Lead:	CU2Lead:	CU1Lead:	CU1Lag:	CU2Lag:	CU3Lag:
	1.180	0.930	0.610	0.790	0.960	1.420

Company Name: British Energy			Station Name: Dungeness B			
Genset ID: DNGB_21Z			Contract Period: 12 months			
Nominated GRC: 484 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead:	Q2Lead:	Q1Lead:	Q1Lag:	Q2:Lag	Q3:Lag
	291	150	50	75	200	368
Available Capability Prices (£/Mvar/h)	CA3Lead:	CA2Lead:	CA1Lead:	CA1Lag:	CA2Lag:	CA3Lag:
	0.049	0.015	0.010	0.010	0.015	0.049
Synchronised Capability Prices (£/Mvar/h)	CS3Lead:	CS2Lead:	CS1Lead:	CS1Lag:	CS2Lag:	CS3Lag:
	0.000	0.000	0.000	0.000	0.000	0.000
Utilisation Prices (£/Mvarh)	CU3Lead:	CU2Lead:	CU1Lead:	CU1Lag:	CU2Lag:	CU3Lag:
	2.250	0.890	0.840	0.840	0.890	2.250

Company Name: British Energy			Station Name: Dungeness B			
Genset ID: DNGB_22Z			Contract Period: 12 months			
Nominated GRC: 494 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead:	Q2Lead:	Q1Lead:	Q1Lag:	Q2:Lag	Q3:Lag
	288	150	50	75	200	352
Available Capability Prices (£/Mvar/h)	CA3Lead:	CA2Lead:	CA1Lead:	CA1Lag:	CA2Lag:	CA3Lag:
	0.049	0.015	0.010	0.010	0.015	0.049
Synchronised Capability Prices (£/Mvar/h)	CS3Lead:	CS2Lead:	CS1Lead:	CS1Lag:	CS2Lag:	CS3Lag:
	0.000	0.000	0.000	0.000	0.000	0.000
Utilisation Prices (£/Mvarh)	CU3Lead:	CU2Lead:	CU1Lead:	CU1Lag:	CU2Lag:	CU3Lag:
	2.250	0.890	0.840	0.840	0.890	2.250

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Company Name: British Energy			Station Name: Sizewell B			
Genset ID: SIZB_01Z			Contract Period: 12 months			
Nominated GRC: 563 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 295	Q2Lead: 200	Q1Lead: 50	Q1Lag: 100	Q2:Lag 200	Q3:Lag 263
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.090	CA2Lead: 0.020	CA1Lead: 0.010	CA1Lag: 0.010	CA2Lag: 0.020	CA3Lag: 0.090
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 1.250	CU2Lead: 0.860	CU1Lead: 0.830	CU1Lag: 0.830	CU2Lag: 0.860	CU3Lag: 1.250

Company Name: British Energy			Station Name: Sizewell B			
Genset ID: SIZB_02Z			Contract Period: 12 months			
Nominated GRC: 562 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 286	Q2Lead: 200	Q1Lead: 50	Q1Lag: 100	Q2:Lag 200	Q3:Lag 263
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.090	CA2Lead: 0.020	CA1Lead: 0.010	CA1Lag: 0.010	CA2Lag: 0.020	CA3Lag: 0.090
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 1.250	CU2Lead: 0.860	CU1Lead: 0.830	CU1Lag: 0.830	CU2Lag: 0.860	CU3Lag: 1.250

Company Name: Corby Power Limited			Station Name: Corby			
Genset ID: CORB_01Z			Contract Period: 12 months			
Nominated GRC: 372 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 185	Q2Lead: 150	Q1Lead: 48	Q1Lag: 48	Q2:Lag 135	Q3:Lag 155
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.017	CA2Lead: 0.016	CA1Lead: 0.015	CA1Lag: 0.015	CA2Lag: 0.016	CA3Lag: 0.017
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.017	CS2Lead: 0.016	CS1Lead: 0.015	CS1Lag: 0.015	CS2Lag: 0.016	CS3Lag: 0.017
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.315	CU1Lead: 0.210	CU1Lag: 0.420	CU2Lag: 0.421	CU3Lag: 2.000

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Company Name: Cottam Development Centre			Station Name: Cottam Development Centre			
Genset ID: CDCL_01Z			Contract Period: 12 months			
Nominated GRC: 400 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 188	Q2Lead: 140	Q1Lead: 48	Q1Lag: 48	Q2:Lag 150	Q3:Lag 185
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.028	CA2Lead: 0.027	CA1Lead: 0.026	CA1Lag: 0.026	CA2Lag: 0.027	CA3Lag: 0.028
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.063	CS2Lead: 0.062	CS1Lead: 0.061	CS1Lag: 0.061	CS2Lag: 0.062	CS3Lag: 0.063
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.228	CU1Lead: 0.152	CU1Lag: 0.304	CU2Lag: 0.305	CU3Lag: 2.000

Company Name: Deeside Power Development			Station Name: Deeside			
Genset ID: DEEP_01Z			Contract Period: 12 months			
Nominated GRC: 246 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 152	Q2Lead: 120	Q1Lead: 50	Q1Lag: 50	Q2:Lag 120	Q3:Lag 206
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.050	CA2Lead: 0.040	CA1Lead: 0.030	CA1Lag: 0.030	CA2Lag: 0.050	CA3Lag: 0.080
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 1.070	CU1Lead: 0.980	CU1Lag: 0.980	CU2Lag: 1.070	CU3Lag: 2.000

Company Name: Humber Power Ltd			Station Name: South Humber Bank			
Genset ID: SHBA_02Z			Contract Period: 12 months			
Nominated GRC: 527 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 237	Q2Lead: 200	Q1Lead: 50	Q1Lag: 75	Q2:Lag 200	Q3:Lag 239
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.000	CA2Lead: 0.000	CA1Lead: 0.000	CA1Lag: 0.047	CA2Lag: 0.052	CA3Lag: 0.052
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 1.500	CU2Lead: 0.871	CU1Lead: 0.871	CU1Lag: 0.871	CU2Lag: 0.871	CU3Lag: 1.500

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Company Name: Innogy plc			Station Name: Aberthaw B			
Genset ID: ABTHB07Z			Contract Period: 12 months			
Nominated GRC: 485 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 147	Q2Lead: 100	Q1Lead: 35	Q1Lag: 35	Q2:Lag 100	Q3:Lag 211
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.022	CA2Lead: 0.006	CA1Lead: 0.002	CA1Lag: 0.012	CA2Lag: 0.037	CA3Lag: 0.138
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.900	CU1Lead: 0.300	CU1Lag: 0.300	CU2Lag: 0.900	CU3Lag: 2.000

