STOR Market Information Report: Tender Round 18
(Short-Term Operating Reserve)

Introduction

This market report is produced after each tender round and is designed to give existing and potential STOR participants an overall view of the tenders received in tender round 18 (TR18). The report provides details of tendered utilisation and availability prices and National Grid's consequent forward contracted position; together with further details on the type and dynamics of the tendered plant. For further information regarding this product or how and when to tender please consult the tender and reports section found on the National Grid Balancing Services information website:

http://www.nationalgrid.com/uk/Electricity/Balancing/services/STOR/

Furthermore, information on the use of the STOR service can be seen at monthly resolution in the Monthly Balancing Services Statement or annually in the Procurement Guidelines Report, found on the National Grid Balancing Services information website:

http://www.nationalgrid.com/uk/Electricity/Balancing/Summary/
http://www.nationalgrid.com/uk/Electricity/Balancing/transmissionlicencestatements/PG/

In assessing the benefit of a STOR tender, the value and costs of that tender are considered. The forecast cost of an accepted tender will reflect expected availability costs and utilisation costs which incorporate the Minimum Non Zero Time (MNZT) of the unit and Minimum Utilisation Period (MUP) for non-BM providers. The tender assessment further considers the response time, the location and the reliability of the tendered unit. The latest assessment principles can be found on the STOR section of the Balancing Services website:

http://www.nationalgrid.com/NR/rdonlyres/7B8CA1AB-4964-4965-B5A2-126C8C202A11/40677/STOR_Assessment_Principles.pdf

This report is divided into two sections:

- Section 1 provides a summary of tendered and accepted volumes and price information across STOR seasons in 2012/13 (Year 6) and 2013/14 (Year 7). The data is broken down by response time and flexible or committed service providers.
- Section 2 provides an overview of the total contracted position for each season in Years 6 and 7 from TR18 and previous tender rounds.

Section 1.1 Submitted and Accepted Volumes

As National Electricity Transmission System Operator (NETSO), National Grid maintains an Operating Reserve Requirement (ORR) from 4 hours ahead of time to real time, to take account of demand forecast errors, plant losses and market imbalance. The ORR is met by headroom on market synchronised machines, additional actions taken by National Grid via the Balancing Mechanism (BM) and contracted reserve products. STOR is a contracted reserve product and as such STOR tenders can make up a finite proportion of the ORR. The amount of contracted STOR required is determined by the size of the ORR which changes due to forecast market length, market provided headroom, volume of intermittent generation and demand forecast errors. The proportion of the ORR met by STOR is determined by considering the technical system requirements and also the forecast cost of alternatives versus the cost of the tendered STOR units.

The tenders are assessed in accordance with the STOR Assessment Principles[1], which, amongst other things, consider availability prices (£/MW/h), utilisation prices (£/MWh), response times and geographical location. The accepted tenders are selected such that the total costs of maintaining the ORR and operating the system are lower than without the selection of those tenders.

STOR Volumes Procured by National Grid

Throughout the STOR seasons National Grid aims to procure a minimum of 1800MW of STOR (subject to sufficient economics). The daily and seasonal optimal STOR MW level varies due to real time and also seasonal pressures on the system, but National Grid has typically engaged in having approximately 2300MW of STOR, when available. Going forward, the optimal STOR MW level is expected to be similar to the optimal STOR MW level experienced currently, however if the ORR changes, then the optimal STOR MW level will also change.

The optimal STOR MW level is what National Grid expects to manage on a daily basis. National Grid examines historic availability profiles from committed and flexible providers to help determine the amount of STOR MW to procure, such that the contracted STOR MW would yield the optimal STOR MW to be available on a daily basis, allowing for economics and pressures on the system.

It is only STOR units that have a response time of 20 minutes or less, that are able to contribute to the optimal STOR MW level as these units are able to help manage system security during any unforeseen event. STOR units with a long notice response time (a response time greater than 20 minutes) do not contribute to the optimal STOR MW level, yet they are kept as reserve for system flexibility and can be used to manage planned events that occur on the system.

Where economics are sufficiently strong, National Grid may procure long notice STOR over and above the optimal STOR MW level in order to ensure the Control Room's operational resilience.

Tenders Received in TR18

At the close of TR18, National Grid received tenders from 39 companies, totalling 153 units, for STOR contracts in 2012/13 and 2013/14. This included nine units that had not tendered before from an existing provider and four new providers entered the market. These new sites represent a potential maximum 177MW of new capacity if they were all fully available at the same time.

This tender round was the final tender opportunity for seasons 6.5 and 6.6, 73 and 77 units were tendered for these seasons respectively. This represents a potential maximum 1369MW for season 6.5 and 1402MW for Season 6.6 in addition to the 2762MW and 2780MW already contracted for the respective seasons. Four units with a response time greater than 20 minutes tendered for seasons 6.5 and 6.6, the remaining tenders were for response times of 20 minutes or less.

A potential maximum of 2105MW was submitted for seasons in STOR Year 7 (2013/14) from 110 units. This included tenders from one company with indexations on their submitted prices. The indexations are to adjust the availability price with respect to RPI change, and to adjust the utilisation prices with respect to gas price (Gas medium consumer price in this instance).

[1] http://www.nationalgrid.com/NR/rdonlyres/7B8CA1AB-4964-4965-B5A2-126C8C202A11/40677/STOR_Assessment_Principles.pdf

Growth in Tendered Volumes leading to a highly competitive Marketplace

As stated in earlier versions of the Market Information Report, there has been growth in the volume of MW tendered for STOR during the last couple of years (see Figure 1). Yet, during the same period, the amount of contracted STOR actually used to maintain the ORR[2] has remained broadly consistent. Allowing for seasonal influences and any one-off events, the proportion of contracted STOR that will actually contribute to the ORR is expected to remain consistent throughout STOR Years 6 and 7 (2012/13 & 2013/14).

Owing to the highly competitive nature of the STOR market, when tendering in for future tender rounds, it is recommended that STOR providers consider optimising their tendered technical parameters, where appropriate.

Successful Tenders in TR18 and Outlook for STOR Year 6 (2012/13)

For the remaining seasons in Year 6, the combined capacity of tenders in TR18 along with the STOR already procured in previous tender rounds would result in having a level of STOR availability that would be greatly in excess of the ORR. Thus, the tenders that were accepted in TR18 were those that demonstrated the most beneficial combination of tendered prices and the selected tenders would be able to provide sufficient MW to fulfil the optimal level of STOR.

The existing Flexible STOR contracts for the two seasons left in STOR Year 6 have been put under pressure by the economics from the leading and thus accepted, tenders from this tender round. This has led to ~600-650MW of previously accepted flexible units for seasons 6.5 and 6.6 being undercut by tenders in TR18. As a result, National Grid's expects week ahead flexible STOR availability rejections to occur throughout seasons 6.5 and 6.6.

The volume of rejections experienced on a week to week basis will be influenced by a number of factors such as STOR unit availability and market surplus for the week ahead.

The Long Notice STOR tenders have managed to contribute to the total accepted MW figure in this tender round, due to the strength of their economics. The tendered prices for Long Notice STOR have dropped from the previous tender rounds leading to ~170MW of Long Notice STOR tenders being accepted for Year 6.

The location of a tender has not been a factor in rejecting tenders, apart from Scottish based tenders which have a devaluation applied to the economics of their tenders.

The unsuccessful tenders in this tender round have been rejected on grounds of weaker economics.

Outlook for STOR Year 7 (2013/14)

Looking ahead to STOR Year 7 (2013/14), the strong economics[3] of the tenders received has meant being able to procure larger volumes of STOR, than has historically been the case at this point in the STOR tender timetable, for STOR service two seasons ahead.

It is expected that there will be minimal change to the level of available STOR that National Grid expects to use daily in Year 7 and with ~2400MW of STOR contracted for Year 7, the challenge of securing a STOR contract for Year 7 is greater than it has been historically at this point in the STOR tender cycle.

