

# STOR Market Information Report: Tender Round 24

## (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 24 (TR24). 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, frequently asked questions, or how and when to tender please consult the STOR section found on the National Grid Balancing Services information website:

<http://www2.nationalgrid.com/uk/services/balancing-services/reserve-services/short-term-operating-reserve/>

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://www2.nationalgrid.com/uk/Industry-information/electricity-transmission-operational-data/>

<http://www2.nationalgrid.com/UK/Industry-information/Electricity-transmission-operational-data/Report-explorer/Services-Reports/>

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://www2.nationalgrid.com/WorkArea/DownloadAsset.aspx?id=29290>

This report is divided into two sections:

- Section 1 provides a summary of tendered and accepted volumes and price information across STOR seasons in 2014/15 (Year 8) and 2015/16 (Year 9). 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 8 and 9 from TR24 and previous tender rounds.

**This report is under continuous review and improvement, if you have any comments or suggestions of information you would like to see in future issues of this report, please contact your account manager or STOR service leads: [Nicholas.Blair@nationalgrid.com](mailto:Nicholas.Blair@nationalgrid.com) and [Owen.Zambuko@nationalgrid.com](mailto:Owen.Zambuko@nationalgrid.com)**

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## 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<sup>\*</sup>, 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

National Grid aims to procure STOR tenders such that a minimum of 1800MW of contracted STOR is made available throughout the STOR seasons. The daily and seasonal optimal STOR MW level varies due to real-time and seasonal pressures on the system, but National Grid typically aims to achieve approximately 2200-2300MW of STOR available where economic to do so. This optimal STOR level can include STOR units with a response time greater than 20 minutes if the economics of those units are sufficient. A unit's tendered response time and price are, and will remain, key factors in the assessment of STOR tenders.

National Grid manages the optimal STOR MW level at a daily resolution through the week-ahead Flexible STOR assessment, refining the available portfolio in response to the forecast conditions for the week-ahead. In order to achieve the optimal level at the week-ahead stage, National Grid examines historic availability profiles from Committed and Flexible providers to help determine the volume of STOR tenders to procure at the tri-annual tender round.

In TR22 for seasons 8.1 and 8.2, National Grid reduced its ORR and hence the optimal level of STOR for these seasons was reduced to 2200MW. National Grid also increased its forecast of availability levels from Committed and Flexible units for those seasons. At the subsequent tender round the optimal level for the immediate seasons (8.3 and 8.4) was reassessed and increased back to 2300MW. For this tender round the level has been re-assessed and for the immediate seasons of 8.5 and 8.6 remains at 2300MW.

## Premium Flexible STOR

As a consequence of the competitive STOR market, Flexible providers who tender and are accepted early in the tender round calendar, have been suffering from being undercut at later tender opportunities and thus being rejected at the week ahead stage, failing to receive any contract revenue. National Grid has worked with the market to produce a development which will provide some security to this sector of the market.

As with the Flexible option, this is open to non-BM participants and for accepted tenders provides the option to tender in their availability for the week ahead on the preceding Friday. Within the Invitation to Tender Pack for STOR Tender Round 24 National Grid has defined "premium windows" for each season and if, at the week ahead stage, a successful Premium Flexible STOR provider offers availability during these premium windows National Grid guarantees to accept the offered availability for the whole day at the week ahead assessment<sup>†</sup>. This essentially offers the Premium Flexible units protection from being undercut in subsequent tender rounds where they offer availability to National Grid in the windows of greatest value to National Grid. As a result of offering this additional security and accepting the additional risk, National Grid applies a devaluation to these tenders when compared to traditional Flexible tenders during the main tender assessment. Under this contract option providers also have the ability to request secondary assessment (at the main tender assessment stage) as a standard Flexible tender should their tender be rejected as a premium tender due to the devaluation.

<sup>\*</sup> [http://www.nationalgrid.com/NR/ronlyres/7B8CA1AB-4964-4965-B5A2-126C8C202A11/40677/STOR\\_Assessment\\_Principles.pdf](http://www.nationalgrid.com/NR/ronlyres/7B8CA1AB-4964-4965-B5A2-126C8C202A11/40677/STOR_Assessment_Principles.pdf)

<sup>†</sup> A minimum of 85% of daily tendered premium window availability will be accepted where the premium window is offered at the week ahead stage. See the STOR Frequency Asked Questions document available from the STOR service link on page 1 for further details

The STOR assessment principles, which are available via the link on page 1, describe the differences in the assessment of Premium Flexible tenders compared to standard tenders. However in brief, a forecast of the level of availability is used to reduce the alternative availability cost used in the calculation of cost benefits. The definition of the alternative availability cost is slightly modified to be the minimum of the forecast cost of creating reserve via the BM or the cost of alternative firm contract options available for the same time period within this tender round.

## Tenders Received in TR24

On Market Day for TR24 (22<sup>nd</sup> August 2014), National Grid received tenders from 31 separate companies for 154 different units across the two years. This included 1 new 5MW from a new participant.

### Year 8 (2014/15)

This tender round was the final tender opportunity for seasons 8.5 and 8.6, 1131MW and 1169MW were tendered for these seasons respectively in addition to the 2723MW and 2687MW already contracted for these seasons. Two units with response times greater than 20 minutes were tendered for seasons 5 and 6 (84MW).

The Premium Flexible product continues to be popular with approximately 390MW tendered for season 8.5 & 8.6 compared to approximately 200MW of standard flexible tenders. This represents 66% of the tendered flexible volume for season 5 and 6.

### Year 9 (2015/16)

27 companies tendered ~ 86 units for seasons 1 to 6 in year 9. This represents up to 1997, 1975 and 2019MW for seasons 1, 3 and 5 respectively; if all were available concurrently. Based on the tenders received and accepted in year 8 there still remains ~600MW that have yet to tender for seasons in year 9.

## The STOR Marketplace Continues to be Competitive and Heavily Subscribed

The maximum volume of STOR tendered for year 8 has increased slightly in comparison to year 7. Excluding long term tenders and one off speculative tenders there remains ~1200MW of tendered STOR capacity without a contract. See Figure 1 for further details.

**Subsequent to the creation of this report 76MW of accepted BM committed capacity has withdrawn from the STOR market. All data and charts in this report include this capacity. This change will be reflected in subsequent market reports.**

## Successful Tenders in TR24

### Year 8 (2014/15)

For Year 8 seasons 5 and 6, the combined capacity of tenders received in TR24 along with the STOR already procured in previous tender rounds would result in a level of STOR availability that would exceed the optimal STOR level. Thus, the tenders that were accepted in TR24 were those that demonstrated the most cost-beneficial prices up to a level that would provide sufficient MW to deliver the optimal STOR level for these seasons.

### Premium Flexible in Year 8

For seasons 5 and 6, all of the 46 premium flexible tenders were accepted as Premium giving 382MW in addition to the 334MW already contracted as Premium Flexible.

### Year 9 (2015/16)

For year 9 there is already a significant proportion of the requirement contracted from the previous tender round and from the tenders received it would be possible to fully meet the existing requirement. Only the most competitive tenders were therefore accepted resulting in ~400MW for season 1 and ~ 440MW for season 5. There remains significant volume to contract at the subsequent opportunities for year 9.

### Premium Flexible in Year 9

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For season 1, 30 tenders for the Premium Flexible service were received (221MW), 4 units were accepted as Premium Flexible (26MW) and a further 7 units were accepted as standard flexible (40MW) and the remaining units were rejected.

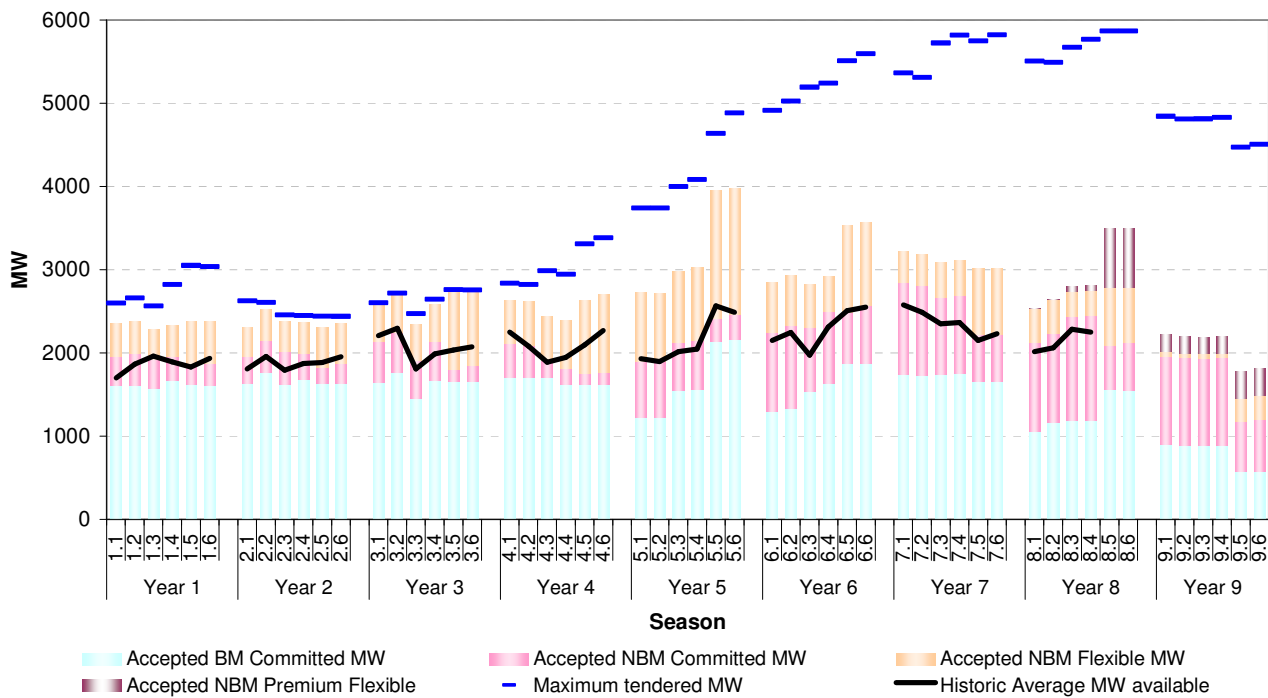
For season 5, there were 31 premium tenders received (424MW), two units (35MW) were accepted as Premium Flexible units, 20 units were accepted as standard flexible (132MW) and 9 units were rejected. accepted as standard flexible units.

**Figure 1** gives a breakdown of the accepted Flexible and Committed MW per season since the start of the STOR service. Premium Flexible tenders are included in the Flexible category for the purpose of this chart. 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 TR24. Subsequent to the creation of this report 76MW of accepted BM committed capacity has withdrawn from the STOR market. All data and charts in this report include this capacity. This change will be reflected in subsequent market reports.

**Figure 1**

**Breakdown of Accepted Flexible and Committed MW per season**



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 8 and Year 9. The table is split into Flexible (including Premium 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 24. Years 8 and 9 were available to tender for in tender rounds 10-12 through the long term tender options. These rows are highlighted on the tables below. Subsequent to the creation of this report 76MW of accepted BM committed capacity has withdrawn from the STOR market. All data and charts in this report include this capacity. This change will be reflected in subsequent market reports.

