

# **REACTIVE POWER MARKET**

## **REACTIVE MARKET REPORT**

### **NINETEENTH TENDER ROUND FOR OBLIGATORY AND ENHANCED REACTIVE POWER SERVICES**

**FOR REACTIVE MARKET AGREEMENTS  
EFFECTIVE 1 APRIL 2007**

11 May 2007

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## **Executive Summary**

### 19<sup>th</sup> Tender Round

This report describes the 19<sup>th</sup> Tender Round evaluation process for Reactive Power Market Agreements for service commencement on 1 April 2007. 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 October 2006 to 31 March 2007. Estimates of the reactive contribution of the GB Transmission System for the same period are also included.

National Grid Electricity Transmission plc evaluated all tenders received against economic purchase and technical performance criteria in accordance with the agreed terms of the market mechanism. On 26 January 2007, tenderers were notified of the results of their respective tenders. The main points are as follows:

- On 17 November 2006 ('Market Day') tenders were received for 20 BM Units over 11 power stations from 6 generating companies.
- Of the 20 tenders received, all were in respect of the Grid Code Obligatory Reactive Power Service (ORPS) and no tenders were in respect of the Grid Code Enhanced Power Service.
- No tenders were received for non-BM Units.
- All tenders received were for a duration of 12 months.
- Both portfolio and independent generating companies submitted tenders.
- Of the 20 tenders evaluated, National Grid offered Reactive Power Market Agreements to 10, all of which proceeded to contract.
- As at 1 April 2007 there were a total of 18 BM Units from a possible 180 with Reactive Power Market Agreements (10 from this 19<sup>th</sup> Tender Round and 8 from earlier Tender Rounds). Any BM Unit on a Reactive Power Market Agreement that commenced 1 April 2007 cannot be tendered again until Tender Round 21 (for agreements commencing 1 April 2008) at the earliest, due to the 12-month minimum agreement duration.

20<sup>th</sup> Tender Round

The next 'Market Day' for receipt of tenders for Reactive Power Market Agreements commencing on 1 October 2007, is Friday 18 May 2007. Invitation to Tender (ITT) Documentation for this Tender Round 20 has been available on the National Grid Industry Information website since 16 March 2007.

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## 1. Introduction

- 1.1 This market report provides information on the results from the assessment process carried out for Reactive Power Tender Round 19 (for contracts that commenced 1 April 2007). This includes details on the contractual position for the provision of Reactive Power Services to the GB Transmission System as at 1 April 2007.
- 1.2 National Grid manages the voltage of the GB 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 is provided on a local basis to meet the constantly varying needs of the system and that there is sufficient Reactive Power reserves available to meet contingencies.
- 1.3 Generating Units provide Reactive Power Capability, and are capable of varying 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 capability based Reactive Power Market Agreements as this payment mechanism helps to ensure that the availability of post-fault Reactive Power reserves is maintained.
- 1.5 Tender Round 19 was undertaken to secure such capability based Reactive Power Market Agreements from 1 April 2007. The service definitions, requirements and contract terms may be found in Schedule 3 to the Connection & Use of System Code (CUSEC), the Grid Code and the ITT (Invitation to Tender) Documentation. These can be accessed via National Grid's industry website at: <http://www.nationalgrid.com/uk/electricity/>

## 2. Tender Process

- 2.1 On 17 November 2007, National Grid Electricity Transmission plc held the Market Day for the Reactive Power Tender Round 19. This enabled any potential provider that fulfilled the qualification criteria specified in Schedule 3 of the CUSC to tender for a Reactive Power Market Agreement.
- 2.2 Tenderers could elect to choose the term of tenders from a minimum period of 12 months and thereafter in 6-month increments (12, 18, 24, 30, 36 months, etc.).
- 2.3 Tenderers who submitted tenders for periods greater than 12 months were also able to include indexation criteria on the tendered prices to be applied to any period(s) beyond the first 12 months.
- 2.4 Tenderers could tender for either the ORPS and/or the Enhanced Reactive Power Service (ERPS), as defined in Schedule 3 of the CUSC.
- 2.5 Potential tenderers comprised the following:
  - Generators required to provide the minimum Grid Code ORPS and already in receipt of the Default Payment Mechanism, who wished to tender for alternative payment terms for the ORPS.
  - Generators that had a reactive capability in excess of the minimum Grid Code ORPS, known as the "Grid Code plus Enhanced Reactive Power Service" (Grid Code ERPS).
  - Any other eligible Service Provider able to offer other plant or apparatus that could generate or absorb Reactive Power, known as ERPS. The only requirement was that these Service Providers had to fulfil the market qualification criteria and have been capable of making their capability available for use by National Grid.

### **3. Tenders Submitted**

- 3.1 A total of 20 discrete tender submissions were received, representing 6 generating companies and 11 power stations. 20 tenders were for BM Units offering the Grid Code ORPS service; and no tenders were received for the Grid Code ERPS service. All tenders offered a contract duration of 12 months.
- 3.2 Tenders were received from directly connected power stations, from both portfolio and independent generating companies. No tenders were received from non-BM providers.
- 3.3 All of the tenders received sought reactive capability based payments in addition to utilisation payments.
- 3.4 All tenders that were evaluated were compliant with the submission criteria specified in Schedule 3 of the CUSC.

### **4. Tender Assessment**

- 4.1 Tender assessment was carried out in accordance with the evaluation criteria specified in Appendix 6 of Schedule 3 of the CUSC. Details of this are more fully described in Appendix 6 of this report.
- 4.2 This assessment included input from the Reactive Power Capability Index updated from that shown in Appendix A of the Invitation To Tender & Guidance Notes for Completion of Tenders that was included in the ITT Documentation. The purpose of this index is to provide an indication of the Reactive Power 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 the GB 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 considered 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 was, and what incentive the Generator was placing on itself to maintain the reactive capability.

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

## 5. Tender Observations

- 5.1 This tender round was characterised by a continuation of relatively few tender submissions with just 10% of eligible BM Units choosing to submit a tender.
- 5.2 Most of the 20 tenders submitting revised pricing, particularly for utilisation - reflecting the changes to default reactive power prices. All tenders continued to seek capability worth, with a wide range of pricing structures across the capability bands. Three of the 20 tenders related to Scottish BM Units
- 5.3 A number of tenders had significant adjustments to the extreme price bands, altering the shape of their Utilisation cost profile.
- 5.4 A quarter of the 20 tenders submitted Synchronised Capability Prices, and three of these were accompanied by corresponding Capability prices. There was significant variation between the emphasis placed on Synchronised Capability and Capability prices between the tenders.
- 5.5 Synchronised capability is more useful to National Grid than Capability, but the valuation of the two differs, dependent on the total time for which the plant is synchronised and when this occurs. National Grid places higher value on tenders with high synchronised capability prices compared with availability prices if the plant tends to run less frequently but at times of high system need. Conversely, National Grid places a lower value on plant with relatively high Synchronised Capability Prices if the plant is expected to run for a large part of the assessment period, as this is more likely to include significant periods when the capability is not essential to secure system operation.
- 5.6 This Tender Round, as with previous ones, has taken into account our views on expected utilisation of generating plant in the energy market. We continued to factor in our view of the likely running under emissions trading and other market changes.

## 6. Assessment Results

- 6.1 Of the 20 tenders evaluated, National Grid offered Reactive Market Agreements to 10 (an acceptance rate of 50%), all of which proceeded to contract.
- 6.2 Tenders were scored against the specified assessment criteria and Figure 1 below shows the attractiveness of tenders from the assessment outcome. The tenders at the “Most” attractive side of Figure 1 were assessed with a positive score indicating they should be offered Market Agreements. Likewise the tenders at the “Least” attractive side of Figure 1 were assessed with a negative score indicating they should not be offered a Market Agreement. The tenders at either end of these measures were considered to be very “attractive” or “unattractive”. Those considered unattractive could, for example, have sought capability payments significantly above expectations of default payments and National Grid’s value of capability.

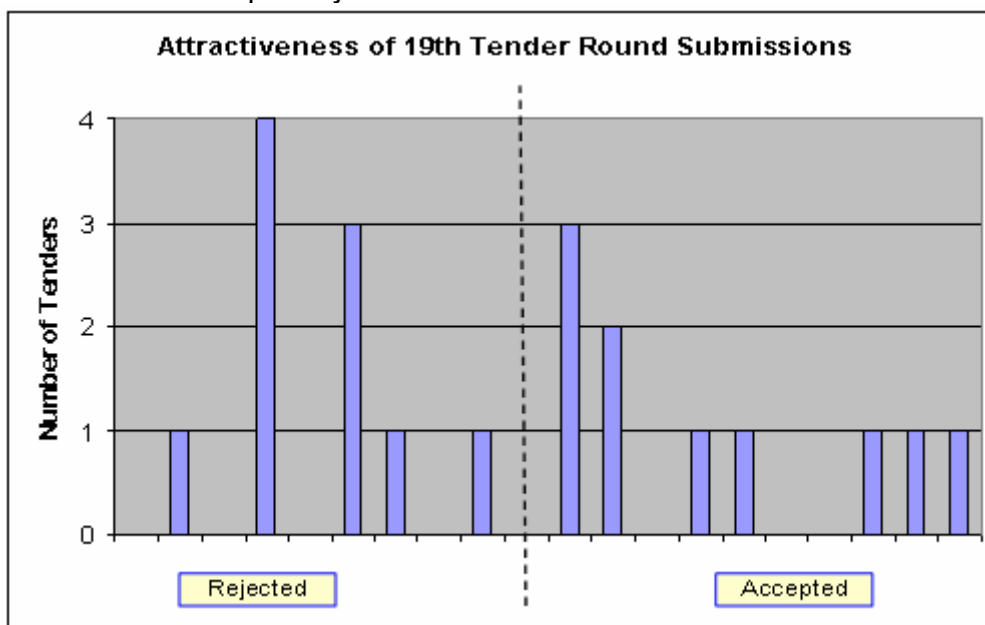


Figure 1

- 6.3 A complete list of all generator BM Units as at 1 April 2007 obliged under the Grid Code to be capable of providing the ORPS is given in Appendix 2. This list includes a record of which BM Units are on Reactive Power Market Agreements and which are on the Default Payment Mechanism (DPM).
- 6.4 Appendix 3 provides a list of BM Units on Market Agreements applicable as at 1 April 2007 showing when the agreements will terminate.
- 6.5 Appendix 7 shows the geographic distribution of BM Units on market and default agreements.
- 6.6 Details of the 10 successful tenders that proceeded to contract commencing 1

April 2007 are listed in Appendix 4.

## 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. Tender Round 19 follows a recent trend of increasing numbers of participants declining to tender.

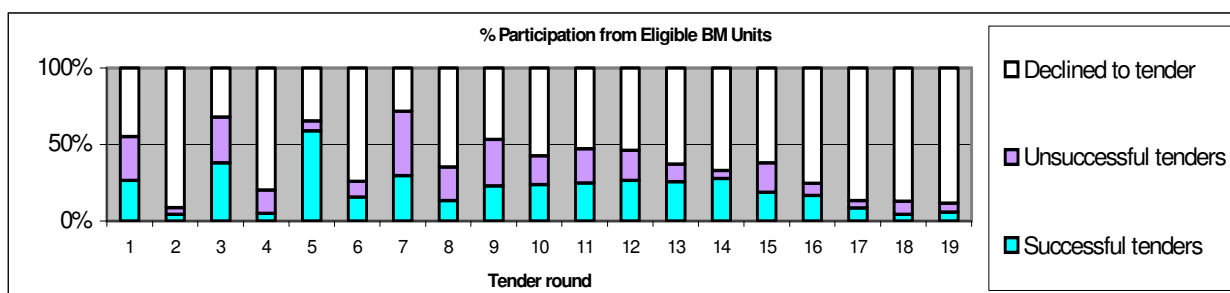


Figure 2 (Source: Appendix 1)

7.2 The acceptance rate of eligible participants in Tender Round 19 increased from recent tender rounds. Figure 3 shows the acceptance rate for all Tender Rounds since the commencement of the Reactive Power Market.