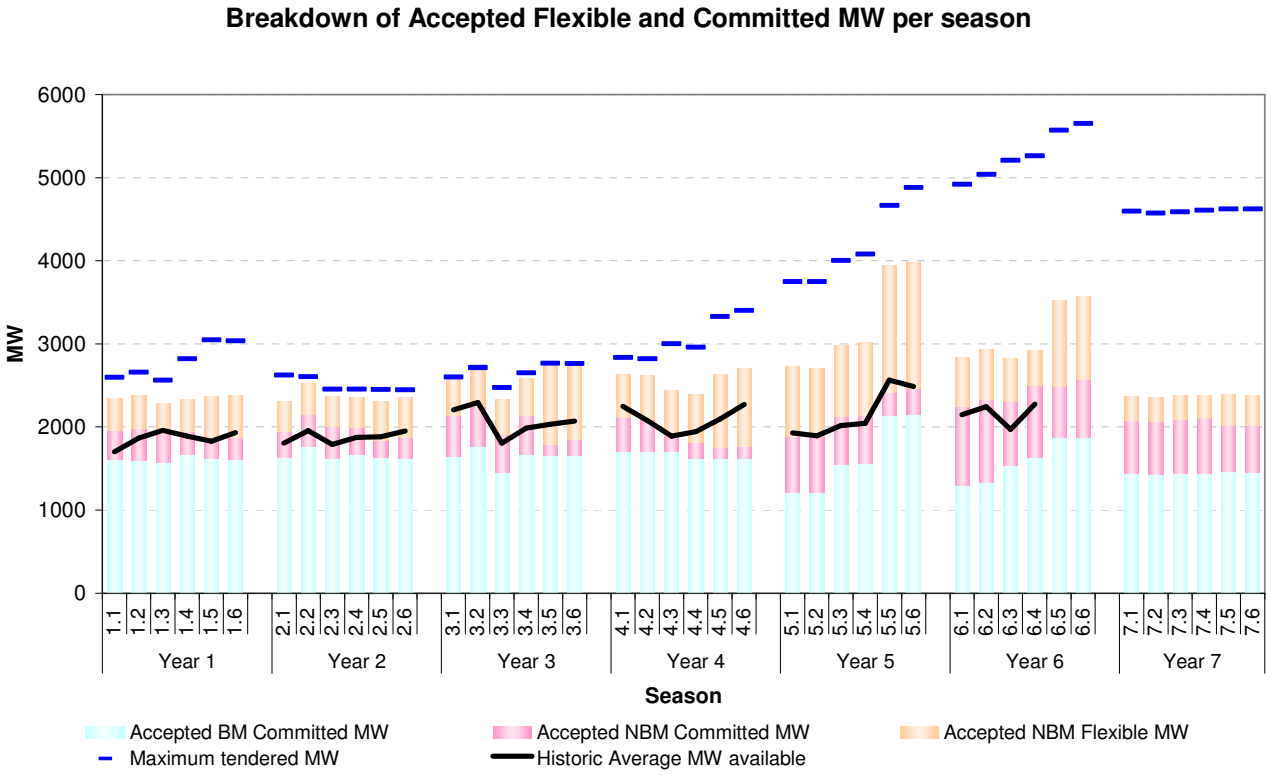
[2] Ignoring the impact from one-off events that led to larger than usual volumes of unsynchronised contracted reserve being requested. Such volumes were procured by accepting greater than usual volumes of Flexible STOR MW via the week-ahead assessment

[3] Based on National Grid's assessment of future margin costs

Figure 1 gives a breakdown of the accepted flexible and committed MW per season since the start of the STOR service. The blue line represents the sum of the maximum tendered MW from unique units from any tender round for each season. For seasons with tender rounds still to come, this figure will increase if units that thus far have not tendered for that season, tender in. The black line on the chart represents the outturn average availability for each season (where available).

Please note this chart contains data from previous tender rounds up to and including TR 18.

Figure 1



Tables 1 and 2 show the total number of MW rejected or accepted together with their respective volume weighted availability and utilisation prices for Year 6 and Year 7. The table is split into Flexible or Committed units with response time less than or equal to 20 minutes, and units (flexible or committed) with response time greater than 20 minutes.

Please note these tables contain data from previous tender rounds up to and including TR 18.

Table 1 Year 6 Summary

Season		6.1			6.2			6.3			6.4			6.5			6.6		
Service Type		C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C
TR 10 Rejected MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 10 Accepted MW		68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0
TR 11 Rejected MW		98	0	0	114	0	0	131	0	0	159	0	0	201	0	0	221	0	0
TR 11 Accepted MW		116	0	0	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0
TR 12 Rejected MW		256	0	0	277	0	0	320	0	0	322	0	0	564	0	0	589	0	0
TR 12 Accepted MW		120	0	0	158	0	0	229	0	0	236	0	0	257	0	0	277	0	0
TR 13 Rejected MW		406	12	0	406	12	0	406	12	0	406	12	0	406	12	0	406	12	0
TR 13 Accepted MW		8	0	0	8	0	0	8	0	0	8	0	0	8	0	0	8	0	0
TR 14 Rejected MW		1017	194	0	1015	195	0	1017	196	0	1023	196	0	1004	208	0	1003	208	0
TR 14 Accepted MW		177	115	0	177	117	0	177	118	0	167	118	0	140	145	0	140	145	0
TR 15 Rejected MW		1863	49	0	1881	67	0	1741	67	0	1852	67	0	1825	73	0	1825	73	0
TR 15 Accepted MW		250	149	0	253	152	0	245	125	0	253	125	0	236	93	0	232	93	0
TR 16 Rejected MW		982	133	0	1234	133	0	1086	93	0	1105	102	0	1120	111	0	1120	114	0
TR 16 Accepted MW		1339	328	175	1383	340	166	1181	234	0	1361	151	0	1026	340	0	1072	296	0
TR 17 Rejected MW		0	0	0	0	0	0	903	323	168	924	323	174	824	173	0	836	176	0
TR 17 Accepted MW		0	0	0	0	0	0	290	30	0	290	30	0	260	73	0	260	73	0
TR 18 Rejected MW		0	0	0	0	0	0	0	0	0	0	0	0	346	255	0	351	258	0
TR 18 Accepted MW		0	0	0	0	0	0	0	0	0	0	0	0	381	219	168	401	218	174
sub Total Rejected MW		4622	0	0	4927	407	0	5604	691	168	5791	700	174	6290	832	0	6351	841	0
sub Total Accepted MW		2078	592	175	2163	609	166	2314	507	0	2499	424	0	2492	870	168	2574	825	174
Total Accepted MW		2845			2938			2821			2923			3530			3573		
Average Rejected Availability Price (£MWh)	TR 10	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11	£ 18.10	£ -	£ -	£ 17.38	£ -	£ -	£ 17.18	£ -	£ -	£ 16.87	£ -	£ -	£ 16.54	£ -	£ -	£ 16.39	£ -	£ -
	TR 12	£ 12.48	£ -	£ -	£ 12.47	£ -	£ -	£ 12.45	£ -	£ -	£ 12.46	£ -	£ -	£ 12.27	£ -	£ -	£ 12.27	£ -	£ -
	TR 13	£ 11.11	£ 9.00	£ -	£ 11.11	£ 9.00	£ -	£ 11.11	£ 9.00	£ -	£ 11.11	£ 9.00	£ -	£ 11.11	£ 9.00	£ -	£ 11.11	£ 9.00	£ -
	TR 14	£ 9.78	£ 8.26	£ -	£ 9.78	£ 8.25	£ -	£ 9.78	£ 8.24	£ -	£ 9.77	£ 8.24	£ -	£ 9.78	£ 8.29	£ -	£ 9.78	£ 8.29	£ -
	TR 15	£ 8.63	£ 8.98	£ -	£ 8.63	£ 8.73	£ -	£ 8.64	£ 8.79	£ -	£ 8.64	£ 8.79	£ -	£ 8.64	£ 8.93	£ -	£ 8.64	£ 8.93	£ -
	TR 16	£ 6.96	£ 7.31	£ -	£ 7.04	£ 7.32	£ -	£ 7.05	£ 7.57	£ -	£ 7.05	£ 7.60	£ -	£ 7.17	£ 7.69	£ -	£ 7.17	£ 7.65	£ -
	TR 17	£ -	£ -	£ -	£ -	£ -	£ -	£ 6.23	£ 6.95	£ 2.75	£ 6.22	£ 6.96	£ 3.01	£ 6.31	£ 7.04	£ -	£ 6.32	£ 6.99	£ -
	TR 18	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ 4.95	£ 5.88	£ -	£ 4.96	£ 5.84	£ -
Average Accepted Availability Price (£MWh)	TR 10	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -	£ 7.15	£ -	£ -	£ 7.15	£ -	£ -	£ 7.45	£ -	£ -	£ 7.45	£ -	£ -
	TR 11	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -
	TR 12	£ 11.47	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -
	TR 13	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -
	TR 14	£ 7.98	£ 7.69	£ -	£ 7.98	£ 7.69	£ -	£ 7.98	£ 7.68	£ -	£ 7.97	£ 7.68	£ -	£ 8.00	£ 7.71	£ -	£ 8.00	£ 7.71	£ -
	TR 15	£ 7.69	£ 7.90	£ -	£ 7.70	£ 7.88	£ -	£ 7.71	£ 7.96	£ -	£ 7.70	£ 7.96	£ -	£ 7.70	£ 7.90	£ -	£ 7.71	£ 7.90	£ -
	TR 16	£ 7.32	£ 7.19	£ 2.00	£ 7.32	£ 7.24	£ 2.00	£ 7.34	£ 7.46	£ -	£ 7.37	£ 7.44	£ -	£ 7.34	£ 7.24	£ -	£ 7.32	£ 7.30	£ -
	TR 17	£ -	£ -	£ -	£ -	£ -	£ -	£ 5.56	£ 4.75	£ -	£ 5.56	£ 4.75	£ -	£ 5.46	£ 5.99	£ -	£ 5.46	£ 5.98	£ -
	TR 18	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ 4.01	£ 4.41	£ 1.20	£ 4.00	£ 4.38	£ 1.20
Average Rejected Utilisation Price (£MWh)	TR 10	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11	£ 198	£ -	£ -	£ 207	£ -	£ -	£ 209	£ -	£ -	£ 212	£ -	£ -	£ 216	£ -	£ -	£ 218	£ -	£ -
	TR 12	£ 223	£ -	£ -	£ 222	£ -	£ -	£ 221	£ -	£ -	£ 220	£ -	£ -	£ 221	£ -	£ -	£ 222	£ -	£ -
	TR 13	£ 228	£ 240	£ -	£ 228	£ 240	£ -	£ 228	£ 240	£ -	£ 228	£ 240	£ -	£ 228	£ 240	£ -	£ 228	£ 240	£ -
	TR 14	£ 239	£ 179	£ -	£ 239	£ 179	£ -	£ 239	£ 179	£ -	£ 239	£ 179	£ -	£ 241	£ 179	£ -	£ 241	£ 179	£ -
	TR 15	£ 230	£ 198	£ -	£ 230	£ 208	£ -	£ 233	£ 208	£ -	£ 231	£ 209	£ -	£ 231	£ 215	£ -	£ 231	£ 215	£ -
	TR 16	£ 234	£ 220	£ -	£ 231	£ 219	£ -	£ 233	£ 210	£ -	£ 233	£ 209	£ -	£ 239	£ 227	£ -	£ 239	£ 228	£ -
	TR 17	£ -	£ -	£ -	£ -	£ -	£ -	£ 199	£ 169	£ 140	£ 200	£ 168	£ 140	£ 201	£ 171	£ -	£ 200	£ 173	£ -
	TR 18	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ 166	£ 166	£ -	£ 167	£ 166	£ -
Average Accepted Utilisation Price (£MWh)	TR 10	£ 350	£ -	£ -	£ 350	£ -	£ -	£ 350	£ -	£ -	£ 350	£ -	£ -	£ 360	£ -	£ -	£ 360	£ -	£ -
	TR 11	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -
	TR 12	£ 205	£ -	£ -	£ 205	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -
	TR 13	£ 200	£ -	£ -	£ 200	£ -	£ -	£ 200	£ -	£ -	£ 200	£ -	£ -	£ 200	£ -	£ -	£ 200	£ -	£ -
	TR 14	£ 202	£ 199	£ -	£ 202	£ 199	£ -	£ 202	£ 199	£ -	£ 201	£ 199	£ -	£ 200	£ 200	£ -	£ 200	£ 200	£ -
	TR 15	£ 212	£ 168	£ -	£ 211	£ 168	£ -	£ 212	£ 165	£ -	£ 212	£ 165	£ -	£ 216	£ 152	£ -	£ 216	£ 152	£ -
	TR 16	£ 199	£ 197	£ 150	£ 198	£ 194	£ 150	£ 204	£ 190	£ -	£ 200	£ 199	£ -	£ 205	£ 191	£ -	£ 204	£ 192	£ -
	TR 17	£ -	£ -	£ -	£ -	£ -	£ -	£ 207	£ 149	£ -	£ 207	£ 149	£ -	£ 221	£ 149	£ -	£ 221	£ 148	£ -
	TR 18	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ 216	£ 135	£ 120	£ 214	£ 134	£ 120