Company Name: Innogy plc			Station Name: Aberthaw B			
Genset ID: ABTHB08Z			Contract Period: 18 months			
Nominated GRC: 485 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 147	Q2Lead: 100	Q1Lead: 35	Q1Lag: 35	Q2:Lag 100	Q3:Lag 211
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.020	CA2Lead: 0.006	CA1Lead: 0.002	CA1Lag: 0.012	CA2Lag: 0.034	CA3Lag: 0.128
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.900	CU1Lead: 0.300	CU1Lag: 0.300	CU2Lag: 0.900	CU3Lag: 2.000

Company Name: Innogy plc			Station Name: Aberthaw B			
Genset ID: ABTHB09Z			Contract Period: 24 months			
Nominated GRC: 485 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 147	Q2Lead: 100	Q1Lead: 35	Q1Lag: 35	Q2:Lag 100	Q3:Lag 211
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.021	CA2Lead: 0.006	CA1Lead: 0.002	CA1Lag: 0.012	CA2Lag: 0.036	CA3Lag: 0.134
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.000	CS2Lead: 0.000	CS1Lead: 0.000	CS1Lag: 0.000	CS2Lag: 0.000	CS3Lag: 0.000
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.900	CU1Lead: 0.300	CU1Lag: 0.300	CU2Lag: 0.900	CU3Lag: 2.000

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Company Name: Innogy plc			Station Name: Fawley			
Genset ID: FAWL_03Z			Contract Period: 12 months			
Nominated GRC: 484 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 154	Q2Lead: 100	Q1Lead: 50	Q1Lag: 75	Q2:Lag 154	Q3:Lag 204
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.100	CA2Lead: 0.003	CA1Lead: 0.001	CA1Lag: 0.001	CA2Lag: 0.003	CA3Lag: 0.060
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 1.000	CS2Lead: 0.400	CS1Lead: 0.240	CS1Lag: 0.240	CS2Lag: 0.400	CS3Lag: 1.000
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.953	CU1Lead: 0.450	CU1Lag: 0.450	CU2Lag: 0.953	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: Drakelow			
Genset ID: DRKPS09Z			Contract Period: 12 months			
Nominated GRC: 333 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 60	Q2Lead: 50	Q1Lead: 38	Q1Lag: 48	Q2:Lag 110	Q3:Lag 137
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.016	CA2Lead: 0.015	CA1Lead: 0.014	CA1Lag: 0.014	CA2Lag: 0.015	CA3Lag: 0.016
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.044	CS2Lead: 0.043	CS1Lead: 0.042	CS1Lag: 0.042	CS2Lag: 0.043	CS3Lag: 0.044
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.637	CU1Lead: 0.425	CU1Lag: 0.850	CU2Lag: 0.851	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: Drakelow			
Genset ID: DRKPS10Z			Contract Period: 12 months			
Nominated GRC: 333 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 60	Q2Lead: 50	Q1Lead: 38	Q1Lag: 48	Q2:Lag 110	Q3:Lag 137
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.010	CA2Lead: 0.009	CA1Lead: 0.008	CA1Lag: 0.008	CA2Lag: 0.009	CA3Lag: 0.010
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.044	CS2Lead: 0.043	CS1Lead: 0.042	CS1Lag: 0.042	CS2Lag: 0.043	CS3Lag: 0.044
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.637	CU1Lead: 0.425	CU1Lag: 0.850	CU2Lag: 0.851	CU3Lag: 2.000

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Company Name: Powergen UK plc			Station Name: High Marnham			
Genset ID: HMRPS01Z			Contract Period: 12 months			
Nominated GRC: 189 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 57	Q2Lead: 40	Q1Lead: 18	Q1Lag: 18	Q2:Lag 40	Q3:Lag 57
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.009	CA2Lead: 0.008	CA1Lead: 0.007	CA1Lag: 0.007	CA2Lag: 0.008	CA3Lag: 0.009
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.045	CS2Lead: 0.044	CS1Lead: 0.043	CS1Lag: 0.043	CS2Lag: 0.044	CS3Lag: 0.045
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.675	CU1Lead: 0.450	CU1Lag: 0.900	CU2Lag: 0.901	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: High Marnham			
Genset ID: HMRPS02Z			Contract Period: 12 months			
Nominated GRC: 189 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 57	Q2Lead: 40	Q1Lead: 18	Q1Lag: 18	Q2:Lag 40	Q3:Lag 57
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.007	CA2Lead: 0.006	CA1Lead: 0.005	CA1Lag: 0.005	CA2Lag: 0.006	CA3Lag: 0.007
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.045	CS2Lead: 0.044	CS1Lead: 0.043	CS1Lag: 0.043	CS2Lag: 0.044	CS3Lag: 0.045
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.675	CU1Lead: 0.450	CU1Lag: 0.900	CU2Lag: 0.901	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: High Marnham			
Genset ID: HMRPS03Z			Contract Period: 12 months			
Nominated GRC: 189 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 57	Q2Lead: 40	Q1Lead: 18	Q1Lag: 18	Q2:Lag 40	Q3:Lag 57
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.008	CA2Lead: 0.007	CA1Lead: 0.006	CA1Lag: 0.006	CA2Lag: 0.007	CA3Lag: 0.008
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.042	CS2Lead: 0.041	CS1Lead: 0.040	CS1Lag: 0.040	CS2Lag: 0.041	CS3Lag: 0.042
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.675	CU1Lead: 0.450	CU1Lag: 0.900	CU2Lag: 0.901	CU3Lag: 2.000

