

Fast Reserve Post Assessment WebEx

September-18



Introduction

This WebEx:

- Relates to the results of the September FR tender round that were published on the website on the 18th September 2018. (This was a full term tender)
- Provides you with some more detailed feedback to ensure all suppliers are getting the same level of information.

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Representatives

	Responsibility	Contact
Rachel Turner	Structuring & Optimisation Manager	Rachel.Turner@nationalgrid.com
Nisha Doshi	Ancillary Services Analyst	box.AncillaryAssessment@nationalgrid.com
Emily Campion	Fast Reserve Service Lead/Account Manager	Emily.Campion@nationalgrid.com

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1. Fast Reserve Assessment

Step 1

- The forecasted cost of a tenders are evaluated against the cost of obtaining an equivalent service in the optional market. This includes:
 - The cost of creating the equivalent reserve
 - The alternative utilisation cost
 - The cost of positioning units to offer fast acting reserve
- We account for the type of service delivered, duration of tender and availability window
 - Utilisation restrictions such as periods of unavailability and MNZT are factored into the forecasted contract cost.
 - Maximum utilisation volumes are accounted for in the forecasted utilisation volume
 - Windows with durations beyond the requirement are valued based on forecasts of potential utilisation volumes

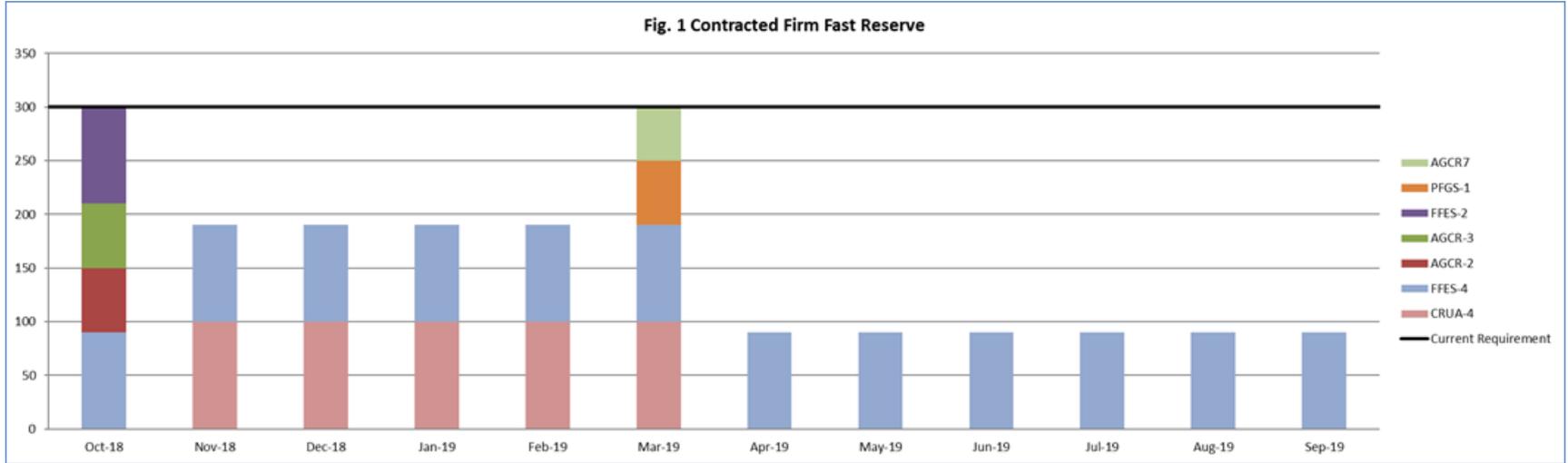
Step 2

- Tenders are stacked in terms of benefit delivered against any outstanding requirement.

Step 3

- Where applicable, any possible over holding is also accounted for in the assessment.

2.Fast Reserve Requirement



“In the September-18 tender round our aim is to primarily focus our procurement of Fast Reserve volume for the period November-18 to February-19 inclusive. We will not procure any further volume for March-19. We will consider procuring volume for April-19 to October-19.”