Table 1 Year 8 Summary

Season	8.1			8.2			8.3			8.4			8.5			8.6			
	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	
<b>Total Minimum Requirements MW</b>	1800			1800			1800			1800			1800			1800			
TR 10 Rejected MW (LONG TERM)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TR 10 Accepted MW (LONG TERM)	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	68	0	0	
TR 11 Rejected MW (LONG TERM)	424	0	0	420	0	0	422	0	0	424	0	0	426	0	0	426	0	0	
TR 11 Accepted MW (LONG TERM)	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0	
TR 12 Rejected MW (LONG TERM)	587	0	0	583	0	0	585	0	0	587	0	0	589	0	0	589	0	0	
TR 12 Accepted MW (LONG TERM)	273	0	0	271	0	0	272	0	0	273	0	0	274	0	0	274	0	0	
TR 19 Rejected MW	1668	134	0	1638	134	0	1617	134	0	1632	134	0	1357	238	0	1467	214	0	
TR 19 Accepted MW	476	0	0	577	0	0	582	0	0	580	0	0	605	14	0	602	14	0	
TR 20 Rejected MW	1686	40	0	1691	40	0	1745	40	0	1675	40	0	1370	228	0	1630	168	0	
TR 20 Accepted MW	605	136	0	619	138	0	619	116	0	621	116	0	318	122	0	362	118	0	
TR 21 Rejected MW	1291	20	88	1248	20	82	1285	8	84	1308	8	86	780	292	0	1125	177	0	
TR 21 Accepted MW	424	0	0	414	8	0	441	0	0	451	0	0	247	91	0	247	91	0	
TR 22 Rejected MW	1034	209	0	1026	200	0	1040	216	0	1062	216	0	658	233	0	736	182	0	
TR 22 Accepted MW	84	267	88	84	265	88	139	79	0	140	79	0	196	243	0	178	227	0	
TR 23 Rejected MW	0	0	0	0	0	0	814	233	0	918	233	0	678	297	0	696	303	0	
TR 23 Accepted MW	0	0	0	0	0	0	118	170	84	118	171	86	47	382	0	47	343	0	
TR 24 Rejected MW	0	0	0	0	0	0	0	0	0	0	0	0	337	17	0	337	21	0	
TR 24 Accepted MW	0	0	0	0	0	0	0	0	0	0	0	0	217	476	84	235	490	86	
sub Total Rejected MW	6890	403	88	6606	394	82	7508	631	84	7606	631	86	6195	1305	0	7006	1065	0	
sub Total Accepted MW	2046	403	88	2149	411	88	2355	365	84	2367	366	86	2088	1328	84	2129	1283	86	
<b>Total Accepted MW</b>	2537			2648			2804			2819			3500			3498			
Average Rejected Availability Price (£/MWh)	TR 10 (LT)	£	-	£	-	£	-	£	-	£	-	£	-	£	-	£	-	£	-
	TR 11 (LT)	£	19.32	£	-	£	19.28	£	-	£	19.30	£	-	£	19.33	£	-	£	19.33
	TR 12 (LT)	£	12.26	£	-	£	12.25	£	-	£	12.26	£	-	£	12.27	£	-	£	12.27
	TR 19	£	5.40	£	6.73	£	5.63	£	6.73	£	5.64	£	6.73	£	5.55	£	6.28	£	5.58
	TR 20	£	4.15	£	3.31	£	4.15	£	3.31	£	4.19	£	3.31	£	4.35	£	3.54	£	4.33
	TR 21	£	2.89	£	2.94	£	2.90	£	2.94	£	2.94	£	3.00	£	3.27	£	3.54	£	2.98
Average Accepted Availability Price (£/MWh)	TR 10 (LT)	£	7.00	£	-	£	7.00	£	-	£	7.15	£	-	£	7.45	£	-	£	7.45
	TR 11 (LT)	£	11.00	£	-	£	11.00	£	-	£	11.00	£	-	£	11.00	£	-	£	11.00
	TR 12 (LT)	£	11.51	£	-	£	11.51	£	-	£	11.51	£	-	£	11.52	£	-	£	11.52
	TR 19	£	4.06	£	-	£	3.99	£	-	£	3.99	£	-	£	3.98	£	4.00	£	3.99
	TR 20	£	3.87	£	3.59	£	3.91	£	3.58	£	3.91	£	3.62	£	5.00	£	3.74	£	5.07
	TR 21	£	1.83	£	-	£	1.83	£	1.50	£	1.84	£	-	£	1.28	£	0.50	£	1.28
Average Rejected Utilisation Price (£/MWh)	TR 10 (LT)	£	-	£	-	£	-	£	-	£	-	£	-	£	-	£	-	£	-
	TR 11 (LT)	£	187	£	-	£	185	£	-	£	186	£	-	£	190	£	-	£	191
	TR 12 (LT)	£	222	£	-	£	222	£	-	£	222	£	-	£	222	£	-	£	222
	TR 19	£	194	£	155	£	199	£	155	£	199	£	155	£	208	£	152	£	204
	TR 20	£	207	£	187	£	206	£	187	£	206	£	187	£	216	£	157	£	210
	TR 21	£	199	£	134	£	202	£	134	£	199	£	140	£	198	£	140	£	208
Average Accepted Utilisation Price (£/MWh)	TR 10 (LT)	£	350	£	-	£	350	£	-	£	350	£	-	£	350	£	-	£	350
	TR 11 (LT)	£	224	£	-	£	224	£	-	£	224	£	-	£	224	£	-	£	224
	TR 12 (LT)	£	206	£	-	£	206	£	-	£	206	£	-	£	206	£	-	£	206
	TR 19	£	163	£	-	£	163	£	-	£	163	£	-	£	163	£	-	£	163
	TR 20	£	152	£	136	£	151	£	134	£	151	£	130	£	143	£	136	£	139
	TR 21	£	183	£	-	£	184	£	150	£	185	£	-	£	236	£	145	£	236