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Company Name: Powergen UK plc			Station Name: High Marnham			
Genset ID: HMRPS05Z			Contract Period: 12 months			
Nominated GRC: 189 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 57	Q2Lead: 40	Q1Lead: 18	Q1Lag: 18	Q2:Lag 40	Q3:Lag 57
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.006	CA2Lead: 0.005	CA1Lead: 0.004	CA1Lag: 0.004	CA2Lag: 0.005	CA3Lag: 0.006
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.047	CS2Lead: 0.046	CS1Lead: 0.045	CS1Lag: 0.045	CS2Lag: 0.046	CS3Lag: 0.047
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.675	CU1Lead: 0.450	CU1Lag: 0.900	CU2Lag: 0.901	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: Ironbridge			
Genset ID: IRNPS01Z			Contract Period: 12 months			
Nominated GRC: 485 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 166	Q2Lead: 130	Q1Lead: 48	Q1Lag: 73	Q2:Lag 170	Q3:Lag 209
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.013	CA2Lead: 0.012	CA1Lead: 0.011	CA1Lag: 0.011	CA2Lag: 0.012	CA3Lag: 0.013
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.036	CS2Lead: 0.035	CS1Lead: 0.034	CS1Lag: 0.034	CS2Lag: 0.035	CS3Lag: 0.036
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.600	CU1Lead: 0.400	CU1Lag: 0.800	CU2Lag: 0.801	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: Ironbridge			
Genset ID: IRNPS02Z			Contract Period: 12 months			
Nominated GRC: 485 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 157	Q2Lead: 125	Q1Lead: 48	Q1Lag: 73	Q2:Lag 170	Q3:Lag 207
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.015	CA2Lead: 0.014	CA1Lead: 0.013	CA1Lag: 0.013	CA2Lag: 0.014	CA3Lag: 0.015
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.037	CS2Lead: 0.036	CS1Lead: 0.035	CS1Lag: 0.035	CS2Lag: 0.036	CS3Lag: 0.037
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.600	CU1Lead: 0.400	CU1Lag: 0.800	CU2Lag: 0.801	CU3Lag: 2.000

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Company Name: Powergen UK plc			Station Name: Ratcliffe on Soar			
Genset ID: RATS_01Z			Contract Period: 12 months			
Nominated GRC: 500 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 147	Q2Lead: 110	Q1Lead: 48	Q1Lag: 73	Q2:Lag 140	Q3:Lag 170
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.036	CA2Lead: 0.035	CA1Lead: 0.034	CA1Lag: 0.034	CA2Lag: 0.035	CA3Lag: 0.036
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.078	CS2Lead: 0.077	CS1Lead: 0.076	CS1Lag: 0.076	CS2Lag: 0.077	CS3Lag: 0.078
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.300	CU1Lead: 0.200	CU1Lag: 0.400	CU2Lag: 0.401	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: Ratcliffe on Soar			
Genset ID: RATS_02Z			Contract Period: 12 months			
Nominated GRC: 500 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 128	Q2Lead: 90	Q1Lead: 48	Q1Lag: 73	Q2:Lag 160	Q3:Lag 193
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.042	CA2Lead: 0.041	CA1Lead: 0.040	CA1Lag: 0.040	CA2Lag: 0.041	CA3Lag: 0.042
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.076	CS2Lead: 0.075	CS1Lead: 0.074	CS1Lag: 0.074	CS2Lag: 0.075	CS3Lag: 0.076
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.300	CU1Lead: 0.200	CU1Lag: 0.400	CU2Lag: 0.401	CU3Lag: 2.000

Company Name: Powergen UK plc			Station Name: Taylors Lane			
Genset ID: TAYL_03Z			Contract Period: 12 months			
Nominated GRC: 64 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 29	Q2Lead: 25	Q1Lead: 8	Q1Lag: 8	Q2:Lag 25	Q3:Lag 30
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.003	CA2Lead: 0.002	CA1Lead: 0.001	CA1Lag: 0.001	CA2Lag: 0.002	CA3Lag: 0.003
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.502	CS2Lead: 0.501	CS1Lead: 0.500	CS1Lag: 0.500	CS2Lag: 0.501	CS3Lag: 0.502
Utilisation Prices (£/Mvarh)	CU3Lead: 2.000	CU2Lead: 0.184	CU1Lead: 0.123	CU1Lag: 0.246	CU2Lag: 0.247	CU3Lag: 2.000

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Company Name: Scottish Power			Station Name: Rye House			
Genset ID: RYEH_01Z			Contract Period: 12 months			
Nominated GRC: 715 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead:	Q2Lead:	Q1Lead:	Q1Lag:	Q2:Lag	Q3:Lag
	324	250	50	100	260	281
Available Capability Prices (£/Mvar/h)	CA3Lead:	CA2Lead:	CA1Lead:	CA1Lag:	CA2Lag:	CA3Lag:
	0.000	0.000	0.000	0.000	0.000	0.000
Synchronised Capability Prices (£/Mvar/h)	CS3Lead:	CS2Lead:	CS1Lead:	CS1Lag:	CS2Lag:	CS3Lag:
	0.042	0.028	0.013	0.021	0.042	0.070
Utilisation Prices (£/Mvarh)	CU3Lead:	CU2Lead:	CU1Lead:	CU1Lag:	CU2Lag:	CU3Lag:
	1.545	1.133	1.092	1.092	1.133	1.545

Company Name: Sutton Bridge Power			Station Name: Sutton Bridge			
Genset ID: SUTB_01Z			Contract Period: 12 months			
Nominated GRC: 803 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead:	Q2Lead:	Q1Lead:	Q1Lag:	Q2:Lag	Q3:Lag
	375	249	50	100	241	360
Available Capability Prices (£/Mvar/h)	CA3Lead:	CA2Lead:	CA1Lead:	CA1Lag:	CA2Lag:	CA3Lag:
	0.000	0.000	0.000	0.000	0.000	0.000
Synchronised Capability Prices (£/Mvar/h)	CS3Lead:	CS2Lead:	CS1Lead:	CS1Lag:	CS2Lag:	CS3Lag:
	0.060	0.040	0.020	0.100	0.125	0.160
Utilisation Prices (£/Mvarh)	CU3Lead:	CU2Lead:	CU1Lead:	CU1Lag:	CU2Lag:	CU3Lag:
	1.000	0.480	0.450	0.450	0.500	1.080

Company Name: West Burton Ltd			Station Name: West Burton			
Genset ID: WBUPS01Z			Contract Period: 12 months			
Nominated GRC: 483 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead:	Q2Lead:	Q1Lead:	Q1Lag:	Q2:Lag	Q3:Lag
	179	140	50	75	170	213
Available Capability Prices (£/Mvar/h)	CA3Lead:	CA2Lead:	CA1Lead:	CA1Lag:	CA2Lag:	CA3Lag:
	0.016	0.010	0.007	0.150	0.170	0.220
Synchronised Capability Prices (£/Mvar/h)	CS3Lead:	CS2Lead:	CS1Lead:	CS1Lag:	CS2Lag:	CS3Lag:
	0.015	0.009	0.006	0.120	0.150	0.200
Utilisation Prices (£/Mvarh)	CU3Lead:	CU2Lead:	CU1Lead:	CU1Lag:	CU2Lag:	CU3Lag:
	1.100	0.450	0.320	0.320	0.450	1.300

