REACTIVE POWER MARKET

REACTIVE MARKET REPORT

TWENTY SEVENTH TENDER ROUND FOR OBLIGATORY AND ENHANCED REACTIVE POWER SERVICES

FOR REACTIVE MARKET AGREEMENTS EFFECTIVE 1 APRIL 2011

11th MAY 2011

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Executive Summary

27th Tender Round

This report describes the 27th Tender Round evaluation process for Reactive Power Market Agreements for service commencement on 1st April 2011. This report would normally include the prices and reactive capability data of the successful tenders, however, as there were no successful tenders no such data is available. The report also includes metered Mvarh utilisation from all eligible service providers for the period 1st October 2010 to 31st March 2011. Estimates of the reactive contribution of the GB Transmission System for the same period are also included.

National Grid evaluated all the tenders received against both economic purchase and technical performance criteria in accordance with the agreed terms of the market mechanism.

The main points are as follows:

- Tenders were received from 4 BM Units representing 2 power stations from 1 Generating Company of which all 4 were in respect of the Grid Code Obligatory Reactive Power Service
- Tenders were offered for a duration of 24 months
- National Grid has rejected all of the 4 tenders evaluated
- There are no BM Units on Market Agreements for the period 1 April 2011 to 30th September 2011.

Contents

Note: Monthly utilisation volume data, split by BM Unit, has been removed from this report but is available on the National Grid Industry Information website at the following address:-

http://www.nationalgrid.com/uk/Electricity/Balancing/services/ReactivePower/Reactive_Utilisation/

1. Introduction

1.1 This market report provides information on the results from the assessment process carried out for Reactive Power Tender Round 27 (for contracts that commenced 1 April 2011). This includes details on the contractual position for the provision of Reactive Power Services to the GB Transmission System as at 1 April 2011.

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 27 was undertaken to secure such capability based Reactive Power Market Agreements from 1st April 2011. The service definitions, requirements and contract terms may be found in Schedule 3 to the Connection & Use of System Code (CUSC), 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/Balancing/services/ReactivePower/marketender/

2. Tender Process

2.1 On 21st January 2011, National Grid Electricity Transmission plc held the Market Day for the Reactive Power Tender Round 27. 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 Obligatory Reactive Power Service (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 4 discrete tender submissions were received, representing 1 generating company and 2 power stations. 4 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 contract duration of 24 months.

3.2 Tenders were received from directly connected power stations. No tenders were received from non-BM providers.

3.3 All of the tenders received sought reactive capability based payments and 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 5 of Schedule 3 of the CUSC. Details of this are more fully described in Appendix 5 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 5 in Schedule 3 of the CUSC for full details on the qualification and evaluation criteria.

5. Tender Observations

5.1 In this tender round, the number of tender submissions has shrunk from the previous tender round of 16 to only 4.

5.2 The 4 tender submissions were return tenderers from the last tender round, TR26, and from the same generating company, with their Mvar capability banding unchanged.

5.3 All tenders are for the ORPS starting from 1st April 2011, for a two year period, with prices indexed to RPI.

5.4 Different BM Units placed different value across the payment structure of Available Capability, Synchronised Capability and Utilisation.

5.5 All tenders continued to seek non-zero Available Capability fees and Synchronised fees. There were significant price variations on different capability bandings within Availability and Synchronised fees.

5.6 Compared to last tender round, TR26, all tenders reduced their Availability and Synchronised fees.

5.7 In general, and especially for typical ORPS providers, Synchronised capability is more useful to National Grid than Available capability, but the valuation of the two differs, depending on the total time for which the BM Unit is synchronised and when this occurs. National Grid places higher value on tenders with high synchronised capability prices compared with Available Capability prices if the plant tends to run less frequently but at times of high system need. Conversely, National Grid places a lower value on tenders 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 the transmission system.

5.8 This tender round, as with previous ones, has taken into account National Grid's views on expected utilisation of generating units in the energy market. The likely running under emissions trading and other market changes has been continuously factored in.

6. Assessment Results

6.1 Of the 4 tenders evaluated, National Grid offered Reactive Market Agreements to none (an acceptance rate of 0%).

6.2 Each tender was scored against the specified assessment criteria and Figure 1 below shows the attractiveness of tenders from the assessment outcome. The tenders at the rejected side of Figure 1 were assessed with a negative score indicating they should not be offered a Market Agreement. None of the tenders were assessed with a positive score indicating they should be offered Market Agreements.The tenders occurring at either end of these measures would be considered 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.