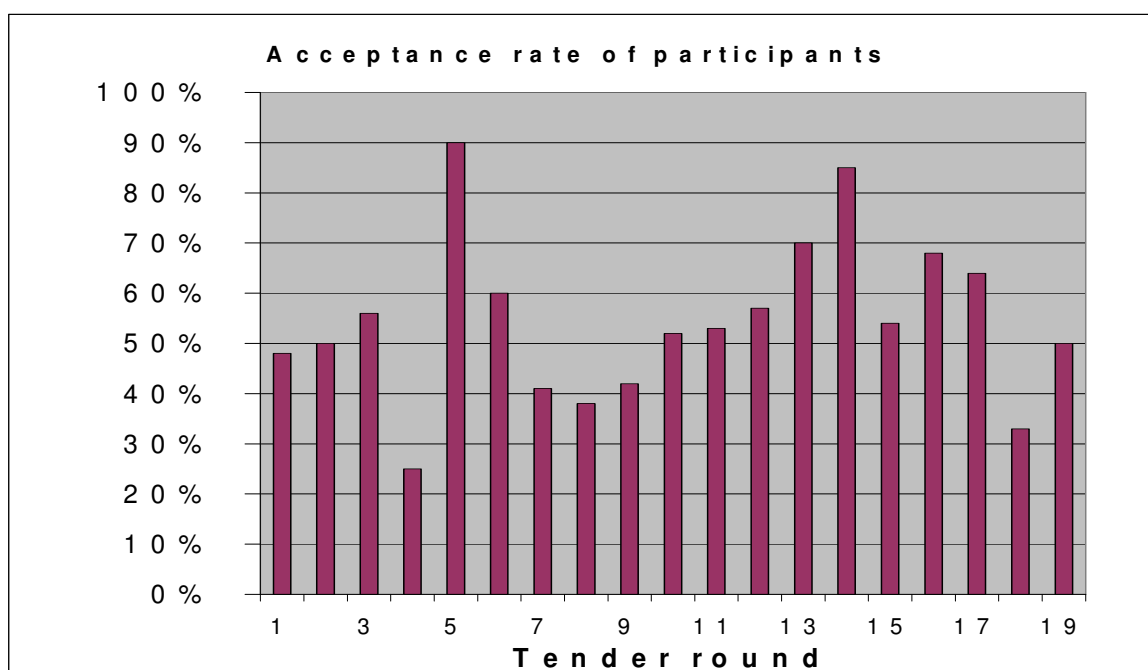


Figure 3 (Source: Appendix 1)

7.3 On 1 April 2007 there are a total of 18 BM Units on Reactive Power Market Agreements with 2 from Tender Round 16, 6 from Tender Round 18 (with one enhanced) and 10 from this Tender Round 19. This information is shown in

Figure 4 in percentage terms, including comparison with BM Units on default payment arrangements that are eligible to tender for a Market Agreement.

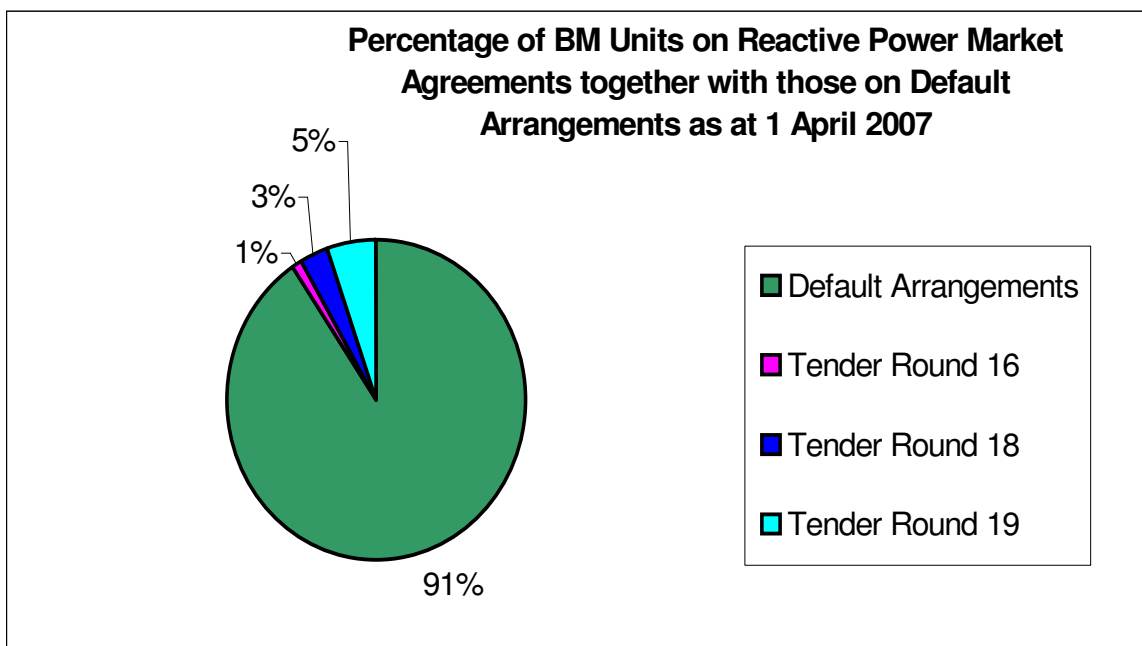


Figure 4 (Source: Appendix 2)

7.4 Figure 5 shows the percentage of eligible BM Units on a Reactive Power Market Agreement as at 1 April 2007 on a regional basis.

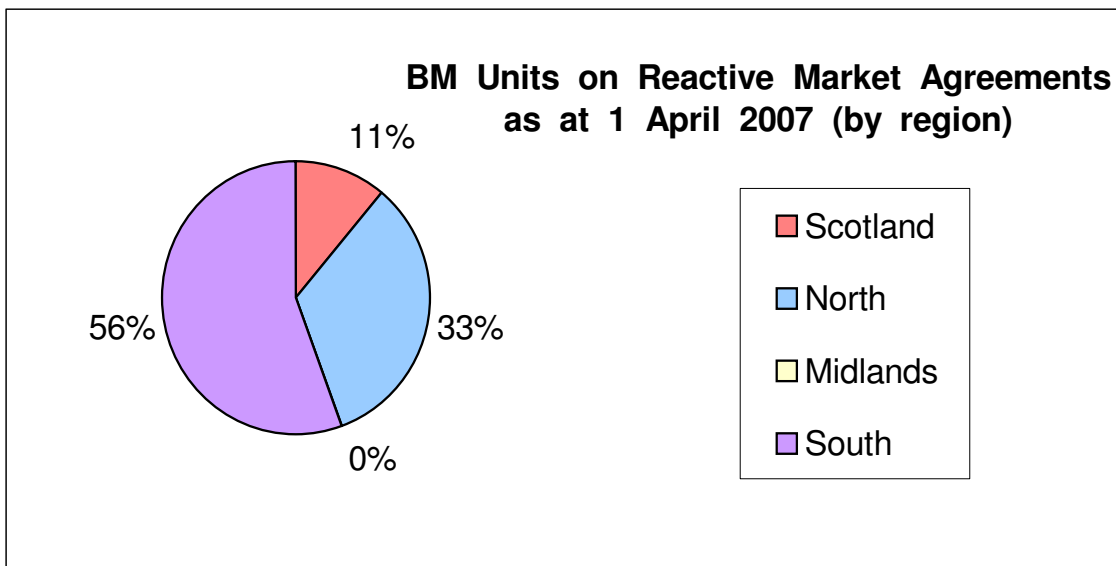


Figure 5 (Source: Appendix 2)

7.5 Figure 6 shows the percentage of total available lagging capability that has been contracted via Reactive Power Market Agreements since the commencement of the Reactive Power Market.

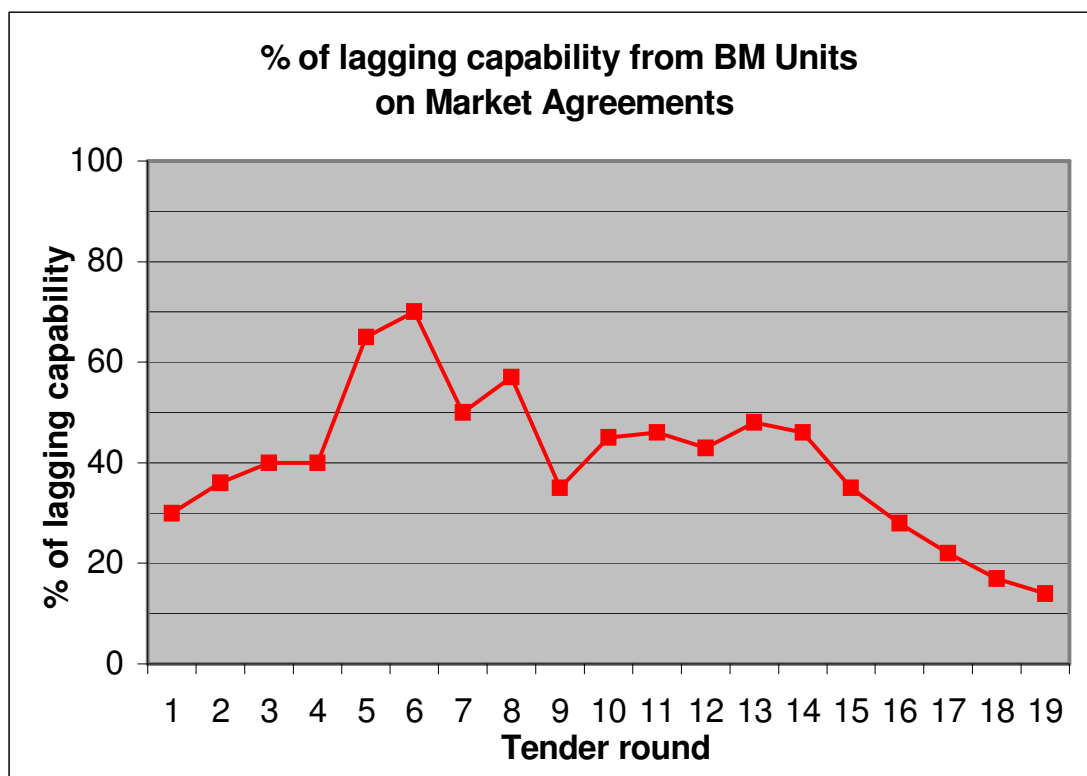


Figure 6 (Source: Appendix 1)

## 8. Generating Unit Reactive MVarh Utilisation

- 8.1 This section summarises a six-month breakdown of metered BM Unit Reactive Power utilisation over the period 1 October 2006 to 31 March 2007.
- 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 2006 to March 2007 is provided in Appendix 5.

