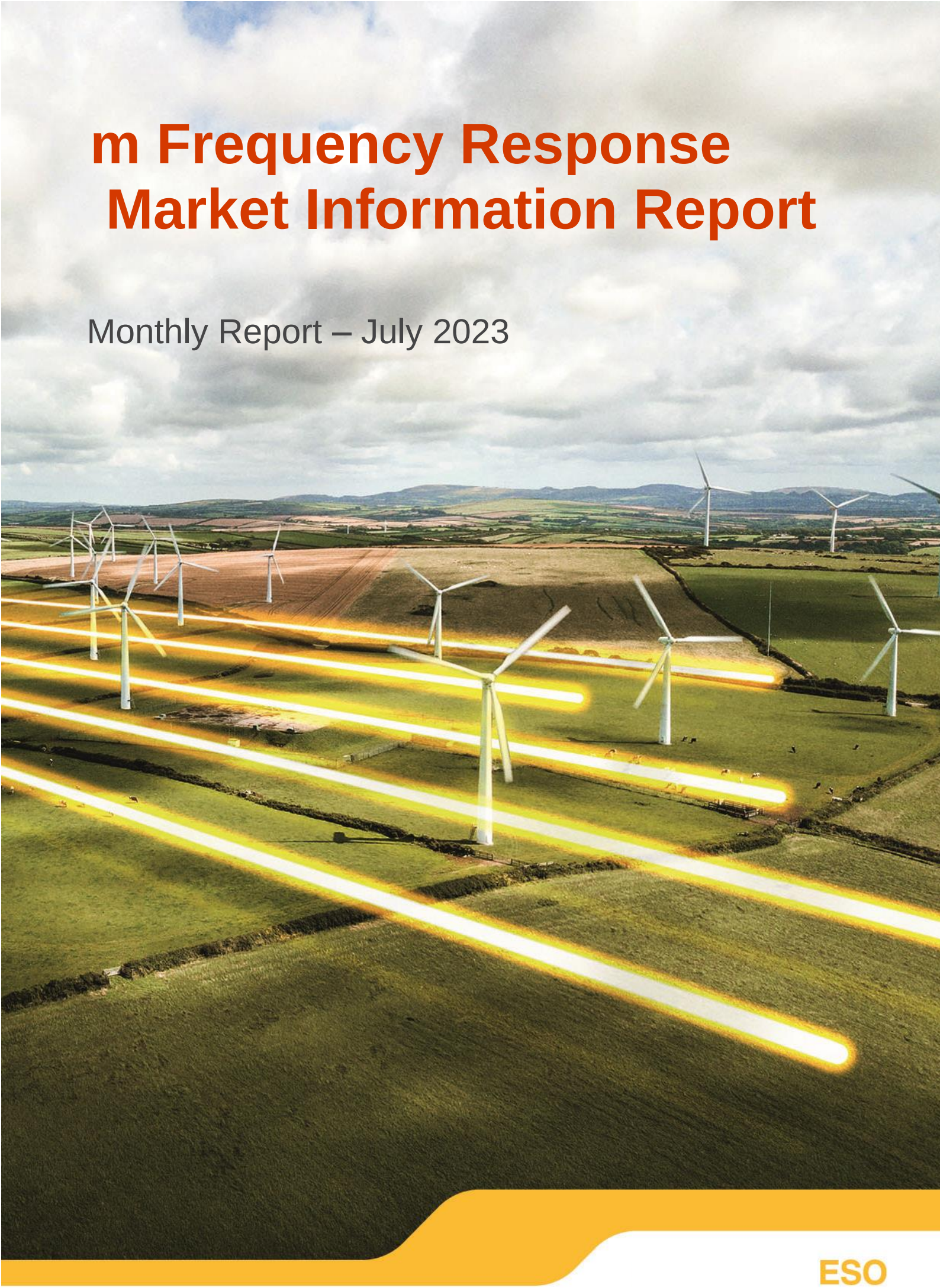
m Frequency Response Market Information Report

Monthly Report – July 2023



ESO

Contents

Introduction

The report covers essential information related to procurement of frequency response products, such as:

- Month ahead tender for Dynamic Firm Frequency Response (DFFR)
- Day ahead auction for Dynamic Containment, Dynamic Moderation and Dynamic Regulation (all procured as low and high).
- Day ahead auction for Static Firm Frequency Response (SFFR).