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Company Name: West Burton Ltd			Station Name: West Burton			
Genset ID: WBUPS02Z			Contract Period: 12 months			
Nominated GRC: 503 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 182	Q2Lead: 145	Q1Lead: 50	Q1Lag: 75	Q2:Lag 140	Q3:Lag 177
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.016	CA2Lead: 0.010	CA1Lead: 0.007	CA1Lag: 0.150	CA2Lag: 0.170	CA3Lag: 0.220
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.015	CS2Lead: 0.009	CS1Lead: 0.006	CS1Lag: 0.120	CS2Lag: 0.150	CS3Lag: 0.200
Utilisation Prices (£/Mvarh)	CU3Lead: 1.100	CU2Lead: 0.450	CU1Lead: 0.320	CU1Lag: 0.320	CU2Lag: 0.450	CU3Lag: 1.300

Company Name: West Burton Ltd			Station Name: West Burton			
Genset ID: WBUPS03Z			Contract Period: 12 months			
Nominated GRC: 503 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 182	Q2Lead: 145	Q1Lead: 50	Q1Lag: 75	Q2:Lag 140	Q3:Lag 177
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.016	CA2Lead: 0.010	CA1Lead: 0.007	CA1Lag: 0.150	CA2Lag: 0.170	CA3Lag: 0.220
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.015	CS2Lead: 0.009	CS1Lead: 0.006	CS1Lag: 0.120	CS2Lag: 0.150	CS3Lag: 0.200
Utilisation Prices (£/Mvarh)	CU3Lead: 1.100	CU2Lead: 0.450	CU1Lead: 0.320	CU1Lag: 0.320	CU2Lag: 0.450	CU3Lag: 1.300

Company Name: West Burton Ltd			Station Name: West Burton			
Genset ID: WBUPS04Z			Contract Period: 12 months			
Nominated GRC: 483 MW	Maximum Leading Capability	Mid Point Leading Capability	Low point Leading Capability	Low point Lagging Capability	Mid Point Lagging Capability	Maximum Lagging Capability
Capability (Mvar)	Q3Lead: 180	Q2Lead: 145	Q1Lead: 50	Q1Lag: 75	Q2:Lag 170	Q3:Lag 212
Available Capability Prices (£/Mvar/h)	CA3Lead: 0.016	CA2Lead: 0.010	CA1Lead: 0.007	CA1Lag: 0.150	CA2Lag: 0.170	CA3Lag: 0.220
Synchronised Capability Prices (£/Mvar/h)	CS3Lead: 0.015	CS2Lead: 0.009	CS1Lead: 0.006	CS1Lag: 0.120	CS2Lag: 0.150	CS3Lag: 0.200
Utilisation Prices (£/Mvarh)	CU3Lead: 1.100	CU2Lead: 0.450	CU1Lead: 0.320	CU1Lag: 0.320	CU2Lag: 0.450	CU3Lag: 1.300

**Appendix 5 - Generation Utilisation Volumes by Unit – October 2002 – March 2003**

BM Unit	Agreement	Monthly Mvarh												6 Month TOTAL	
		Oct-02		Nov-02		Dec-02		Jan-03		Feb-03		Mar-03		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
ABTHB07Z	Default	2,323	10,962	4,108	6,394	4,315	6,859	2,640	7,863	3,601	6,555	2,782	6,612	19,768	45,245
ABTHB08Z	Default	3,917	4,433	3,425	6,943	4,061	7,632	3,771	5,429	3,789	7,859	8,197	4,393	27,160	36,689
ABTHB09Z	Default	1,976	9,822	3,555	9,380	5,186	8,357	2,825	10,383	4,268	5,325	2,687	7,868	20,496	51,136
AESB_01Z	Default	646	2,047	815	3,572	744	3,276	138	917	0	0	141	1,852	2,484	11,664
BARK_02Z	Default	15,388	17,025	15,505	12,548	11,295	17,163	14,068	17,304	12,194	14,680	15,786	9,816	84,236	88,537
BARK_11Z	Default	12,156	15,085	13,691	11,171	10,182	14,639	13,268	15,037	10,507	14,487	13,450	11,573	73,255	81,993
BRGG_01Z	Market	1,565	2,586	1,049	3,184	2,463	1,588	1,444	3,380	1,175	2,940	720	2,694	8,416	16,372
CDCL_01Z	Market	3,237	31,109	3,375	26,915	2,270	9,535	2,293	24,608	2,232	22,779	1,913	35,962	15,321	150,909
CNQPS01Z	Market	0	0	5,136	993	8,061	9,829	2,521	17,768	4,841	10,251	4,652	10,411	25,211	49,252
CNQPS02Z	Market	6,344	18,972	4,184	14,439	8,601	14,351	2,213	11,090	4,317	15,817	4,031	15,810	29,691	90,479
CNQPS03Z	Market	6,251	18,205	4,369	17,537	6,004	10,153	2,864	16,795	4,139	10,177	4,018	15,778	27,645	88,644
CNQPS04Z	Market	6,848	19,084	3,212	15,356	8,320	13,419	2,089	12,586	3,989	15,591	3,977	13,888	28,436	89,923
CORB_01Z	Market	6,093	9,187	6,046	10,610	3,300	12,413	3,071	14,056	3,148	8,223	1,634	11,419	23,292	65,908
COSO_01Z	Default	374	966	1,975	1,824	2,195	6,267	1,990	4,695	2,366	3,417	4,225	5,562	13,124	22,732
COTPS01Z	Default	2,251	21,181	1,238	23,309	1,174	22,752	850	16,813	1,390	10,578	3,440	12,484	10,344	107,115
COTPS02Z	Default	825	16,062	2,002	18,108	3,366	26,303	2,220	25,296	1,182	17,059	2,249	19,161	11,844	121,990
COTPS03Z	Default	2,442	17,740	639	17,935	3,034	20,356	2,340	24,998	2,015	22,263	2,849	17,578	13,319	120,872
COTPS04Z	Default	1,803	21,814	1,443	20,213	2,125	19,627	2,134	23,796	1,930	27,461	2,422	18,082	11,857	130,992
COWE_01Z	Default	0	61	0	137	0	143	0	215	0	162	0	14	0	732
COWE_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DAMC_01Z	Market	12,300	15,531	14,932	14,381	10,304	15,832	15,386	21,538	16,160	23,006	17,185	12,518	86,267	102,805
DEEP_01Z	Default	7,917	17,754	4,970	18,063	1,028	11,580	435	13,900	1,467	16,607	2,494	11,289	18,310	89,193
DERW_01Z	Market	339	8,820	3,486	4,960	3,544	3,930	1,792	7,209	3,136	3,629	2,452	4,006	14,749	32,554
DIDC_01G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIDC_01Z	Market	15,003	24,495	10,576	10,042	7,010	14,284	7,280	12,985	5,717	13,059	7,173	6,375	52,758	81,241