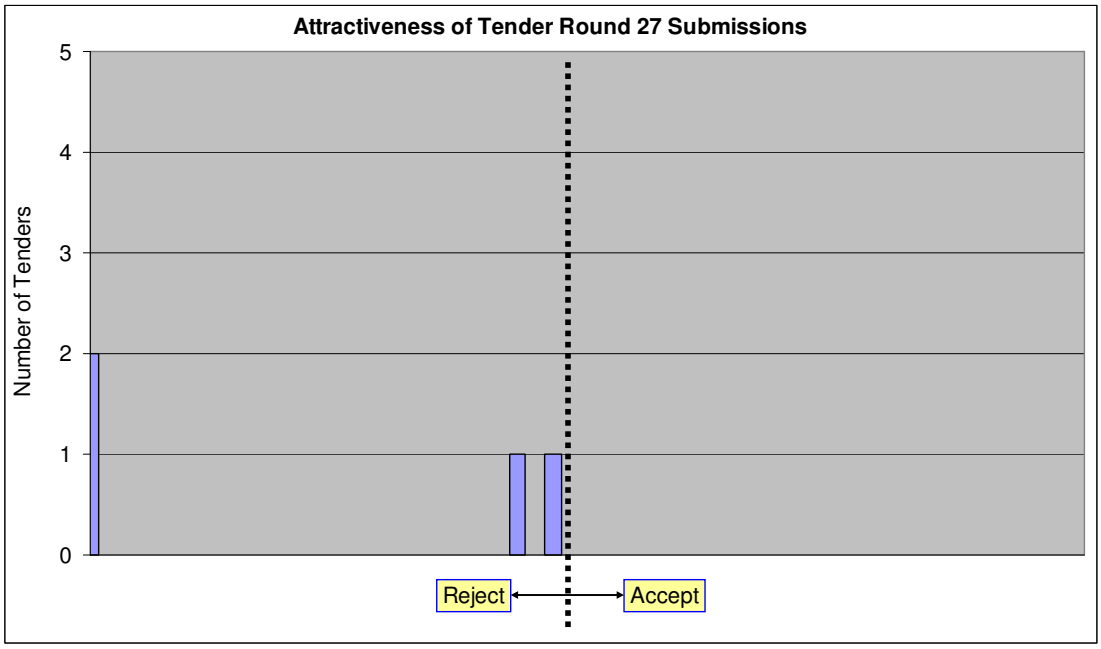


Figure 1

6.3 A complete list of all generator BM Units as at 1 April 2011 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 2011 showing when the agreements will terminate.

6.5 Appendix 6 shows the geographic distribution of BM Units on market and default agreements.

6.6 Details of the successful tenders that proceeded to contract commencing 1 April 2011 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 27 follows a recent trend of decreasing numbers of participants within the reactive market.

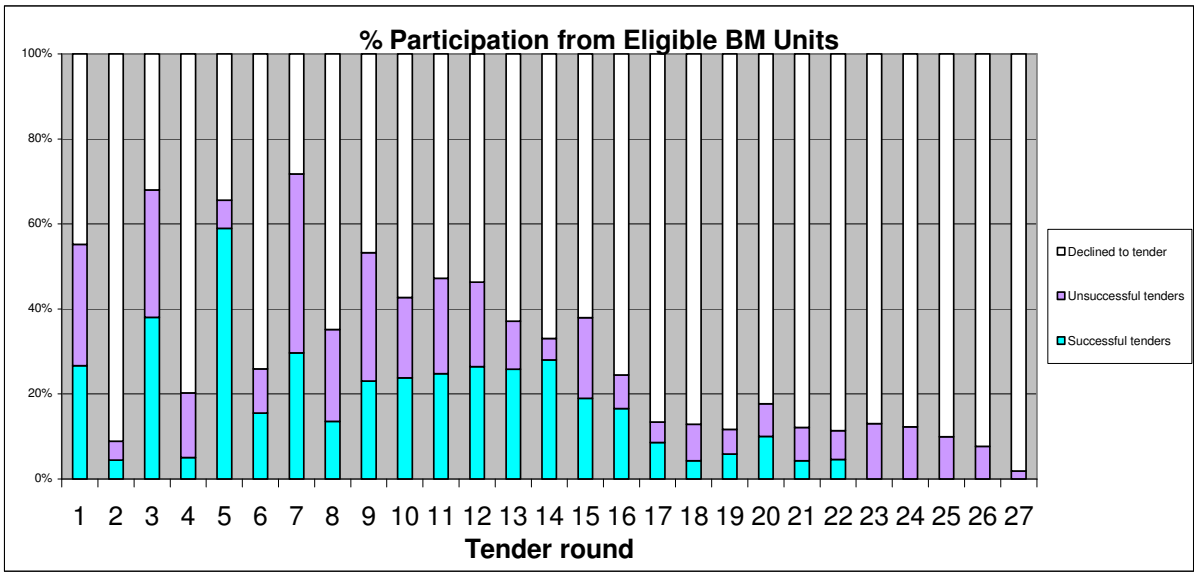


Figure 2 (Source: Appendix 1)