We provide our forecast requirements for these products and give guidance on how to participate in the tender and the auctions. We also provide an update on the phase out of FFR and our plan to increase the Dynamic Regulation cap from August onwards. For longer-term requirements please take a look at our Operability Strategy Report.

Future Requirements and New Services

We know that a successful transition relies on clear and timely signals to facilitate growth and competition in our new markets and to support this we are committed to continuing to improve transparency of both how and when we communicate our future needs. We are in a period of transition where both existing Primary/Secondary/High (PSH) and new (DC, DM, DR) frequency response products will be procured. Our intention once the transition is complete, is to meet our dynamic pre- and post-fault frequency response needs with the new suite of dynamic products (Containment, Moderation and Regulation).

Phase out of Dynamic FFR (DFFR)

A key milestone in frequency response reform is the phasing-out of monthly Dynamic FFR (DFFR). This is happening gradually as we develop and establish the new pre-fault dynamic frequency response products Dynamic Regulation (DR) and Dynamic Moderation (DM).

To enable a measured transition between the legacy and new suite of response services for frequency response providers and the ESO, we are reducing our DFFR requirements by 50MW for each EFA block per month whilst increasing the DR requirement by 30MW. Following the change in March 2023 to procure up to 200MW of DR a series of IT changes were required to facilitate further increases to the DR requirement.

There is a final IT change that raising the requirement is dependent on to ensure the visibility of non-BM units in balancing systems. This change is on track to take place in July and therefore enable the cap to be lifted from August 2023 onwards. As a result, we will procure 50MW less in this month's FFR tender round and continue to reduce the volumes as shown below:

Month of procurement	Month of Delivery	Dynamic FFR	DR Cap
August	September	150	260
September	October	100	290
October	November	0	350

Figure 1: Phasing out FFR with DR cap requirements for September 2023 onwards

We will continue to keep the impact of raising the DR volume cap under review and expect the final tender for DFFR to take place in September 2023 for volume delivery in October 2023. The requirement for this month will be 100MW.

Most deliverables under Response Reform Release 1 went live end of March 2023 and the teams are focusing efforts to deliver Release 2. Details have been shared through the webinar and Market Change Roadshows in

May. The recording from the webinar is available **here** and the slides are available **here**. For further updates please refer to our Future of Balancing Services Updates Newsletter – details in Guidance and Data.

DR Requirements

We have updated our DR requirements dataset to reflect our expected procurement levels for September 2023, we will continue to be publish revisions to the requirements on the ESO data portal.

DM Requirements

We are working in the progress to understand system requirements for DM. We will communicate the anticipated future requirements of DM once we are satisfied with our analysis. In the interim, we will continue to procure up to 100MW of DM, and DM volumes will not contribute to offsetting our minimum dynamic response requirements.

DC Requirements

Following a review of market and system conditions, we have revised our requirements for DC low and high resulting in an increase in overall requirements. This change went live on the 27th of March and is currently reflected in the rolling 4-day forecasts updated daily. The 12 month forecast data has been updated to reflect this change. We will continue to review and revise our requirements in line with system conditions and proactively communicate any changes to the market via this publication and the 4 day rolling DC requirements forecast.

Firm Frequency Response Requirement

DFFR via month ahead tender for September 2023 (TR 164)

This section provides information to dynamic FFR providers on the requirement for the tender (TR 164) for delivery in September 2023.

As System Operator, we are required to operate the system economically and efficiently. In TR 163, where only dynamic tenders were assessed, all FFR volume was accepted at a cost less than the alternative actions.

As a prudent System Operator, we seek to optimise our requirements to ensure system security at least cost. For September 2023, increased volume of DR will to be offsetting the PSH requirements hence the requirement for FFR shall be reduced, as per table below.

Month	EFA block	Dynamic Response Required (MW)		
		Primary	Secondary	High
September 2023	EFA 1	150	150	150
	EFA 2	150	150	150
	EFA 3	150	150	150
	EFA 4	150	150	150
	EFA 5	150	150	150
	EFA 6	150	150	150

Figure 2: FFR requirements for September 2023

In the move to standard EFA block window durations, the minimum of the total requirement across each EFA block outlines the level to be procured with the additional volumes required for PSH procured via the DR and DM markets, where we do not meet our requirements through the day ahead DR and DM markets, we will use Mandatory Frequency Response (MFR) to address any shortfalls.