3. Overview of tenders – commencing from November 18

Tender no.	Tendered Unit	Tendered Period		Tendered Window	Length /months	Average Availability fee £/h	Average Positional fee £/h	Utilisation Fee (£/MWh)	FR volume/MW	MWh limit /per operational day	Max Utilisation/ per operational day	Periods of Unavailability	MNZT /mins	MZT /mins
180906	FFES-3	01-Nov-18	28-Feb-19	Mon- Fri 06:00 to 23:00 Sat 06:00 to 23:00 Sun and BHs 07:00 to 23:00	4	740.00	0.00	115.00	90	300.00	30.00	0	2.00	2.00
180908	FFES-3	01-Nov-18	31-Oct-19	Mon- Fri 06:00 to 23:00 Sat 06:00 to 23:00 Sun and BHs 07:00 to 23:00	11	504.00	0.00	106.00	90	300.00	30.00	0	2.00	2.00
180921	AGCR2	01-Nov-18	31-Oct-19	05:00 to 05:00	11	132.00	0.00	85.00	60	1440.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180922	AGCR2	01-Nov-18	31-Oct-19	06:00 to 23:30	11	179.00	0.00	85.00	60	1440.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180920	AGCR2	01-Nov-18	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	11	183.00	0.00	85.00	60	1440.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180918	AGCR2	01-Nov-18	31-Oct-19	05:00 to 05:00	11	264.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00
180919	AGCR2	01-Nov-18	31-Oct-19	06:00 to 23:30	11	354.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00
180917	AGCR2	01-Nov-18	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	11	360.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00
180912	AGCR2	01-Nov-18	28-Feb-19	05:00 to 05:00	4	348.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00
180913	AGCR2	01-Nov-18	28-Feb-19	06:00 to 23:30	4	472.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00
180911	AGCR2	01-Nov-18	28-Feb-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	4	480.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00
180915	AGCR2	01-Nov-18	28-Feb-19	05:00 to 05:00	4	90.00	0.00	85.00	60	1440.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180916	AGCR2	01-Nov-18	28-Feb-19	06:00 to 23:30	4	115.00	0.00	85.00	60	1440.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180914	AGCR2	01-Nov-18	28-Feb-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	4	117.00	0.00	85.00	60	1440.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180932	AGCR7	01-Nov-18	28-Feb-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	4	400.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00
180933	AGCR7	01-Nov-18	28-Feb-19	05:00 to 05:00	4	290.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00
180934	AGCR7	01-Nov-18	28-Feb-19	06:00 to 23:30	4	393.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00
180935	AGCR7	01-Nov-18	28-Feb-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	4	98.00	0.00	86.00	50	1200.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180936	AGCR7	01-Nov-18	28-Feb-19	05:00 to 05:00	4	75.00	0.00	86.00	50	1200.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180937	AGCR7	01-Nov-18	28-Feb-19	06:00 to 23:30	4	96.00	0.00	86.00	50	1200.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180938	AGCR7	01-Nov-18	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	11	300.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00
180939	AGCR7	01-Nov-18	31-Oct-19	05:00 to 05:00	11	220.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00
180940	AGCR7	01-Nov-18	31-Oct-19	06:00 to 23:30	11	295.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00
180941	AGCR7	01-Nov-18	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	11	153.00	0.00	86.00	50	1200.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180942	AGCR7	01-Nov-18	31-Oct-19	05:00 to 05:00	11	110.00	0.00	86.00	50	1200.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00
180943	AGCR7	01-Nov-18	31-Oct-19	06:00 to 23:30	11	150.00	0.00	86.00	50	1200.00	20.00	Nov-18 to Jan-19, Monday to Friday 16:30-19:30 Feb-19, Monday to Friday 17:00-20:00	7.00	7.00