7.2 Figure 3 shows the acceptance rate for all Tender Rounds since the commencement of the Reactive Power Market.

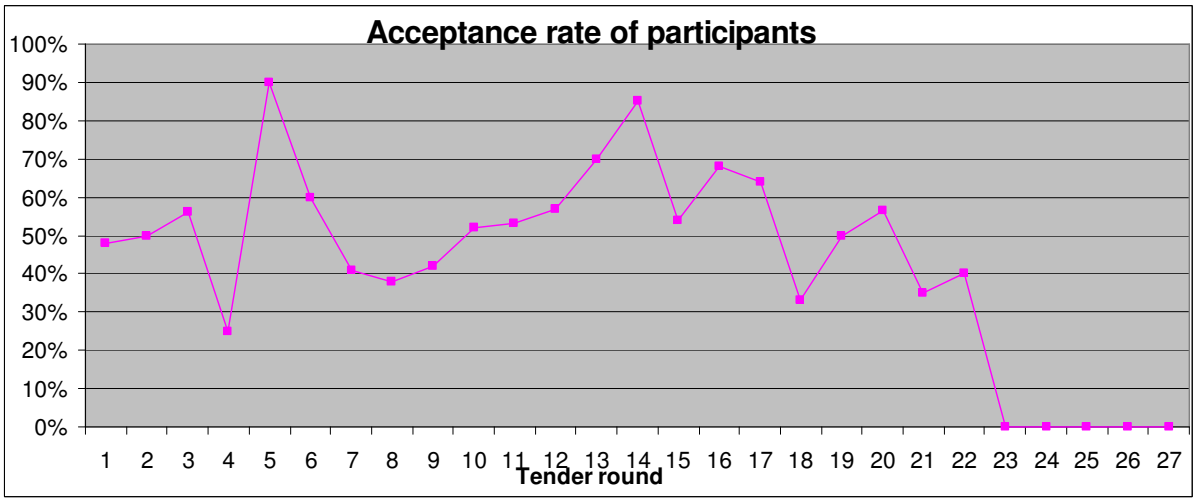


Figure 3 (Source: Appendix 1)

7.3 On 1st April 2011 there are no BM Units on Reactive Power Market Agreements.

7.4 Figure 5 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.

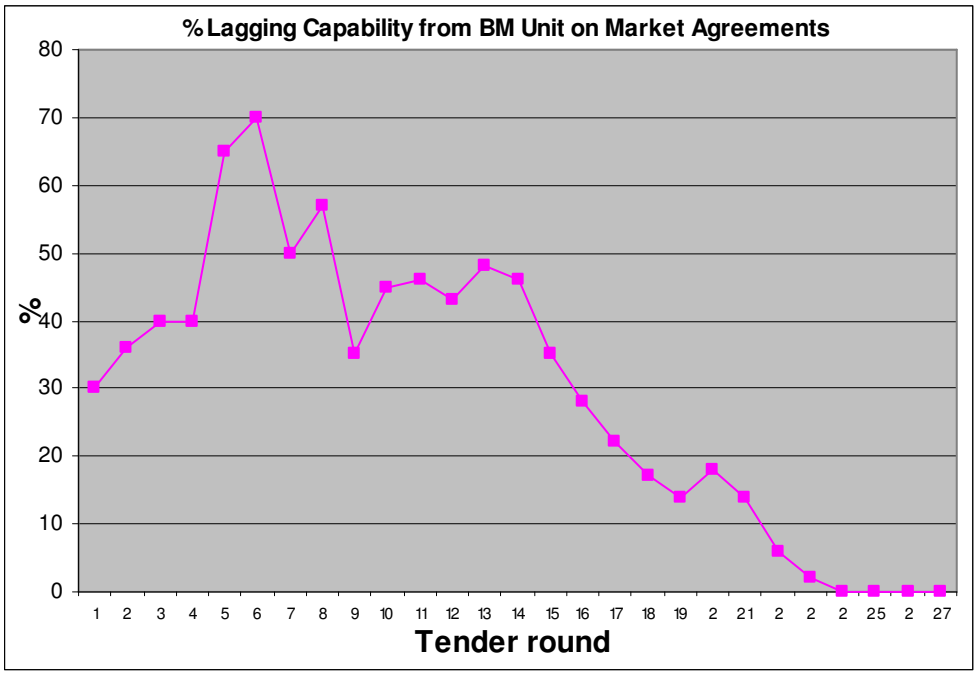


Figure 5 (Source: Appendix 1)

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 1st October 2010 to 31st March 2011.