Average Prices are Weighted by MW Volume and Hours Tendered

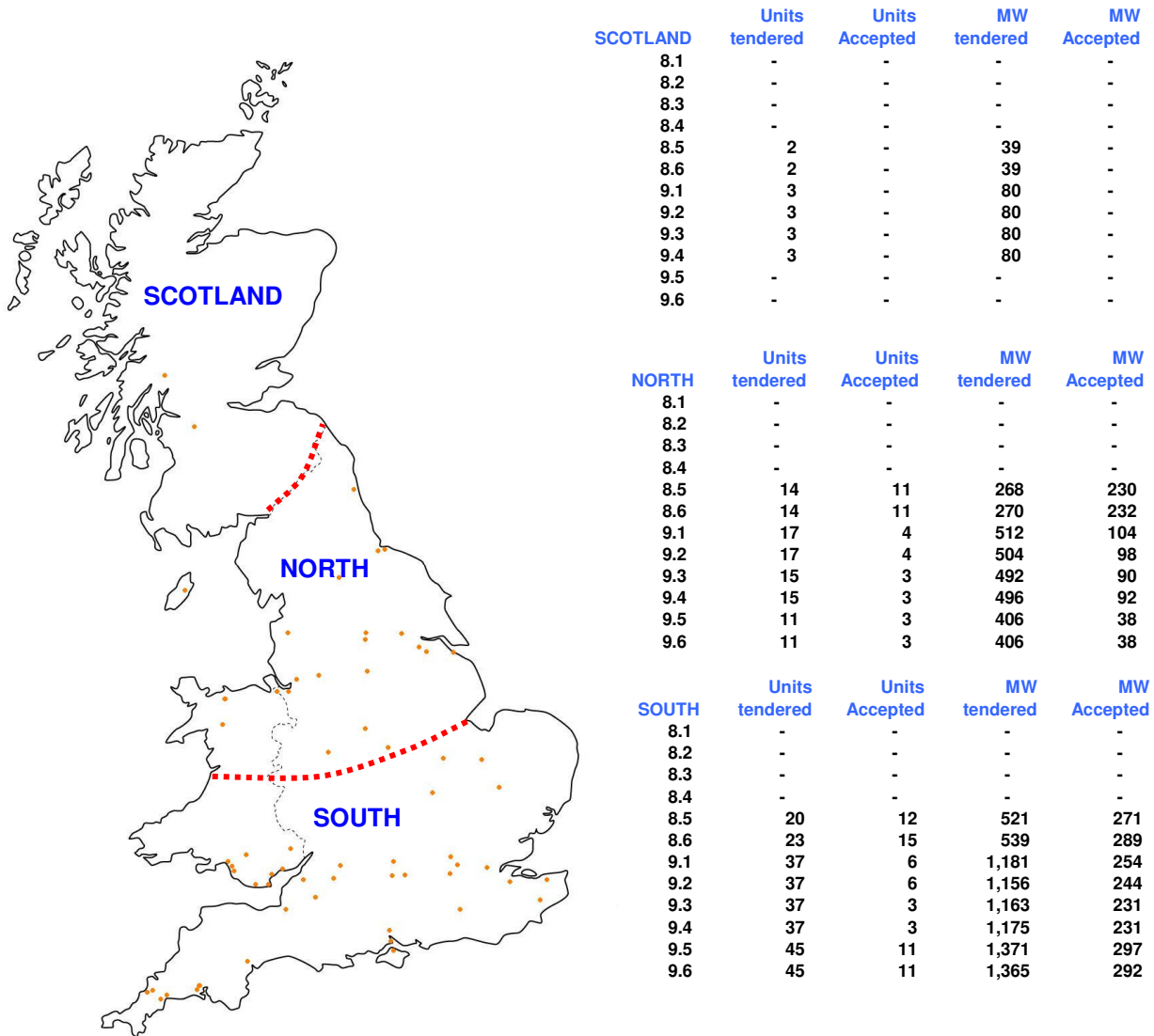
Table 2 Year 9 Summary

Season	9.1			9.2			9.3			9.4			9.5			9.6			
	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
<b>Total Minimum Requirements MW</b>	1800			1800			1800			1800			1800			1800			
TR 10 Rejected MW (LONG TERM)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TR 10 Accepted MW (LONG TERM)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
TR 11 Rejected MW (LONG TERM)	424	0	0	420	0	0	422	0	0	424	0	0	426	0	0	426	0	0	
TR 11 Accepted MW (LONG TERM)	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0	116	0	0	
TR 12 Rejected MW (LONG TERM)	587	0	0	583	0	0	585	0	0	587	0	0	589	0	0	589	0	0	
TR 12 Accepted MW (LONG TERM)	273	0	0	271	0	0	272	0	0	273	0	0	274	0	0	274	0	0	
TR 22 Rejected MW	1063	75	0	1051	75	0	1056	75	0	1061	75	0	1079	92	0	1074	92	0	
TR 22 Accepted MW	764	186	0	769	181	0	769	172	0	767	172	0	506	286	0	508	286	0	
TR 23 Rejected MW	1668	97	0	1639	104	0	1431	97	0	1439	97	0	1535	266	0	1594	211	0	
TR 23 Accepted MW	475	6	0	473	7	0	473	6	0	478	6	0	40	98	0	70	98	0	
TR 24 Rejected MW	1432	163	0	1415	163	0	1439	155	0	1453	155	0	1242	317	0	1296	262	0	
TR 24 Accepted MW	248	66	88	238	66	82	225	72	84	225	72	86	240	220	0	235	220	0	
sub Total Rejected MW	5174	335	0	5108	342	0	4933	327	0	4964	327	0	4871	675	0	4979	565	0	
sub Total Accepted MW	1876	258	88	1867	254	82	1855	250	84	1859	250	86	1176	604	0	1203	604	0	
<b>Total Accepted MW</b>	2222			2203			2189			2195			1780			1807			
Average Rejected Availability Price (£MWh)	TR 10 (LT)	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11 (LT)	£ 19.32	£ -	£ -	£ 19.28	£ -	£ -	£ 19.30	£ -	£ -	£ 19.32	£ -	£ -	£ 19.33	£ -	£ -	£ 19.33	£ -	£ -
	TR 12 (LT)	£ 12.26	£ -	£ -	£ 12.25	£ -	£ -	£ 12.26	£ -	£ -	£ 12.26	£ -	£ -	£ 12.27	£ -	£ -	£ 12.27	£ -	£ -
	TR 22	£ 8.26	£ 3.75	£ -	£ 8.26	£ 3.75	£ -	£ 8.26	£ 3.75	£ -	£ 8.26	£ 3.75	£ -	£ 10.16	£ 3.97	£ -	£ 8.57	£ 3.97	£ -
	TR 23	£ 3.26	£ 4.10	£ -	£ 3.26	£ 4.03	£ -	£ 3.15	£ 4.20	£ -	£ 3.25	£ 4.21	£ -	£ 5.91	£ 4.06	£ -	£ 3.15	£ 4.13	£ -
TR 24	£ 2.10	£ 1.44	£ -	£ 2.10	£ 1.46	£ -	£ 2.09	£ 1.43	£ -	£ 2.25	£ 1.45	£ -	£ 5.61	£ 2.00	£ -	£ 2.31	£ 2.09	£ -	
Average Accepted Availability Price (£MWh)	TR 10 (LT)	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11 (LT)	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -	£ 11.00	£ -	£ -
	TR 12 (LT)	£ 11.51	£ -	£ -	£ 11.51	£ -	£ -	£ 11.51	£ -	£ -	£ 11.51	£ -	£ -	£ 11.52	£ -	£ -	£ 11.52	£ -	£ -
	TR 22	£ 3.77	£ 2.29	£ -	£ 3.76	£ 2.27	£ -	£ 3.77	£ 2.24	£ -	£ 4.16	£ 2.24	£ -	£ 4.58	£ 2.85	£ -	£ 4.57	£ 2.84	£ -
	TR 23	£ 1.36	£ 1.50	£ -	£ 1.35	£ 2.00	£ -	£ 1.35	£ 1.50	£ -	£ 1.36	£ 1.50	£ -	£ 1.50	£ 0.71	£ -	£ 1.39	£ 0.71	£ -
TR 24	£ 1.00	£ 0.89	£ 0.49	£ 1.00	£ 0.89	£ 0.49	£ 1.00	£ 0.97	£ 0.49	£ 1.00	£ 0.97	£ 0.49	£ 1.00	£ 0.71	£ -	£ 1.00	£ 0.71	£ -	
Average Rejected Utilisation Price (£MWh)	TR 10 (LT)	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11 (LT)	£ 187	£ -	£ -	£ 185	£ -	£ -	£ 186	£ -	£ -	£ 187	£ -	£ -	£ 190	£ -	£ -	£ 191	£ -	£ -
	TR 12 (LT)	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -	£ 222	£ -	£ -
	TR 22	£ 206	£ 160	£ -	£ 206	£ 160	£ -	£ 206	£ 160	£ -	£ 206	£ 160	£ -	£ 205	£ 164	£ -	£ 205	£ 164	£ -
TR 23	£ 172	£ 133	£ -	£ 172	£ 132	£ -	£ 176	£ 132	£ -	£ 177	£ 132	£ -	£ 197	£ 163	£ -	£ 195	£ 159	£ -	
TR 24	£ 178	£ 118	£ -	£ 179	£ 118	£ -	£ 179	£ 117	£ -	£ 179	£ 117	£ -	£ 214	£ 124	£ -	£ 215	£ 125	£ -	
Average Accepted Utilisation Price (£MWh)	TR 10 (LT)	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -	£ -
	TR 11 (LT)	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -	£ 224	£ -	£ -
	TR 12 (LT)	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -	£ 206	£ -	£ -
	TR 22	£ 161	£ 147	£ -	£ 160	£ 148	£ -	£ 160	£ 151	£ -	£ 160	£ 151	£ -	£ 159	£ 155	£ -	£ 159	£ 155	£ -
TR 23	£ 219	£ 90	£ -	£ 219	£ 90	£ -	£ 219	£ 100	£ -	£ 219	£ 100	£ -	£ 230	£ 140	£ -	£ 204	£ 140	£ -	
TR 24	£ 182	£ 123	£ 99	£ 182	£ 123	£ 99	£ 185	£ 120	£ 99	£ 185	£ 120	£ 99	£ 185	£ 143	£ -	£ 185	£ 143	£ -	

Average Prices are Weighted by MW Volume and Hours Tendered

Figure 2 presents the number of units and the total MW tendered and accepted for each season and each location. The orange dots on the map indicate the approximate location of the units tendered in any season (not including sites located in more than one region).

Figure 2 Map of Great Britain



**MULTIPLE LOCATIONS (Aggregated sites)**

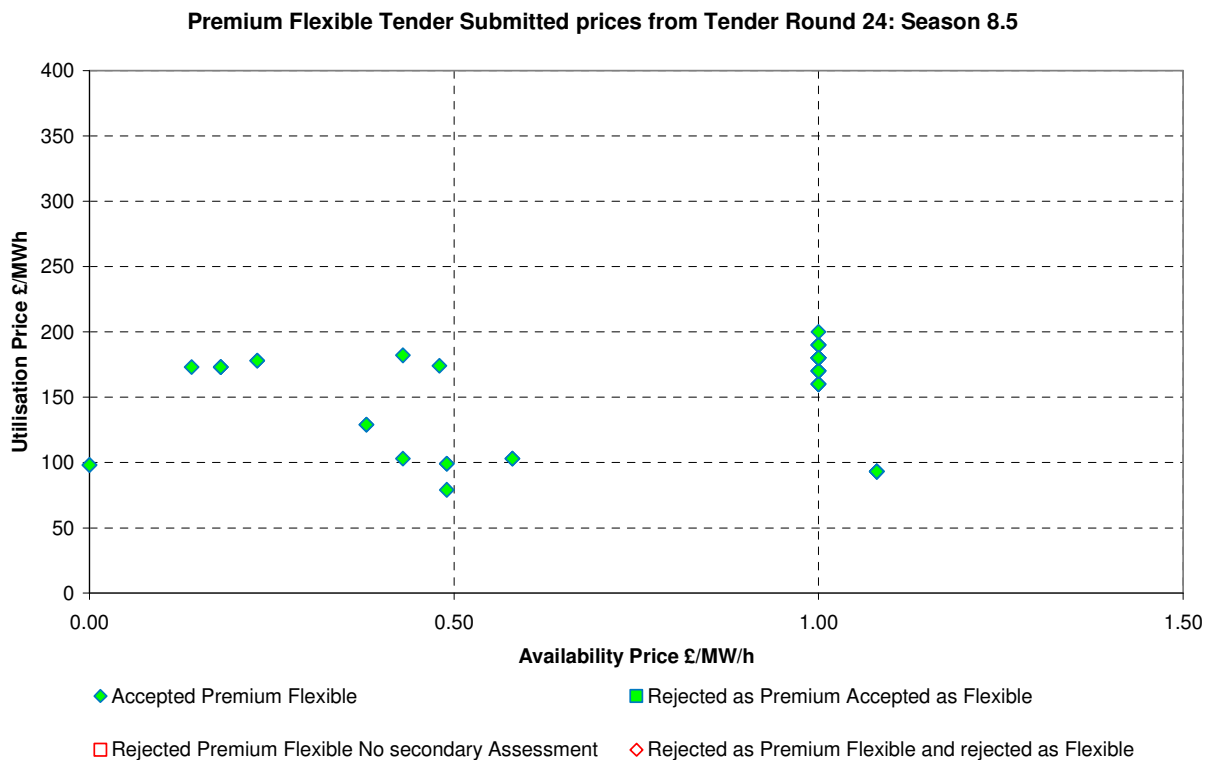
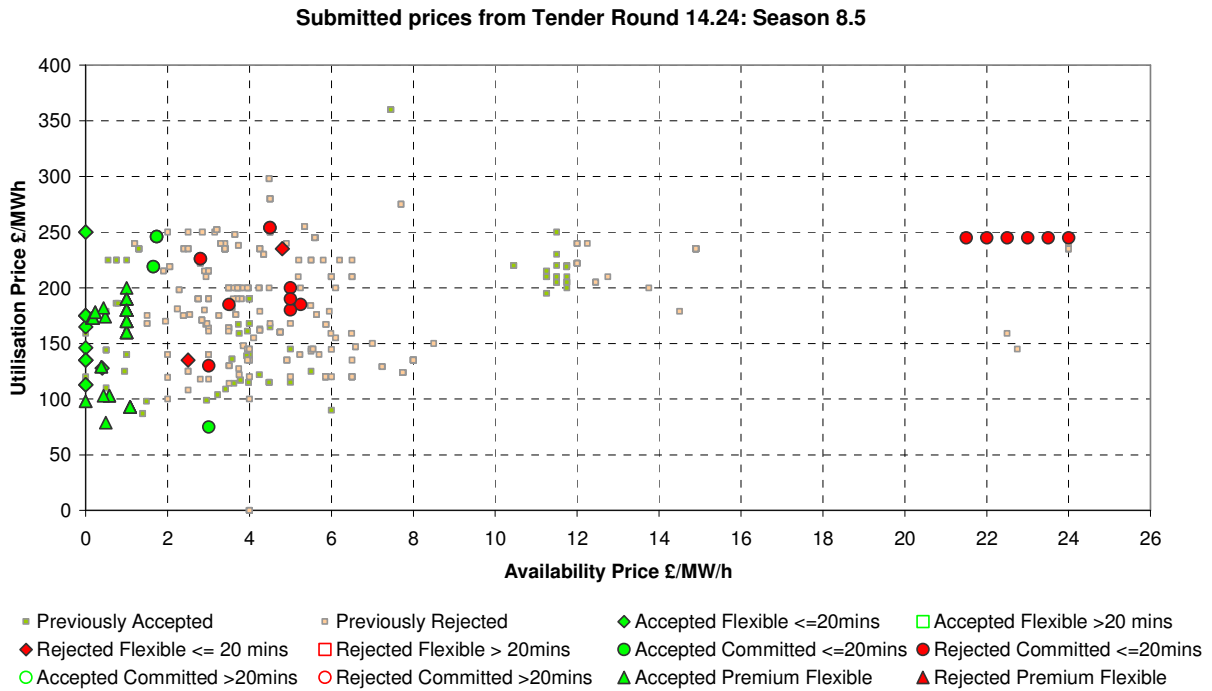
MULTIPLE	Units tendered	Units Accepted	MW tendered	MW Accepted
8.1	-	-	-	-
8.2	-	-	-	-
8.3	-	-	-	-
8.4	-	-	-	-
8.5	47	42	303	276
8.6	49	43	321	290
9.1	29	7	224	44
9.2	29	7	224	44
9.3	32	10	240	60
9.4	32	10	240	60
9.5	30	15	242	125
9.6	30	15	242	125



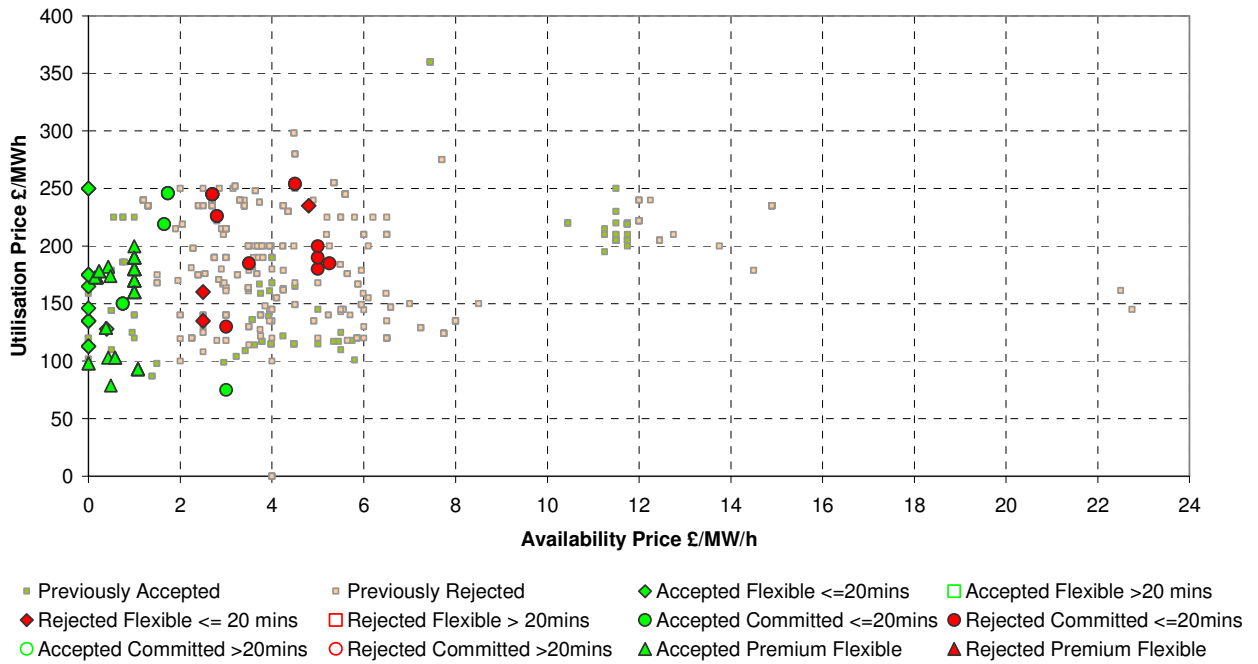
### Section 1.2 Prices

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 display any units accepted as Premium Flexible, or rejected as Premium Flexible if they were not then assessed as Flexible. If a unit was rejected as Premium Flexible and then assessed as Flexible, they are represented on the chart as normal Flexible tenders. These charts also depict the accepted and rejected tenders from previous tender rounds. Additional plots displaying only the Premium Flexible tenders are included for clarity.