Average Prices are Weighted by MW Volume and Hours Tendered

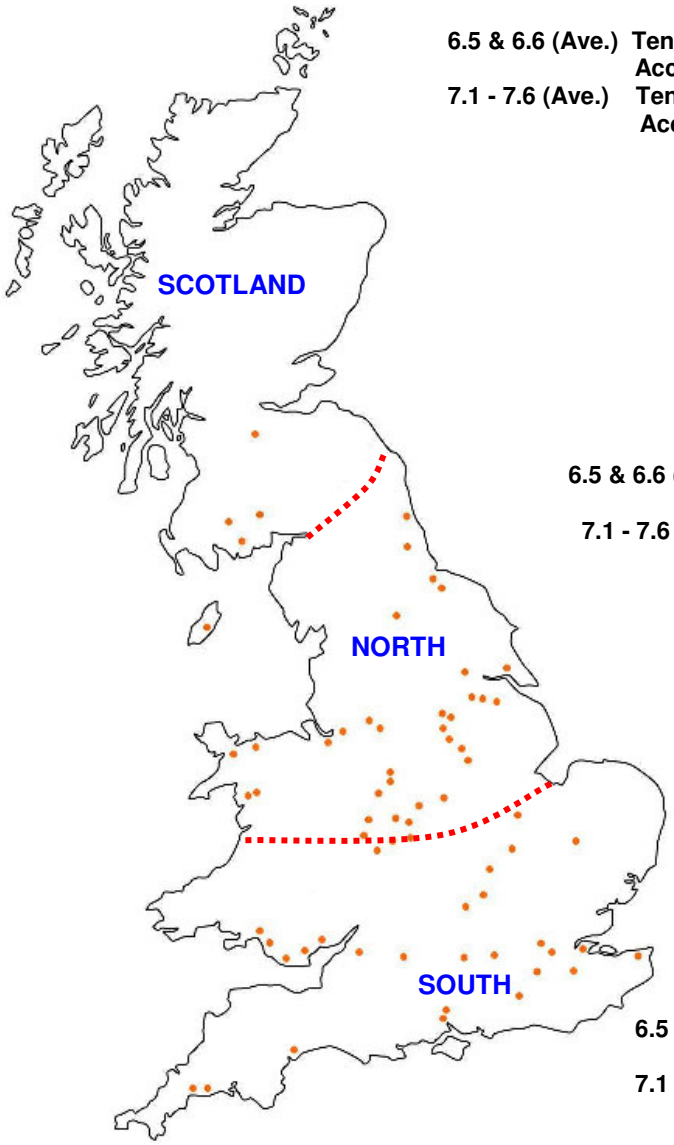
Table 2 Year 7 Summary

Season		7.1			7.2			7.3			7.4			7.5			7.6		
Service Type		C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C	C <20mins	F <20mins	>20mins F or C
TR 10 Rejected MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 10 Accepted MW		68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0
TR 11 Rejected MW		219	0	0	215	0	0	217	0	0	219	0	0	426	0	0	426	0	0
TR 11 Accepted MW		116	0	0	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0
TR 12 Rejected MW		587	0	0	583	0	0	585	0	0	587	0	0	589	0	0	589	0	0
TR 12 Accepted MW		276	0	0	274	0	0	275	0	0	276	0	0	277	0	0	277	0	0
TR 13 Rejected MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 13 Accepted MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 14 Rejected MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 14 Accepted MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 15 Rejected MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 15 Accepted MW		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TR 16 Rejected MW		2102	19	19	2100	19	19	2010	19	19	2088	19	19	2091	19	19	2091	19	19
TR 16 Accepted MW		0	10	0	32	10	0	32	10	0	32	10	0	22	10	0	22	10	0
TR 17 Rejected MW		0	133	0	1244	133	0	1156	133	0	1252	133	0	1168	228	0	1167	228	0
TR 17 Accepted MW		939	9	0	937	9	0	937	9	0	936	9	0	939	9	0	939	9	0
TR 18 Rejected MW		1048	128	0	1032	128	0	1044	128	0	960	136	0	860	239	0	905	195	0
TR 18 Accepted MW		650	273	0	643	270	0	668	265	0	678	257	0	602	348	0	597	348	0
sub Total Rejected MW		0	280	19	5174	280	19	5012	280	19	5106	288	19	5134	486	19	5178	442	19
sub Total Accepted MW		2081	292	0	2070	289	0	2096	284	0	2106	276	0	2024	367	0	2019	367	0
Total Accepted MW		2373			2359			2380			2382			2391			2386		
Average Rejected Availability Price (£MWh)	TR 10	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11	£ 16.33	£ -	£ -	£ 16.21	£ -	£ -	£ 16.27	£ -	£ -	£ 16.33	£ -	£ -	£ 19.33	£ -	£ -	£ 19.33	£ -	£ -
	TR 12	£ 12.26	£ -	£ -	£ 12.25	£ -	£ -	£ 12.26	£ -	£ -	£ 12.26	£ -	£ -	£ 12.27	£ -	£ -	£ 12.27	£ -	£ -
	TR 13	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 14	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 15	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 16	£ 7.58	£ 7.88	£ 9.30	£ 7.58	£ 7.88	£ 9.30	£ 7.56	£ 8.19	£ 9.30	£ 7.58	£ 8.19	£ 9.30	£ 7.58	£ 8.58	£ 9.30	£ 7.58	£ 8.58	£ 9.30
	TR 17	£ 7.35	£ 7.77	£ -	£ 7.36	£ 7.77	£ -	£ 7.34	£ 7.77	£ -	£ 7.35	£ 7.77	£ -	£ 7.34	£ 7.44	£ -	£ 7.34	£ 7.44	£ -
	TR 18	£ 6.34	£ 6.17	£ -	£ 6.34	£ 6.18	£ -	£ 6.37	£ 6.18	£ -	£ 6.35	£ 6.22	£ -	£ 6.17	£ 6.38	£ -	£ 6.16	£ 6.57	£ -
Average Accepted Availability Price (£MWh)	TR 10	£ 7.00	£ -	£ -	£ 7.00	£ -	£ -	£ 7.15	£ -	£ -	£ 7.15	£ -	£ -	£ 7.45	£ -	£ -	£ 7.45	£ -	£ -
	TR 11	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -
	TR 12	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -	£ 11.50	£ -	£ -
	TR 13	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 14	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 15	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 16	£ 7.29	£ 7.22	£ -	£ 7.29	£ 7.22	£ -	£ 7.29	£ 7.22	£ -	£ 7.29	£ 7.22	£ -	£ 6.97	£ 7.22	£ -	£ 6.97	£ 7.22	£ -
	TR 17	£ 5.64	£ 7.90	£ -	£ 5.63	£ 7.90	£ -	£ 5.63	£ 7.90	£ -	£ 5.63	£ 7.90	£ -	£ 5.63	£ 7.90	£ -	£ 5.63	£ 7.90	£ -
	TR 18	£ 6.13	£ 6.10	£ -	£ 6.13	£ 6.15	£ -	£ 6.10	£ 6.15	£ -	£ 6.09	£ 6.18	£ -	£ 6.18	£ 5.87	£ -	£ 6.19	£ 5.87	£ -
Average Rejected Utilisation Price (£MWh)	TR 10	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11	£ 219	£ -	£ -	£ 220	£ -	£ -	£ 219	£ -	£ -	£ 219	£ -	£ -	£ 190	£ -	£ -	£ 191	£ -	£ -
	TR 12	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -
	TR 13	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 14	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 15	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 16	£ 229	£ 278	£ 175	£ 229	£ 278	£ 175	£ 231	£ 278	£ 175	£ 229	£ 278	£ 175	£ 229	£ 278	£ 175	£ 229	£ 278	£ 175
	TR 17	£ 184	£ 172	£ -	£ 184	£ 172	£ -	£ 184	£ 172	£ -	£ 185	£ 172	£ -	£ 185	£ 177	£ -	£ 184	£ 177	£ -
	TR 18	£ 178	£ 183	£ -	£ 178	£ 182	£ -	£ 178	£ 183	£ -	£ 181	£ 181	£ -	£ 180	£ 188	£ -	£ 180	£ 190	£ -
Average Accepted Utilisation Price (£MWh)	TR 10	£ 350	£ -	£ -	£ 350	£ -	£ -	£ 350	£ -	£ -	£ 350	£ -	£ -	£ 360	£ -	£ -	£ 360	£ -	£ -
	TR 11	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -
	TR 12	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -
	TR 13	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 14	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 15	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 16	£ 187	£ 190	£ -	£ 187	£ 190	£ -	£ 187	£ 190	£ -	£ 187	£ 190	£ -	£ 193	£ 190	£ -	£ 193	£ 190	£ -
	TR 17	£ 242	£ 139	£ -	£ 242	£ 139	£ -	£ 242	£ 139	£ -	£ 242	£ 139	£ -	£ 242	£ 139	£ -	£ 242	£ 139	£ -
	TR 18	£ 151	£ 140	£ -	£ 151	£ 140	£ -	£ 152	£ 141	£ -	£ 152	£ 140	£ -	£ 150	£ 151	£ -	£ 150	£ 151	£ -