8.2 Table 1 shows the MVArh utilisation volumes (Lead plus Lag) for all eligible BM Units on a monthly basis.

Utilisation Volume (MVArh)

Month	Default Payment Mechanism	Market Agreements	Total = Market Agreements + DPM
Oct-10	1,747,756	0	1,747,756
Nov-10	1,677,404	0	1,677,404
Dec-10	1,700,797	0	1,700,797
Jan-11	1,637,319	0	1,637,319
Feb-11	1,523,406	0	1,523,406
Mar-11	1,796,505	0	1,796,505
Total	**10,083,187**	**0**	**10,083,187**

Table 1 – Summary of Generator Reactive Utilisation Oct 10 – Mar 11

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 general reduction trend seen over the last ten years is attributable to more distributed generation and lower power flows across the system which have resulted in a reduction in reactive losses on the supergrid and hence the reactive utilisation required from generation. Referring to Table 2, it should be noted, however, that this overall reduction is the product of a continual fall in lag TVArh and general rise in lead TVArh which has intensified over the last three years.

Table 2 – Generator Reactive Utilisation (TVArh) by region

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

	SCOTLAND		NORTH		MIDLANDS		SOUTH		TOTAL		
	lead	lag	Lead	lag	lead	Lag	lead	lag	Lead	lag	Lead + lag
Apr05 – Sep05	1.32	0.39	2.07	3.28	0.83	1.04	2.07	1.03	6.29	5.74	12.03
Oct05 – Mar06	1.06	0.80	2.10	4.56	0.76	1.91	1.88	1.48	5.80	8.75	14.55
Apr06 – Sep06	1.09	0.56	2.29	3.00	0.74	0.67	1.79	0.87	5.91	5.09	11.00
Oct06 – Mar07	0.74	0.96	2.49	4.27	0.57	1.17	1.79	1.18	5.59	7.58	13.17
Apr 07 – Sep 07	1.04	0.31	2.30	2.63	0.64	0.69	1.63	0.74	5.61	4.39	10.00
Oct 07 – Mar 08	1.17	0.53	2.28	3.98	0.64	0.74	1.49	1.08	5.58	6.33	11.90
Apr 08 – Sep 08	1.27	0.31	1.84	2.15	0.59	0.44	1.24	0.61	4.95	3.50	8.45
Oct 08 – Mar 09	1.63	0.55	1.85	1.89	0.60	0.64	1.18	0.79	5.26	3.86	9.12
Apr 09 – Sep 09	1.91	0.25	2.66	1.36	0.86	0.44	1.53	0.54	6.96	2.60	9.56
Oct 09 – Mar 10	1.98	0.31	2.62	1.99	0.53	0.70	1.54	0.78	6.67	3.78	10.45
Apr 10 – Sep 10	1.88	0.23	3.55	1.10	0.53	0.38	1.67	0.50	7.63	2.18	9.82
Oct-10 – Mar-11	1.69	0.28	3.23	1.32	0.76	0.41	1.79	0.61	7.47	2.61	10.08

9. Estimates of the reactive contribution of the GB Transmission System for October 2010 to March 2011

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 30th March 2011.

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 available on the National Grid Industry Information website at the following address: http://www.nationalgrid.com/uk/Electricity/Balancing/services/ReactivePower/ReactiveUtilisation/. 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:

|Generation Net TVArh| = |Net Reactive Demand at GSPs TVArh| - |Net System TVArh|

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 October 2010 to March 2011

Component (TVArh)	Oct 10	Nov 10	Dec 10	Jan 11	Feb 11	Mar 11	6 month total
MSC	3.04	3.02	3.45	3.33	2.86	2.98	18.68
Shunt Reactor	-4.34	-4.01	-4.37	-4.40	-3.91	-4.35	-25.38
SVC generation	0.08	0.09	0.12	0.09	0.07	0.08	0.53
SVC absorption	-0.20	-0.16	-0.16	-0.20	-0.19	-0.23	-1.14
HV network shunt gain	10.05	9.99	10.55	10.35	9.03	9.97	59.94
HV network series losses	-2.14	-1.90	-2.24	-2.33	-2.19	-2.35	-13.15
SGT series losses	-2.91	-1.61	-2.06	-1.89	-1.60	-1.70	-11.77
Net System Utilisation	3.58	5.42	5.29	4.96	4.07	4.39	27.71
Generation Lead	-1.01	-1.00	-0.97	-0.91	-0.85	-1.04	-5.78
Generation Lag	0.42	0.45	0.49	0.46	0.39	0.39	2.60
Net Demand at GSPs	-2.40	-2.86	-2.73	-2.69	-2.34	-2.18	-15.20

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 Enhanced Reactive Power Services. National Grid is required to publish details of circumstances surrounding this in the proceeding six-month period. During the period 1st October 2010 to 31st March 2011 National Grid did not require any service contracts for the provision of enhanced voltage support.