### Utilisation Volume (MVarh)

Month	Default Payment Mechanism	Market Agreements	Total = Market Agreements + DPM
Oct-06	1,630,885	545,462	2,176,347
Nov-06	1,809,794	510,375	2,320,169
Dec-06	1,895,522	417,794	2,313,316
Jan-07	1,946,785	391,896	2,338,681
Feb-07	1,624,751	323,465	1,948,215
Mar-07	1,712,125	376,787	2,088,912
<b>Total</b>	<b>10,619,861</b>	<b>2,565,778</b>	<b>13,185,639</b>

Table 1 - Summary of Generator Reactive utilisation Oct 06 – Mar 07

- 8.3 Table 2, on the next page, shows six-monthly utilisation totals since 1996, sorted by the Seven Year Statement defined regions – North, Midlands and South up to March 2005 and from April 2005 onwards – Scotland, North, Midlands and South.
- 8.4 The volumes set out in Table 2 refer to all BM Units eligible for a Reactive Utilisation Payment (default plus market). MVarh lag and MVarh lead are calculated according to the aggregation methodology described within Appendix 2 in Schedule 3 of the CUSC and also within the companion document "Methodology Document for the Aggregation of Reactive Power Metering" by which reactive utilisation payments are made.
- 8.5 The reduction over the last 10 years is attributable to more distributed generation and lower power flows across the system that has resulted in a reduction in reactive losses on the supergrid and hence the reactive utilisation required from generation.

Table 2 – Generator Reactive Utilisation (Tvarh) by region

	NORTH		MIDLANDS		SOUTH		TOTAL		
	lead	lag	lead	Lag	Lead	lag	Lead	lag	Lead + lag
<b>Apr96 - Sep96</b>	2.86	9.79	0.37	1.94	1.49	2.29	4.72	14.02	18.74
<b>Oct96 - Mar97</b>	2.72	12.71	0.36	3.07	1.74	2.72	4.82	18.50	23.32
<b>Apr97 - Sep97</b>	2.89	8.65	0.41	1.60	1.87	1.77	5.17	12.02	17.19
<b>Oct97 - Mar98</b>	2.78	10.67	0.31	3.07	1.54	2.01	4.63	15.75	20.38
<b>Apr98 - Sep98</b>	1.96	7.68	0.44	2.02	1.85	1.51	4.25	11.20	15.45
<b>Oct98 - Mar99</b>	1.71	9.54	0.36	2.07	1.65	1.66	3.76	13.48	17.24
<b>Apr99 - Sep99</b>	1.77	7.25	0.37	1.52	1.27	1.40	3.40	10.20	13.60
<b>Oct99 – Mar00</b>	1.98	10.45	0.27	2.13	1.35	2.19	3.60	14.77	18.37
<b>Apr00 – Sep00</b>	1.44	6.31	0.48	1.69	1.59	1.32	3.51	9.32	12.83
<b>Oct00 – Mar01</b>	1.52	7.40	0.40	2.72	1.48	1.73	3.40	11.85	15.25
<b>Apr01 – Sep01</b>	1.80	4.59	0.50	1.76	1.94	1.18	4.24	7.53	11.77
<b>Oct01 - Mar02</b>	1.70	5.79	0.58	3.07	1.50	1.78	3.79	10.65	14.44
<b>Apr02 – Sep02</b>	1.59	4.70	0.52	0.95	1.76	1.20	3.87	6.85	10.72
<b>Oct02 – Mar03</b>	1.71	5.73	0.47	2.51	1.53	1.78	3.71	10.02	13.73
<b>Apr03 – Sep03</b>	1.40	3.96	0.56	1.59	1.92	1.36	3.88	6.91	10.79
<b>Oct03 – Mar04</b>	2.28	5.48	0.34	1.89	1.69	2.29	4.31	9.66	13.97
<b>Apr04 – Sep04</b>	2.26	3.97	0.85	1.08	2.16	1.29	5.27	6.34	11.61
<b>Oct04 – Mar05</b>	1.89	5.26	0.66	1.84	1.85	1.99	4.40	9.09	13.49

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	SCOTLAND		NORTH		MIDLANDS		SOUTH		TOTAL		
	lead	lag	Lead	lag	lead	Lag	lead	lag	Lead	lag	Lead + lag
<b>Apr05 – Sep05</b>	1.32	0.39	2.07	3.28	0.83	1.04	2.07	1.03	6.29	5.74	12.03
<b>Oct05 – Mar06</b>	1.06	0.80	2.10	4.56	0.76	1.91	1.88	1.48	5.80	8.75	14.55
<b>Apr06 – Sep06</b>	1.09	0.56	2.29	3.00	0.74	0.67	1.79	0.87	5.91	5.09	11.00
<b>Oct 06 – Mar 07</b>	0.74	0.96	2.49	4.27	0.57	1.17	1.79	1.18	5.59	7.58	13.17

## 9. Estimates of the reactive contribution of the GB Transmission System for October 2006 to March 2007

9.1 National Grid is required by Schedule 3 of the CUSC to ‘use all reasonable endeavours’ to provide estimates of the Reactive Power absorption and generation in MVarh by the GB Transmission System for the six-month period ending 31 March 2007.

9.2 This has been approached in two stages:

- The net Reactive Power utilisation (Tvarh) of the GB Transmission System has been derived from the difference between the reactive output of generating units and the Net Reactive Demand at Grid Supply Points (GSPs). This is shown in Table 3 where the accuracy of the data is consistent with the underlying meter readings. The generation figures are a national monthly summation of the Settlements figures given in Appendix 5. At this stage, the data in Table 3, on the next page, may be subject to amendment via accruals or any outstanding disputes.
- The net Tvarh described above has been broken down by Transmission System component and is also shown in Table 3. It should be noted that this information is based on estimates and operational records only. The ‘net reactive demand at GSP’ figures have been derived from operational records. The figures shown are net, i.e. lagging demand minus leading demand, and in the case of the figures in Table 3 they show lagging demand in each month. These figures represent the net effect of the consumer demand plus the LV losses minus the LV gain.

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

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

For example, for March 2007, (1.11 – 0.83 = net system utilisation – net demand at GSPs). 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 more detailed breakdown found in Table 3 can be described by the following equation:

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

Table 3 - Net System Effect Oct 06 to Mar 07

Component (Tvarh)	Oct-06	Nov-06	Dec-06	Jan-07	Feb-07	Mar-07	6 month total
MSC	1.86	2.30	2.29	2.55	2.26	2.30	13.56
Shunt Reactor	-2.25	-1.80	-2.32	-1.93	-1.72	-2.07	-12.09
SVC generation	0.08	0.09	0.09	0.09	0.09	0.08	0.52
SVC absorption	-0.12	-0.08	-0.11	-0.08	-0.06	-0.09	-0.54
HV network shunt gain	9.86	9.83	10.38	10.20	9.22	10.03	59.52
HV network series losses	-3.54	-3.54	-3.71	-3.74	-3.39	-3.67	-21.59
SGT series losses	-1.83	-2.09	-2.08	-2.05	-1.79	-1.81	-11.65
<b>Net System Utilisation</b>	4.07	4.70	4.53	5.05	4.61	4.76	27.72
<b>Generation Lead</b>	-0.90	-0.80	-0.92	-0.17	-0.78	-0.83	-4.40
<b>Generation Lag</b>	0.97	1.31	1.21	1.35	1.23	1.11	6.52
<b>Net Demand at GSPs</b>	-4.62	-4.66	-3.94	-4.50	-4.00	-4.10	-25.82

9.5 The above values are all on an entirely GB basis, and thus include the contributions from English, Welsh and Scottish transmission systems, including all the 132kV and lower voltages.

9.6 Points to note when considering Table 3 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 Compensators) and shunt reactors is determined by operational security requirements.

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

- 10.1 Paragraph 5 in Schedule 3 of the CUSC (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 proceeding six-month period. During the period 1 October 2006 to 31 March 2007 National Grid required two services for the provision of voltage support.
- 10.2 The Scottish network, whose constraints had been internalised prior to BETTA, provided a condition in which a local power station had to be constrained on during winter 2006/7 for local voltage support. The primary system requirement was voltage support, although thermal limits were also studied. This requirement could only be satisfied by local generation, which had to be contracted for energy (MWh) rather than enhanced Reactive Power duty, since the unit had notified its unwillingness to run at that time. This condition is an enduring requirement that has been secured to cover periods of system need.
- 10.3 During the period January-March 2007 a single mode failure on the fuel supply at a power station in Scotland required consents from the Scottish Executive to run on an alternate fuel source. One of the caveats placed on the station to allow running on the alternative fuel was that an instruction from National Grid was required. National Grid identified there was a system requirement for the station to run for voltage support in Scotland, which had also been exacerbated by the loss of a Nuclear power station, hence a unit at the station was contracted for energy on a time limited basis.

## **Appendices**

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

Tender Round	Tender Round Start date	BM 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%
12	1 Oct 2003	121	56	56	0	49	7	32	23	~43%
13	1 Apr 2004	126	46	46	0	41	5	32	32	~48%
14	1 Oct 2004	118	39	38	1	38	1	33	21	~46%

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Tender Round	Tender Round Start date	BM 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
15	1 Apr 2005	153	58	58	0	57	1	29	25	~35%
16	1 Oct 2005	151	37	36	1	33	4	25	13	~28%
17	1 Apr 2006	164	22	22	0	22	0	14	12	~20%
18	1 Oct 2006	164	21	20	1	21	0	7	6	~17%
19	1 Apr 2007	172	20	20	0	20	0	10	10	~14%

**NB: Tender Round 1-14 inclusive incorporates England and Wales BM Units ONLY. Tender Round 15 onwards comprise of GB BM units.**

**Appendix 2 - BM Units' contractual position at 1 April 2007**

**Scotland**

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
1	Clachan 1	DPM	10	FIFE_01Z	DPM	19	LOAN_04Z	DPM
2	COCK_01Z	DPM	11	FOYE_01Z	DPM	20	PEHE_01Z	DPM
3	COCK_02Z	DPM	12	FOYE_02Z	DPM	21	PEHE_02Z	DPM
4	COCK_03Z	DPM	13	GRMO_01Z	Market 19	22	PEHE_03Z	DPM
5	COCK_04Z	DPM	14	HUNB_07Z	DPM	23	PEHE_04Z	DPM
6	CRUA_01Z	DPM	15	HUNB_08Z	DPM	24	SLOY_04Z	DPM
7	CRUA_02Z	DPM	16	LOAN_01Z	DPM	25	TORN_01Z	Market 19
8	CRUA_03Z	DPM	17	LOAN_02Z	DPM	26	TORN_02Z	DPM
9	CRUA_04Z	DPM	18	LOAN_03Z	DPM			