Average Prices are Weighted by MW Volume and Hours Tendered

Figure 2 presents the number of units and the total MW tendered and accepted, averaged either for a pair of seasons or for all six seasons in the case of year seven, with respect to the location in Great Britain. For instance, in the north of England region for seasons 6.5 & 6.6, an average of 23 units were tendered offering an average total of 420MW of capacity, of which an average of 14 units were accepted which represents an average of 326MW of capacity. The orange dots on the map indicate the location of the tenders (not including sites located in more than one region).

Figure 2 Map of Great Britain



6.5 & 6.6 (Ave.) Tendered: 5 Units, 69 MW
Accepted: 4 Units, 61 MW
7.1 - 7.6 (Ave.) Tendered: 5 Units, 69 MW
Accepted: 4 Units, 61 MW

6.5 & 6.6 (Ave.) Tendered: 23 Units, 420 MW
Accepted: 14 Units, 326 MW
7.1 - 7.6 (Ave.) Tendered: 21 Units, 843 MW
Accepted: 11 Units, 403 MW

6.5 & 6.6 (Ave.) Tendered: 33 Units, 704 MW
Accepted: 18 Units, 328 MW
7.1 - 7.6 (Ave.) Tendered: 42 Units, 867 MW
Accepted: 18 Units, 334 MW

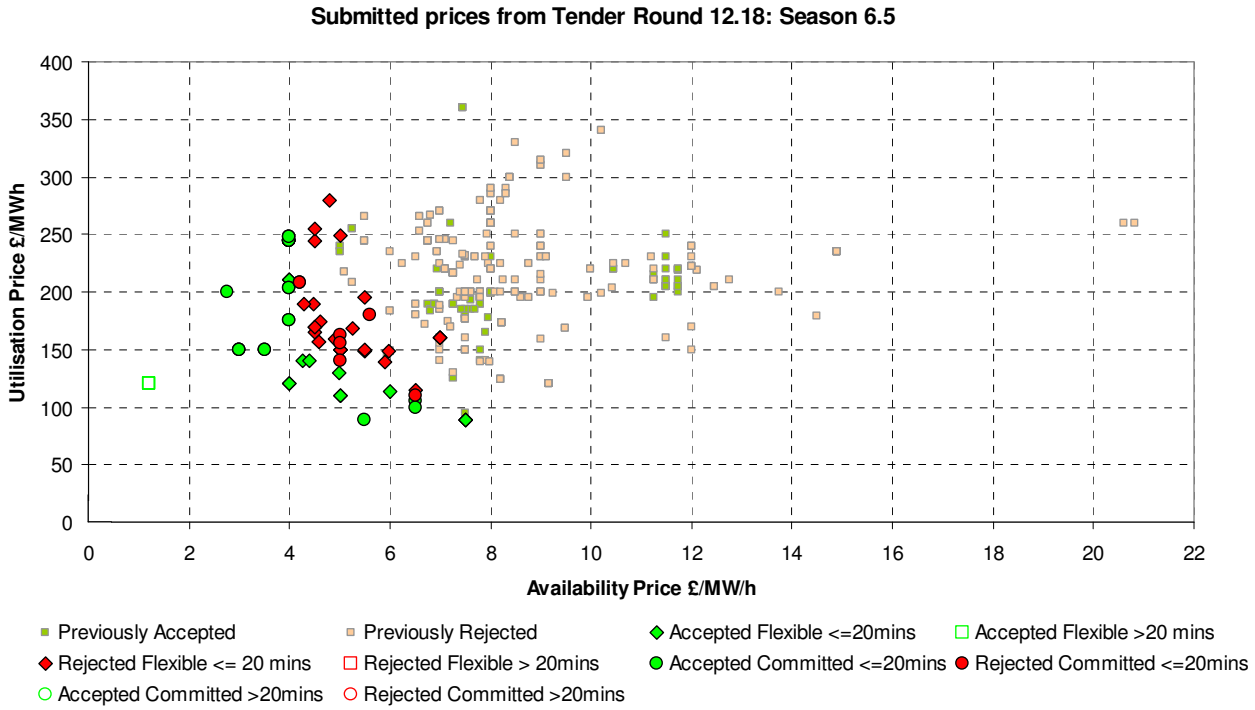
MULTIPLE LOCATIONS
(Aggregators)

6.5 & 6.6 (Ave.) Tendered: 15 Units, 193 MW
Accepted: 6 Units, 66 MW
7.1 - 7.6 (Ave.) Tendered: 37 Units, 288 MW
Accepted: 14 Units, 135 MW

Section 1.2 Prices

Figures 3 and 4 below show scatter plots of availability and utilisation price for each tender and for each season. The data is broken down into response time groups of >20 mins or <=20 mins, flexible or committed service and accepted or rejected tenders. These charts also depict the accepted and rejected tenders from previous tender rounds.