Appendices

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%

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%
20	1 Oct 2007	170	30	30	0	30	0	17	15	~18%
21	1 Apr 2008	165	20	20	0	20	0	7	4	~14%
22	1 Oct 2008	176	20	20	0	20	0	8	3	~6%
23	1 Apr 2009	177	23	23	0	23	0	0	0	~2%
24	1 Oct 2009	180	22	22	0	22	0	0	0	0%
25	1 Apr 2010	181	18	18	0	18	0	0	0	0%
26	1 Oct 2010	209	16	16	0	12	4	0	0	0%
27	1 Apr 2011	219	4	4	0	0	4	0	0	0%

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 1st April 2011

Scotland

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
1	**AIGA_01Z**	DPM	20	**FASN_02Z**	DPM	38	**LOCH_01Z**	DPM
2	**CASH_01Z**	DPM	21	**FASN_03Z**	DPM	39	**LOCH_02Z**	DPM
3	**CEAN_01Z**	DPM	22	**FIFE_01Z**	DPM	40	**LUIC_01Z**	DPM
4	**CLUN_01Z**	DPM	23	**FINL_01Z**	DPM	41	**LUIC_02Z**	DPM
5	**CLUN_02Z**	DPM	24	**FOYE_01Z**	DPM	42	**MOSS_01Z**	DPM
6	**COCK_01Z**	DPM	25	**FOYE_02Z**	DPM	43	**NANT_01Z**	DPM
7	**COCK_02Z**	DPM	26	**GLEN_01Z**	DPM	44	**ORRI_01Z**	DPM
8	**COCK_03Z**	DPM	27	**GRMO_01Z**	DPM	45	**PEHE_01Z**	DPM
9	**COCK_04Z**	DPM	28	**GRUB_01Z**	DPM	46	**PEHE_02Z**	DPM
10	**CRUA_01Z**	DPM	29	**GRUB_02Z**	DPM	47	**QUIO_01Z**	DPM
11	**CRUA_02Z**	DPM	30	**HUNB_07Z**	DPM	48	**SLOY_01Z**	DPM
12	**CRUA_03Z**	DPM	31	**HUNB_08Z**	DPM	49	**SLOY_02Z**	DPM
13	**CRUA_04Z**	DPM	32	**INGA_01Z**	DPM	50	**SLOY_03Z**	DPM
14	**CULL_02Z**	DPM	33	**KIOR_01Z**	DPM	51	**SLOY_04Z**	DPM
15	**DEAN_01Z**	DPM	34	**LOAN_01Z**	DPM	52	**TORA_01Z**	DPM
16	**ERRO_01Z**	DPM	35	**LOAN_02Z**	DPM	53	**TORA_02Z**	DPM
17	**ERRO_02Z**	DPM	36	**LOAN_03Z**	DPM	54	**TORN_01Z**	DPM
18	**ERRO_03Z**	DPM	37	**LOAN_04Z**	DPM	55	**TORN_02Z**	DPM
19	**FASN_01Z**	DPM						

North

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
56	**EGGPS01Z**	DPM	81	**FIDL_02Z**	DPM	106	**FFES_01Z**	DPM
57	**EGGPS02Z**	DPM	82	**FIDL_03Z**	DPM	107	**FFES_02Z**	DPM
58	**EGGPS03Z**	DPM	83	**FIDL_04Z**	DPM	108	**FFES_03Z**	DPM
59	**EGGPS04Z**	DPM	84	**FELL_01Z**	DPM	109	**FFES_04Z**	DPM
60	**CDCL_01Z**	DPM	85	**SHBA_01Z**	DPM	110	**KILNS01Z**	DPM
61	**LAGA_01Z**	DPM	86	**SHBA_02Z**	DPM	111	**WYLF_01Z**	DPM
62	**DEEP_01Z**	DPM	87	**HUMR_01Z**	DPM	112	**WYLF_02Z**	DPM
63	**CNQPS01Z**	DPM	88	**COTPS01Z**	DPM	113	**WYLF_03Z**	DPM
64	**CNQPS02Z**	DPM	89	**COTPS02Z**	DPM	114	**WYLF_04Z**	DPM
65	**CNQPS03Z**	DPM	90	**COTPS03Z**	DPM	115	**KILLP01Z**	DPM
66	**CNQPS04Z**	DPM	91	**COTPS04Z**	DPM	116	**KILLP02Z**	DPM
67	**DRAXX01Z**	DPM	92	**KEAD_01Z**	DPM	117	**BRGG_01Z**	DPM
68	**DRAXX02Z**	DPM	93	**ROOS_01Z**	DPM	118	**ROCK_01Z**	DPM
69	**DRAXX03Z**	DPM	94	**HEYM101Z**	DPM	119	**SCCL_01Z**	DPM
70	**DRAXX04Z**	DPM	95	**HEYM102Z**	DPM	120	**SCCL_02Z**	DPM
71	**DRAXX05Z**	DPM	96	**HEYM207Z**	DPM	121	**SCCL_03Z**	DPM
72	**DRAXX06Z**	DPM	97	**HEYM208Z**	DPM	122	**SHOT_01Z**	DPM
73	**DRAXX09G**	DPM	98	**HRTL_01Z**	DPM	123	**CLAC-1**	DPM
74	**DRAXX10G**	DPM	99	**HRTL_02Z**	DPM	124	**TESI_01Z**	DPM
75	**DRAXX12G**	DPM	100	**DINO_01Z**	DPM	125	**TESI_02Z**	DPM
76	**FERR_01Z**	DPM	101	**DINO_02Z**	DPM	126	**WBUPS01Z**	DPM
77	**FERR_02Z**	DPM	102	**DINO_03Z**	DPM	127	**WBUPS02Z**	DPM
78	**FERR_03Z**	DPM	103	**DINO_04Z**	DPM	128	**WBUPS03Z**	DPM
79	**FERR_04Z**	DPM	104	**DINO_05Z**	DPM	129	**WBUPS04Z**	DPM
80	**FIDL_01Z**	DPM	105	**DINO_06Z**	DPM			