**North**

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
27	BRGG_01Z	DPM	51	DRAXX10G	DPM	75	HRTL_02Z	DPM
28	CDCL_01Z	DPM	52	DRAXX12G	DPM	76	HUMR_01Z	DPM
29	CNQPS01Z	DPM	53	EGGPS01Z	Market 19	77	KEAD_01Z	Market 19
30	CNQPS02Z	DPM	54	EGGPS02Z	DPM	78	KILNS01Z	DPM
31	CNQPS03Z	DPM	55	EGGPS03Z	Market 18	79	KILLP01Z	DPM
32	CNQPS04Z	DPM	56	EGGPS04Z	Market 18	80	KILLP02Z	DPM
33	COTPS01Z	DPM	57	FELL_01Z	DPM	81	ROCK_01Z	DPM
34	COTPS02Z	DPM	58	FERR_01Z	DPM	82	ROOS_01Z	DPM
35	COTPS03Z	DPM	59	FERR_02Z	DPM	83	SCCL_01Z	DPM
36	COTPS04Z	DPM	60	FERR_03Z	DPM	84	SCCL_02Z	DPM
37	DEEP_01Z	DPM	61	FERR_04Z	DPM	85	SCCL_03Z	DPM
38	DINO_01Z	DPM	62	FFES_01Z	DPM	86	SHBA_01Z	DPM
39	DINO_02Z	DPM	63	FFES_02Z	DPM	87	SHBA_02Z	DPM
40	DINO_03Z	DPM	64	FFES_03Z	DPM	88	SHOT_01Z	DPM
41	DINO_04Z	DPM	65	FFES_04Z	DPM	89	TESI_01Z	DPM
42	DINO_05Z	DPM	66	FIDL_01Z	DPM	90	TESI_02Z	DPM
43	DINO_06Z	DPM	67	FIDL_02Z	DPM	91	WBUPS01Z	DPM
44	DRAXX01Z	DPM	68	FIDL_03Z	DPM	92	WBUPS02Z	DPM
45	DRAXX02Z	DPM	69	FIDL_04Z	DPM	93	WBUPS03Z	DPM
46	DRAXX03Z	DPM	70	HEYM101Z	Market 19	94	WBUPS04Z	DPM
47	DRAXX04Z	DPM	71	HEYM102Z	DPM	95	WYLF_01Z	DPM
48	DRAXX05Z	DPM	72	HEYM207Z	DPM	96	WYLF_02Z	DPM
49	DRAXX06Z	DPM	73	HEYM208Z	Market 19	97	WYLF_03Z	DPM
50	DRAXX09G	DPM	74	HRTL_01Z	DPM	98	WYLF_04Z	DPM

**Midlands**

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
99	CORB_01Z	DPM	106	PETEM01Z	DPM	113	RUGPS06G	DPM
100	DERW_01Z	DPM	107	RATS_01Z	DPM	114	RUGPS07G	DPM
101	GYAR_01Z	DPM	108	RATS_02Z	DPM	115	SIZB_01Z	DPM
102	IRNPS01Z	DPM	109	RATS_03Z	DPM	116	SIZB_02Z	DPM
103	IRNPS02Z	DPM	110	RATS_04Z	DPM	117	SIZEA01Z	DPM
104	KLYNA01Z	DPM	111	RUGPS06Z	DPM	118	SIZEA02Z	DPM
105	LBAR_01Z	DPM	112	RUGPS07Z	DPM	119	SPLN-1	DPM
						120	SUTB_01Z	DPM

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**South**

	<b>BM Unit</b>	<b>Contract</b>		<b>BM Unit</b>	<b>Contract</b>		<b>BM Unit</b>	<b>Contract</b>
121	ABTHB07Z	DPM	141	DIDC_03G	DPM	161	LITTD01G	DPM
122	ABTHB08Z	DPM	142	DIDC_04G	DPM	162	LITTD02G	DPM
123	ABTHB09Z	DPM	143	DNGB_21Z	Market 18	163	LITTD03G	DPM
124	BAGE_01Z	Market 18 (ERPS)	144	DNGB_22Z	Market 18	164	LITTD01Z	Market 16
125	BAGE_02Z	DPM	145	DUNGA01Z	DPM	165	LITTD02Z	Market 16
126	BARK_02Z	DPM	146	DUNGA02Z	DPM	166	MEDP_01Z	DPM
127	BARK_11Z	Market 19	147	DUNGA03Z	DPM	167	OLDS_01Z	DPM
128	BRYP_01Z	DPM	148	DUNGA04Z	DPM	168	OLDS_02Z	DPM
129	COSO_01Z	DPM	149	EECL_01Z	DPM	169	RYHPS01Z	DPM
130	COWE_01Z	DPM	150	FAWL_01Z	Market 19	170	SEAB_01Z	DPM
131	COWE_02Z	DPM	151	FAWL_03Z	Market 18	171	SEAB_02Z	DPM
132	DAMC_01Z	DPM	152	FAWN_01Z	DPM	172	SHOS_01Z	DPM
133	DIDC_01Z	DPM	153	GRAI_01Z	DPM	173	TAYL_02Z	DPM
134	DIDC_02Z	DPM	154	GRAI_04Z	DPM	174	TAYL_03Z	DPM
135	DIDC_03Z	DPM	155	HINB_07Z	Market 19	175	TILBB08Z	DPM
136	DIDC_04Z	DPM	156	HINB_08Z	Market 19	176	TILBB09Z	DPM
137	DIDCB05Z	DPM	157	KINO_01Z	DPM	177	TILBB10Z	DPM
138	DIDCB06Z	DPM	158	KINO_02Z	DPM	178	USKM_13Z	DPM
139	DIDC_01G	DPM	159	KINO_03Z	DPM	179	USKM_14Z	DPM
140	DIDC_02G	DPM	160	KINO_04Z	DPM	180	USKM_15Z	DPM

**Notes:**

Market 16 refers to those contracts commencing 1 October 2005.

Market 18 refers to those contracts commencing 1 October 2006.

Market 19 refers to those contracts commencing 1 April 2007.

Eligible BM Units for Market Agreements are those with reactive capability, leading or lagging greater than 15 MVar at the commercial boundary, and the further stipulations stated in CUSC Schedule 3.

There is one contract for Enhanced Capability.

**BM Units with MSAs incorporating reactive capability, leading or lagging less than 15 MVar**

	<b>BM Unit</b>	<b>Contract</b>		<b>BM Unit</b>	<b>Contract</b>		<b>BM Unit</b>	<b>Contract</b>
1	Beauly – AIGA_01Z	DPM	18	Conon - ORRI_01Z	DPM	34	Killin - LOCH_02Z	DPM
2	Beauly – AIGA_02Z	DPM	19	Conon – TORA_01Z	DPM	35	Killin - LUBR_01Z	DPM
3	Beauly – CULL_02Z	DPM	20	Conon – TORA_02	DPM	36	Moriston - CEAN_01Z	DPM
4	Beauly - DEAN_01Z	DPM	21	ERRO_01Z	DPM	37	Moriston - CEAN_02Z	DPM
5	Beauly - DEAN_02Z	DPM	22	ERRO_02Z	DPM	38	Moriston - GLEN_01Z	DPM
6	Beauly - KIOR_01Z	DPM	23	ERRO_03Z	DPM	39	Moriston - GLEN_02Z	DPM

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7	Beaully - KIOR_02Z	DPM	24	FASN_01Z	DPM	40	Moriston - Livishie 1	DPM
8	Black Law	DPM	25	FASN_02Z	DPM	41	NANT_01Z	DPM
9	Clunie - CLUN_01Z	DPM	26	FASN_03Z	DPM	42	Shin 1	DPM
10	Clunie - CLUN_02Z	DPM	27	FINL_01Z	DPM	43	Shin 2	DPM
11	Clunie - CLUN_03Z	DPM	28	Garry - INGA_01Z	DPM	44	SLOY_01Z	DPM
12	Clunie - Pitlochry 1	DPM	29	Garry - QUOI_01Z	DPM	45	SLOY_02Z	DPM
13	Clunie - Pitlochry 2	DPM	30	Grudie Bridge 1	DPM	46	SLOY_03Z	DPM
14	Conon - LUIC_01Z	DPM	31	Grudie Bridge 2	DPM	47	Tongland	DPM
15	Conon - LUIC_02Z	DPM	32	Killin - CASH_01Z	DPM	48	Tummel Bridge 1	DPM
16	Conon - MOSS_01Z	DPM	33	Killin - LOCH_01Z	DPM	49	Tummel Bridge 2	DPM
17	Conon - MOSS_02Z	DPM						

### Notes:

Non-eligible BM Units for Market Agreements are those with reactive capability, leading or lagging less than 15 MVAR at the commercial boundary. The BM Units, above, do receive default payments as they have Mandatory Service Agreements.

**Appendix 3 - Reactive Market Agreement status at 1 April 2007**

<b>Contracts Continuing on 1 April 2007</b>			
	<b>Company</b>	<b>BM Unit ID</b>	<b>Contract Expiry Date</b>
1	Baglan Operations Ltd	BAGE_01Z	30/09/2007 (ERPS)
2	British Energy Generation Ltd	DNGB_21Z	30/09/2007
3	British Energy Generation Ltd	DNGB_22Z	30/09/2007
4	Eggborough Power Ltd	EGGB_03Z	30/09/2007
5	Eggborough Power Ltd	EGGB_04Z	30/09/2007
6	RWE Npower plc	FAWL-03Z	30/09/2007
7	RWE Npower plc	LITTD_01Z	30/09/2007
8	RWE Npower plc	LITTD_02Z	30/09/2007

<b>New Contracts Commencing on 1 April 2007</b>			
	<b>Company</b>	<b>BM Unit ID</b>	<b>Contract Expiry Date</b>
1	Barking Power Limited	BARK_11Z	31/03/2008
2	British Energy Generation Ltd	EGGPS01Z	31/03/2008
3	British Energy Generation Ltd	HEYS101Z	31/03/2008
4	British Energy Generation Ltd	HEYS208Z	31/03/2008
5	British Energy Generation Ltd	HINB_07Z	31/03/2008
6	British Energy Generation Ltd	HINB_08Z	31/03/2008
7	British Energy Generation Ltd	TORN_01Z	31/03/2008
8	Grangemouth CHP Limited	GRMO_01Z	31/03/2008
9	Keadby Generation Limited	KEAD_01Z	31/03/2008
10	RWE Npower plc	FAWL_01Z	31/03/2008

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**Appendix 4 - Successful tender details for contracts commencing 1 April 2007**

Company Name: Barking Power Limited			Station Name: Barking (Module 1)			
Genset ID: BARK_01Z			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: 203	Q2Lead: 90	Q1Lead: 50	Q1Lag: 75	Q2Lag: 90	Q3Lag: 136
Available Capability Prices (£/MVar/h)	CA3Lead 0.120	CA2Lead 0.120	CA1Lead 0.120	CA1Lag 0.120	CA2Lag 0.120	CA3Lag 0.120
Synchronised Capability Prices (£/MVar/h)	CS3Lead 0	CS2Lead 0	CS1Lead 0	CS1Lag 0	CS2Lag 0	CS3Lag 0
Utilisation Prices (£/MVarh)	CU3Lead 1.060	CU2Lead 1.060	CU1Lead 1.060	CU1Lag 1.060	CU2Lag 1.060	CU3Lag 1.060

Company Name: British Energy Generation Ltd			Station Name: Heysham 1			
Genset ID: HEYM101Z			Contract Period: 12 months			
Nominated GRC: 575 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: 150	Q1Lead: 50	Q1Lag: 75	Q2Lag: 200	Q3Lag: 292
Available Capability Prices (£/MVar/h)	CA3Lead 0.150	CA2Lead 0.110	CA1Lead 0.100	CA1Lag 0.100	CA2Lag 0.110	CA3Lag 0.150
Synchronised Capability Prices (£/MVar/h)	CS3Lead 0	CS2Lead 0	CS1Lead 0	CS1Lag 0	CS2Lag 0	CS3Lag 0
Utilisation Prices (£/MVarh)	CU3Lead 3.400	CU2Lead 1.650	CU1Lead 1.610	CU1Lag 1.610	CU2Lag 1.650	CU3Lag 3.400

Company Name: British Energy Generation Ltd			Station Name: Heysham 2			
Genset ID: HEYM208Z			Contract Period: 12 months			
Nominated GRC: 660 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: 279	Q2Lead: 200	Q1Lead: 50	Q1Lag: 50	Q2Lag: 200	Q3Lag: 257
Available Capability Prices (£/MVar/h)	CA3Lead 0.150	CA2Lead 0.120	CA1Lead 0.110	CA1Lag 0.110	CA2Lag 0.120	CA3Lag 0.150
Synchronised Capability Prices (£/MVar/h)	CS3Lead 0	CS2Lead 0	CS1Lead 0	CS1Lag 0	CS2Lag 0	CS3Lag 0
Utilisation Prices (£/MVarh)	CU3Lead 3.400	CU2Lead 1.640	CU1Lead 1.610	CU1Lag 1.610	CU2Lag 1.640	CU3Lag 3.400