Figure 3 Year 6 Availability and Utilisation price charts



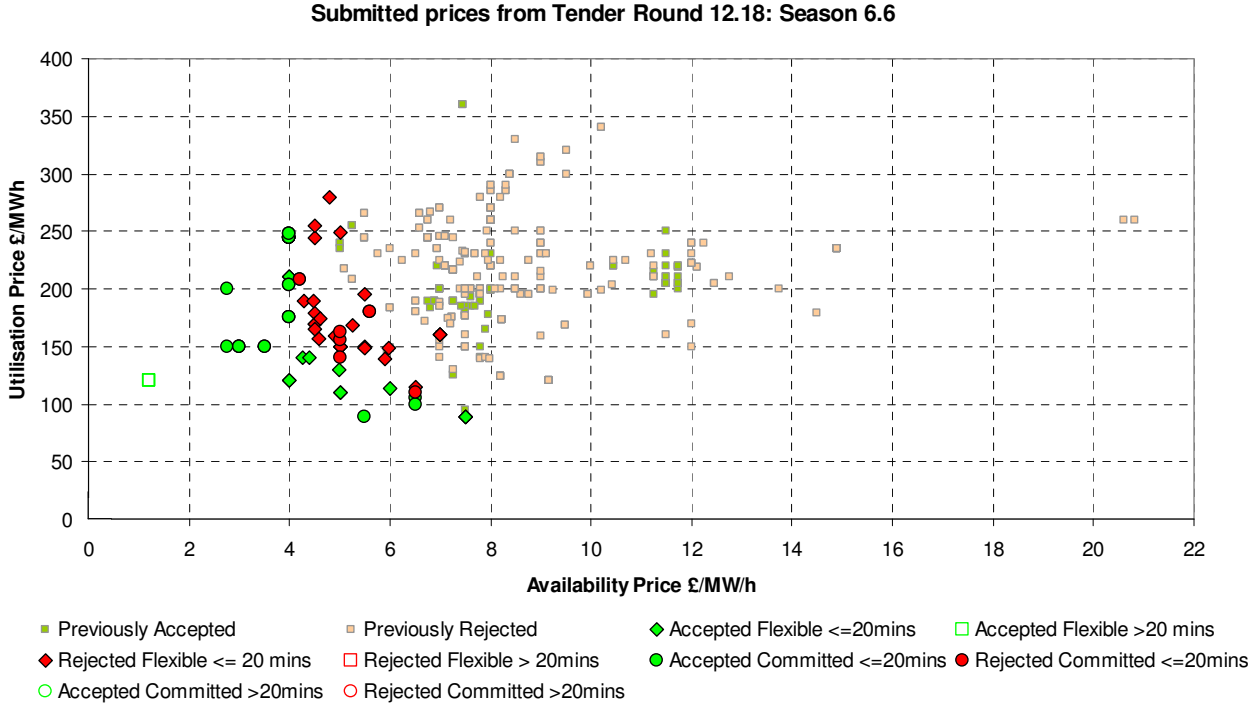
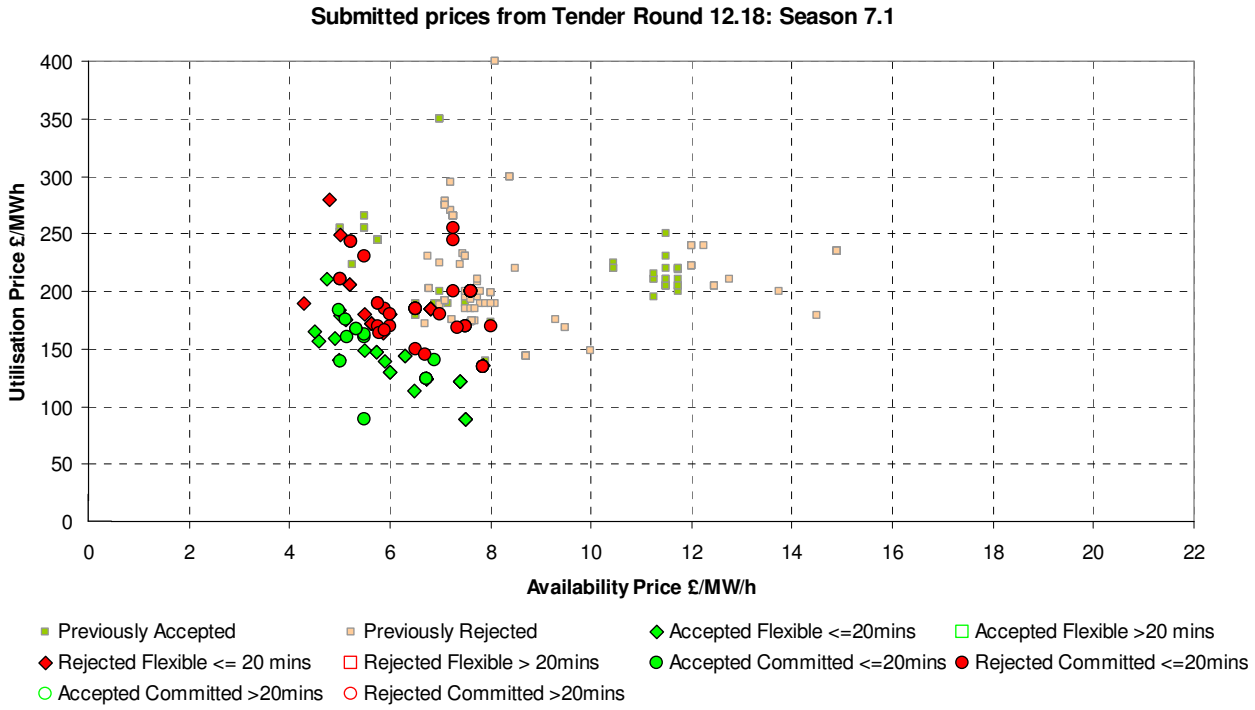
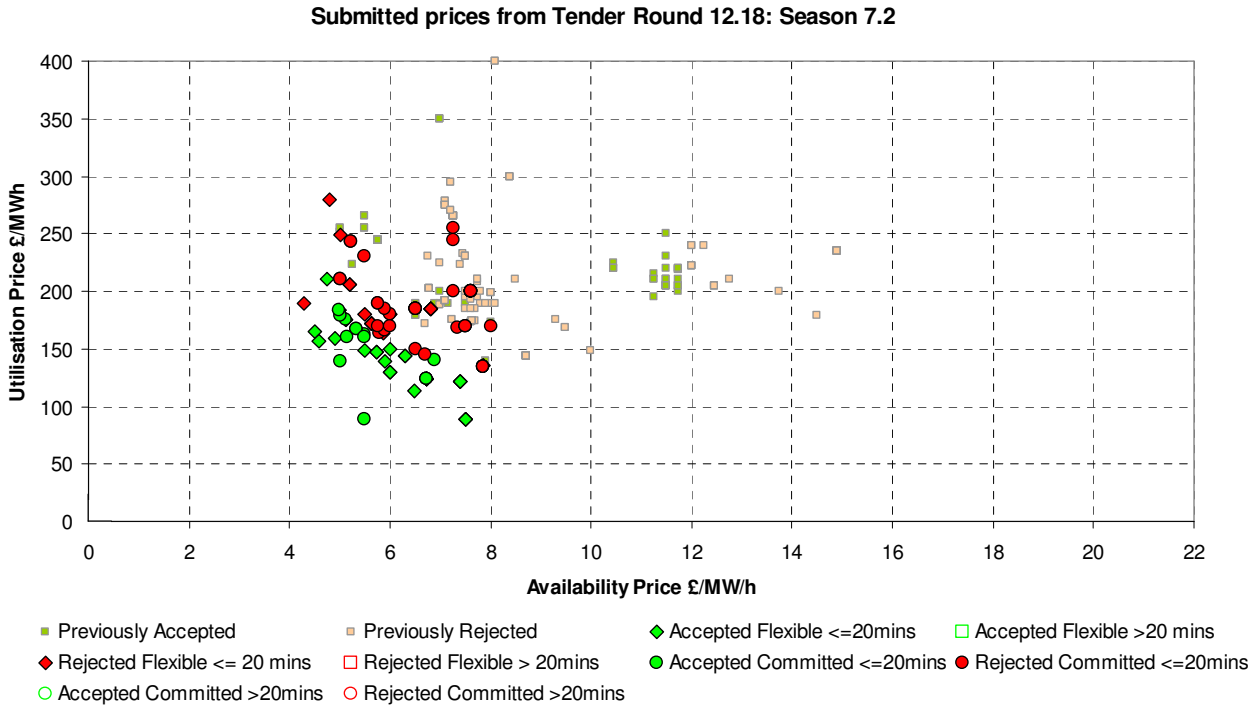
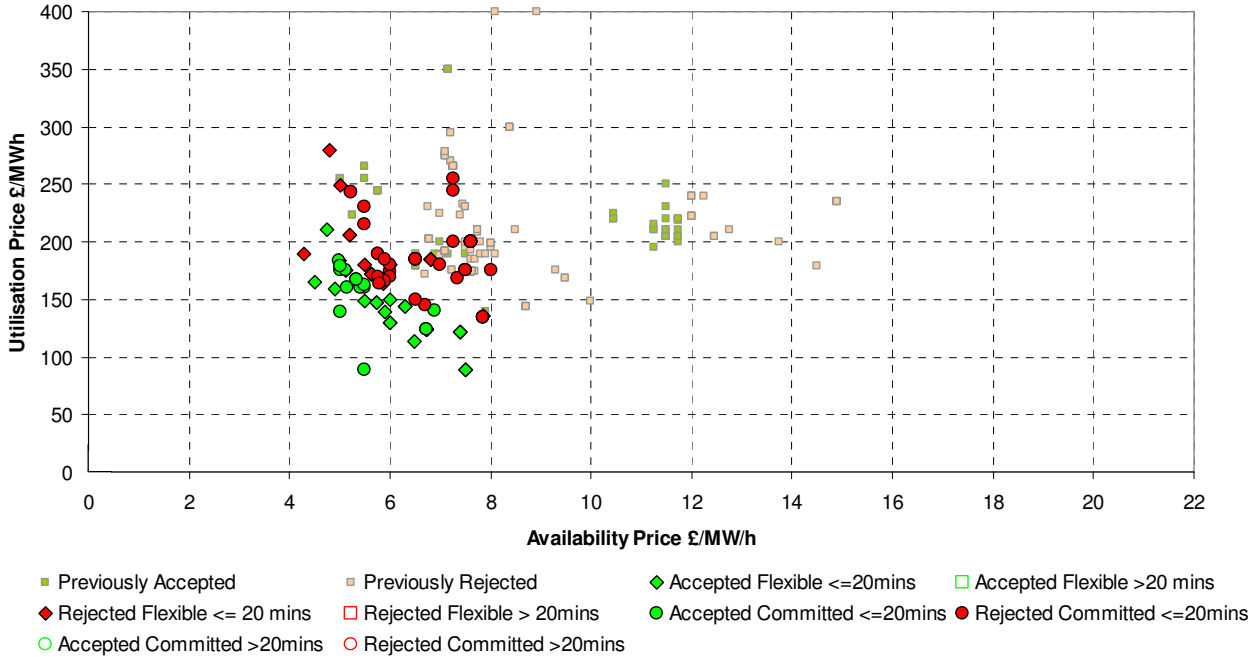