**Figure 3 Year 8 Availability and Utilisation price charts**



Submitted prices from Tender Round 14.24: Season 8.6



Premium Flexible Tender Submitted prices from Tender Round 24: Season 8.6

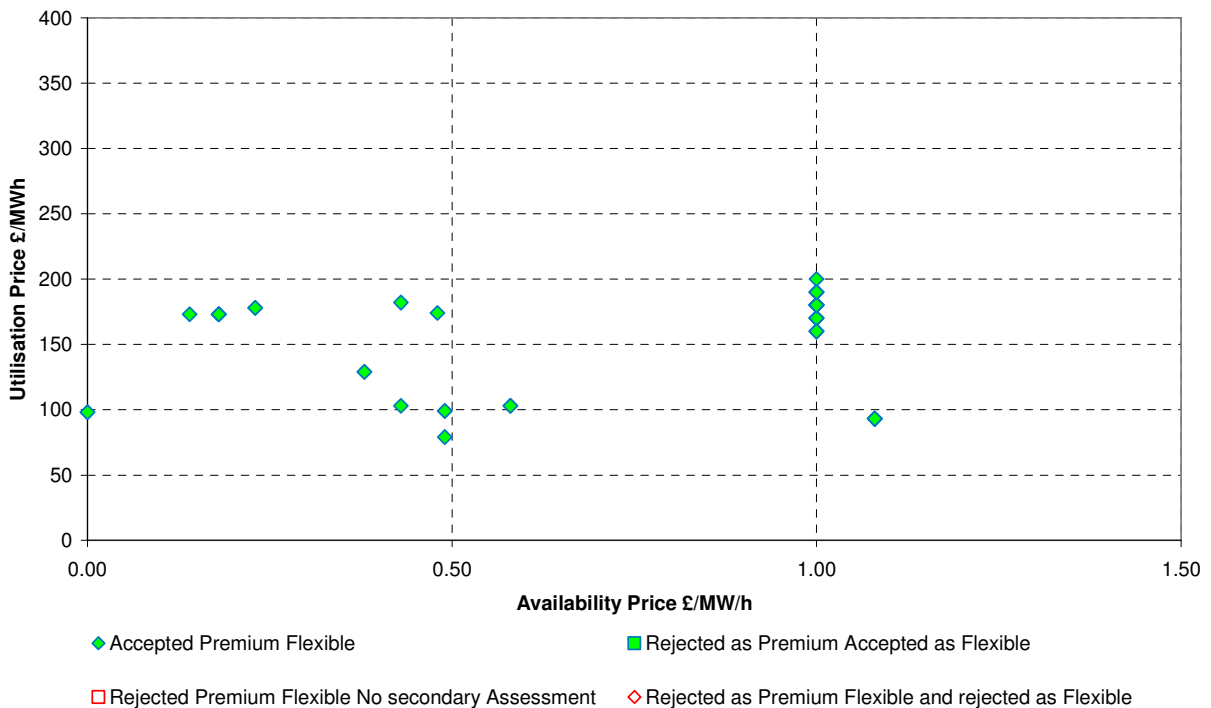
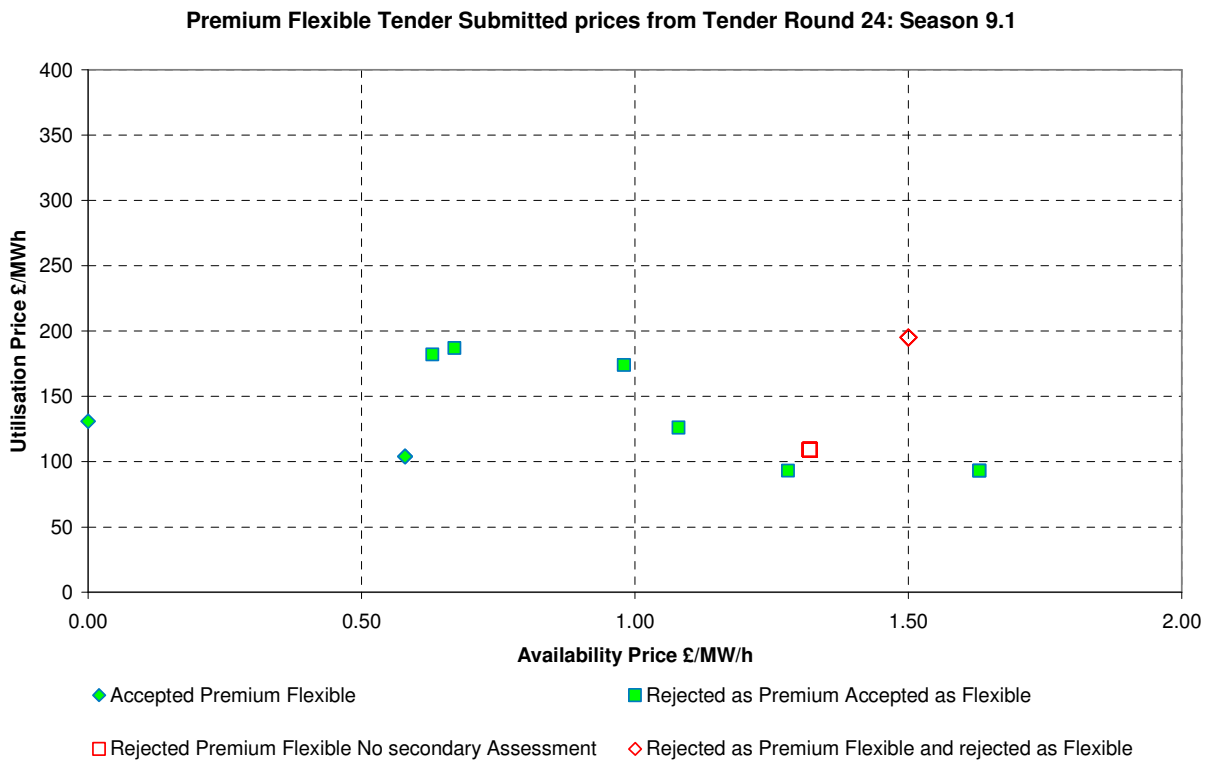
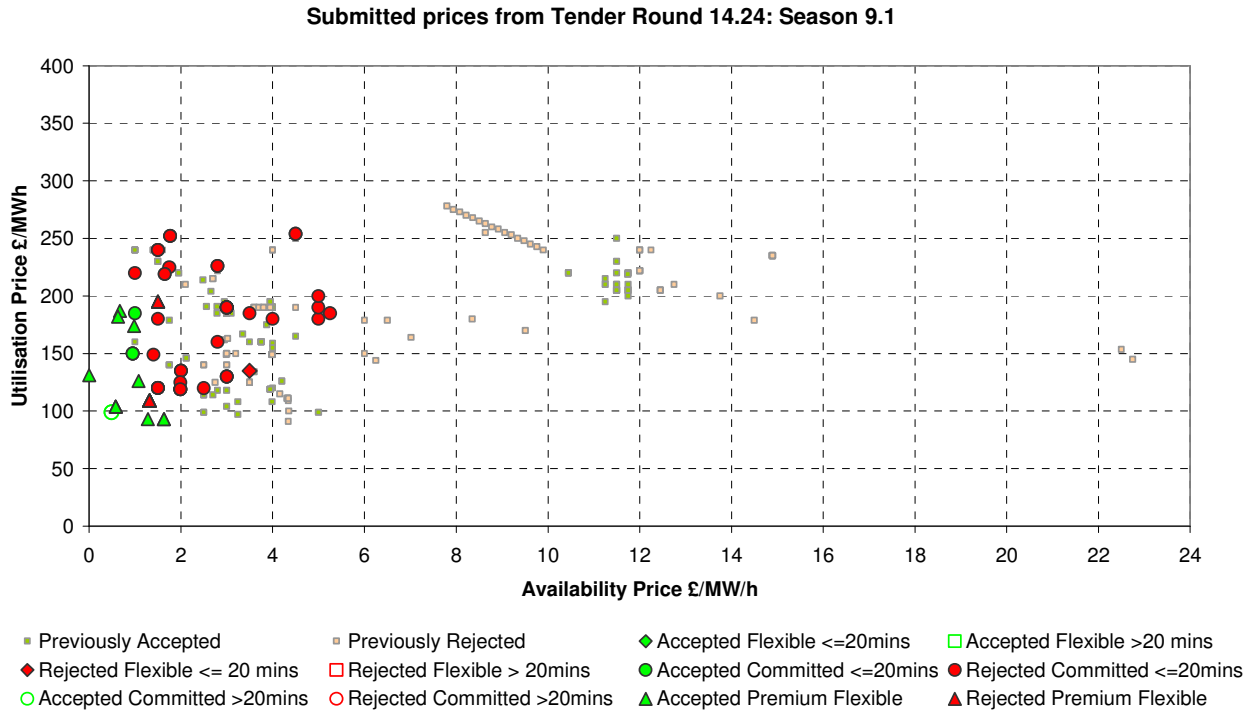
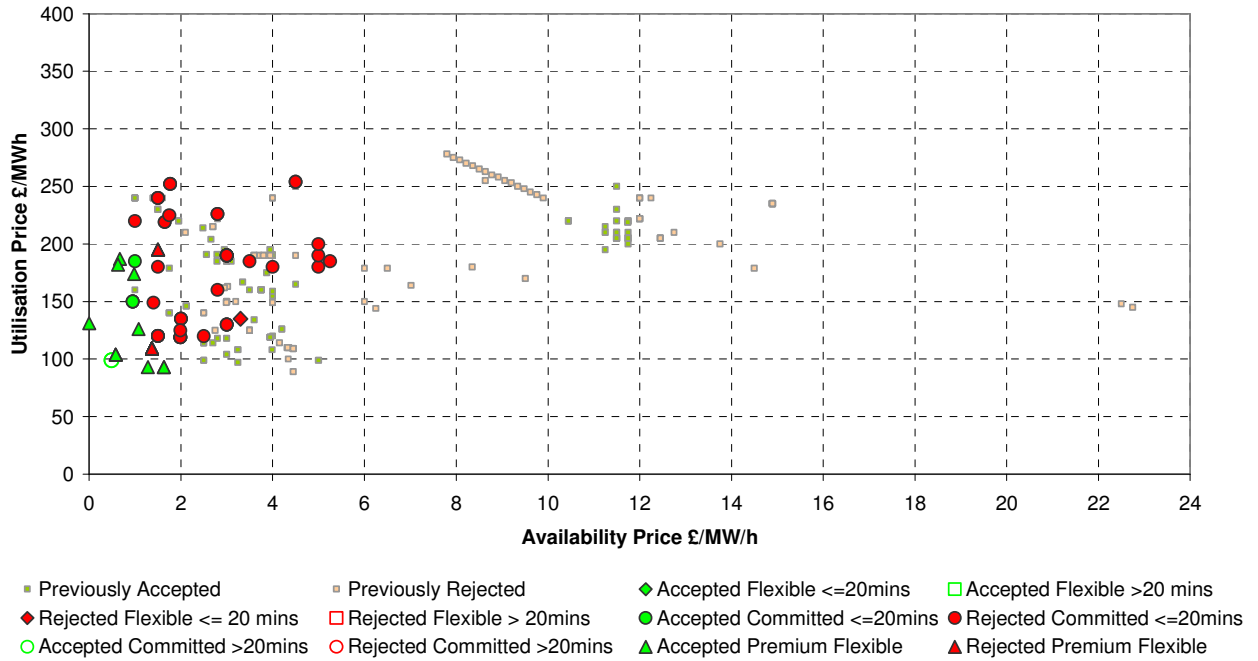