Key Dates for DFFR TR 164

This Market Information Report is relevant for dynamic tenders submitted in **August 2023 for delivery in September 2023.** Tenders from eligible service providers for Firm Frequency Response should be submitted on **1st August 2023 by 17:00** (1st business day) for all tenders.

ESO will notify service providers of the outcome of the tender assessment, and preliminary nominations, by **Wednesday 16th August 2023** (12th business day).

From January 2018, non-compliant tenders are rejected prior to assessment.

DFFR August 2023 Contracts Awarded

37 active contracts are due to provide DFFR in August 2023.

Figure 3 displays the number of tenders submitted in the FFR market for the last 12 months by service type.

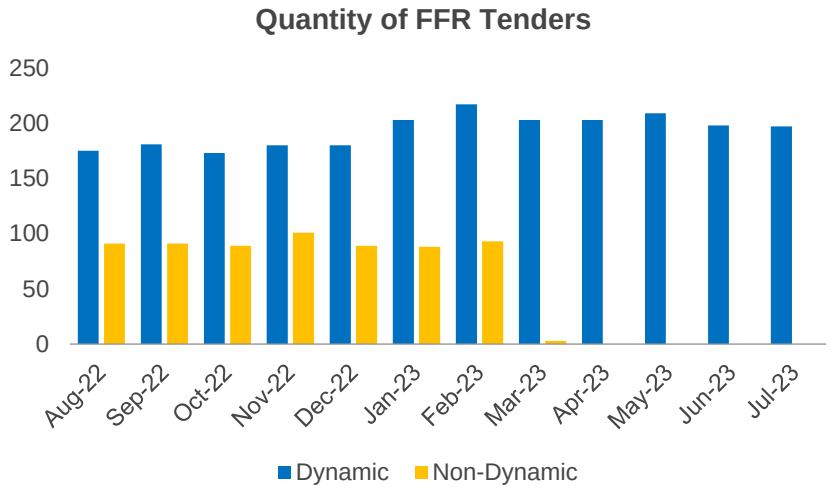


Figure 3: Quantity of FFR Tenders

SFFR for day ahead auction for August 2023

This section provides information to SFFR providers on the requirement for the auctions for delivery in August 2023.

The requirement will maintain at 250MW for each EFA block in August 2023. Following the initial test period, the SFFR requirement and the market response to the move to daily procurement will be reviewed and any changes in the SFFR requirement will be shared through these Market Information Reports.

Month	EFA block	Static Response Required (MW)
		Secondary
August 2023	EFA 1	250
	EFA 2	250
	EFA 3	250
	EFA 4	250
	EFA 5	250
	EFA 6	250

Figure 4: SFFR static requirements for August 2023

Market participants should note that the ESO has license requirements to operate the system economically and efficiently. This means that the SFFR volume advertised above will not always be procured through this daily SFFR market if the system need can be met through other response services or system actions at a lower overall cost to end consumers.

Dynamic Containment 12-month rolling indicative requirements

This section provides information on requirements for Dynamic Containment Low Frequency (DC-LF) and Dynamic Containment High Frequency (DC-HF). These requirements are indicative and subject to change.

In order to improve our view of anticipated level of procured volumes for DC-L and DC-H, from November 2022 we started publishing a new 12 month rolling forecast to determine the requirement for those services. The volumes are driven by actual forecast for demand, inertia, and infeed loss sizes (including progress in the ALoMCP) and reductions in the contracted volumes of legacy services (Enhanced Frequency Response), rather than relying on historical data when determining the requirement.

DC-LF Requirements for next 12 months

Figure 5 presents an indicative view of our expected requirements for the DC-L service. This is split into 200MW volume bands which can be seen in the top middle section of the graphic. For each month the % of time we expect the DC-L requirements to fall within the associated band (based on current assumptions) for each EFA block is represented by the shading of the associated cells as described at the bottom of figure 4.