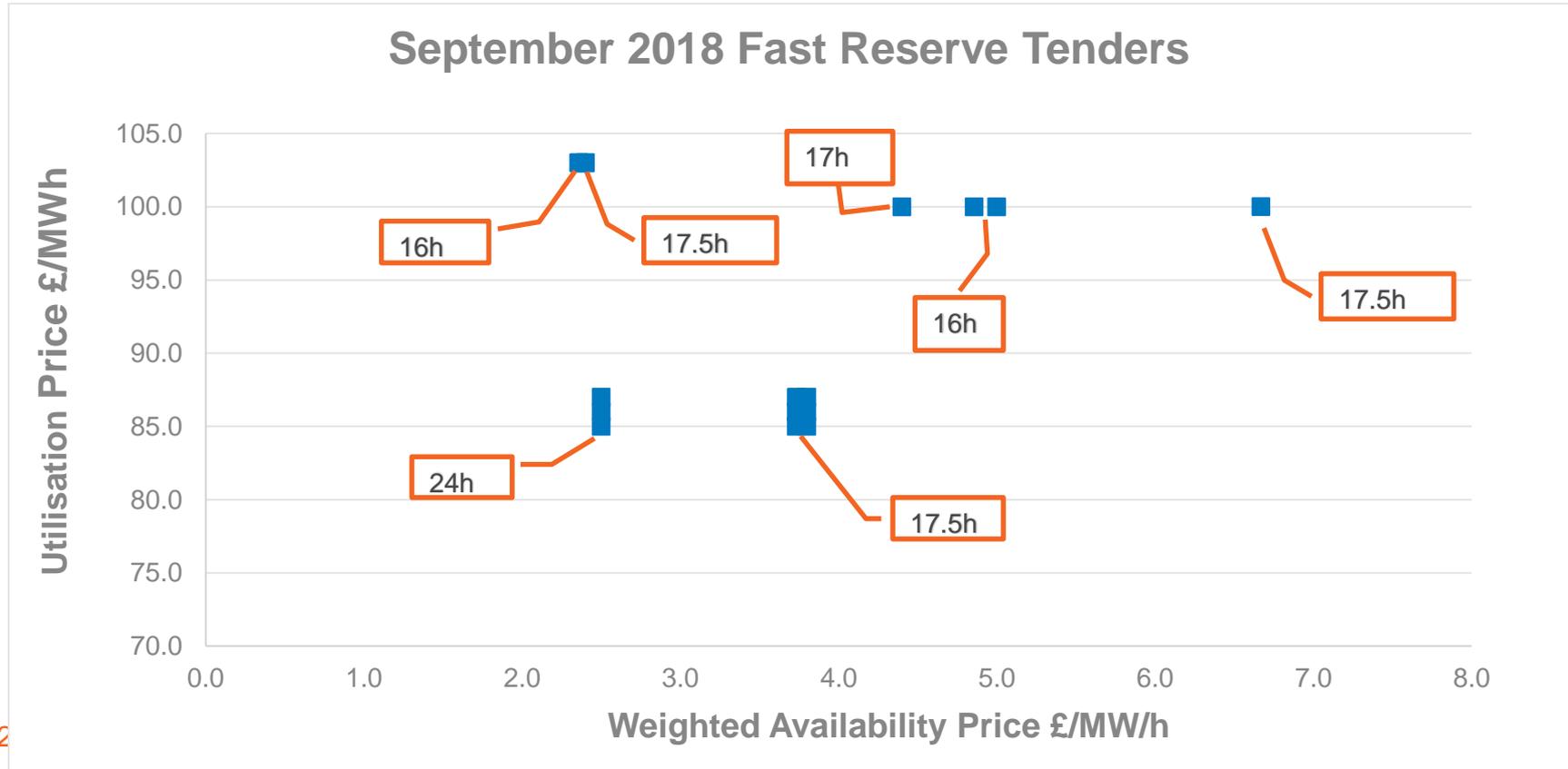
3. Overview of tenders – commencing from November 18