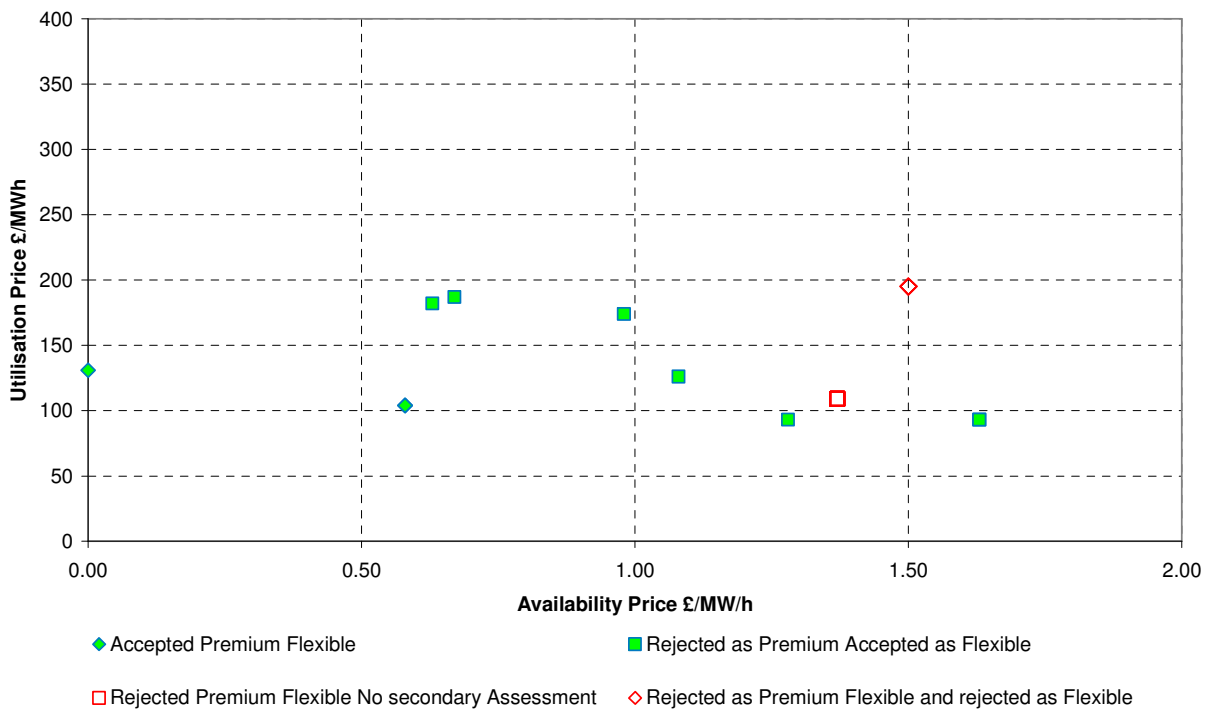
Figure 4 Year 9 Availability and Utilisation price charts



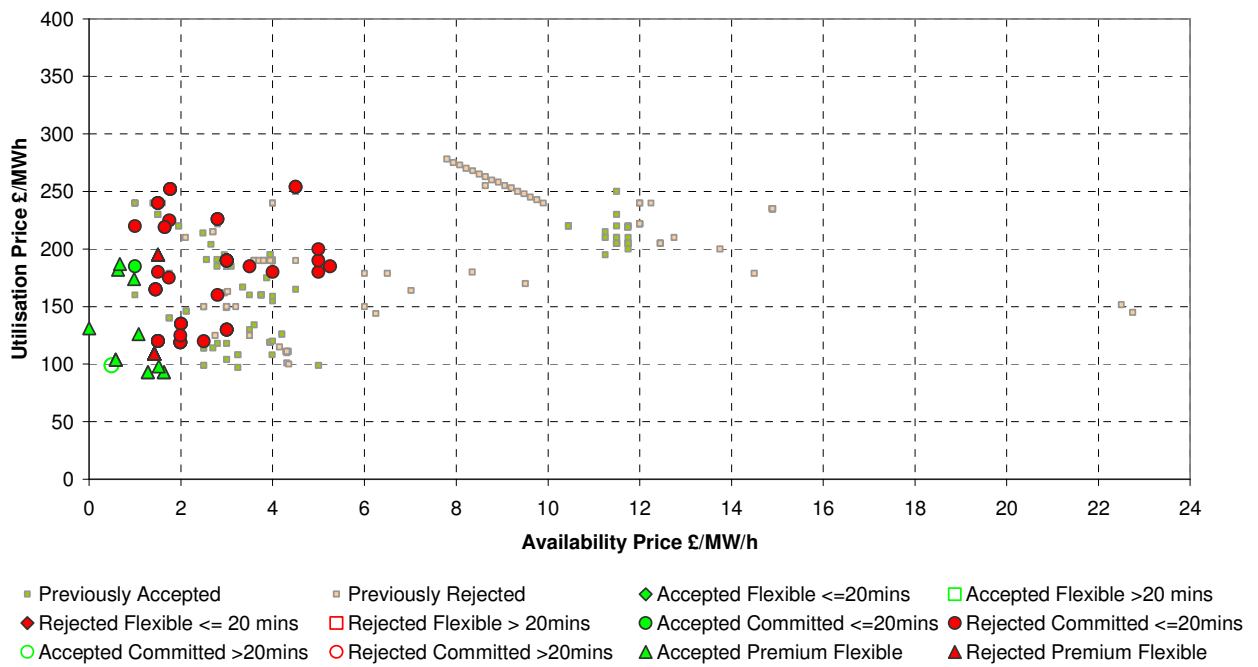
Submitted prices from Tender Round 14.24: Season 9.2



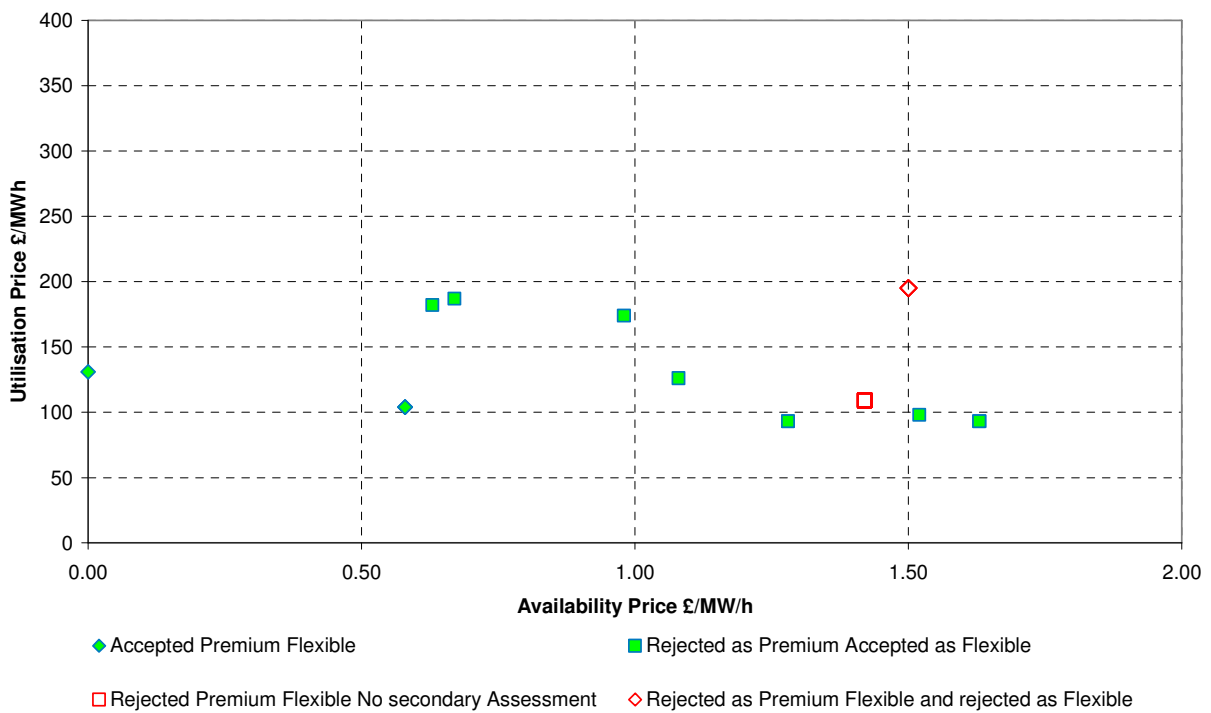
Premium Flexible Tender Submitted prices from Tender Round 24: Season 9.2



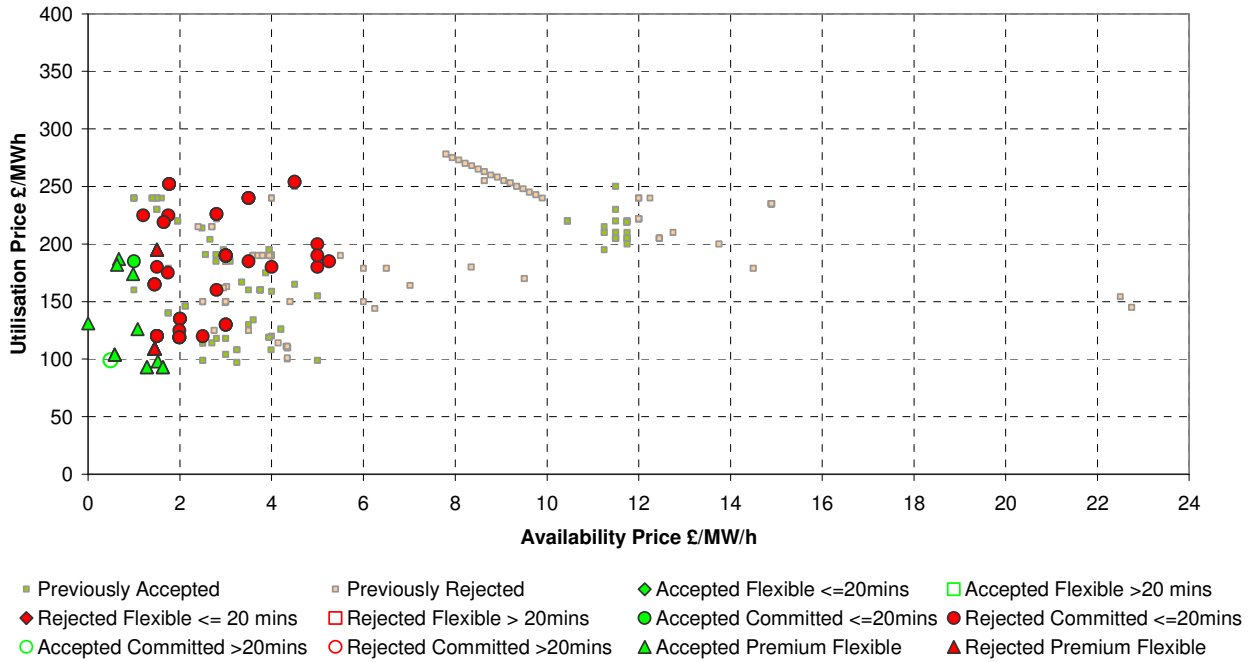
Submitted prices from Tender Round 14.24: Season 9.3