Midlands

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
130	**KLYNA01Z**	DPM	138	**SIZB_02Z**	DPM	146	**RUGPS06G**	DPM
131	**CORB_01Z**	DPM	139	**SIZEA01Z**	DPM	147	**RUGPS06Z**	DPM
132	**DERW_01Z**	DPM	140	**SIZEA02Z**	DPM	148	**RUGPS07G**	DPM
133	**GYAR_01Z**	DPM	141	**PETEM01Z**	DPM	149	**RUGPS07Z**	DPM
134	**IRNPS01Z**	DPM	142	**RATS_01Z**	DPM	150	**SPLN_01Z**	DPM
135	**IRNPS02Z**	DPM	143	**RATS_02Z**	DPM	151	**SUTB_01Z**	DPM
136	**LBAR_01Z**	DPM	144	**RATS_03Z**	DPM			
137	**SIZB_01Z**	DPM	145	**RATS_04Z**	DPM			

South

	BM Unit	Contract		BM Unit	Contract		BM Unit	Contract
152	**ABTHB07Z**	DPM	176	**DIDC_04G**	DPM	200	**LITTD01Z**	DPM
153	**ABTHB08Z**	DPM	177	**DIDC_04Z**	DPM	201	**LITTD02G**	DPM
154	**ABTHB09Z**	DPM	178	**DIDCB05Z**	DPM	202	**LITTD02Z**	DPM
155	**BAGE_01Z**	DPM	179	**DIDCB06Z**	DPM	203	**LITTD03G**	DPM
156	**BAGE_02Z**	DPM	180	**DNGB_21Z**	DPM	204	**MEDP_01Z**	DPM
157	**BARK_02Z**	DPM	181	**DNGB_22Z**	DPM	205	**MRWD_01Z**	DPM
158	**BARK_11Z**	DPM	182	**DUNGA01Z**	DPM	206	**OLDS_01Z**	DPM
159	**BRWE_01Z**	DPM	183	**DUNGA02Z**	DPM	207	**OLDS_02Z**	DPM
160	**BRWE_02Z**	DPM	184	**DUNGA03Z**	DPM	208	**RYHPS01Z**	DPM
161	**BRWE_03Z**	DPM	185	**DUNGA04Z**	DPM	209	**SEAB_01Z**	DPM
162	**BRWE_04Z**	DPM	186	**EECL_01Z**	DPM	210	**SEAB_02Z**	DPM
163	**BRWE_05Z**	DPM	187	**FAWL_01Z**	DPM	211	**SHOS_01Z**	DPM
164	**BRWE_06Z**	DPM	188	**FAWL_03Z**	DPM	212	**TAYL_02Z**	DPM
165	**BRYP_01Z**	DPM	189	**FAWN_01Z**	DPM	213	**TAYL_03Z**	DPM
166	**COSO_01Z**	DPM	190	**GRAI_01Z**	DPM	214	**TILBB08Z**	DPM
167	**COWE_01Z**	DPM	191	**GRAI_03Z**	DPM	215	**TILBB09Z**	DPM
168	**COWE_02Z**	DPM	192	**GRAI_04Z**	DPM	216	**TILBB10Z**	DPM
169	**DAMC_01Z**	DPM	193	**HINB_07Z**	DPM	217	**USKM_13Z**	DPM
170	**DIDC_01G**	DPM	194	**HINB_08Z**	DPM	218	**USKM_14Z**	DPM
171	**DIDC_01Z**	DPM	195	**KINO_01Z**	DPM	219	**USKM_15Z**	DPM
172	**DIDC_02G**	DPM	196	**KINO_02Z**	DPM			
173	**DIDC_02Z**	DPM	197	**KINO_03Z**	DPM			
174	**DIDC_03G**	DPM	198	**KINO_04Z**	DPM			
175	**DIDC_03Z**	DPM	199	**LITTD01G**	DPM			

Appendix 3 - Reactive Market Agreement status at 1 April 2011

Contracts Continuing on 1 April 2011			
	Company	**BM Unit ID**	**Contract Expiry Date**
1	None	None	N/A

New Contracts Commencing on 1 April 2011			
	Company	**BM Unit ID**	**Contract Expiry Date**
1	None	None	N/A

Appendix 4 - Successful tender details for contracts commencing 1 April 2011

Note: There were no successful tenderers

Appendix 5 - Tender Assessment Procedure

A5 Introduction

A5.1 National Grid assessed Reactive Power Tender Round 27 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.