Figure 4 Year 7 Availability and Utilisation price charts

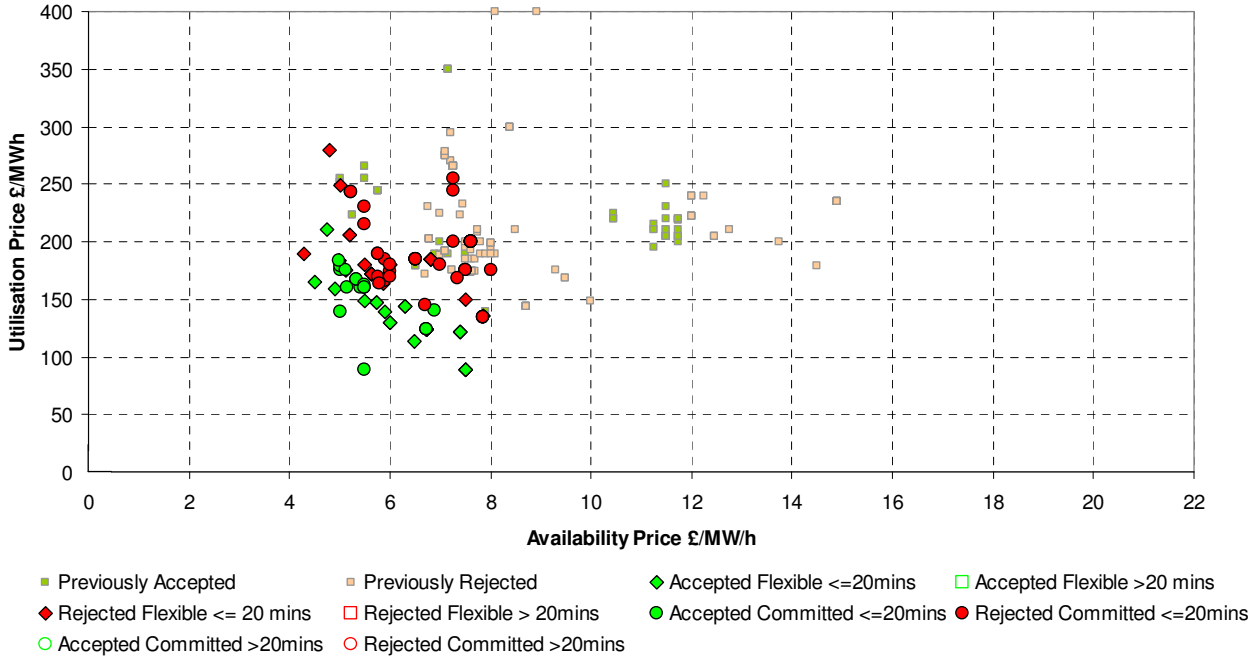




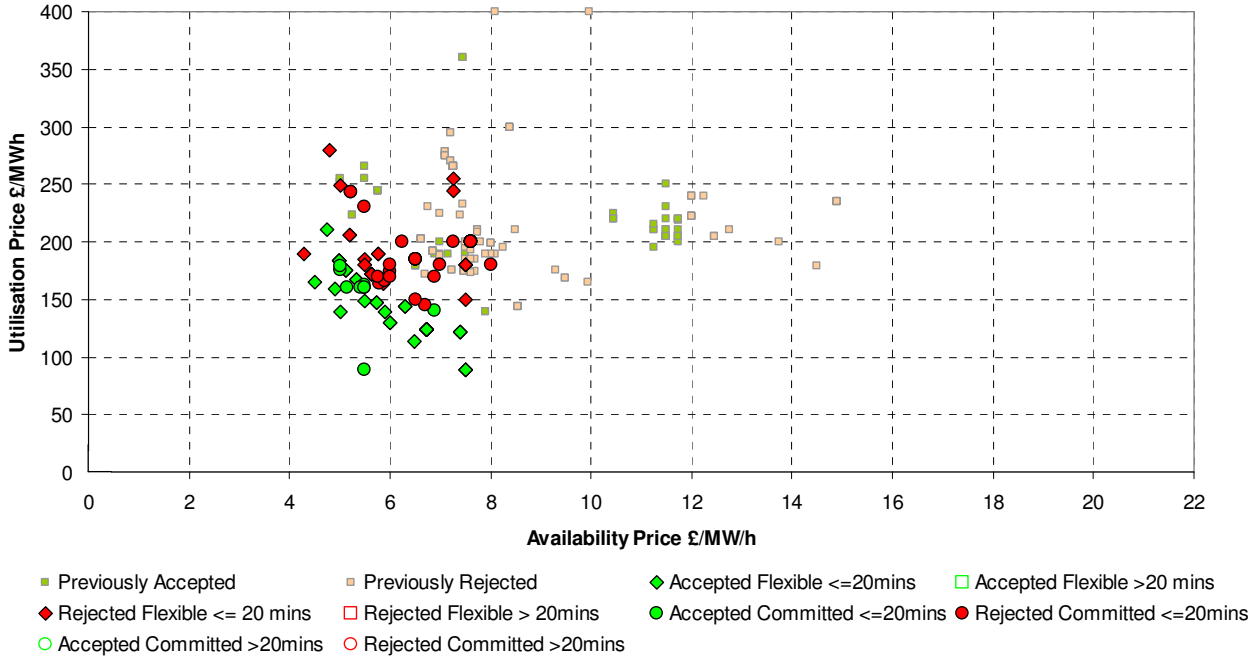
Submitted prices from Tender Round 12.18: Season 7.3



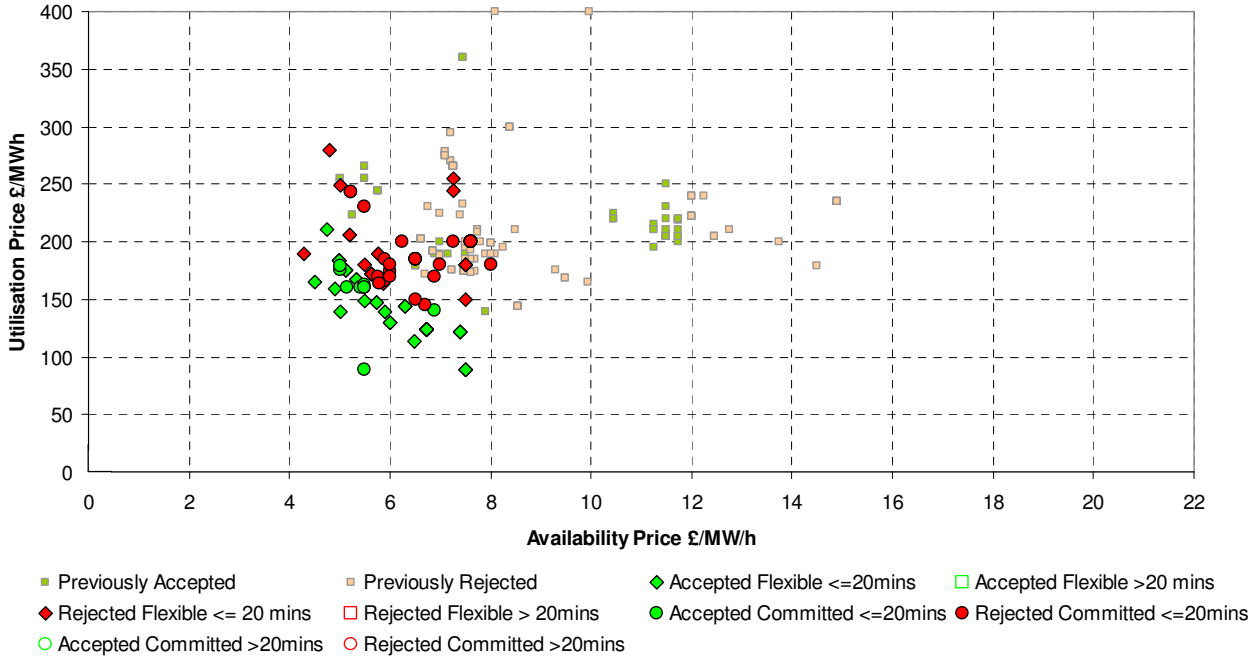
Submitted prices from Tender Round 12.18: Season 7.4



Submitted prices from Tender Round 12.18: Season 7.5



Submitted prices from Tender Round 12.18: Season 7.6



Section 1.3 MW Capacity

Figures 5 and 6 exhibit cumulative graphs. In these graphs the total accepted MW from previous tender rounds, up to and including the results from TR 18, have been stacked according to two categories: **Figures 5a and 6a** illustrate the accepted MW stacked in terms of the utilisation price of a unit and **Figures 5b and 6b** illustrate the accepted MW stacked according to the response time of the unit, both sets of data are arranged in ascending order. **Figure 5a** shows that for season 6.6 there is approximately 2200MW of contracted STOR with utilisation prices of £225/MWh or less. **The utilisation prices have had indexation applied (seasonal and annual) for Year 6 only as Year 7 indexes are not currently known. Please note that the charts in Section 1.3 include MW from flexible units, which may not be available at all times. Also note that the charts contain data from previous tender rounds up to and including TR 18.**