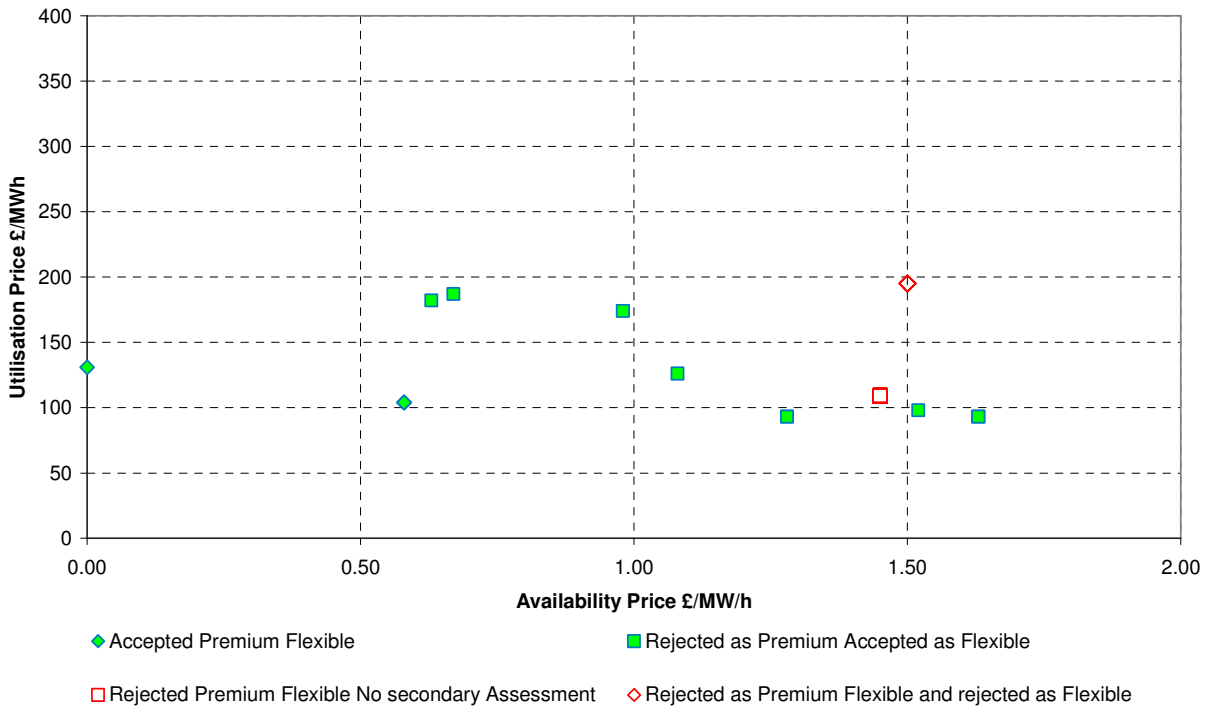
Premium Flexible Tender Submitted prices from Tender Round 24: Season 9.3



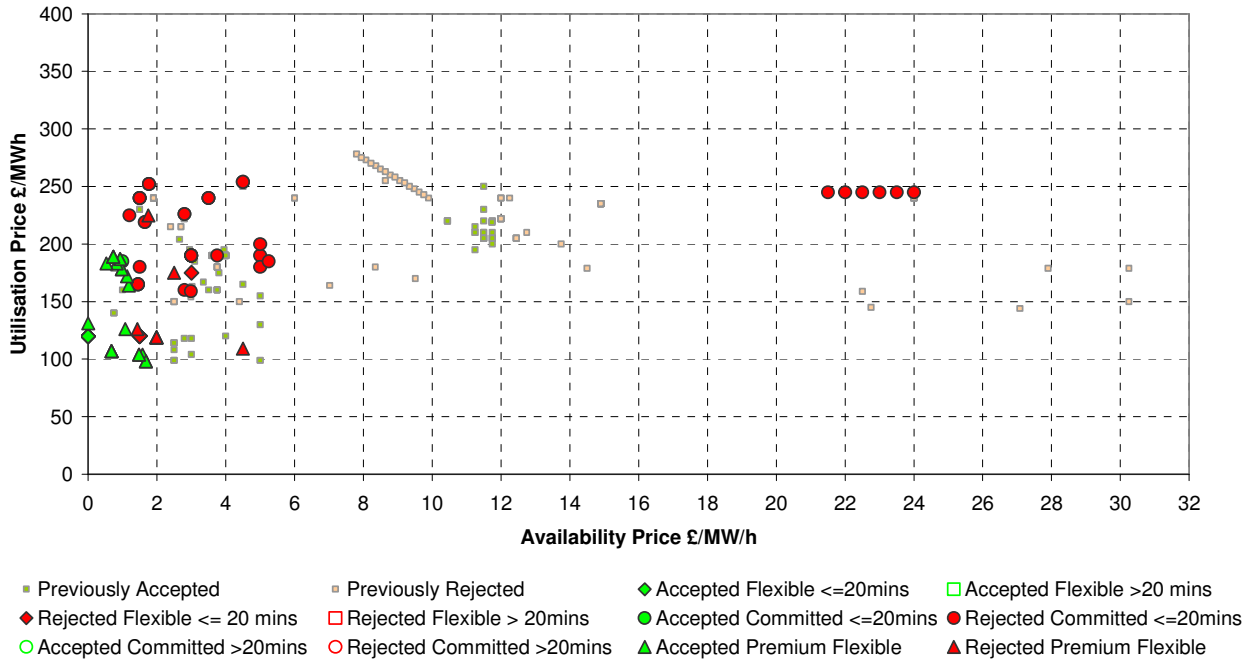
Submitted prices from Tender Round 14.24: Season 9.4



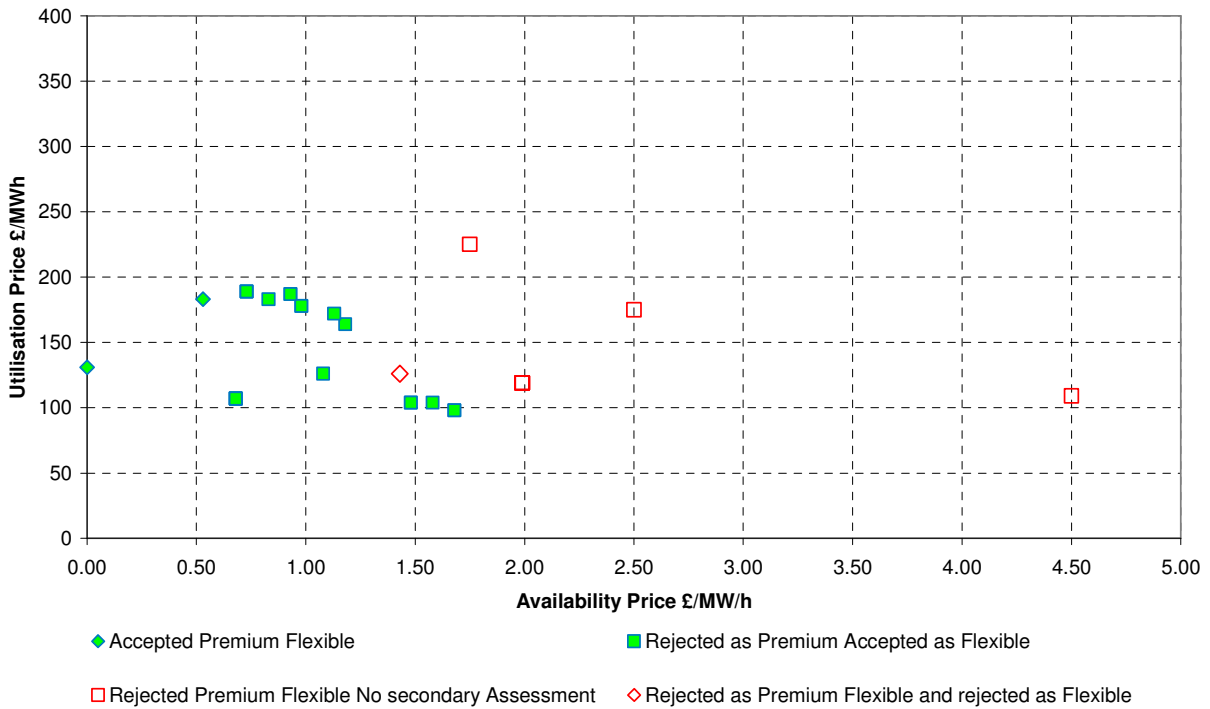
Premium Flexible Tender Submitted prices from Tender Round 24: Season 9.4



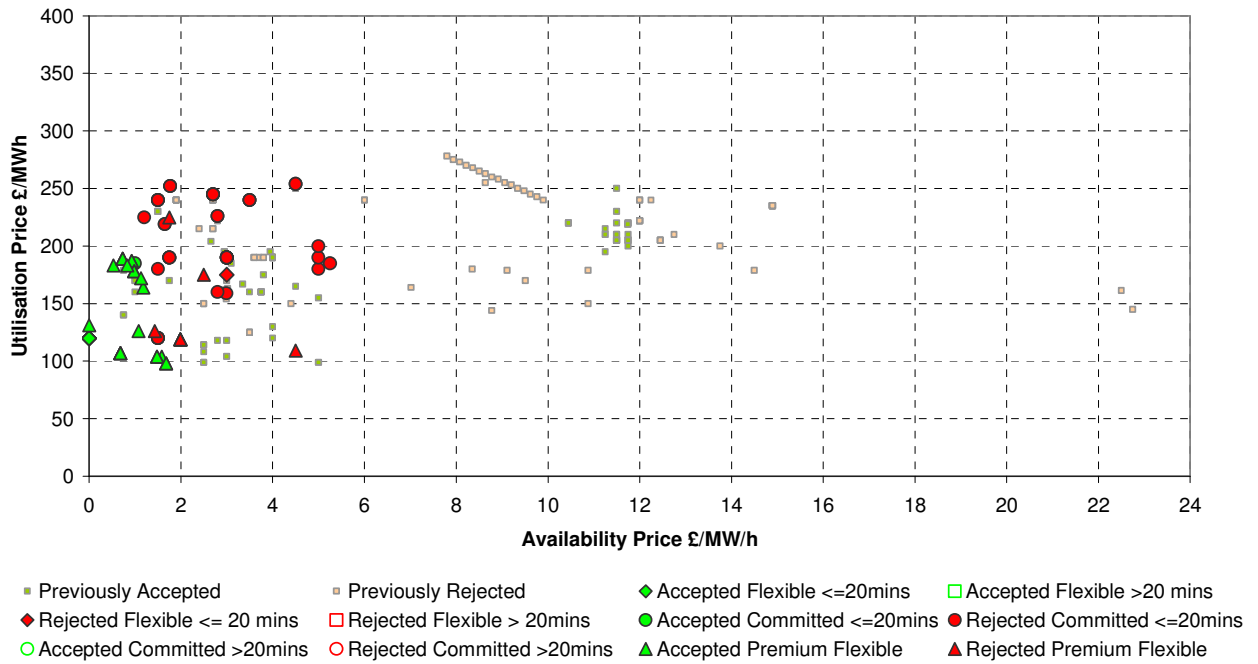
Submitted prices from Tender Round 14.24: Season 9.5