A5.2 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.

A5.3 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,

based on historical trends and forecast load factors. The historical observations covered the period April 2005 to December 2010 and came from the Ancillary Services records against which Reactive Power utilisation is currently being paid.

- The alternative DPM utilisation payment was forecast as the forecast Mvarh multiplied by the forecast utilisation prices. These utilisation prices were £2.68/Mvarh for summer 2011 and £2.84/Mvarh for winter 2011. The utilisation prices were derived from the calculation defined in the CUSC Schedule 3, using a forecast of indices. Utilisation prices and the associated forecasted indices were communicated to all potential service providers and published before Market Day. Default prices for second year service were also forecasted in the assessment, based on forecast RPI and power prices. These were used to compare with the RPI indexed tendered prices.

- The market agreement capability payment was forecast as tendered price multiplied by tendered capability, allowing for break-points, multiplied by forecast hours for both available and synchronised capability.

- The market agreement utilisation payment was forecast as tendered prices multiplied by the same forecast Mvarh as those used in the alternative DPM payment forecast, 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.

A5.4 Assessment Sensitivities

- 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.

- 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 3.3(e)(ii) of Schedule 3 of the CUSC. 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. A range of +/-10% on Default prices was considered alongside historic trends.

- National Grid recognised that availability and maximum Mvarh from a BMU is affected by outage plans and unforeseen break downs. A central Mvarh forecast from each BMU was first developed considering given outage plan and historic reliability. The robustness of the central contract decisions was then tested against a range of variation on planned outage and estimated breakdown rate.

  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 any of the following:*
    - *A new station opening nearby*
    - *An existing nearby station closing*
    - *A change in local Reactive Power demand*
    - *A change to the transmission system (including planned outages)*

  - *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?*

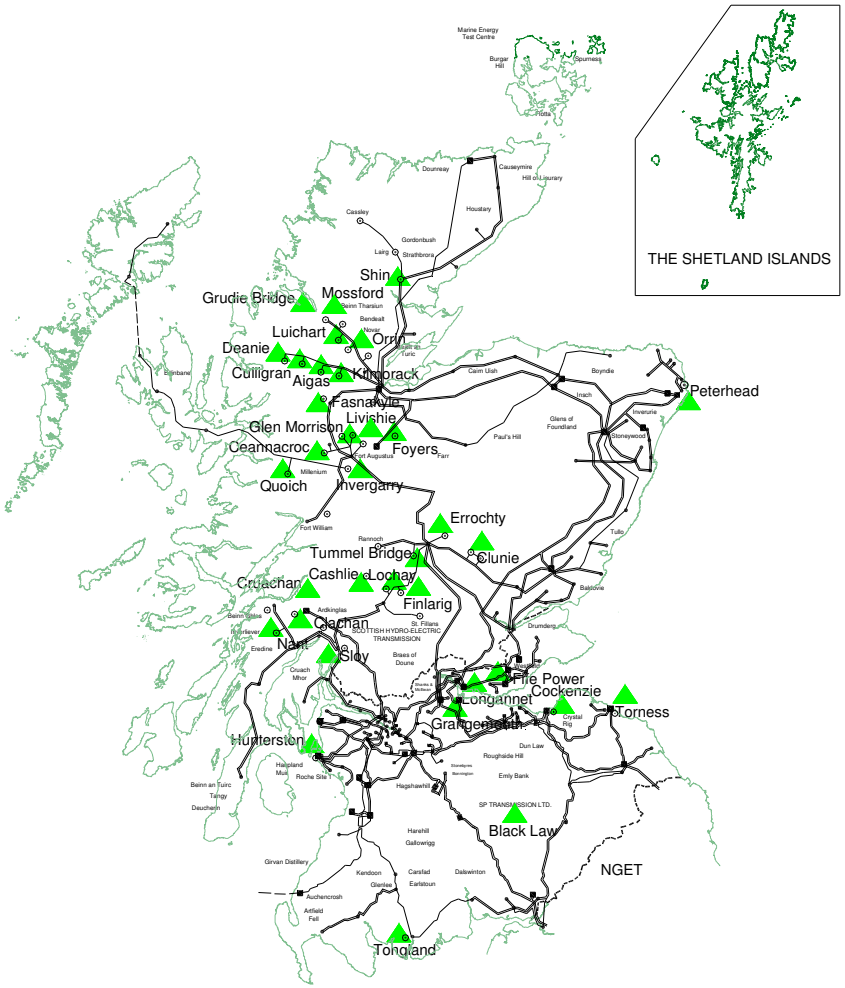
- All other criteria in CUSC Schedule 3, paragraph 3, are covered by this methodology.