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Company Name: British Energy Generation Ltd			Station Name: Hinkley Point B			
Genset ID: HINB_07Z			Contract Period: 12 months			
Nominated GRC: 650 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: 307	Q2Lead: 200	Q1Lead: 75	Q1Lag: 50	Q2Lag: 150	Q3Lag: 221
Available Capability Prices (£/MVar/h)	CA3Lead 0.085	CA2Lead 0.042	CA1Lead 0.040	CA1Lag 0.040	CA2Lag 0.042	CA3Lag 0.085
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 3.400	CU2Lead 1.580	CU1Lead 1.550	CU1Lag 1.550	CU2Lag 1.580	CU3Lag 3.400

Company Name: British Energy Generation Ltd			Station Name: Hinkley Point B			
Genset ID: HINB_08Z			Contract Period: 12 months			
Nominated GRC: 615 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: 301	Q2Lead: 200	Q1Lead: 75	Q1Lag: 50	Q2Lag: 150	Q3Lag: 273
Available Capability Prices (£/MVar/h)	CA3Lead 0.085	CA2Lead 0.042	CA1Lead 0.040	CA1Lag 0.040	CA2Lag 0.042	CA3Lag 0.085
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 3.400	CU2Lead 1.580	CU1Lead 1.550	CU1Lag 1.550	CU2Lag 1.580	CU3Lag 3.400

Company Name: British Energy Generation Ltd			Station Name: Torness			
Genset ID: TORN-01Z			Contract Period: 12 months			
Nominated GRC: 640 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: 278	Q2Lead: 200	Q1Lead: 75	Q1Lag: 50	Q2Lag: 150	Q3Lag: 291
Available Capability Prices (£/MVar/h)	CA3Lead 0.120	CA2Lead 0.090	CA1Lead 0.085	CA1Lag 0.085	CA2Lag 0.090	CA3Lag 0.120
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 3.400	CU2Lead 1.660	CU1Lead 1.600	CU1Lag 1.600	CU2Lag 1.660	CU3Lag 3.400

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Company Name: Eggborough Power Ltd			Station Name: Eggborough			
Genset ID: EGGB_01Z			Contract Period: 12 months			
Nominated GRC: 490 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: 149	Q2Lead: 100	Q1Lead: 50	Q1Lag: 75	Q2Lag: 150	Q3Lag: 208
Available Capability Prices (£/MVar/h)	CA3Lead 0.050	CA2Lead 0.035	CA1Lead 0.030	CA1Lag 0.030	CA2Lag 0.035	CA3Lag 0.050
Synchronised Capability Prices (£/MVar/h)	CS3Lead 0.035	CS2Lead 0.025	CS1Lead 0.022	CS1Lag 0.022	CS2Lag 0.025	CS3Lag 0.035
Utilisation Prices (£/MVarh)	CU3Lead 3.200	CU2Lead 1.510	CU1Lead 1.500	CU1Lag 1.500	CU2Lag 1.510	CU3Lag 3.200

Company Name: Grangemouth CHP Ltd			Station Name: Grangemouth			
Genset ID: GRMO_01Z			Contract Period: 12 months			
Nominated GRC: 140 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: null	Q2Lead: null	Q1Lead: 70	Q1Lag: 40	Q2Lag: 60	Q3Lag: null
Available Capability Prices (£/MVar/h)	CA3Lead 0.000	CA2Lead 0.000	CA1Lead 0.000	CA1Lag 0.000	CA2Lag 0.000	CA3Lag 0.000
Synchronised Capability Prices (£/MVar/h)	CS3Lead 0.000	CS2Lead 0.000	CS1Lead 0.000	CS1Lag 0.590	CS2Lag 0.740	CS3Lag null
Utilisation Prices (£/MVarh)	CU3Lead null	CU2Lead null	CU1Lead 5.300	CU1Lag 1.310	CU2Lag 1.590	CU3Lag null

Company Name: RWE Npower plc			Station Name: Fawley			
Genset ID: FAWL_01Z			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	Q2Lag: 154	Q3Lag: 204
Available Capability Prices (£/MVar/h)	CA3Lead 0.103	CA2Lead 0.003	CA1Lead 0.001	CA1Lag 0.001	CA2Lag 0.003	CA3Lag 0.062
Synchronised Capability Prices (£/MVar/h)	CS3Lead 1.030	CS2Lead 0.412	CS1Lead 0.247	CS1Lag 0.247	CS2Lag 0.412	CS3Lag 1.030
Utilisation Prices (£/MVarh)	CU3Lead 2.200	CU2Lead 1.048	CU1Lead 0.495	CU1Lag 0.495	CU2Lag 1.048	CU3Lag 2.200

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Company Name: Keadby Generation Ltd			Station Name: Keadby (Module 1)			
Genset ID: KEAD_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: 349	Q2Lead: 300	Q1Lead: 200	Q1Lag: 200	Q2Lag: 300	Q3Lag: 323
Available Capability Prices (£/MVar/h)	CA3Lead 0.000	CA2Lead 0.000	CA1Lead 0.000	CA1Lag 0.000	CA2Lag 0.000	CA3Lag 0.000
Synchronised Capability Prices (£/MVar/h)	CS3Lead 0.140	CS2Lead 0.140	CS1Lead 0.140	CS1Lag 0.140	CS2Lag 0.140	CS3Lag 0.140
Utilisation Prices (£/MVarh)	CU3Lead 2.790	CU2Lead 1.500	CU1Lead 1.250	CU1Lag 1.250	CU2Lag 1.500	CU3Lag 15.000

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Appendix 5 - Generation Utilisation Volumes by BM Unit – October 2006 to March 2007

BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
ABTHB07Z	Default	5,815	2,211	3,294	1,483	6,591	6,566	4,995	7,427	2,258	6,339	2,354	4,518	25,306	28,544
ABTHB08Z	Default	5,022	4,897	6,373	8,340	3,595	4,306	3,922	6,147	2,441	5,617	2,059	5,574	23,411	34,881
ABTHB09Z	Default	6,912	6,389	3,418	9,696	4,368	9,061	2,274	8,705	1,805	8,249	1,810	4,939	20,587	47,038
AIGA_01Z	Default	7	5	16	5	85	1	92	271	13	3	17	2	229	287
BAGE_01Z	Market	12,997	5,180	5,567	6,995	8,854	6,814	5,290	8,291	6,062	11,430	3,999	5,950	42,770	44,660
BAGE_02Z	Default	1	1	89	16	325	9	117	18	152	9	134	5	817	58
BARK_02Z	Default	16,454	5,429	10,328	12,002	14,734	12,260	12,790	19,478	12,269	13,742	10,888	8,360	77,463	71,270
BARK_11Z	Default	14,455	5,767	8,744	10,032	11,196	10,405	9,736	14,186	9,277	11,432	8,394	7,505	61,803	59,326
BRGG_01Z	Default	1,665	633	2,086	668	2,116	212	1,607	165	2,411	959	3,389	917	13,274	3,555
BRWE_01Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRWE_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRWE_03Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRWE_04Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRWE_05Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRWE_06Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BRYP_01Z	Default	1,699	4,039	622	2,805	590	2,747	453	2,356	1,611	2,791	1,429	4,292	6,405	19,029
CASH_01Z	Default	0	103	0	262	12	78	42	1	30	1	11	1	94	446
CDCL_01Z	Default	3,562	14,520	725	14,432	1,473	14,138	1,170	12,487	3,445	21,568	3,533	20,968	13,908	98,112
CEAN_01Z	Default	0	147	0	173	0	273	0	278	0	279	0	293	0	1,443
CLAC-1	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CLUN_01Z	Default	448	294	464	380	449	447	429	464	374	685	356	644	2,520	2,914
CLUN_02Z	Default	417	335	380	273	425	307	403	374	238	213	375	632	2,239	2,133
CNQPS01Z	Default	1,276	3,579	3,040	9,714	4,065	5,619	4,988	3,122	4,142	3,274	3,971	4,642	21,483	29,950
CNQPS02Z	Default	3,681	6,910	1,459	13,721	3,862	5,490	3,808	6,135	2,543	4,028	1,635	2,681	16,988	38,965
CNQPS03Z	Default	4,371	5,687	3,535	8,778	3,262	5,138	5,404	4,054	4,243	3,053	4,409	4,445	25,224	31,155
CNQPS04Z	Default	3,667	5,635	1,897	12,032	3,095	5,733	2,703	7,014	4,759	3,348	4,025	4,494	20,146	38,257
COCK_01Z	Default	1,890	11,531	4,015	10,655	6,198	11,065	4,735	9,521	3,036	4,981	4,121	7,795	23,996	55,548

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BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
COCK_02Z	Default	1,638	13,753	3,602	12,660	1,873	11,339	2,331	11,161	3,387	8,350	2,212	8,964	15,044	66,227
COCK_03Z	Default	10,876	75	14,851	19	19,734	11	17,771	36	12,995	5	14,935	11	91,163	156
COCK_04Z	Default	18,796	30	17,744	1	23,588	4	21,591	0	18,717	0	18,958	32	119,394	67
CORB_01Z	Default	1,945	4,672	780	1,848	1,373	2,492	910	2,224	3,368	2,789	4,929	2,224	13,305	16,248
COSO_01Z	Default	5,838	4,249	3,430	5,745	2,855	6,118	3,223	7,068	1,307	2,567	3,234	1,612	19,887	27,358
COTPS01Z	Default	1,589	8,835	3,458	12,604	3,275	8,228	2,800	10,928	1,219	15,427	1,332	17,057	13,672	73,077
COTPS02Z	Default	1,002	10,352	2,799	12,851	820	38,588	33	38,312	671	28,394	1,892	20,219	7,218	148,716
COTPS03Z	Default	3,811	8,863	2,676	14,994	4,117	12,920	2,506	16,090	2,488	16,611	1,202	17,498	16,800	86,977
COTPS04Z	Default	4,426	8,625	3,010	16,421	4,176	9,793	2,889	14,549	1,628	17,239	1,931	16,364	18,060	82,989
COWE_01Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COWE_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRUA_01Z	Default	5,074	112	5,611	1,115	5,232	1,677	3,671	2,634	4,517	903	5,237	622	29,342	7,063
CRUA_02Z	Default	3,886	244	3,841	1,046	2,996	1,984	3,680	2,592	4,869	1,052	4,393	793	23,665	7,711
CRUA_03Z	Default	2,630	30	3,246	418	3,464	1,007	3,336	1,582	3,750	649	3,114	326	19,541	4,013
CRUA_04Z	Default	4,446	71	3,441	505	3,577	1,329	2,780	1,723	3,314	526	3,626	319	21,184	4,473
CULL_02Z	Default	10	7	13	8	59	19	17	9	18	8	19	10	135	60
DAMC_01Z	Default	11,329	6,813	5,664	8,346	11,408	14,137	10,693	25,396	13,082	15,909	14,331	10,569	66,506	81,171
DEAN_01Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEEP_01Z	Default	4,962	8,520	2,394	7,021	2,713	4,198	3,189	4,340	6,095	4,649	3,818	5,004	23,172	33,732
DERW_01Z	Default	362	10,557	903	8,120	3,128	3,205	94	10,962	134	8,608	1,314	8,933	5,936	50,386
DIDC_01G	Default	15	0	0	0	0	0	0	0	0	0	0	0	15	0
DIDC_01Z	Default	0	0	2,462	1,574	13,717	4,425	6,046	6,983	6,546	3,783	3,823	2,724	32,594	19,489
DIDC_02G	Default	0	2	0	0	0	0	0	0	0	0	0	0	0	2
DIDC_02Z	Default	12,289	2,334	10,231	5,322	3,951	4,897	5,549	5,487	4,262	2,928	2,547	870	38,830	21,837
DIDC_03G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIDC_03Z	Default	0	0	18,971	4,274	43,172	5	46,067	6	37,578	20	7,359	2	153,147	4,307
DIDC_04G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIDC_04Z	Default	16,985	3,982	462	828	8,765	354	21,345	114	11,438	411	1,120	323	60,116	6,011
DIDCB05Z	Default	0	0	0	0	3,951	913	10,942	15,543	15,740	12,625	17,742	10,196	48,375	39,277