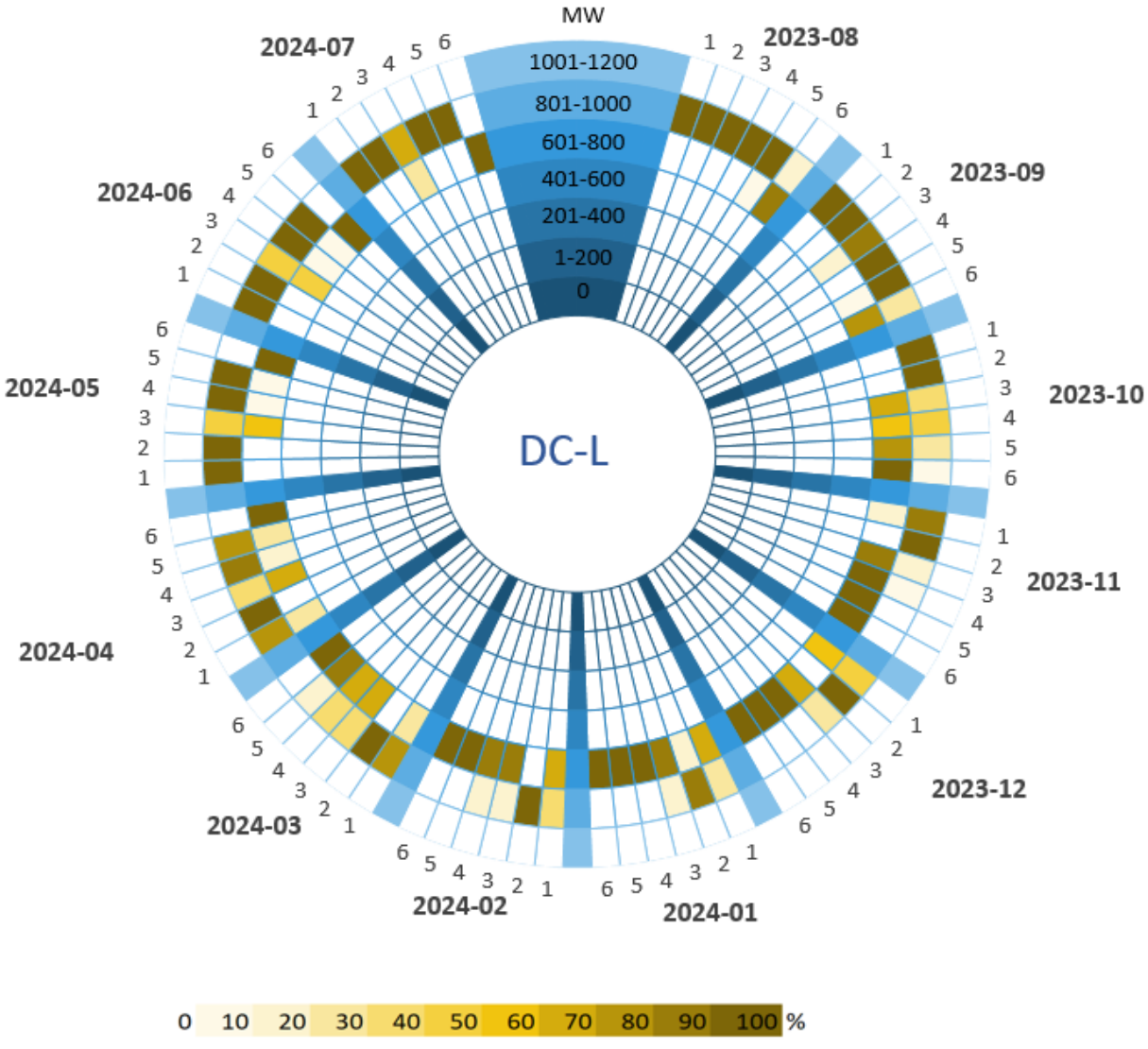


Figure 5: Indicative DC-L Requirements for next 12 months

DC-HF Requirements for next 12 months

Figure 6 presents an indicative view of our expected requirements for the DC-H service. This is split into 200MW volume bands which can be seen in the top middle section of the graphic. For each month the % of time we expect the DC-H requirements to fall within the associated band (based on current assumptions) for each EFA block is represented by the shading of the associated cells as described at the bottom of figure 5.