3. Overview of tenders – Summer 19 only

Tender no.	Tendered Unit	Tendered Period		Tendered Window	Length /months	Average Availability fee £/h	Average Positional fee £/h	Utilisation Fee (£/MWh)	FR volume/MW	MWh limit /per operation al day	Max Utilisatio ns / per operation al day	MNZT /mins	MZT /mins
180901	PGFS1	01-Apr-19	30-Sep-19	07:00 to 23:00	6	76.00	42.00	103.00	50	150.00	10.00	0.00	2.00
180902	PGFS1	01-Apr-19	30-Sep-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	6	78.00	42.00	103.00	50	150.00	10.00	0.00	2.00
180903	PGFS1	01-Oct-19	31-Oct-19	07:00 to 23:00	1	76.00	42.00	103.00	50	150.00	10.00	0.00	2.00
180904	PGFS1	01-Oct-19	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	1	78.00	42.00	103.00	50	150.00	10.00	0.00	2.00
180905	CRUA-4	01-Apr-19	30-Sep-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	6	333.00	334.00	100.00	100	330.00	30.00	2.00	2.00
180907	FFES-3	01-Apr-19	31-Oct-19	Mon- Fri 06:00 to 23:00 Sat 06:00 to 23:00 Sun and BHs 07:00 to 23:01	7	380.00	0.00	100.00	90	300.00	30.00	2.00	2.00
180909	PLUTFR-1	01-Apr-19	31-Oct-19	07:00 to 23:00	7	April-19 to May-19 540 June-19 to October-19 600	0.00	100.00	120	480.00	5.00	2.00	15.00
180910	PLUTFR-1	01-Apr-19	31-Oct-19	07:00 to 23:00	7	300.00	0.00	100.00	60	480.00	5.00	2.00	15.00
180924	AGCR2	01-Apr-19	31-Oct-19	05:00 to 05:00	7	150.00	0.00	85.00	60	1440.00	20.00	7.00	7.00
180925	AGCR2	01-Apr-19	31-Oct-19	06:00 to 23:30	7	224.00	0.00	85.00	60	1440.00	20.00	7.00	7.00
180923	AGCR2	01-Apr-19	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	7	228.00	0.00	85.00	60	1440.00	20.00	7.00	7.00
180926	AGCR3	01-Apr-19	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	7	228.00	0.00	86.00	60	1440.00	20.00	7.00	7.00
180927	AGCR3	01-Apr-19	31-Oct-19	05:00 to 05:00	7	150.00	0.00	86.00	60	1440.00	20.00	7.00	7.00
180928	AGCR3	01-Apr-19	31-Oct-19	06:00 to 23:30	7	224.00	0.00	86.00	60	1440.00	20.00	7.00	7.00
180929	AGCR6	01-Apr-19	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	7	342.00	0.00	87.00	90	2160.00	20.00	7.00	7.00
180930	AGCR6	01-Apr-19	31-Oct-19	05:00 to 05:00	7	225.00	0.00	87.00	90	2160.00	20.00	7.00	7.00
180931	AGCR6	01-Apr-19	31-Oct-19	06:00 to 23:30	7	336.00	0.00	87.00	90	2160.00	20.00	7.00	7.00

3. Overview of tenders – commencing in Summer 19



3. Overview of tenders – commencing from November 18

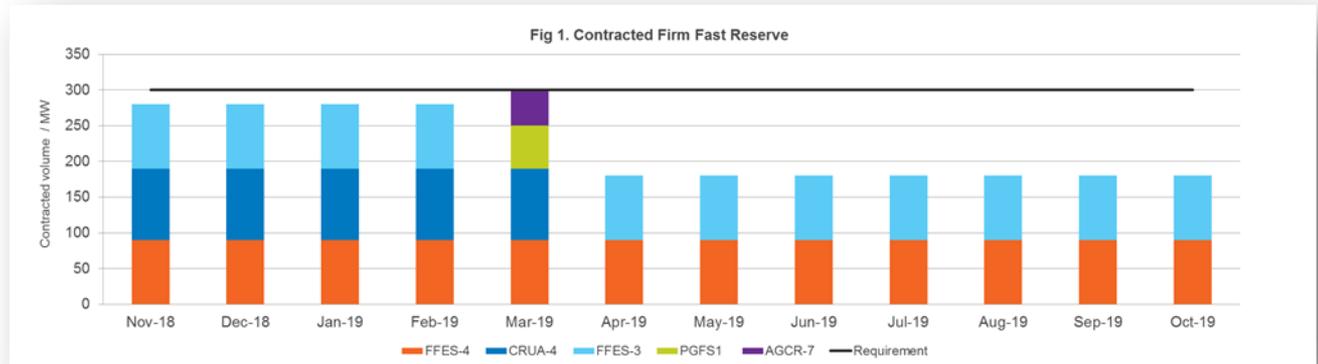


4. Results

Required volume for November-18 to February-19

- Focused on the benefit for winter 18/19
 - Tenders that triad avoided offered a low benefit over winter
 - Long MNZT reduced the benefit of the contract
- Assessed the benefit of 4 month / 11 month contracts
- Considered the benefits of 4 month winter contract combined with a 7 month summer contract

11 month contracts with FFES-3 for 90 MW offered the highest benefit and lowest risk



5.Rejection Reason Code

9 tenders offered a lower benefit to the accepted tender and were rejected under reason code 4:

- Valued as the most beneficial tender for that unit over the given period offered.
- All other tenders were rejected under reason code 3; they were mutually exclusive with tenders on the same units that offered a higher benefit.