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BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
DIDCB06Z	Default	32,727	9,470	18,841	11,978	15,186	13,594	13,260	13,535	6,348	3,097	0	0	86,362	51,674
DINO_01Z	Default	5,135	1,511	7,290	2,072	7,107	1,780	6,340	1,835	7,674	1,872	6,353	990	39,899	10,060
DINO_02Z	Default	7,064	161	8,826	385	8,344	310	8,155	488	8,681	811	9,260	758	50,331	2,913
DINO_03Z	Default	4,745	1,042	4,183	2,130	4,434	2,231	3,244	2,385	4,408	2,287	5,913	1,291	26,928	11,365
DINO_04Z	Default	7,434	736	3,860	2,957	7,024	1,530	6,785	1,929	5,024	1,577	4,187	1,644	34,314	10,373
DINO_05Z	Default	6,118	236	7,186	2,604	10,328	1,608	8,212	1,417	10,194	754	7,301	937	49,338	7,556
DINO_06Z	Default	4,587	419	3,037	273	2,901	329	2,258	97	2,743	74	3,365	228	18,892	1,420
DNGB_21Z	Market	0	0	6,667	10,453	14,741	9,994	10,933	8,781	6,331	7,771	5,675	594	44,347	37,592
DNGB_22Z	Market	6,319	4,345	12,895	7,509	0	0	7,423	5,242	3,673	1,383	14,280	5,917	44,591	24,396
DRAXX01Z	Market	24,741	11,345	6,835	23,760	5,602	17,177	7,584	21,841	9,403	17,355	3,608	26,019	57,773	117,497
DRAXX02Z	Market	7,048	32,370	4,957	24,757	5,596	17,881	6,078	19,682	7,771	15,351	7,348	27,886	38,799	137,927
DRAXX03Z	Default	6,751	24,338	5,755	14,154	7,167	13,690	6,407	8,997	5,552	8,160	4,850	16,350	36,481	85,689
DRAXX04Z	Market	10,808	29,027	6,388	25,797	5,774	20,647	7,221	17,967	7,050	15,067	41,190	4,303	78,430	112,809
DRAXX05Z	Market	9,879	25,671	6,728	24,854	7,136	20,330	7,066	17,921	8,748	13,339	5,824	27,813	45,381	129,928
DRAXX06Z	Market	8,825	28,039	5,382	25,679	6,173	20,434	5,648	19,705	6,180	11,052	5,156	27,623	37,363	132,531
DRAXX09G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRAXX10G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DRAXX12G	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DUNGA01Z	Default	5,149	2,145	2,639	2,198	4,402	1,403	0	0	0	0	0	0	12,190	5,746
DUNGA02Z	Default	3,045	1,893	1,929	3,225	2,589	2,189	0	0	0	0	0	0	7,562	7,307
DUNGA03Z	Default	4,002	3,219	3,008	2,327	3,989	2,376	0	0	0	0	0	0	10,998	7,922
DUNGA04Z	Default	5,557	335	4,763	657	6,151	869	0	0	0	0	0	0	16,470	1,860
EECL_01Z	Default	6,200	5,052	1,439	4,465	3,121	5,328	2,021	8,146	2,807	9,825	2,456	6,492	18,045	39,309
EGGPS01Z	Default	1,182	2,649	2,926	8,467	4,662	8,232	3,582	5,574	3,851	4,246	2,653	5,195	18,855	34,362
EGGPS02Z	Default	1,964	3,130	2,696	9,365	3,233	6,417	2,173	6,428	2,048	3,529	2,350	3,109	14,464	31,978
EGGPS03Z	Market	2,073	7,147	2,806	16,937	3,314	12,065	3,722	14,852	4,192	10,260	3,110	11,035	19,217	72,296
EGGPS04Z	Market	2,570	8,769	3,577	17,507	5,807	12,974	4,259	14,556	3,370	9,086	47	377	19,631	63,269
ERRO_01Z	Default	23	126	22	171	55	263	26	132	10	51	17	98	152	841
ERRO_02Z	Default	2	15	14	168	39	306	15	165	5	65	5	58	81	776

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BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
ERRO_03Z	Default	28	127	17	163	46	288	21	141	8	51	14	96	133	866
FASN_01Z	Default	0	0	153	19	472	11	422	9	331	14	401	12	1,778	66
FASN_02Z	Default	59	41	94	128	359	97	357	57	307	53	10	211	1,186	587
FASN_03Z	Default	36	395	1	53	9	213	292	92	1	332	0	450	339	1,534
FAWL_03Z	Market	26	765	36	968	140	0	1,466	136	541	192	502	7	2,711	2,069
FAWN_01Z	Default	13,328	1,221	979	2	6,350	69	7,974	1	13,613	0	16,448	0	58,691	1,293
FELL_01Z	Default	0	6,103	0	12,216	899	11,134	0	13,553	1,876	9,599	0	12,092	2,774	64,697
FERR_01Z	Default	4,795	4,961	6,318	5,772	7,285	3,288	4,997	2,750	5,987	4,463	4,991	6,501	34,373	27,736
FERR_02Z	Default	3,544	3,780	4,442	6,095	7,041	4,364	4,829	3,527	3,766	4,237	5,005	4,706	28,625	26,709
FERR_03Z	Default	3,026	2,857	4,799	5,208	7,514	4,251	3,241	6,139	1,701	3,854	3,882	6,044	24,163	28,353
FERR_04Z	Default	6,160	4,083	6,372	4,537	5,944	4,528	5,815	4,792	6,432	4,488	5,437	6,027	36,161	28,456
FFES_01Z	Default	3,773	134	2,739	46	2,808	27	3,550	74	1,114	10	1,161	9	15,145	298
FFES_02Z	Default	1,668	20	1,814	62	1,689	18	1,783	79	839	23	903	20	8,696	223
FFES_03Z	Default	2,904	298	2,691	288	3,186	239	1,756	203	2,826	376	3,341	411	16,705	1,814
FFES_04Z	Default	1,101	310	1,456	371	1,408	545	994	242	1,238	356	1,562	456	7,759	2,281
FIDL_01Z	Default	104	22	13,628	501	8,607	1,281	6,063	1,414	5,501	796	3,731	2,240	37,633	6,253
FIDL_02Z	Default	4,909	2,408	4,932	5,505	7,183	4,495	7,329	4,132	4,669	2,562	3,651	2,182	32,673	21,283
FIDL_03Z	Default	3,378	1,742	8,368	3,956	8,297	3,405	9,346	2,868	3,767	1,982	4,784	1,933	37,940	15,887
FIDL_04Z	Default	2,118	3,383	4,895	6,267	7,682	4,135	6,864	3,451	5,584	2,495	3,576	2,516	30,719	22,246
FIFE_01Z	Default	1,575	437	1,002	150	840	33	894	117	3,246	25	4,618	10	12,176	771
FINL_01Z	Default	241	318	378	320	257	529	287	559	309	315	705	293	2,178	2,334
FOYE_01Z	Default	344	1,752	472	1,616	236	2,095	261	2,433	301	1,666	92	1,198	1,706	10,761
FOYE_02Z	Default	172	1,523	325	1,661	145	1,973	183	1,606	148	1,241	112	1,171	1,085	9,175
GLEN_01Z	Default	0	76	0	98	0	168	0	176	0	146	0	158	1	822
GRAI_01Z	Default	1,532	991	208	1,974	514	2,039	31	100	6	511	1	107	2,291	5,723
GRAI_03Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAI_04Z	Default	22	59	235	2,484	338	984	376	420	313	443	0	0	1,284	4,390
GRMO_01Z	Market	0	21,116	3	20,600	0	20,664	1	17,703	0	17,559	0	20,394	4	118,037
GRUB_01Z	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-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
GRUB_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GYAR_01Z	Default	4,768	8,105	4,077	10,846	3,513	11,590	3,438	12,411	3,946	10,069	7,685	5,300	27,426	58,320
HEYM101Z	Market	78,652	36	74,202	0	36,962	548	11,389	27,987	12,290	21,898	13,596	32,078	227,090	82,547
HEYM102Z	Market	10,517	60,907	10,427	63,085	8,599	39,117	8,883	30,235	11,574	18,791	716	3,648	50,716	215,783
HEYM207Z	Market	4,957	37,830	4,861	38,910	11,446	37,764	11,134	25,882	12,422	19,012	12,316	26,486	57,136	185,885
HEYM208Z	Market	7,589	59,404	4,928	32,081	7,836	38,257	6,476	20,609	7,021	19,638	7,048	23,500	40,898	193,490
HINB_07Z	Market	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HINB_08Z	Market	13,692	4,040	0	0	0	0	0	0	0	0	0	0	13,692	4,040
HRTL_01Z	Default	28	0	40	0	5,944	1,529	15,704	43,592	12,192	29,665	21,003	38,970	54,911	113,756
HRTL_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUMR_01Z	Default	24,116	0	23,450	0	24,239	0	24,401	0	17,710	0	24,774	0	138,690	0
HUNB_07Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HUNB_08Z	Default	26,551	1,584	0	0	0	0	0	0	0	0	0	0	26,551	1,584
INGA_01Z	Default	0	293	0	825	0	1,731	0	748	0	289	103	799	103	4,687
IRNPS01Z	Market	5,744	2,831	4,858	7,040	7,081	6,752	7,072	8,258	3,959	3,438	5,952	2,086	34,665	30,405
IRNPS02Z	Default	4,909	1,512	4,389	7,131	4,585	4,427	5,959	8,785	3,380	5,398	3,184	1,779	26,406	29,032
KEAD_01Z	Default	4,583	50,479	1,611	52,587	1,870	37,953	1,388	48,879	2,038	34,421	2,059	53,953	13,549	278,273
KILLP01Z	Default	1,009	1,689	1,847	2,781	2,627	3,707	2,350	1,651	3,933	4,824	3,921	6,929	15,687	21,580
KILLP02Z	Default	2,618	1,461	1,744	3,656	3,136	3,050	2,370	1,521	4,729	3,117	6,201	6,125	20,797	18,931
KILNS01Z	Default	5,670	7,436	3,477	2,341	3,347	2,948	2,483	382	2,382	2,941	4,108	9,227	21,467	25,273
KINO_01Z	Default	6,966	3,591	28,872	1,557	25,328	871	21,589	310	15,886	917	27,052	454	125,691	7,699
KINO_02Z	Default	8,251	2,528	52,872	376	46,985	0	39,670	79	25,373	289	30,766	281	203,918	3,553
KINO_03Z	Default	3,470	4,705	5,111	10,331	8,767	11,592	3,788	17,862	6,751	6,473	1,329	1,473	29,215	52,435
KINO_04Z	Default	7,344	5,219	14,182	3,099	19,347	1,245	27,655	1,361	19,534	2,227	30,139	1,256	118,203	14,407
KIOR_01Z	Default	3	5	13	11	73	3	64	3	22	4	20	2	194	26
KLYNA01Z	Default	0	0	0	0	91	0	3,343	0	6,882	0	11,624	0	21,939	0
LBAR_01Z	Default	12,444	15,995	5,938	31,358	4,410	33,564	4,359	37,063	1,780	21,201	4,066	17,608	32,996	156,789
LITTD01G	Default	0	4	0	0	0	5	0	0	0	0	0	0	0	9
LITTD01Z	Market	0	0	132	283	519	172	215	330	2	160	131	517	1,000	1,462