The DC-H requirements in Figure 5 are indicative requirements based on our actual forecast for demand, inertia, and outfeed loss sizes in next 12 months. We aim to buy enough DC-H to manage the largest outfeed losses on the system. The peak requirement generally occurs during lower demand/inertia EFA blocks

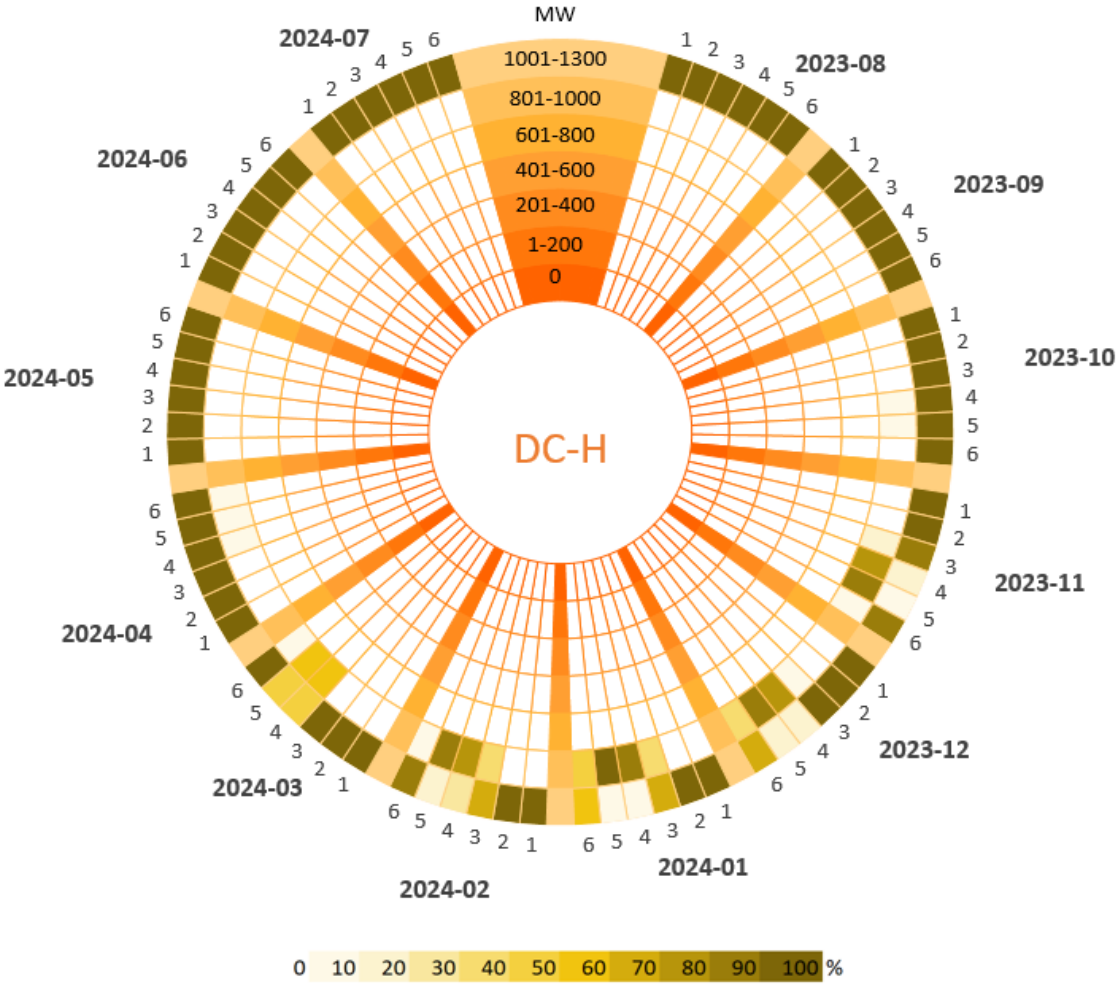


Figure 6: Indicative DC-H Requirements for next 12 months

4 Day Ahead Forecast

You can find daily updates on the ESO Data Portal.