Tender no.	Tendered Unit	Tendered Period		Tendered Window	Length /months	Average Availability fee £/h	Average Positional fee £/h	Utilisation Fee (£/MWh)	FR volume/MW	MWh limit /per operational day	Max Utilisations / per operational day	Periods of Unavailability	MNZT /mins	MZT /mins	Rejection Reason code
180902	PGFS1	01-Apr-19	30-Sep-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	6	78.00	42.00	103.00	50	150.00	10.00	None	0.00	2.00	4
180904	PGFS1	01-Oct-19	31-Oct-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	1	78.00	42.00	103.00	50	150.00	10.00	None	0.00	2.00	4
180905	CRUA-4	01-Apr-19	30-Sep-19	Mon- Fri 06:00 to 23:30 Sat, Sun and BHs 07:00 to 23:30	6	333.00	334.00	100.00	100	330.00	30.00	n/a	2.00	2.00	4
180909	PLUTFR-1	01-Apr-19	31-Oct-19	07:00 to 23:00	7	April-19 to May-19 540 June-19 to October-19 600	0.00	100.00	120	480.00	5.00	0	2.00	15.00	4
180924	AGCR2	01-Apr-19	31-Oct-19	05:00 to 05:00	7	150.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00	4
180912	AGCR2	01-Nov-18	28-Feb-19	05:00 to 05:00	4	348.00	0.00	85.00	60	1440.00	20.00	NA	7.00	7.00	4
180927	AGCR3	01-Apr-19	31-Oct-19	05:00 to 05:00	7	150.00	0.00	86.00	60	1440.00	20.00	NA	7.00	7.00	4
180930	AGCR6	01-Apr-19	31-Oct-19	05:00 to 05:00	7	225.00	0.00	87.00	90	2160.00	20.00	NA	7.00	7.00	4
180939	AGCR7	01-Nov-18	31-Oct-19	05:00 to 05:00	11	220.00	0.00	86.00	50	1200.00	20.00	NA	7.00	7.00	4

6. Market Information Report

Revamped the Market Information report

- Requirement information remains the same
 - Will inform providers which period we are seeking volume

- Section in Fast Reserve Utilisation data includes:

1. Monthly utilisation volumes
2. Utilisation volumes by price band
3. Utilisation durations by time bands

- New section on Market Developments

16



1
Introduction

1. Firm Fast Reserve

Fast Reserve provides the rapid and reliable delivery of active power through an increased output from generation or a reduction in consumption from demand sources, following receipt of an electronic dispatch instruction from National Grid Electricity System Operator (ESO). Fast Reserve requires all units to have the capability to commence service delivery within two minutes following instruction, at a rate of 250MW per minute or greater and provide a minimum of 50MW. Fast Reserve is an additional energy balancing service used to control frequency changes.

Fast Reserve may be provided as either a Firm service, procured through a tender process, or as an Optional service. Submitted tender prices are compared to the costs of alternatives to deliver the equivalent level of Fast Reserve. This report provides information about the volume of, and time periods over which, Firm Fast Reserve is required to current and potential providers.

To be an eligible service provider for Firm or Optional Fast Reserve you must have demonstrated your Fast Reserve capability to the ESO's reasonable satisfaction. This involves accepting instructions via National Grid ESO's dispatch platform.

2. Highlights

In September-18, forty-three tenders were received; four from Peak Gen, two from Plusus Power, three from First Hydro, one from Scottish Power and thirty-three from UKOP. Following the September-18 assessment, we contracted FFES-3 for 50MW from the 1st November-18 to 31st October 2019.

Following the September-18 tender we have now contracted sufficient volume against our procurement strategy and therefore do not need to secure any further volume until the January-19 tender round. We are required to run a monthly tender but for the sake of clarity we will not accept any more volume until the tender round beginning 1st January. If there is change in the requirement it will be communicated via this monthly report.

We have determined that while we have not met our 500 MW requirement from November-18 to February-19 we will not contract any further volume for this period. Contracting any further volume, with a minimum volume requirement of 50 MW will lead to overholding. Costs are assessed to ~~£60,200,000~~ overholding and therefore their resulting benefits will be significantly reduced.

Key Points

This Market Information Report is required for tenders submitted in response to the tender from November-18.