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BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
LITTD02G	Default	3	0	0	0	0	0	0	0	0	0	0	0	3	0
LITTD02Z	Market	64	133	571	1,320	286	282	0	0	63	5	0	0	984	1,740
LITTD03G	Default	4	0	4	0	3	1	2	0	1	0	5	0	18	2
LOAN_01Z	Default	4,609	7,751	15,654	19,179	12,135	18,546	6,433	18,530	1,794	2,697	0	0	40,625	66,704
LOAN_02Z	Default	7,381	14,944	7,490	19,231	14,148	20,543	11,063	14,849	2,268	12,082	8,164	10,588	50,514	92,238
LOAN_03Z	Default	9,387	17,641	13,890	15,972	13,178	23,776	3,578	9,017	1,726	19,587	6,799	9,316	48,558	95,309
LOAN_04Z	Default	9,256	13,442	17,456	15,424	40,754	104	36,029	1,291	0	0	9,577	12,641	113,072	42,902
LOCH_01Z	Default	342	84	613	98	487	132	615	132	453	144	632	192	3,143	782
LOCH_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LUIC_01Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LUIC_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MEDP_01Z	Default	24,994	7,457	12,297	14,972	17,959	10,312	9,787	11,205	14,507	12,142	17,216	6,149	96,760	62,237
MOSS_01Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NANT_01Z	Default	20	49	358	156	92	157	137	131	21	47	24	77	652	616
OLDS_01Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OLDS_02Z	Default	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ORRI_01Z	Default	63	1	97	1	430	1	292	0	496	123	86	42	1,465	168
PEHE_01Z	Default	12,071	31,439	23,408	36,939	6,677	45,656	10,215	54,385	8,171	35,483	42,841	85,779	103,384	289,681
PEHE_02Z	Default	2,843	17,958	808	10,257	65	9,501	891	9,137	1,444	9,886	823	8,748	6,873	65,488
PETEM01Z	Default	3,397	2,426	1,359	3,569	649	3,960	996	2,442	4,043	5,659	3,549	7,821	13,993	25,877
QUIO_01Z	Default	477	190	221	431	96	819	207	869	125	874	266	646	1,391	3,830
RATS_01Z	Default	11,785	2,260	6,036	10,076	6,242	7,088	7,659	6,816	4,341	7,751	4,992	8,013	41,055	42,004
RATS_02Z	Default	4,402	5,334	7,091	8,959	8,274	9,712	4,417	15,031	8,029	7,127	5,304	8,570	37,516	54,732
RATS_03Z	Default	4,748	4,733	4,025	9,042	5,027	9,385	5,945	11,452	3,287	5,285	4,261	10,389	27,292	50,286
RATS_04Z	Default	6,009	3,207	5,018	8,711	6,203	10,960	5,735	14,048	4,346	5,958	4,873	9,853	32,183	52,737
ROCK_01Z	Default	9,144	7,136	7,805	8,272	9,982	6,794	7,291	8,677	13,834	5,694	12,104	5,809	60,159	42,382
ROOS_01Z	Default	234	6,590	270	4,656	552	1,867	649	874	1,416	1,091	563	433	3,684	15,511
RUGPS06G	Default	0	0	0	0	0	15	0	7	0	16	0	6	0	44
RUGPS06Z	Default	2,042	1,828	3,810	6,103	4,909	6,038	5,767	7,181	3,840	6,041	4,548	7,333	24,916	34,524

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BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
RUGPS07G	Default	0	59	0	43	0	43	0	9	0	26	0	53	0	233
RUGPS07Z	Default	4,957	2,332	5,979	5,720	7,737	4,282	5,534	7,557	4,991	8,496	6,566	6,939	35,763	35,326
RYHPS01Z	Default	16,544	17,103	4,375	20,075	3,347	16,076	2,932	25,608	5,474	23,402	11,842	18,519	44,514	120,783
SCCL_01Z	Default	464	1,889	2,401	7,245	587	879	1,486	2,532	1,205	2,356	1,028	2,053	7,171	16,954
SCCL_02Z	Default	1,501	3,266	1,492	1,710	1,823	5,768	1,548	7,288	1,998	4,563	4,659	4,145	13,021	26,739
SCCL_03Z	Default	937	1,568	55	3,963	959	3,103	1,159	4,860	1,469	3,423	473	4,760	5,051	21,677
SEAB_01Z	Default	15,662	8,697	5,970	12,327	5,224	13,460	3,952	12,259	4,356	17,292	7,267	11,783	42,432	75,819
SEAB_02Z	Default	13,110	4,980	857	335	2,867	1,460	3,060	4,874	4,811	13,122	4,126	7,263	28,831	32,033
SHBA_01Z	Default	3,751	13,309	3,273	7,862	5,612	9,796	1,255	10,357	4,891	11,107	4,163	13,831	22,945	66,261
SHBA_02Z	Default	2,455	13,142	2,902	11,867	2,017	8,355	1,990	10,718	2,487	10,406	3,342	12,139	15,193	66,627
SHOS_01Z	Default	6,103	2,751	5,948	2,169	5,740	2,582	3,823	1,963	0	0	0	0	21,613	9,464
SHOT_01Z	Default	416	2,368	17	555	38	3,408	45	4,942	249	5,519	243	5,816	1,007	22,608
SIZB_01Z	Default	3,134	8,594	6,249	24,529	4,968	33,713	5,607	30,774	1,963	30,792	3,543	28,073	25,464	156,475
SIZB_02Z	Default	3,037	4,052	18,971	2,071	16,359	2,153	20,056	1,547	19,903	1,170	21,123	1,305	99,448	12,298
SIZEA01Z	Default	1,969	1,728	2,322	7,993	2,077	6,232	0	0	0	0	0	0	6,368	15,953
SIZEA02Z	Default	4,684	4,199	3,897	6,819	1,797	7,963	0	0	0	0	0	0	10,379	18,982
SLOY_01Z	Default	300	135	392	111	228	111	192	168	97	41	133	107	1,343	674
SLOY_02Z	Default	181	197	249	224	108	132	178	233	44	80	135	174	894	1,040
SLOY_03Z	Default	0	0	149	151	169	137	149	159	66	58	158	121	691	626
SLOY_04Z	Default	21	5	21	12	15	12	137	90	39	23	12	4	246	146
SPLN_01Z	Default	5,673	22,958	1,516	30,826	2,659	27,560	2,582	30,760	3,758	29,536	3,065	27,184	19,252	168,824
SUTB_01Z	Default	12,913	20,912	5,739	30,435	5,567	25,371	5,842	38,026	4,026	29,360	3,381	13,723	37,468	157,828
TAYL_02Z	Default	0	37	2	34	20	19	8	10	3	12	3	20	37	133
TAYL_03Z	Market	1	4	13	4	48	8	9	50	11	16	51	5	132	87
TESI_01Z	Default	5,022	15,959	11,710	15,336	10,477	11,954	7,736	5,706	7,357	7,109	10,675	2,504	52,977	58,568
TESI_02Z	Default	4,771	19,686	14,523	15,691	11,698	9,819	7,954	5,064	5,647	7,248	13,719	2,300	58,311	59,808
TILBB08Z	Default	6,564	2,594	3,972	4,848	6,349	5,282	2,893	8,183	3,178	4,130	3,822	5,542	26,778	30,578
TILBB09Z	Default	4,978	2,527	3,294	3,747	4,921	4,131	3,007	8,909	4,165	2,854	2,960	2,222	23,325	24,390
TILBB10Z	Default	6,394	4,597	4,456	6,325	4,403	5,034	2,135	8,904	2,986	6,265	3,788	4,546	24,162	35,670

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BM Unit	Agreement	Monthly MVarh												6 Month TOTAL	
		Oct-06		Nov-06		Dec-06		Jan-07		Feb-07		Mar-07		Lead	Lag
		Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag		
TORA_01Z	Default	74	11	95	7	192	0	187	0	121	0	153	0	821	19
TORA_02Z	Default	0	93	46	82	185	0	286	0	138	0	263	0	917	175
TORN_01Z	Default	24,799	20,890	24,249	21,200	28,076	16,281	35,949	9,953	24,192	6,222	19,077	8,411	156,342	82,957
TORN_02Z	Default	36,099	1,359	6,643	12,971	9,272	8,979	11,979	8,013	6,130	10,527	5,081	10,714	75,204	52,563
USKM_13Z	Default	455	152	1,117	906	375	476	365	1,012	355	910	274	375	2,940	3,830
USKM_14Z	Default	308	158	489	919	213	823	251	738	134	910	246	584	1,642	4,131
USKM_15Z	Default	152	190	784	1,308	260	2,304	289	1,056	259	1,321	161	702	1,905	6,881
WBUPS01Z	Default	403	19,979	1,061	31,951	1,869	27,316	969	22,193	1,022	16,959	943	20,646	6,266	139,043
WBUPS02Z	Default	186	40,594	431	28,743	1,193	32,477	846	25,973	676	23,679	341	24,261	3,672	175,728
WBUPS03Z	Default	280	40,446	530	30,369	1,346	40,190	712	33,501	374	33,825	1,509	20,170	4,752	198,501
WBUPS04Z	Default	470	18,993	1,125	29,420	1,450	37,146	1,066	35,190	848	37,638	513	30,921	5,472	189,309
WYLF_01Z	Default	7,430	1,245	2,048	4,446	2,373	382	12,184	414	8,374	1,232	18,737	115	51,146	7,834
WYLF_02Z	Default	12,546	243	4,898	2,856	9,811	1,688	22,059	142	11,739	534	15,420	351	76,474	5,814
WYLF_03Z	Default	19,592	36	8,057	1,933	5,873	2,420	15,085	190	14,323	657	15,787	525	78,716	5,762
WYLF_04Z	Default	0	0	0	0	4,360	1,502	9,588	1,573	11,262	828	9,179	1,611	34,390	5,514
<b>Subtotal</b>	Default	794,026	836,859	742,439	1,067,355	880,960	1,014,562	834,615	1,112,170	701,185	923,566	787,687	924,438	4,740,911	5,878,950
<b>Subtotal</b>	Market	206,501	338,961	161,834	348,541	135,915	281,879	111,868	280,028	110,662	212,803	130,549	246,237	857,329	1,708,449
<b>Total</b>	MVarh	1,000,527	1,175,819	904,273	1,415,896	1,016,875	1,296,441	946,482	1,392,199	811,846	1,136,369	918,236	1,170,676	5,598,240	7,587,399

## Appendix 6 - Tender Assessment Procedure

### A6 Introduction

A6.1 National Grid assessed Reactive Power Tender Round 19 in a manner consistent with the processes applied to all previous Tender Rounds, as detailed in Schedule 3 of the CUSC. Analytical processing was conducted in six-month time periods (Summer – from 1 April to 30 September and Winter – from 1 October to 31 March) in order to consider any interaction with the overlap of contracts secured during the previous Reactive Power Market Tender Rounds and also to take into account the effects of the implementation of CUSC Modification CAP045.