Related Data & Information

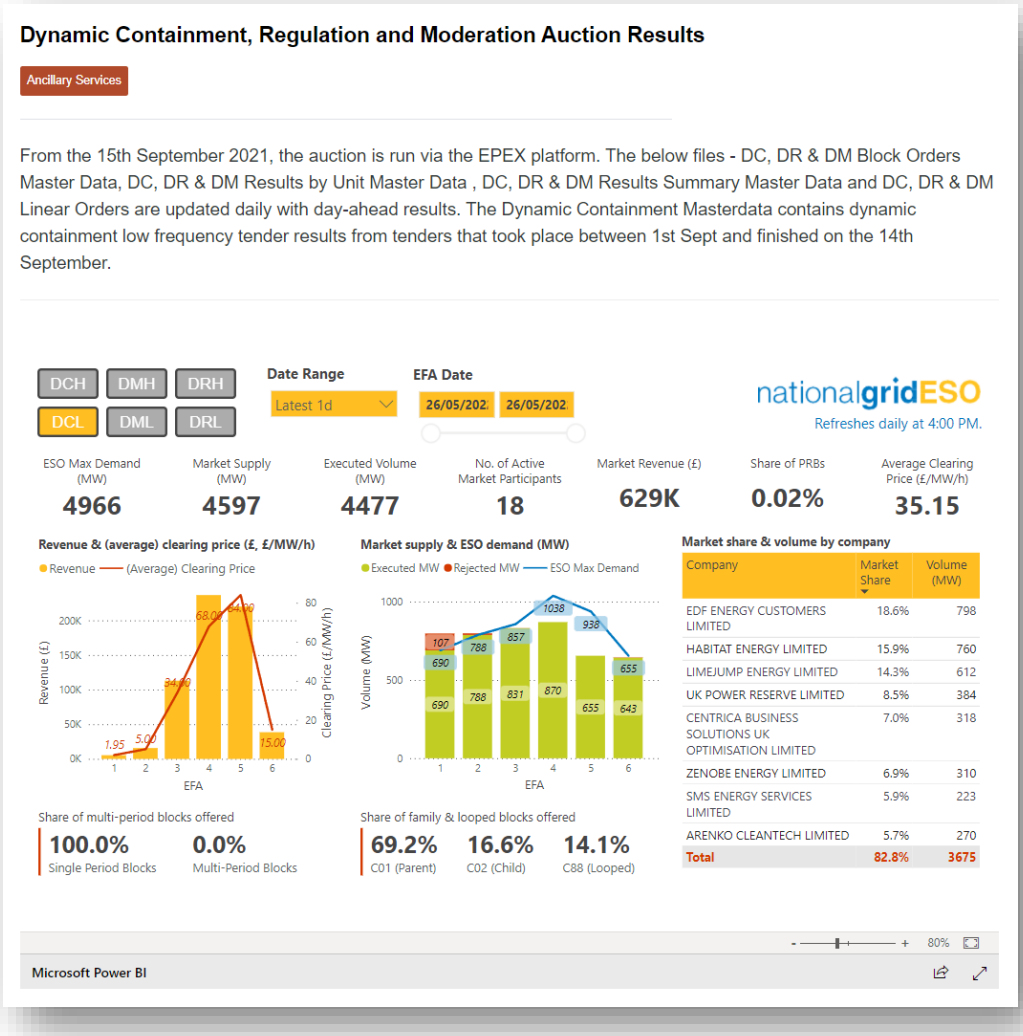
Information related to the service including how to participate can be found on the Dynamic Containment page of the ESO website.

DC Block Orders Master Data, DC Results by Unit Master Data, DC Results Summary Master Data and DC Linear Orders are updated daily with day-ahead results on the ESO Data Portal.

We have published the data for the DC charts above here.

Response Dashboard

An interactive Power BI response dashboard which is refreshed daily provides an accessible way to explore the auction results for DC, DR and DM.



Appendix 1: DFFR Supporting Information

Procurement Rules

Testing

Providers are required to have successfully passed FFR testing of their asset by the National Grid Generator Compliance Team prior to tendering in for month ahead delivery. If tendering to provide an FFR service starting on 1st September 2023, the unit must have passed testing prior to the tender submission window closing on the 1st business day in August 2023. Tenders that do not meet this requirement will be deemed non-compliant and automatically rejected.

Limiting tenders

Providers are limited to submitting 3 tenders per unit, per tender period. A tender period is considered to be month ahead. All-or-nothing bids will be considered as 1 tender submission.

EFA Block Procurement

For providers wishing to start a tender on the last day of the previous month, these tenders cannot start earlier than 2300 or they will be deemed as non-compliant.

The minimum requirement across each specific EFA block will determine how much volume will be procured for each of the 6 daily 4-hour blocks.

Submission and Results

Tender Submission

Providers must use the template provided in the Coupa system to tender in for FFR. Use of any other template or submissions via e-mail will not be accepted.