Figure 5a: Cumulative MW by Utilisation Price for Year 6

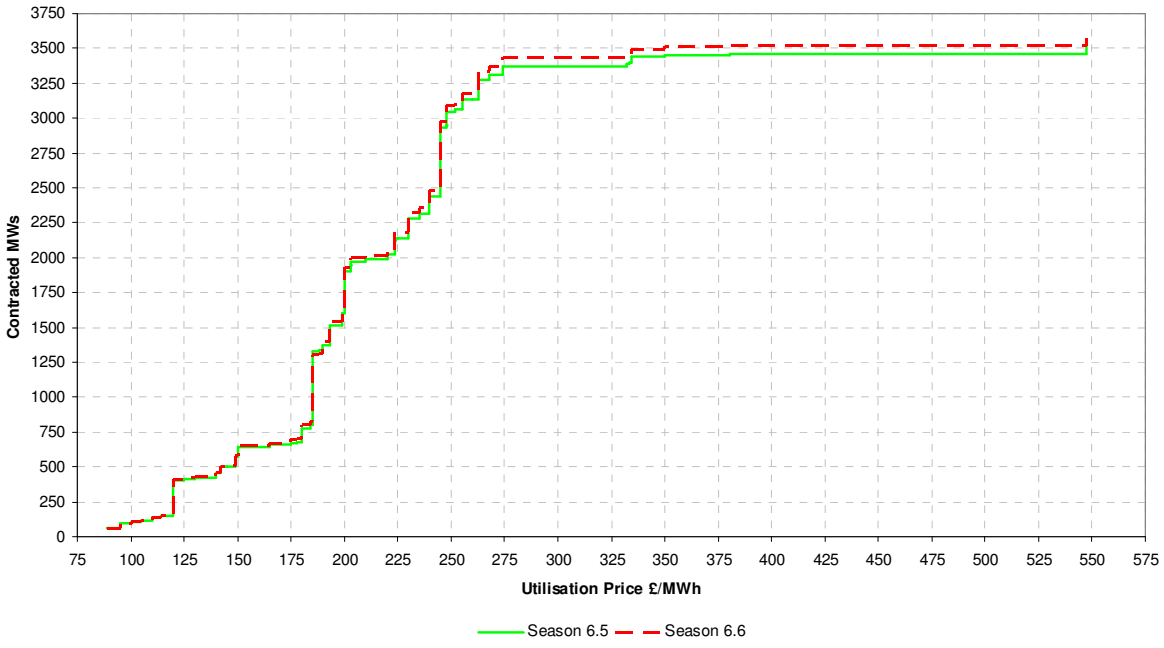


Figure 5b: Cumulative MW by Response Time for Year 6

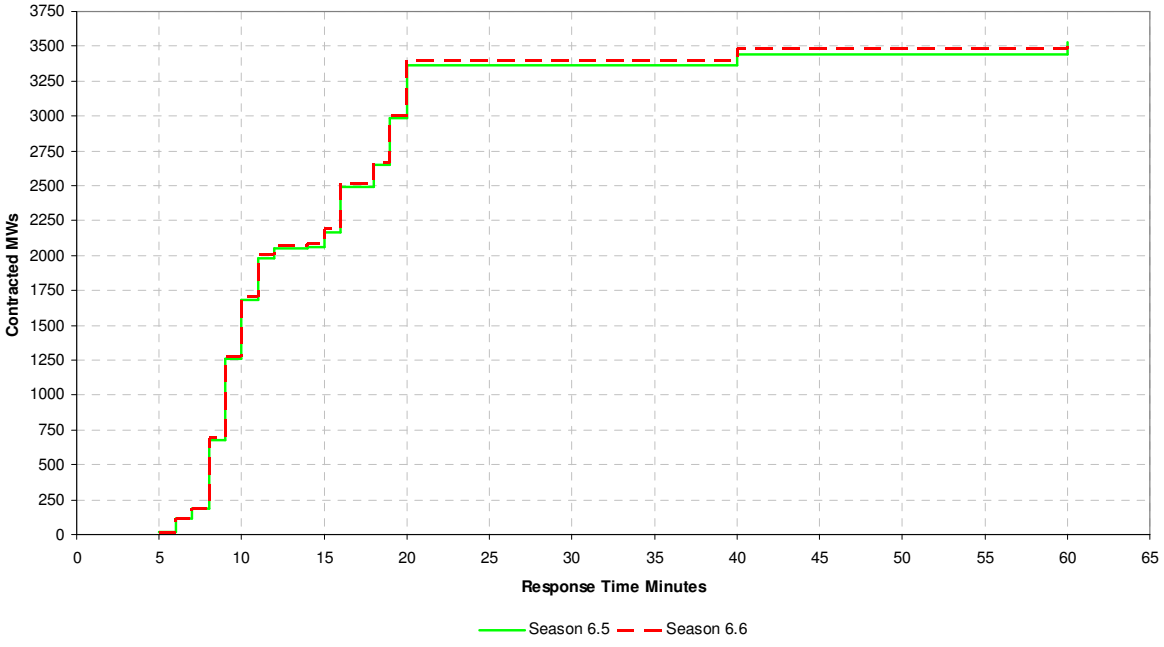


Figure 6b illustrates that for seasons 7.5 and 7.6 approximately 1400MW of STOR is contracted with a response time of 10 minutes or less. **No indexation has been applied to Year 7 utilisation prices, the utilisation prices are presented according to their original base year.**

Figure 6a: Cumulative MW by Utilisation Price for Year 7

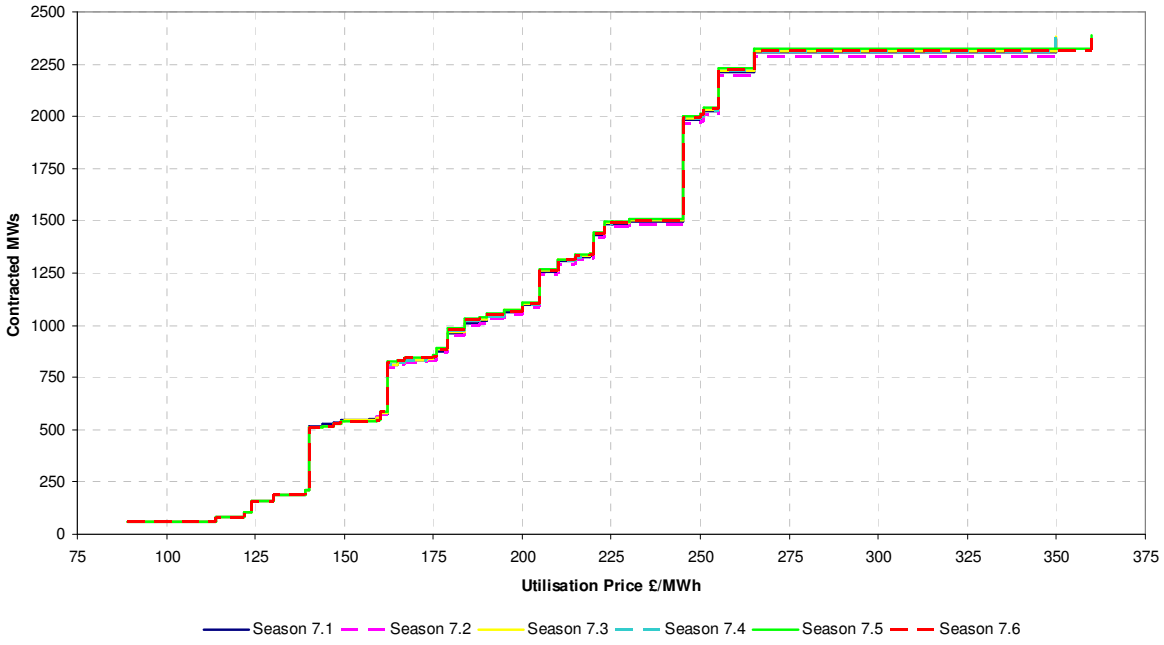
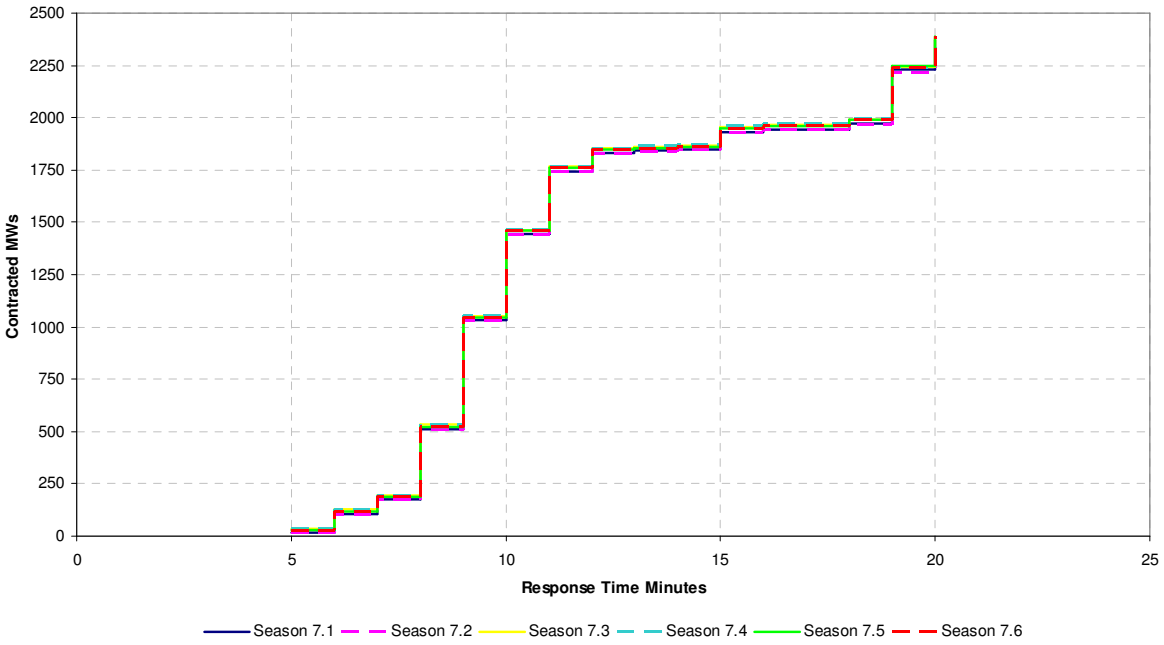