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BM Unit	Agreement	Monthly Mvarh												6 Month TOTAL	
		Oct-02		Nov-02		Dec-02		Jan-03		Feb-03		Mar-03		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
DIDC_02G	Default	0	0	0	0	0	2	0	0	0	0	0	0	0	2
DIDC_02Z	Default	0	0	10,032	7,408	6,828	10,059	10,136	9,776	7,392	9,107	8,444	3,984	42,832	40,334
DIDC_03G	Default	0	0	0	0	0	7	0	5	0	0	0	0	0	12
DIDC_03Z	Default	0	0	0	0	2,170	10,133	4,578	9,246	4,175	18,557	5,855	5,313	16,778	43,249
DIDC_04G	Default	0	0	0	0	0	5	0	0	0	0	0	0	0	5
DIDC_04Z	Market	0	0	4,881	1,402	7,457	13,870	4,117	16,871	3,876	18,191	10,290	8,255	30,620	58,589
DIDCB05Z	Market	3,029	3,229	15,919	10,499	13,985	22,463	8,565	31,327	6,485	22,984	17,170	12,720	65,153	103,222
DIDCB06Z	Market	22,362	28,065	19,026	13,467	15,501	18,338	18,999	20,645	17,107	15,431	17,785	6,073	110,778	102,018
DINO_01Z	Default	14,867	352	7,394	96	6,840	176	10,258	499	7,255	110	13,989	57	60,602	1,289
DINO_02Z	Default	7,825	1,126	12,760	915	9,291	1,883	7,438	1,168	3,313	258	6,537	229	47,164	5,579
DINO_03Z	Default	19,767	1,106	14,119	217	11,188	356	12,972	286	10,165	313	3,114	237	71,326	2,516
DINO_04Z	Default	959	82	9,028	673	6,599	1,140	4,256	770	5,554	776	4,763	386	31,159	3,827
DINO_05Z	Default	6,093	390	13,540	199	9,204	833	11,024	948	6,872	1,229	11,705	1,461	58,437	5,060
DINO_06Z	Default	0	0	239	0	3,525	105	4,264	490	7,870	1,224	6,078	531	21,975	2,350
DNGB_21Z	Market	11,875	8,718	3,939	17,632	4,202	5,691	14,360	4,864	9,276	1,475	0	0	43,651	38,380
DNGB_22Z	Market	0	0	5,326	12,494	9,429	6,144	15,227	5,051	19,409	2,576	11,484	1,619	60,876	27,885
DRAXX01Z	Default	7,617	38,787	7,602	32,524	4,847	28,203	5,734	29,601	3,570	35,574	4,463	24,976	33,834	189,666
DRAXX02Z	Market	6,300	43,020	4,046	25,325	6,593	34,006	2,663	34,651	3,200	33,323	3,493	27,044	26,295	197,367
DRAXX03Z	Default	4,503	29,870	4,410	27,855	3,867	22,201	4,723	28,526	5,547	32,201	4,890	30,333	27,939	170,987
DRAXX04Z	Market	5,464	30,556	6,904	33,487	4,386	29,973	3,036	36,626	5,289	36,277	8,136	31,845	33,215	198,764
DRAXX05Z	Default	4,062	19,279	5,519	28,918	7,531	22,569	5,819	31,293	3,841	35,342	5,172	32,700	31,944	170,101
DRAXX06Z	Market	5,752	39,552	3,695	23,276	6,664	29,236	5,042	30,313	3,789	28,524	8,099	32,952	33,040	183,852
DRAXX09G	Default	0	8	0	0	37	11	0	11	0	11	0	2	37	43
DRAXX10G	Default	0	0	0	0	0	9	0	0	9	3	0	0	9	12
DRAXX12G	Default	0	0	0	0	0	0	0	0	7	2	0	0	7	2
DRKPS09Z	Market	4,541	7,423	1,326	4,339	2,027	7,168	3,365	13,576	3,225	12,568	392	3,023	14,876	48,097
DRKPS10Z	Market	3,717	7,728	884	2,634	2,826	6,131	3,587	10,219	2,757	10,117	1,251	3,077	15,021	39,907
DRKPS12Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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BM Unit	Agreement	Monthly Mvarh												6 Month TOTAL	
		Oct-02		Nov-02		Dec-02		Jan-03		Feb-03		Mar-03		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
DUNGA01Z	Default	1,620	2,310	903	3,599	3,145	2,732	4,012	1,032	5,022	968	2,184	1,198	16,886	11,839
DUNGA02Z	Default	1,232	2,571	580	5,696	1,970	2,916	2,576	2,119	3,745	1,562	1,624	2,374	11,728	17,239
DUNGA03Z	Default	2,512	1,069	718	3,318	3,993	1,662	4,372	1,134	3,793	1,337	3,320	503	18,706	9,022
DUNGA04Z	Default	2,615	700	1,853	1,454	6,261	1,009	6,854	807	6,095	709	6,011	93	29,688	4,772
EECL_01Z	Default	4,689	13,149	4,628	7,529	6,717	11,768	3,148	3,261	4,349	10,638	3,593	7,717	27,125	54,063
EGGPS01Z	Default	3,415	23,823	3,446	18,293	1,893	10,001	5,612	12,420	2,281	5,111	1,609	2,585	18,257	72,232
EGGPS02Z	Default	2,621	17,080	3,424	20,305	4,233	11,917	3,711	12,413	1,530	3,017	2,395	6,196	17,914	70,929
EGGPS03Z	Default	3,625	23,667	394	43,666	5,354	19,310	3,271	15,768	2,228	11,505	3,832	7,844	18,705	121,759
EGGPS04Z	Default	3,494	21,861	2,987	20,002	4,749	19,356	5,561	16,822	2,907	15,019	752	6,124	20,449	99,184
FAWL_03Z	Market	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FAWN_01Z	Default	3,131	61	922	610	1,562	299	1,130	548	1,410	140	1,074	127	9,229	1,784
FELL_01Z	Default	22	8,011	2,615	3,281	813	7,196	156	10,530	27	10,173	89	10,331	3,723	49,522
FERR_01Z	Default	2,536	13,793	3,111	9,274	2,967	16,011	2,316	13,806	4,099	7,461	4,467	5,006	19,495	65,350
FERR_02Z	Default	1,338	10,995	2,374	11,625	2,177	12,906	3,549	9,158	2,996	6,376	4,941	3,780	17,375	54,840
FERR_03Z	Default	1,237	12,302	1,625	10,003	2,525	16,293	2,986	13,527	3,066	12,013	3,650	7,393	15,089	71,530
FERR_04Z	Default	1,131	14,467	1,395	15,518	2,113	13,661	2,742	12,597	3,155	9,427	4,137	6,803	14,673	72,473
FFES_01Z	Default	0	0	0	0	0	0	0	0	0	0	124	163	124	163
FFES_02Z	Default	1,579	366	1,599	163	1,387	176	1,408	139	1,076	65	638	105	7,688	1,015
FFES_03Z	Default	1,019	210	1,826	83	1,291	380	1,849	488	1,796	658	1,638	475	9,420	2,293
FFES_04Z	Default	2,035	255	1,712	691	2,803	598	1,861	623	1,470	268	1,492	44	11,371	2,478
FIDL_01Z	Default	6,174	3,670	4,521	2,283	4,086	2,073	5,219	4,822	3,367	4,162	7,232	1,678	30,600	18,687
FIDL_02Z	Default	4,329	4,982	2,988	2,624	3,834	3,286	5,223	4,368	5,328	3,934	6,425	4,138	28,127	23,332
FIDL_03Z	Default	17,022	98	12,562	134	10,447	264	21,523	282	30,506	25	20,254	99	112,315	900
FIDL_04Z	Default	10,657	3,492	4,752	3,412	4,079	5,057	6,126	3,428	4,011	5,027	7,123	3,110	36,748	23,526
FIFO_13Z	Market	0	0	14	68	14	47	0	0	0	0	0	0	29	115
FIFO_14Z	Market	0	0	0	0	0	129	0	0	0	0	0	0	0	129
FIFO_15Z	Market	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAI_01Z	Market	7	390	56	906	32	1,199	60	729	0	0	0	0	156	3,223