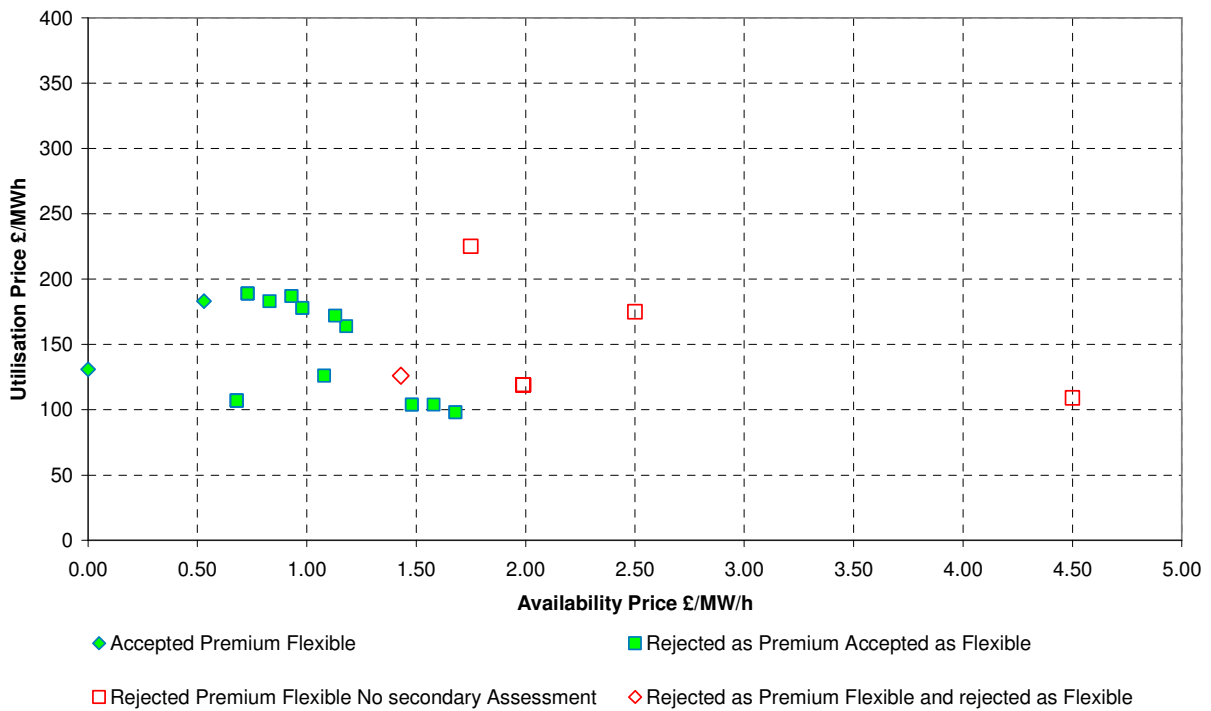
Premium Flexible Tender Submitted prices from Tender Round 24: Season 9.5



Submitted prices from Tender Round 14.24: Season 9.6



Premium Flexible Tender Submitted prices from Tender Round 24: Season 9.6





### 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 TR24, have been stacked according to two categories: **Figure 5a & 5b** is ranked according to utilisation price and **Figures 6a & 6b** according to the response time of the unit. **The utilisation prices have had indexation applied (seasonal and annual) these are final for season 8.5 but may change for the remaining seasons.** Please note that the charts in this section 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 TR24. Subsequent to the creation of this report 76MW of accepted BM committed capacity has withdrawn from the STOR market. All data and charts in this report include this capacity. This change will be reflected in subsequent market reports.

Figure 5a: Cumulative MW by Utilisation Price for Year 8

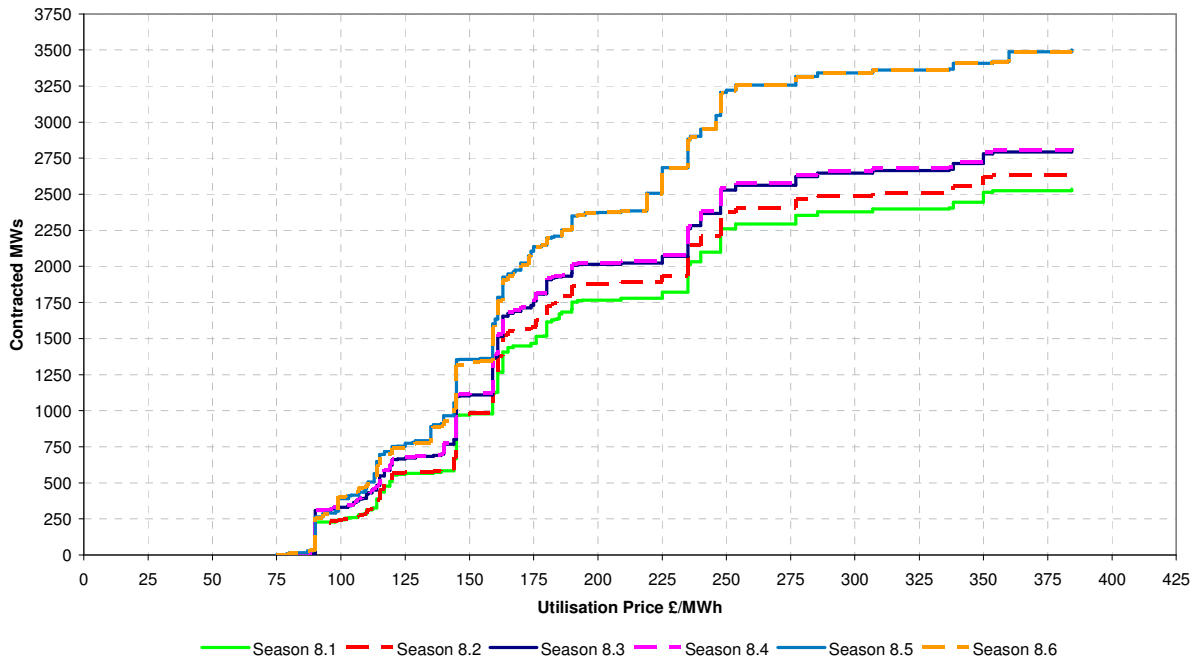


Figure 5b: Cumulative MW by Utilisation Price for Year 9

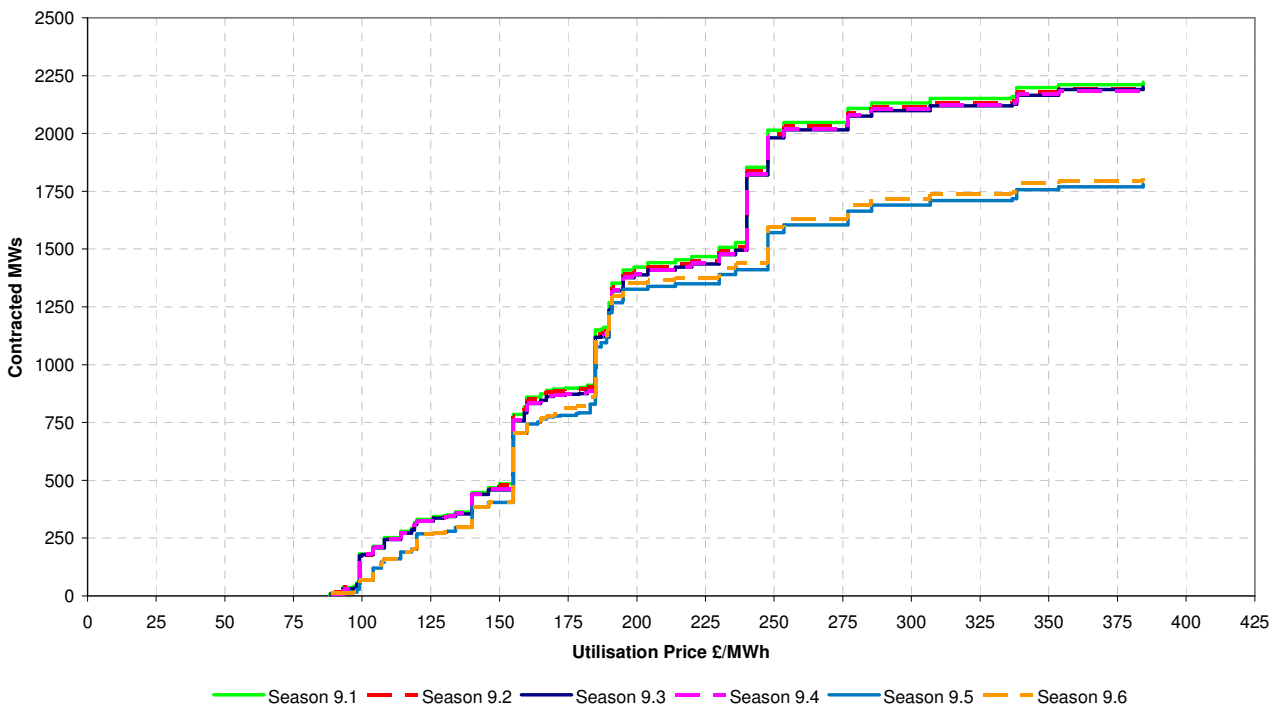


Figure 6b illustrates that for seasons 9.5 and 9.6 approximately 850MW of STOR is contracted with a response time of 10 minutes or less.