Tenders from eligible service providers for Firm Fast Reserve should be submitted by 11.59 (14:00 GMT) for all tenders.

National Grid will notify service providers of the outcome of the tender assessment by 12.00 (12:00 business day).

Tenders cannot be identified using the usual Tender Submission Form on the ANISA E-Tender platform if you have not registered by ANISA or received an invite to the event. Please contact your Account Manager in the first instance. If you have any questions about the event, email contracting@nationalgrid.com.

More details on the tenders that have been accepted or rejected are available from the post-assessment tender reports at <https://www.nationalgrid.com/contracting-services/reserve-services/fast-reserve/tender-reports>.

The Fast Reserve Assessment Synopsis Report and other useful reports are available at <https://www.nationalgrid.com/contracting-services/reserve-services/fast-reserve/tender-reports>.

For a monthly cost summary of services procured please follow the below link to the Monthly Balancing Services Summary (MBSS), which gives a breakdown of costs by service including the Firm and Optional Fast Reserve costs: <https://www.nationalgrid.com/contracting-services/balancing-services>.

This report is under continuous review and development, therefore if you have any comments or suggestions of information you would like to see in the future reports, please contact your account manager or the assessment team: fast_reserve_assessment@nationalgrid.com

All data will be provided in an excel spreadsheet

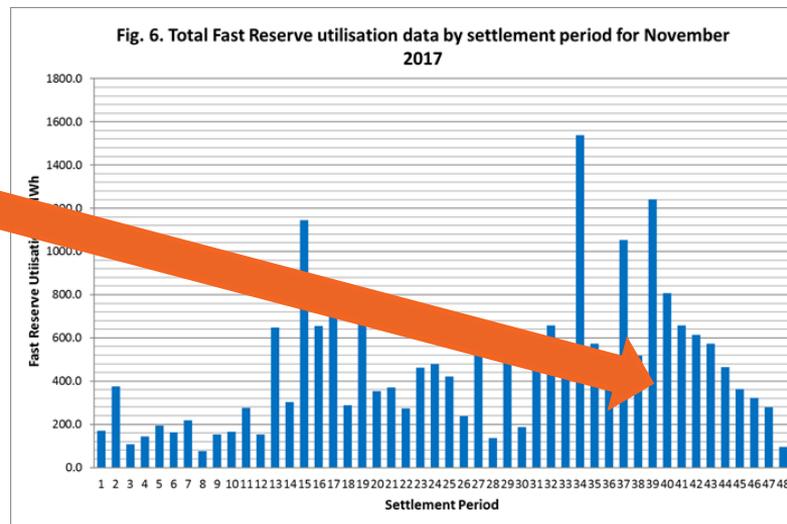
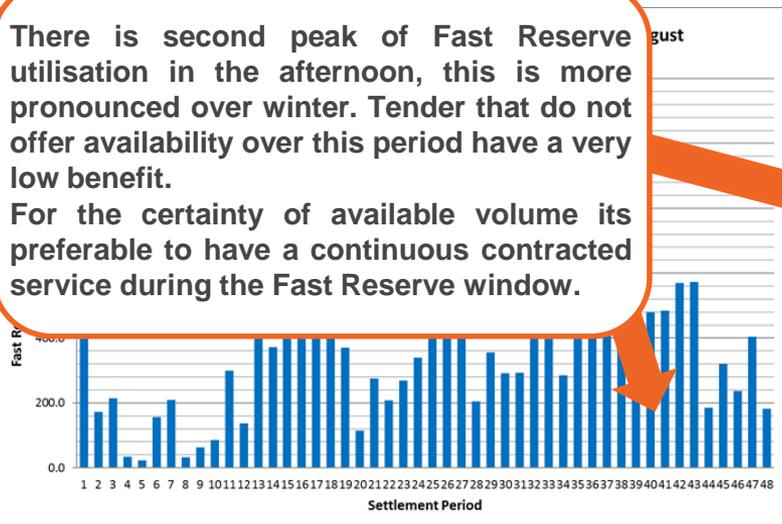
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6. Market Information Report

Monthly utilisation volumes

- The following graphs represent the daily profile of Fast Reserve utilisation
- Each column is the aggregate of all accepted Fast Reserve offers (Firm and Optional) for each settlement period for the entire month.