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BM Unit	Agreement	Monthly Mvarh												6 Month TOTAL	
		Oct-02		Nov-02		Dec-02		Jan-03		Feb-03		Mar-03		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
GRAI_04Z	Market	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEYM101Z	Market	6,759	60,523	2,768	67,116	5,402	52,321	1,854	60,934	1,148	70,632	3,200	36,447	21,131	347,974
HEYM102Z	Market	6,621	57,226	2,599	62,375	828	28,444	1,029	48,169	1,529	65,664	3,618	57,290	16,223	319,168
HEYM207Z	Market	0	4,757	4,943	16,402	5,685	49,382	1,902	56,404	62,574	663	56,423	0	131,527	127,607
HEYM208Z	Market	8,025	53,218	4,364	60,167	6,899	50,014	3,426	54,109	1,613	56,896	4,620	51,564	28,947	325,968
HINB_07Z	Market	28,218	8,166	23,932	5,672	14,351	9,199	15,240	6,401	13,663	4,049	18,588	2,993	113,992	36,480
HINB_08Z	Market	267	48	224	83	15,338	4,463	17,254	5,549	14,232	4,742	18,288	2,542	65,604	17,427
HMRPS01Z	Market	1,190	2,197	921	883	461	1,968	1,121	3,031	162	391	0	0	3,855	8,470
HMRPS02Z	Market	1,009	3,013	402	265	225	328	454	1,471	961	844	951	406	4,003	6,326
HMRPS03Z	Market	1,303	2,889	602	667	284	954	667	2,024	747	908	719	716	4,322	8,158
HMRPS04Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HMRPS05Z	Market	6,413	131	1,582	202	1,516	86	3,489	147	2,706	273	451	270	16,157	1,108
HRTL_01Z	Market	1,434	55,082	714	39,087	1,939	48,572	2,332	55,887	1,158	55,348	1,354	29,510	8,931	283,487
HRTL_02Z	Market	2,569	50,225	1,810	70,935	3,279	48,122	1,538	45,136	576	49,926	2,160	47,382	11,932	311,727
IRNPS01Z	Market	2,148	25,360	1,517	12,054	2,063	20,772	1,603	26,743	1,660	21,663	4,577	14,173	13,569	120,764
IRNPS02Z	Market	2,487	22,155	2,427	10,616	2,669	4,946	3,718	10,014	4,820	8,514	4,260	5,253	20,381	61,498
KEAD_01Z	Market	4,764	61,276	5,675	51,061	6,368	44,197	1,781	66,408	2,331	61,584	4,532	65,519	25,450	350,045
KILLP01Z	Market	1,360	18,926	1,044	24,613	1,660	11,116	1,222	12,751	1,296	4,740	1,202	2,171	7,786	74,318
KILLP02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KILNS01Z	Market	1,742	40,205	901	41,219	961	36,289	409	15,128	244	250	424	2,703	4,681	135,794
KINO_01Z	Market	125	36	293	34	185	3	508	11	489	0	391	0	1,990	84
KINO_02Z	Market	6,990	2,883	3,558	8,785	3,753	7,761	6,681	3,787	5,979	5,067	0	0	26,961	28,282
KINO_03Z	Market	2,666	6,669	4,967	10,585	2,033	14,614	6,068	8,757	6,872	9,777	4,686	10,327	27,292	60,729
KINO_04Z	Market	37	47	9	169	42	168	108	110	62	171	114	117	373	782
KLYNA01Z	Default	4,824	0	6,944	0	6,469	0	5,488	0	4,753	0	5,461	0	33,938	0
LBAR_01Z	Default	6,972	39,568	1,112	9,577	4,790	37,575	2,804	55,546	2,198	54,541	4,924	30,598	22,800	227,404
LITTD01G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LITTD01Z	Market	254	1,376	589	3,573	253	1,462	42	1,937	411	483	52	95	1,602	8,926