Figure 6a: Cumulative MW by Response Time for Year 8

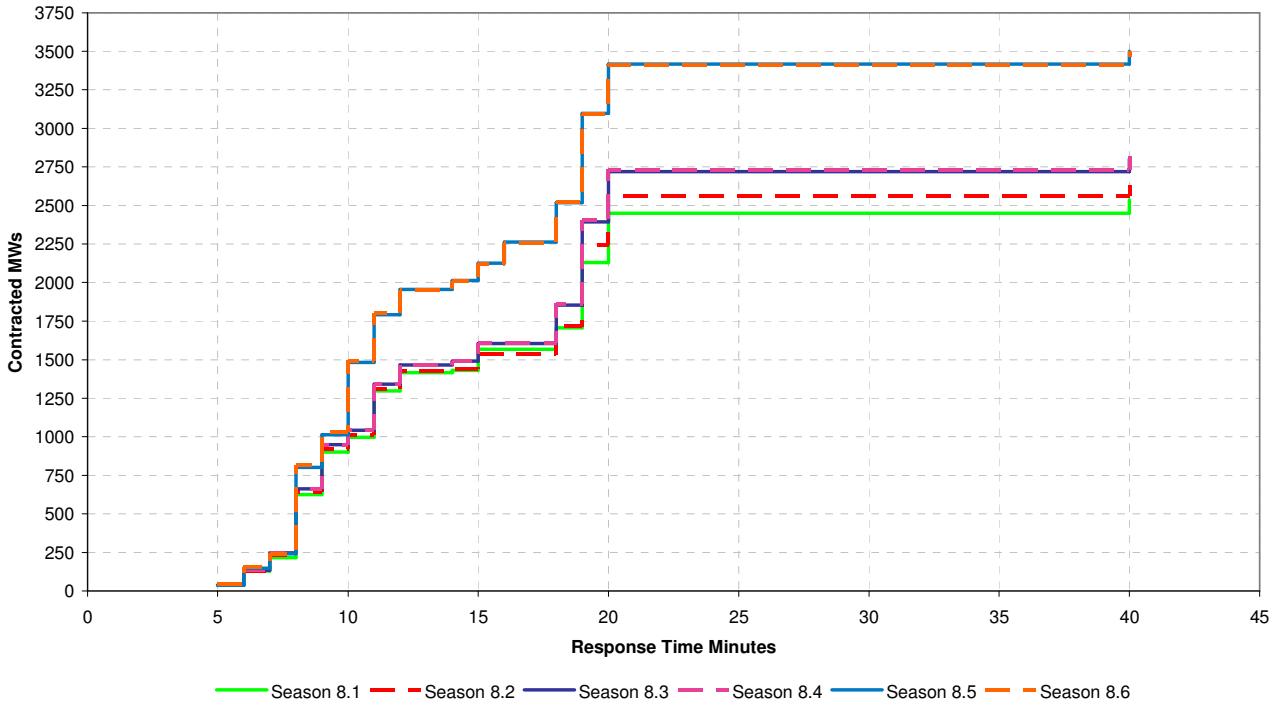
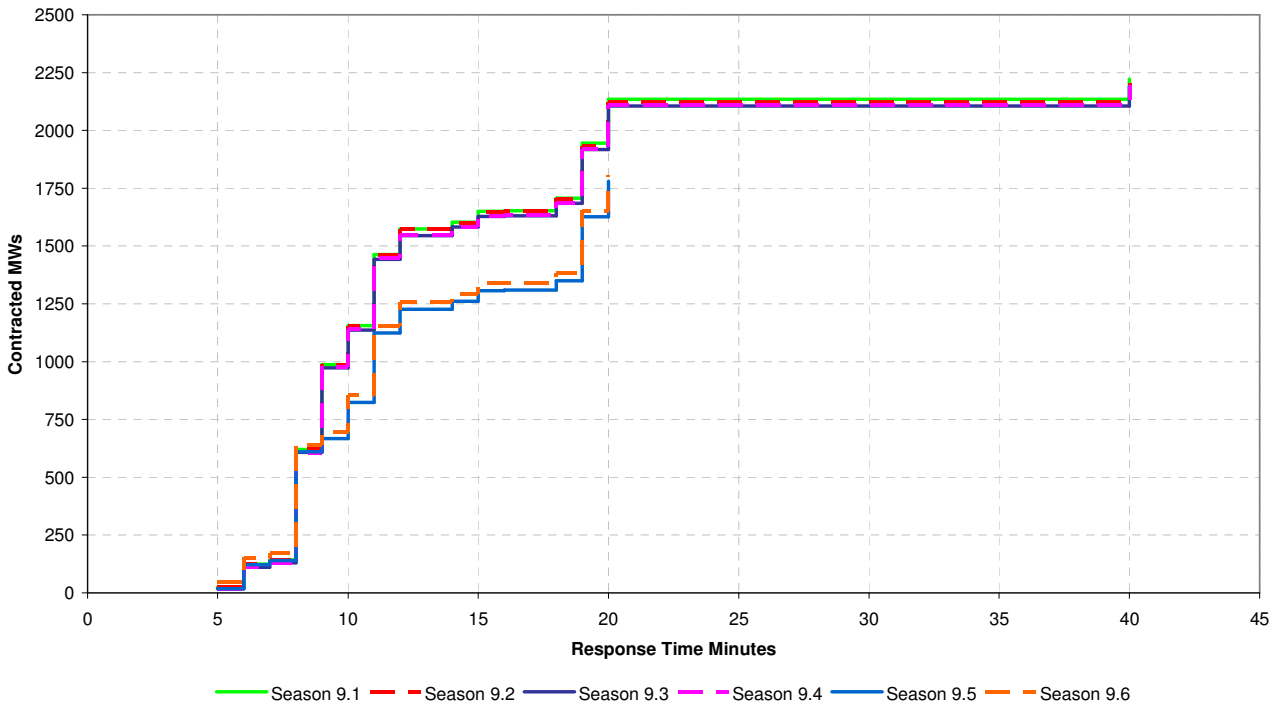


Figure 6b: Cumulative MW by Response Time for Year 9



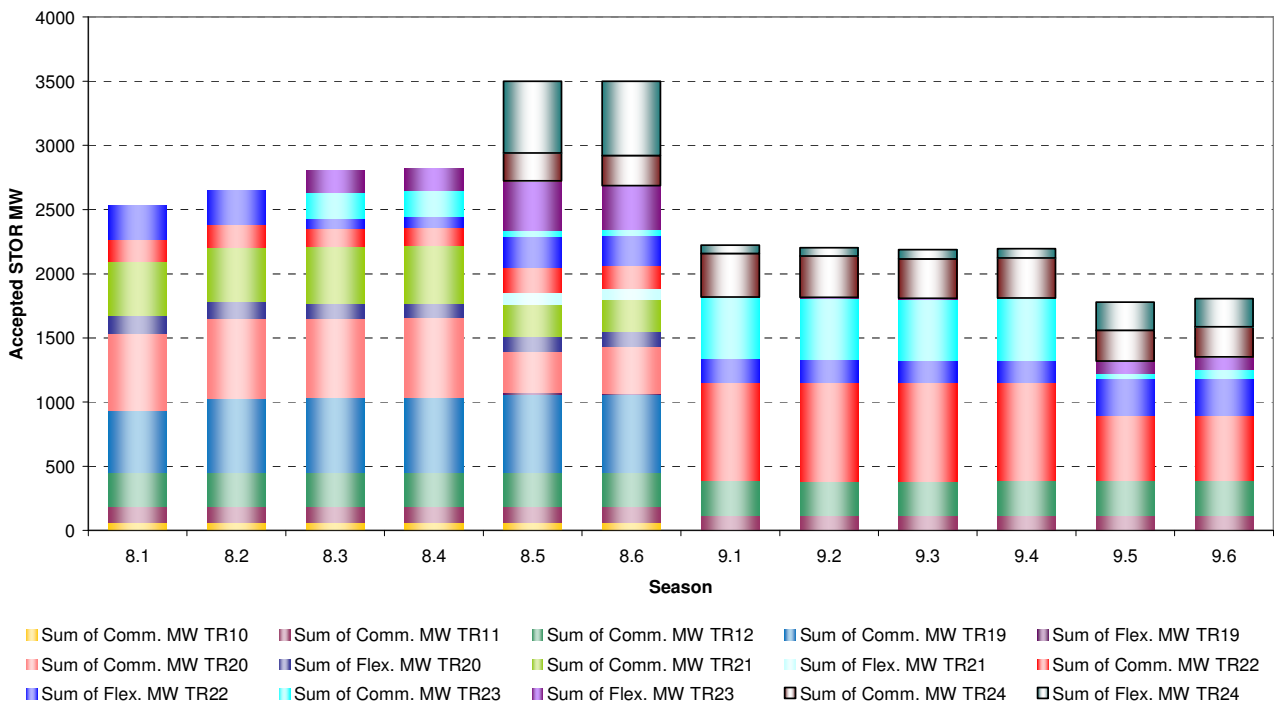
## Section 2 Total Contracted Position

Figure 7 shows the breakdown of accepted volumes from all previous tender rounds across the seasons of Years 8 and 9. The table accompanying Figure 7 below displays the same data in table format split by Committed or Flexible. For purpose of this chart and table Premium Flexible units are classed as Flexible units.

Figure 7 Year 8 and 9 summaries by tender round

Please note this figure contains data from previous tender rounds up to and including TR24. Subsequent to the creation of this report 76MW of accepted BM committed capacity has withdrawn from the STOR market. All data and charts in this report include this capacity. This change will be reflected in subsequent market reports.

Overview of Accepted STOR Tenders for Seasons 8.1 - 9.6



Season	8.1		8.2		8.3		8.4		8.5		8.6	
	C	F	C	F	C	F	C	F	C	F	C	F
Accepted MW	68		68		68		68		68		68	
TR10 (LT)	116		116		116		116		116		116	
TR11 (LT)	273		271		272		273		274		274	
TR12 (LT)	476		577		582		580		605	14	602	14
TR19	605	136	619	138	619	116	621	116	318	122	362	118
TR20	424		414	8	441		451		247	91	247	91
TR21	172	267	172	265	139	79	140	79	196	243	178	227
TR22					202	170	204	171	47	382	47	343
TR23									217	560	235	576
TR24												
Total	2134	403	2237	411	2439	365	2453	366	2088	1412	2129	1369

Season	9.1		9.2		9.3		9.4		9.5		9.6	
	C	F	C	F	C	F	C	F	C	F	C	F
Accepted MW	0	0	0	0	0	0	0	0	0	0	0	0
TR10 (LT)	116		116		116		116		116		116	
TR11 (LT)	273		271		272		273		274		274	
TR12 (LT)	764	186	769	181	769	172	767	172	506	286	508	286
TR22	475	6	473	7	473	6	478	6	40	98	70	98
TR23	336	66	320	66	309	72	311	72	240	220	235	220
TR24												
Total	1964	258	1949	254	1939	250	1945	250	1176	604	1203	604

## 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/083D0D9C-1A33-4336-8FA3-1A69DCC1C903/60303/TR20\\_General\\_Description.pdf](http://www.nationalgrid.com/NR/rdonlyres/083D0D9C-1A33-4336-8FA3-1A69DCC1C903/60303/TR20_General_Description.pdf)

## Appendix 2:

**Accepted and Rejected Tenders TR23:** 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 8) and the following year (Year 9).

Seasons 2014/15								
Season	Dates	WD		NWD		Hours/Day Type		Total
		Start Time	End Time	Start Time	End Time	WD	NWD	
1	05:00 on Tuesday 1st Apr 2014 - 05:00 on Monday 28th Apr 2014	07:00	13:30	10:00	14:00	209	32.5	241.5
		19:00	22:00	19:30	22:00			
2	05:00 on Monday 28th Apr 2014 - 05:00 on Monday 18th Aug 2014	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 18th Aug 2014 - 05:00 on Monday 22nd Sep 2014	07:30	14:00	10:30	13:30	348	36	384
		16:00	21:30	19:00	22:00			
4	05:00 on Monday 22nd Sep 2014 - 05:00 on Monday 27th Oct 2014	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 27th Oct 2014 - 05:00 on Monday 2nd Feb 2015	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 2nd Feb 2015 - 05:00 on Wednesday 1st Apr 2015	07:00	13:30	10:30	13:30	550	60	610
		16:30	21:00	16:30	21:00			
						3449.5	414.5	3864
		<b>Season</b>	<b>WD</b>	<b>NWD</b>				
		1	22	5				
		2	94	18				
		3	29	6				
		4	30	5				
		5	81	17				
		6	50	8				
				<b>Total Hours</b>			<b>3864</b>	

Seasons 2015/16								
Season	Dates	WD		NWD		Hours/Day Type		Total
		Start Time	End Time	Start Time	End Time	WD	NWD	
1	05:00 on Wednesday 1st Apr 2015 - 05:00 on Monday 27th Apr 2015	07:00	13:30	10:00	14:00	199.5	32.5	232
		19:00	22:00	19:30	22:00			
2	05:00 on Monday 27th Apr 2015 - 05:00 on Monday 24th Aug 2015	07:30	14:00	09:30	13:30	1150	133	1283
		16:00	18:00	19:30	22:30			
		19:30	22:30					
3	05:00 on Monday 24th Aug 2015 - 05:00 on Monday 21st Sep 2015	07:30	14:00	10:30	13:30	276	30	306
		16:00	21:30	19:00	22:00			
4	05:00 on Monday 21st Sep 2015 - 05:00 on Monday 26th Oct 2015	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 26th Oct 2015 - 05:00 on Monday 1st Feb 2016	07:00	13:30	10:30	13:30	920	135	1055
		16:00	21:00	16:00	20:30			
6	05:00 on Monday 1st Feb 2016 - 05:00 on Friday 1st Apr 2016	07:00	13:30	10:30	13:30	561	67.5	628.5
		16:30	21:00	16:30	21:00			
						3436.5	430.5	3867
		<b>Season</b>	<b>WD</b>	<b>NWD</b>				
		1	21	5				
		2	100	19				
		3	23	5				
		4	30	5				
		5	80	18				
		6	51	9				
				<b>Total Hours</b>			<b>3867</b>	