There is second peak of Fast Reserve utilisation in the afternoon, this is more pronounced over winter. Tender that do not offer availability over this period have a very low benefit. For the certainty of available volume its preferable to have a continuous contracted service during the Fast Reserve window.



6. Market Information Report

Utilisation volumes by price band

- To aid the market with price information
- The volumes included BM and NBM units for both Firm and Optional services
- Only looking at Offers, increase generation or a reduction in demand.
- Highlights the prices most often used for Fast Reserve
 - Limited by options of prices offered by Fast Reserve units.

Fast Reserve BM and NBM Utilisation Volume / MWh (Offers only)						
Price Band £/MWh		Apr-18	May-18	Jun-18	Jul-18	Aug-18
Greater than	less than					
0	60	0	0	0	0	79
60	70	0	0	0	0	0
70	80	0	0	0	0	0
80	90	3005	296	3502	2826	2084
90	100	3325	4798	2239	5138	5738
100	110	7502	6976	4405	5819	6619
110	120	3260	2412	1092	1824	1207
120	130	284	272	188	112	45
130	140	8	5	21	77	29
140	150	691	634	392	113	155
150	160	0	0	0	10	0
160	170	1106	700	584	849	764
170	180	0	0	0	0	0
180	190	0	28	12	131	0
190	200	0	0	0	0	0
200		90	135	155	136	141
Total		19272	16257	12590	17036	16861

All data will be provided in an excel spreadsheet

6. Market Information Report

Utilisation durations by time bands

- To give a better indication of the value of the MNZT
- The table shows that longer MNZT are required less often:
 - 89% of Fast Reserve instructions are 2 mins or longer
 - 38% of Fast Reserve instructions are 10 mins or longer

The full table will be provided in the Market information Report

Fast Reserve Duration (mins)		No. of instructions	Percentage of total instructions	Potential % of instruction
Greater than	less than			
0	1	1650	6%	100%
1	2	1593	6%	94%
2	3	1761	6%	89%
3	4	2250	8%	83%
4	5	2808	10%	75%
5	6	1973	7%	65%
6	7	1534	5%	58%
7	8	1746	6%	53%
8	9	1431	5%	47%
9	10	1107	4%	42%
10	11	1063	4%	38%
11	12	977	3%	34%
12	13	733	3%	31%
13	14	788	3%	28%
14	15	940	3%	26%
15	16	652	2%	22%
16	17	573	2%	20%
17	18	545	2%	18%
18	19	488	2%	16%
19	20	431	1%	14%
20	21	358	1%	13%

7. Fast Reserve Outline Change Proposal

We have published the Outline Change Proposal (OCP) for Fast Reserve. This is an opportunity for the industry to feedback on the proposed changes to the service.

- Part of this OCP is the simplification of the Standard Contract Terms (SCT) as stated in the product road map for frequency response and reserve.
- The deadline for responses is 5pm on the 8th October 2018. The OCP and simplified SCTs can be found via the following link:

<https://www.nationalgrideso.com/balancing-services/reserve-services/fast-reserve?overview>

8. New Tender Submission Form

Thank you for using the new tender submission form.

- Please start your tender in Column E and change the date in row 2 as appropriate.
- Please ensure that the tendered hours are correctly calculated, and factor in any periods on unavailability (i.e. reduce the hours as appropriate).

9. Next tender round, October-18

October-18 Tender Round

- Procuring volume for delivery from November-18.
- Tender submission date of Monday 1st October 2018 at 17:00.
- Tenders must use the latest submission form to be compliant.
- Providers must have proved Fast Reserve delivery to our satisfaction.