A6.2 National Grid has 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 submitted was entered into TARDIS (Transmission Ancillary Reactive Database Information System).
- *Tender Data validation:* All TARDIS entries were then separately checked back to the original tender sheets. Compliance checks within TARDIS showed that all the tenders submitted were compliant.
- *Reactive Power Service Assessment:* The tenders were assessed against forecast, taking into account the many interacting factors associated with each tender acceptance decision, as described in Appendix 6 in Schedule 3 of the CUSC. This involved, inter-alia, evaluation against projections of expenditure and availability of service against historical and forecast MVar and MVarh data to produce central views of the money payable under the DPM (Default Payment Mechanism) or a Market Agreement (described below). The overall assessment was supported by an examination of a number of credible sensitivities around the central assessment.

### 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 Unit tendered, the processing was as follows:

- Forecast MVarh generated, in each band by reactive MVar breakpoints, were set via extrapolations from historical observations and forecast load factors. The historical observations covered the period 2004/5 to 2005/6 and came from the Ancillary Services records against which Reactive Power utilisation is currently being paid.
- The default payment mechanism utilisation money was set at forecast MVarh multiplied by the forecast utilisation prices. These prices were £3.0506/MVarh for winter and £2.5350/MVarh for summer. (Derived from CUSC Schedule 3, using a forecast of indices.)
- Market agreement capability money was set at tendered price multiplied by tendered capability, allowing for break-points, multiplied by forecast hours for both available and synchronised capability.
- 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. However, Reactive Power assessment is by no means as simple as taking the cheapest option. A full understanding of the factors influencing Reactive Power requirements on the GB 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 should be considered. These factors are referred to in 5.3(e)(ii) of Schedule 3 of the CUSC and are cross-referenced in section 2.12 of the Invitation to Tender & Guidance Notes for Completion of Tenders in the ITT Documentation. National Grid assessment has developed and implemented a process enabling these factors and associated uncertainties to be methodically considered.
- In the light of CAP045, the variability in the DPM price will affect the balance between market and default payments. The robustness of the core contract decisions was considered against a range of default prices from the central forecast default prices used. The range considered was from +/-10%
- The Reactive Power market tender evaluation process is subjective in nature, based as it is on forecast assumptions. It has therefore been 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:

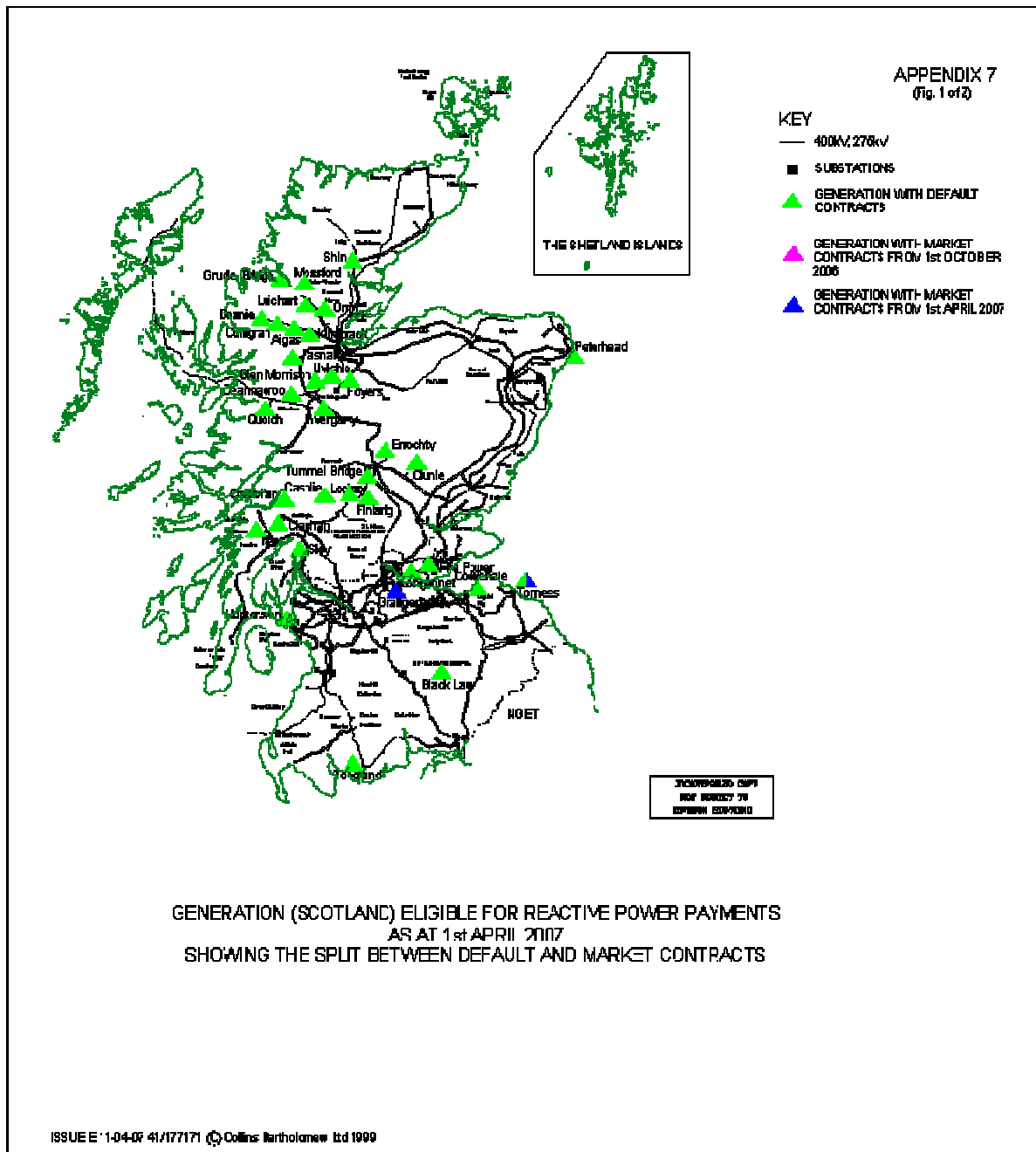
- *Would a Market Agreement (central case assessment) give a reduction in payments?*
- *Would a Market Agreement reflect the effectiveness at providing voltage support at that location?*
- *Would a Market Agreement be robust against expected individual variations in utilisation due to:*
  - ◆ *a new 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 its 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 the constraints identified.

In all cases, National Grid considered possible interaction with National Grid planned investments. The commissioning 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.

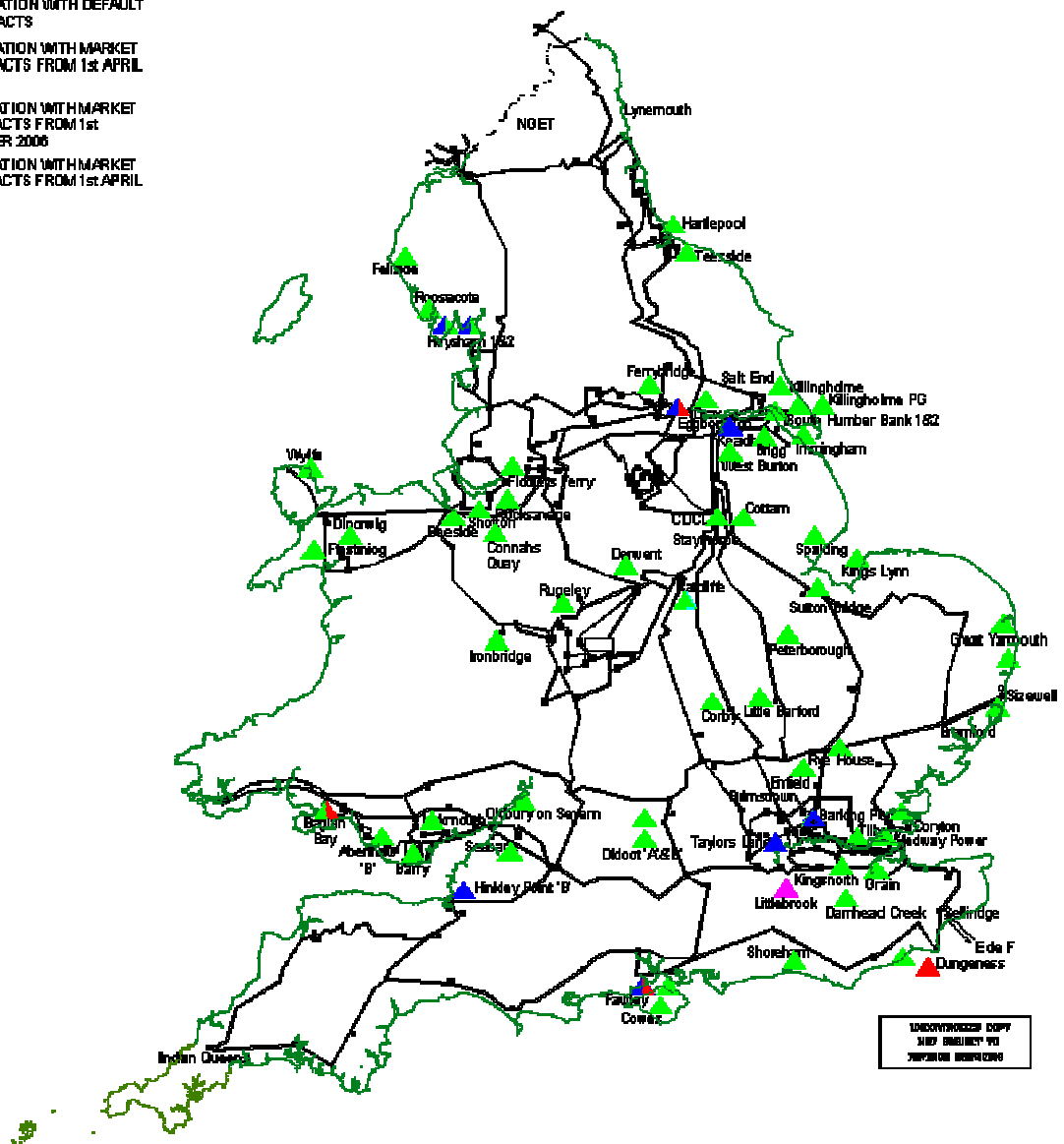
**Appendix 7 - Geographic Distribution between DPM and Market Contracts**



APPENDIX 7  
(Fig. 2 of 2)

KEY

- 400kV, 275kV
- SUBSTATIONS
- ▲ GENERATION WITH DEFAULT CONTRACTS
- ▲ GENERATION WITH MARKET CONTRACTS FROM 1st APRIL 2006
- ▲ GENERATION WITH MARKET CONTRACTS FROM 1st OCTOBER 2006
- ▲ GENERATION WITH MARKET CONTRACTS FROM 1st APRIL 2007



GENERATION (ENGLAND AND WALES) ELIGIBLE FOR REACTIVE POWER PAYMENTS  
AS AT 1st APRIL 2007  
SHOWING THE SPLIT BETWEEN DEFAULT AND MARKET CONTRACTS

**Appendix 8 - Contact Information**

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

**Craig Dyke  
Network Operations  
National Grid  
National Grid House  
Warwick Technology Park  
Gallows Hill  
Warwick  
CV34 6DA**

On telephone number: **01926 653397**

Email: **craig.dyke@uk.ngrid.com**

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

**[www.nationalgrid.com/uk/Electricity/Balancing/tenderreports/reactivepower/](http://www.nationalgrid.com/uk/Electricity/Balancing/tenderreports/reactivepower/)**