Figure 6b: Cumulative MW by Response Time for Year 7

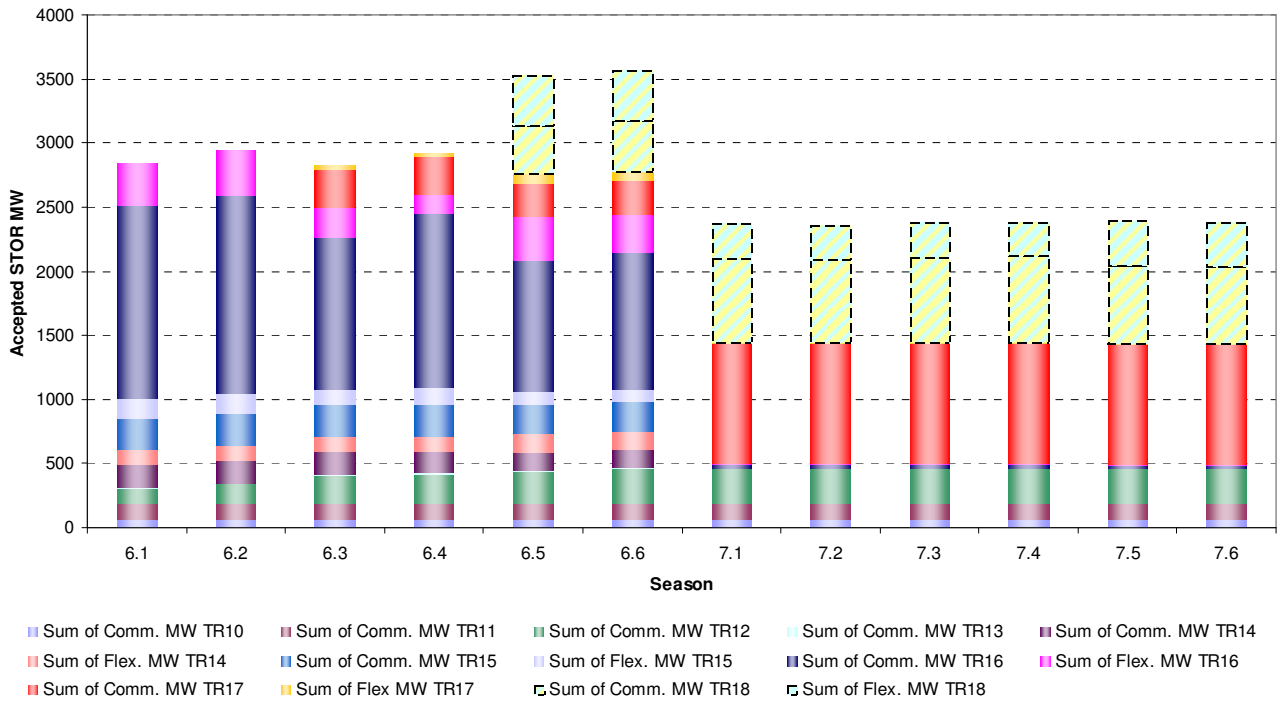


Section 2 Total Contracted Position

Figure 7 shows the breakdown of accepted volumes by committed and flexible services across the seasons of Years 6 and 7. The table accompanying Figure 7 below displays the same data in table format.

Figure 7 Year 6 and 7 summaries by tender round

Please note this figure contains data from previous tender rounds up to and including TR 18.



	Season	6.1		6.2		6.3		6.4		6.5		6.6	
	Service Type	C	F	C	F	C	F	C	F	C	F	C	F
Accepted MW	TR10	68	0	68	0	68	0	68	0	68	0	68	0
	TR11	116	0	116	0	116	0	116	0	116	0	116	0
	TR12	120	0	158	0	229	0	236	0	257	0	277	0
	TR13	8	0	8	0	8	0	8	0	8	0	8	0
	TR14	177	115	177	117	177	118	167	118	140	145	140	145
	TR15	250	149	253	152	245	125	253	125	236	93	232	93
	TR16	1514	328	1549	340	1181	234	1361	151	1026	340	1072	296
	TR17	0	0	0	0	290	30	290	30	260	73	260	73
	TR18	0	0	0	0	0	0	0	0	381	387	401	392
	Total	2253	592	2329	609	2314	507	2499	424	2492	1038	2574	999

	Season	7.1		7.2		7.3		7.4		7.5		7.6	
	Service Type	C	F	C	F	C	F	C	F	C	F	C	F
Accepted MW	TR10	68	0	68	0	68	0	68	0	68	0	68	0
	TR11	116	0	116	0	116	0	116	0	116	0	116	0
	TR12	276	0	274	0	275	0	276	0	277	0	277	0
	TR13	0	0	0	0	0	0	0	0	0	0	0	0
	TR14	0	0	0	0	0	0	0	0	0	0	0	0
	TR15	0	0	0	0	0	0	0	0	0	0	0	0
	TR16	32	10	32	10	32	10	32	10	22	10	22	10
	TR17	939	9	937	9	937	9	936	9	939	9	939	9
	TR18	650	273	643	270	668	265	678	257	602	348	597	348
	Total	2081	292	2070	289	2096	284	2106	276	2024	367	2019	367

Appendix 1: Terminology and Definitions

High level description of STOR:
STOR is designed to give National Grid sufficient Operating Reserve to replace sudden generation losses, or unpredictable changes in demand between four hours ahead of real time and real time and requires a large proportion of units to be available within 20 minutes. STOR also recognises that other potential reserve providers who cannot meet the 20 minute response time criteria can still be of value in meeting our reserve requirement. Hence a key aspect of the definition of the STOR product is that it extends the maximum response time to 240 minutes to allow alternative providers to participate. How value is placed on these units by National Grid is different to the sub 20 minute notice units as the longer notice units compete mainly with alternative options available in the Balancing Mechanism with equivalent response times. Location, reliability and utilisation parameters are also important elements of the STOR assessment.

The committed service applies to all providers who wish to make themselves available for all required windows nominated by National Grid. Both BM and NBM providers can tender for this service. The flexible service applies only to NBM providers and allows the provider to make the unit available or unavailable for particular windows. This availability is assessed on a week-ahead basis and providers are notified if their service is required or not. It is at the discretion of National Grid whether a unit is accepted or rejected at the week-ahead stage and this decision will be based on the same assessment principles as the main tender assessment. The increased accuracy of the week-ahead forecast means that some factors may have more importance such as location if specific constraint issues are forecast. Both Services attract an availability payment paid on a £/MW/h basis when available within defined windows and an utilisation payment on delivery of STOR MW when instructed by National Grid paid on a £/MWh basis.

A summary of the STOR service can be found on our website at the following link:

http://www.nationalgrid.com/NR/rdonlyres/72D4386B-2027-474C-B281-2384F5B21A5E/40978/TR11STORGeneralDescriptionFinal.pdf

Appendix 2:

Accepted and Rejected Tenders TR18: A list of information containing prices, response time, location and unit type of all accepted and rejected tenders from this tender round, previously found in the appendix to the market information reports, can now be downloaded, in spreadsheet format, from the tender and reports section of the National Grid Balancing Services webpage:

http://www.nationalgrid.com/uk/Electricity/Balancing/services/STOR/

Appendix 3: Season Reference

The following tables summarise the season information for the current year (Year 6) and the following year (Year 7).

Seasons 2012/13								
Season	Dates	WD		NWD		Hours/Day Type		Total
		Start Time	End Time	Start Time	End Time	WD	NWD	
1	05:00 on Sunday 1st Apr 2012 - 05:00 on Monday 30th Apr 2012	07:00	13:30	10:00	14:00	218.5	39	257.5
		19:00	22:00	19:30	22:00			
2	05:00 on Monday 30th Apr 2012 - 05:00 on Monday 20th Aug 2012	07:30	14:00	09:30	13:30	1069.5	133	1202.5
		16:00	18:00	19:30	22:30			
		19:30	22:30					
3	05:00 on Monday 20th Aug 2012 - 05:00 on Monday 24th Sep 2012	07:30	14:00	10:30	13:30	348	36	384
		16:00	21:30	19:00	22:00			
4	05:00 on Monday 24th Sep 2012 - 05:00 on Monday 29th Oct 2012	07:00	13:30	10:30	13:30	330	32.5	362.5
		16:30	21:00	17:30	21:00			
5	05:00 on Monday 29th Oct 2012 - 05:00 on Monday 4th Feb 2013	07:00	13:30	10:30	13:30	931.5	127.5	1059
		16:00	21:00	16:00	20:30			
6	05:00 on Monday 4th Feb 2013 - 05:00 on Monday 1st Apr 2013	07:00	13:30	10:30	13:30	528	60	588
		16:30	21:00	16:30	21:00			
						3425.5	428	3853.5

Season	WD	NWD
1	23	6
2	93	19
3	29	6
4	30	5
5	81	17
6	48	8

Total Hours	3853.5

Seasons 2013/14								
Season	Dates	WD		NWD		Hours/Day Type		Total
		Start Time	End Time	Start Time	End Time	WD	NWD	
1	05:00 on Monday 1st Apr 2013 - 05:00 on Monday 29th Apr 2013	07:00	13:30	10:00	14:00	218.5	32.5	251
		19:00	22:00	19:30	22:00			
2	05:00 on Monday 29th Apr 2013 - 05:00 on Monday 19th Aug 2013	07:30	14:00	09:30	13:30	1081	126	1207
		16:00	18:00	19:30	22:30			
		19:30	22:30					
3	05:00 on Monday 19th Aug 2013 - 05:00 on Monday 23rd Sep 2013	07:30	14:00	10:30	13:30	348	36	384
		16:00	21:30	19:00	22:00			
4	05:00 on Monday 23th Sep 2013 - 05:00 on Monday 28th Oct 2013	07:00	13:30	10:30	13:30	330	32.5	362.5
		16:30	21:00	17:30	21:00			
5	05:00 on Monday 28th Oct 2013 - 05:00 on Monday 3rd Feb 2014	07:00	13:30	10:30	13:30	931.5	127.5	1059
		16:00	21:00	16:00	20:30			
6	05:00 on Monday 3rd Feb 2014 - 05:00 on Tuesday 1st Apr 2014	07:00	13:30	10:30	13:30	539	60	599
		16:30	21:00	16:30	21:00			
						3448	414.5	3862.5

Season	WD	NWD
1	23	5
2	94	18
3	29	6
4	30	5
5	81	17
6	49	8

Total Hours	3862.5