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BM Unit	Agreement	Monthly Mvarh												6 Month TOTAL	
		Oct-02		Nov-02		Dec-02		Jan-03		Feb-03		Mar-03		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
LITTD02G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LITTD02Z	Market	686	965	434	1,872	132	963	204	122	17	100	258	0	1,730	4,023
LITTD03G	Default	0	0	0	0	5	0	0	0	0	0	0	0	5	0
MEDP_01Z	Default	19,737	8,662	22,582	12,192	25,311	8,500	25,352	8,024	36,950	5,820	27,288	6,378	157,221	49,575
OLDS_01Z	Default	2,422	10,585	2,984	7,943	3,868	9,580	2,956	4,090	1,889	6,540	4	1,239	14,123	39,976
OLDS_02Z	Default	5,884	5,341	4,618	8,981	5,565	6,042	4,697	13,886	1,972	8,000	2,760	3,183	25,495	45,433
PETEM01Z	Default	4,115	9,569	3,351	3,158	2,739	4,529	2,543	5,380	2,464	3,358	3,209	2,304	18,422	28,297
RATS_01Z	Market	7,125	22,841	7,533	20,842	7,095	22,219	8,449	32,771	2,553	31,474	6,618	14,686	39,373	144,832
RATS_02Z	Market	3,652	16,193	6,054	24,448	5,409	22,490	5,740	33,606	1,767	27,199	9,231	20,402	31,854	144,338
RATS_03Z	Market	3,869	25,000	3,286	28,436	4,900	28,052	2,889	36,032	1,989	32,489	4,952	20,570	21,886	170,579
RATS_04Z	Market	3,352	23,858	5,076	25,919	1,890	19,733	3,727	30,414	2,303	30,645	7,283	17,540	23,631	148,109
ROCK_01Z	Default	11,947	15,860	9,224	13,093	16,648	14,522	11,257	22,317	10,071	10,012	11,003	13,005	70,150	88,810
ROOS_01Z	Market	376	6,471	858	1,647	0	0	0	0	0	0	157	161	1,391	8,279
RUGPS06G	Default	0	20	0	29	0	21	0	16	0	34	0	11	0	131
RUGPS06Z	Default	2,575	15,237	4,296	16,589	2,759	22,476	1,572	19,444	2,216	7,207	0	0	13,418	80,954
RUGPS07G	Default	0	58	0	64	0	43	0	69	0	17	0	0	0	251
RUGPS07Z	Default	3,473	21,507	6,126	12,047	3,743	23,391	3,533	21,938	2,189	13,886	2,385	14,463	21,449	107,232
RYHPS01Z	Market	6,978	33,436	6,525	21,959	9,163	26,869	6,946	39,896	6,587	35,331	10,893	26,073	47,092	183,564
SEAB_01Z	Market	10,400	11,623	11,333	7,411	10,558	12,863	6,793	10,451	4,387	10,408	3,956	11,394	47,427	64,150
SEAB_02Z	Market	5,151	9,412	11,296	4,482	9,267	4,988	5,631	5,694	4,933	3,416	4,899	3,048	41,178	31,042
SHBA_01Z	Default	4,769	15,309	5,854	11,685	6,280	9,237	4,908	12,105	3,193	13,949	5,592	13,189	30,596	75,474
SHBA_02Z	Default	2,138	16,289	2,585	14,139	3,888	9,715	2,418	12,958	1,517	11,855	2,031	3,916	14,576	68,871
SHOS_01Z	Default	6,993	4,046	7,702	2,412	2,604	2,165	3,829	5,821	2,519	3,789	4,797	4,945	28,444	23,179
SIZB_01Z	Default	5,545	30,713	4,336	12,819	5,570	16,784	3,010	18,619	3,022	15,342	3,476	11,313	24,959	105,591
SIZB_02Z	Default	6,374	27,372	7,099	8,903	6,469	15,300	3,813	17,261	3,442	14,279	4,815	9,602	32,012	92,716
SIZEA01Z	Default	1,193	9,071	1,049	5,699	1,742	5,174	3,927	4,209	287	8,621	1,731	4,941	9,929	37,715
SIZEA02Z	Default	1,297	7,030	2,504	2,616	2,630	4,552	4,148	3,422	1,087	4,153	1,918	4,846	13,583	26,619
SUTB_01Z	Market	8,370	31,447	7,199	18,990	6,804	20,878	5,773	34,474	4,601	27,961	813	7,965	33,560	141,714

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BM Unit	Agreement	Monthly Mvarh												6 Month TOTAL	
		Oct-02		Nov-02		Dec-02		Jan-03		Feb-03		Mar-03		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
TAYL_02Z	Market	0	29	0	42	1	94	5	12	2	11	0	10	9	198
TAYL_03Z	Market	5	51	0	19	16	12	2	16	30	4	0	5	54	107
TESI_01Z	Default	3,396	18,061	5,306	22,952	8,403	19,951	6,292	25,674	3,559	18,619	6,322	13,089	33,279	118,346
TESI_02Z	Default	3,525	15,709	5,228	19,804	5,436	15,379	4,718	20,421	2,514	17,482	3,668	14,201	25,089	102,996
TILBB08Z	Default	1,785	5,974	5,281	9,188	6,061	8,647	5,626	8,392	2,752	8,953	7,688	3,949	29,192	45,102
TILBB09Z	Default	4,580	8,710	4,119	6,067	4,896	9,468	3,992	9,501	2,334	11,527	0	0	19,921	45,274
TILBB10Z	Default	1,683	12,113	2,496	9,597	1,594	7,745	2,296	13,932	2,220	11,752	7,041	6,027	17,330	61,166
WBUPS01Z	Default	416	43,983	283	42,481	551	34,495	663	50,872	1,172	47,886	1,657	44,252	4,742	263,969
WBUPS02Z	Default	347	47,280	292	50,544	897	38,275	1,503	40,952	1,371	52,498	433	12,183	4,843	241,732
WBUPS03Z	Default	994	7,524	1,126	16,931	488	19,985	1,562	19,462	1,522	22,166	1,115	10,753	6,807	96,820
WBUPS04Z	Default	1,060	6,682	2,274	9,533	520	12,361	1,065	12,334	837	12,126	918	31,525	6,674	84,561
WYLF_01Z	Default	7,104	1,428	6,569	2,154	11,154	721	11,144	886	8,661	790	10,432	773	55,064	6,751
WYLF_02Z	Default	5,248	2,417	8,549	2,832	11,619	579	10,746	898	8,272	947	9,819	811	54,253	8,485
WYLF_03Z	Default	358	278	640	26	14,983	815	9,763	624	5,867	923	15,988	217	47,599	2,884
WYLF_04Z	Default	454	220	0	0	10,785	1,258	10,184	827	4,000	2,351	7,462	2,024	32,885	6,679
Subtotal	Default	316,952	831,499	333,474	766,020	377,493	780,802	378,895	849,239	329,383	780,176	378,274	568,114	2,114,470	4,575,848
Subtotal	Market	257,375	974,406	247,815	906,575	264,422	874,067	238,581	1,055,280	277,672	928,561	305,525	706,800	1,591,389	5,445,689
Total	Mvarh	574,327	1,805,905	581,289	1,672,595	641,915	1,654,869	617,476	1,904,518	607,055	1,708,737	683,798	1,274,914	3,705,859	10,021,538