- 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 6 - Geographic Distribution between DPM and Market Contracts



APPENDIX 6
(Fig. 1 of 2)

KEY

400kV, 275kV

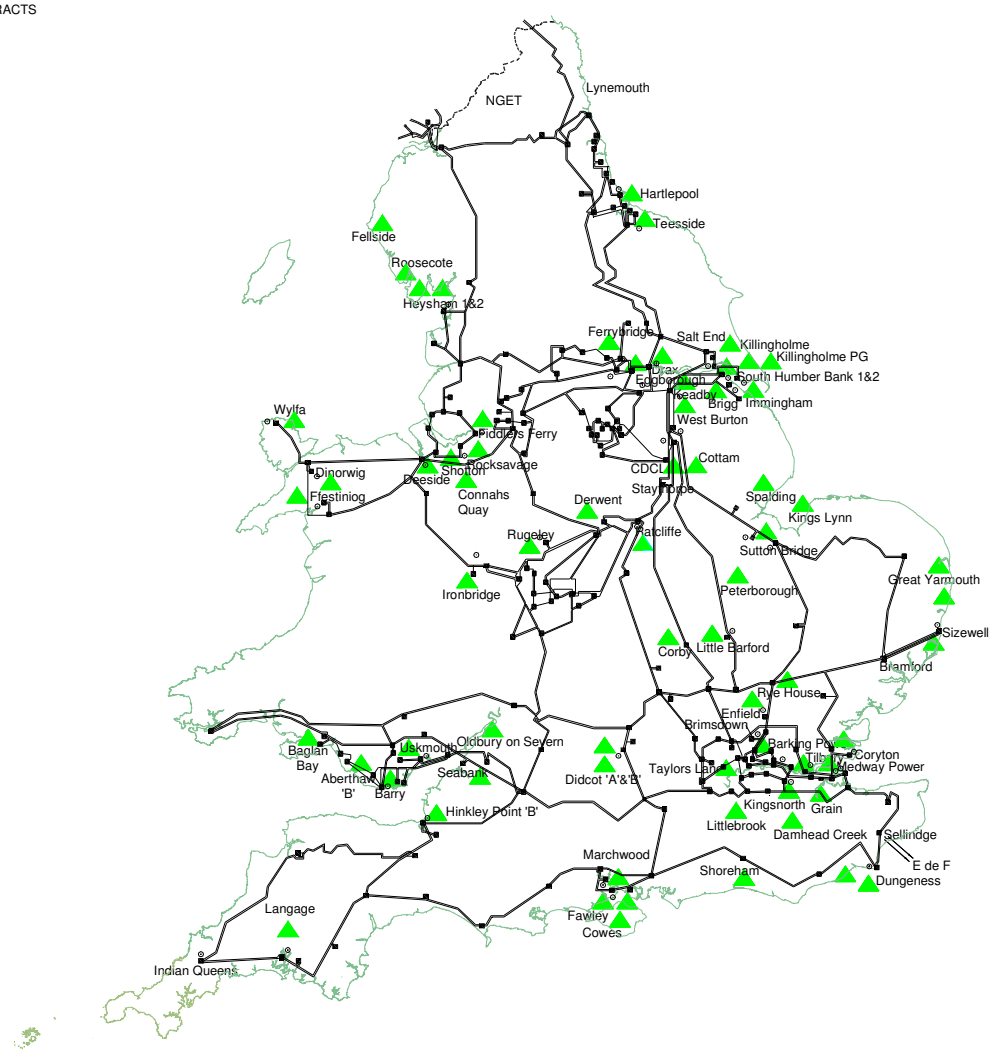
SUBSTATIONS

GENERATION WITH DEFAULT CONTRACTS

GENERATION (SCOTLAND) ELIGIBLE FOR REACTIVE POWER PAYMENTS
AS AT 1st APRIL 2011
SHOWING THE SPLIT BETWEEN DEFAULT AND MARKET CONTRACTS

APPENDIX 6
(Fig. 2 of 2)

KEY
400kV, 275kV
SUBSTATIONS
GENERATION WITH DEFAULT CONTRACTS



GENERATION (ENGLAND AND WALES) ELIGIBLE FOR REACTIVE POWER PAYMENTS
AS AT 1st APRIL 2011
SHOWING THE SPLIT BETWEEN DEFAULT AND MARKET CONTRACTS

Appendix 7 - Contact Information

A7.1 Further report information, comments suggestions and enquiries can be directed to:

Lisa Kettle
Network Operations (B2)
National Grid
National Grid House
Warwick Technology Park
Gallows Hill
Warwick
CV34 6DA

On telephone number: **01926 654308**
Email: **lisa.x.kettle@uk.ngrid.com**

A7.2 For any other information please visit the National Grid website on the following address:

http://www.nationalgrid.com/uk/Electricity/Balancing/services/ReactivePower/markettender/