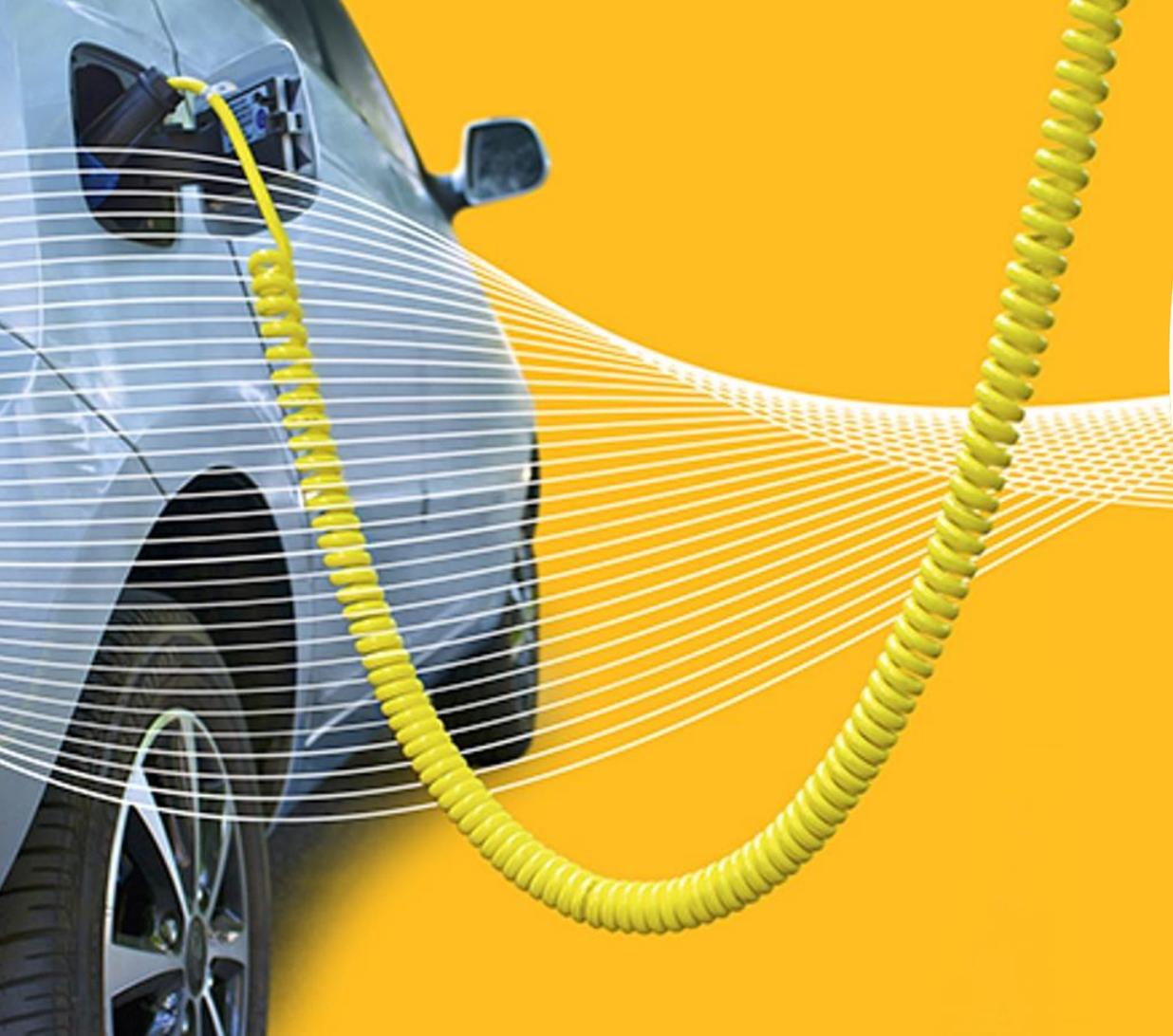
10. Next tender round, October-18

Although we have not met our 300 MW requirement our current intention is to not procure any further volume for the period November-18 to February-19. We will confirm if this is the case in the Market Information Report

- Contracting any further volume, with a minimum requirement of 50 MW will lead to significant overholding.
- Units are assessed to take into account overholding and therefore their resulting benefit will be significantly reduced.

Following the September-18 tender we have now contracted sufficient volume against our procurement strategy. Our current intention is to not procure any further Fast Reserve for Summer 19 until the January tender round. We will confirm if this is the case in the Market Information Report

- The Market Information Report will be released by Wednesday 26th September 2018.



11. Feedback

Before we move onto the questions section, we ask you to leave your feedback using Webex live poll that will shortly be appearing on your screen shortly

12. Questions

Please ask your questions via the WebEx chat function

If we are unable to offer an answer to a question on the call, we will take it away and provide an answer back in writing to all those on the call.

National Grid reserve the right to refuse to answer any questions deemed inappropriate.



nationalgrideso.com

National Grid ESO, Faraday House, Warwick Technology Park,
Gallows Hill, Warwick, CV346DA

nationalgridESO