## Appendix 6 - Tender Assessment Procedure

### A6 Introduction

A6.1 National Grid assessed the eleventh Reactive Power Market tender round in a manner consistent with the processes applied to all previous tender rounds, as detailed in CUSC. Analytical processing was conducted in six-monthly segments in order to consider any interaction with the overlap of contracts secured during the previous Reactive Power Market tender rounds.

A6.2 National Grid divided the process of assessing tenders into several stages, which were addressed as follows:

- *Tender Receipt and Registration:* The tenders were opened, in the presence of a separate witness and all tender data was transcribed into TARDIS (Transmission Ancillary Reactive Database Information System).
- *Tender Data validation:* All database entries were then separately checked back to the original tender sheets. TARDIS compliance checks showed that all tenders submitted were compliant.
- *Obligatory Reactive Power Service Assessment:* The tenders were assessed against likely outgoings, taking into account the many interacting factors associated with each tender acceptance decision, as described in CUSC Schedule 3, Appendix 6. This involved, inter-alia, evaluation against projections of expenditure and availability of service against historic and forecast Mvar and Mvarh data to produce central views of the money payable under the DPM or a market agreement (described below). The overall assessment was supported by an examination of many credible sensitivities around the central view.
- *Enhanced Reactive Power Service Assessment:* Had National Grid received any ERPS tenders these would have been considered on a case-by-case basis against possible alternatives, such as transmission constraints or National Grid investment.

### A6.3 Core Analytical processing

- Tender assessment takes place in the context of uncertainties and interactions affecting reactive payments and transmission requirements. To initiate the assessment of the overall value of each tender, it is considered necessary to construct a central view of future payments so that the relative impact of the factors influencing the economic evaluation of tenders can be fully addressed.

For each BM Unittendered, the processing was as follows:

- Forecast Mvarh generated, in each band by reactive Mvar breakpoints, were set via extrapolations from historic observations and forecast load factors. The historic observations covered the period 2001 to 2002 and came from the Ancillary Services records against which reactive power utilisation is currently being paid.
- The default utilisation money was set at forecast Mvarh multiplied by the utilisation price of £1.39/ Mvarh nationally. (Derived from CUSC Schedule 3)
- Market agreement capability money was set at tendered price multiplied by tendered capability, allowing for break-points, multiplied by forecast hours both available and synchronised.
- Market agreement utilisation money was set at tendered prices, multiplied by the above forecast Mvarh, respecting the tendered break-point bands of Mvarh utilisation.
- The core comparison of default versus market agreement is based on the forecast payments detailed above. Reactive power assessment is however, by no means as simple as taking the cheapest option. A full understanding of the factors influencing reactive power requirements on the National Grid Transmission System must be taken into account to provide a complete economic assessment of tender value.

#### **A6.4 Assessment Sensitivities**

- The principal role of tender assessment is to quantify and evaluate consistently the many factors that National Grid and the then Reactive Power Market Working Group (RPMWG) have agreed should be considered. These factors are those referred to in 5.3(e)(ii) of CUSC Schedule 3 and are cross-referenced in section 2.12 of the Invitation to Tender pack. The National Grid evaluation team has developed and implemented a process enabling these factors and associated uncertainties to be methodically considered.
- The RPMWG accepted at the outset of the reactive market that aspects of the tender evaluation process would be subjective in nature. It was therefore important to establish a framework within which this subjectivity could be exercised in a consistent fashion across all tenders.

Specific questions were asked of each tender, examples of which follow:

- *Would a Market Agreement (central case assessment) give a reduction in payments?*
- *Would a Market Agreement reflect the effectiveness at providing voltage support at that location?*
- *Would a Market Agreement be robust against expected individual variations in utilisation due to:*
  - ◆ *a new station opening nearby*
  - ◆ *an existing nearby station closing*
  - ◆ *trends in local reactive power demand*
  - ◆ *reinforcements to and planned outages of parts of the transmission system*
- *Would a Market Agreement enhance the incentive on the Generator to maintain his Grid Code capability?*
- *How would a Market Agreement affect operational despatch?*
- *To what extent might a Market Agreement potentially offset National Grid investment?*
- *Would a Market Agreement for ORPS enable a desired contract for ERPS?*
- All other criteria in CUSC Schedule 3, paragraph 3, are covered by this methodology.
- In all cases, National Grid continued to consider interaction with forecast transmission constraints. In all cases there were insignificant interactions with constraints identified.
- In all cases, National Grid considered possible interaction with National Grid planned investments. The commissioning in 2003/04 of new National Grid transmission equipment, which includes some reactive compensation equipment, influenced National Grid's view of forecast Mvarh. All of the commissioning equipment is required for compliance with Transmission Licence Standards, and re-phasing of planned National Grid investments within a 12-month contract period is not a practical option.



## **Appendix 8 - Contact Information**

A8.1 Further report information, comments suggestions and enquiries can be directed to:

**Paul Bagg  
Operations and Trading  
National Grid Company plc  
National Grid House  
Kirby Corner Road  
Coventry  
CV4 8JY**

On telephone number: **024 7642 3128**

Email: **paul.bagg@uk.ngrid.com**

A8.2 For any other information please visit the National Grid website on the following address:

**[www.nationalgrid.com/uk/balancing/indinfo/balancing/mn\\_reactive.html](http://www.nationalgrid.com/uk/balancing/indinfo/balancing/mn_reactive.html)**