In line with the standardisation outlined in the Product Road Map, procurement of DFFR will only take place across the standard 6 EFA blocks. Tenders must therefore only start, and end, at the following times: 2300, 0300, 0700, 1100, 1500 and 1900. Submitted tenders must have a minimum window availability of 4 hours in line with EFA blocks.

Please note that this is a month ahead only tender for dynamic response only. Tenders should therefore be submitted for September 2023 delivery.

Results

The full set of FFR results for the last tender round (TR 163) can be found here.

From TR140 onwards the unit location will be detailed as part of the results that are published in the FFR Post Tender Report. The locational details consist of the first 4 characters of the postcode for single units that are 1 MW or greater.

Tender Rejection Guidance

The table below provides guidance as to the reasons why a tender has been rejected. They can be matched against the numbers in the 'Reason Code' section of the Post Tender Report.

No.	FFR Reason Code	Comment
1	Beneficial	While the price submitted was considered beneficial, on this occasion this tender was not accepted for one of the following reasons: **1.2** There was no outstanding requirement **1.3** The desired volume against the ESO procurement strategy for future tender months had already been satisfied **1.4** This tender formed part of an all-or-nothing group which did not collectively deliver enough benefit to be considered
2	Price not beneficial across tendered period	The price submitted was too high and did not provide any contract benefit against alternative actions including the mandatory and optional market.
3	Does not meet tender prerequisites	Please refer to the 'Technical Parameters' section using the following link to determine the criteria necessary to participate in the FFR market https://www.nationalgrid.com/uk/electricity/balancing-services/frequency-response-services/firm-frequency-response
4	Multiple tenders received for the same unit	Only the most valuable tender(s) of the total group of submitted tenders was considered.

Figure 7: Tender Rejection Codes

Appendix 2: SFFR Supporting Information

Procurement Rules

The Procurement Rules for the Static FFR service can be found on the ESO website.

Submissions and Results

Procurement of SFFR takes place across the standard 6 EFA blocks. Bids must therefore only start, and end, at the following times: 2300, 0300, 0700, 1100, 1500 and 1900. Submitted bids must have a minimum window availability of 4 hours in line with EFA blocks.

Please note that the gate opens 14 days before Service Day and bids can be submitted during that time until gate closure at 11:00 am on the EFA day immediately preceding the Service Day.

The below graphic shows the definitions related to Auction Timings as contained within the Procurement Rules.

The Auction Results Time is defined in the Procurement Rules as 17:00, this is a 'no later than' expectation.

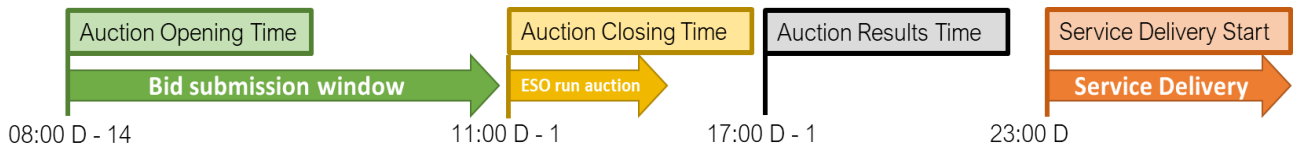


Figure 8: SFFR timeline

*All times are UK local times (BST or GMT)

The full set of SFFR results and Buy Orders are published daily after auction is cleared and can be found on the ESO Data Portal. We endeavour to publish the results promptly after auction clears at 11:00.

Guidance and Data

FFR Service Overview

The FFR Service Overview provides current and potential Firm Frequency Response (FFR) providers guidance on the service. It pulls together FAQs on the service and provides links to related documents.

Related Data

The following information is published on the ESO Data Portal

- Live System Data
- Historic Frequency Data
- Firm Frequency Response (FFR) Post Tender Reports
- Firm Frequency Response (FFR) Market Information

Other Useful Links

- Register for Future of balancing services updates
- ESO Operational Transparency Forum

Appendix 3: Dynamic Containment 12-month rolling indicative requirements – detailed information

Appendix 3 - % of probability of DC requirement existing in between ranges

DCL	-	200	400	600	800	1,000	1,200
2023-08							
EFA1	-	-	-	-	-	100	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	-	100	-
EFA4	-	-	-	-	-	100	-
EFA5	-	-	-	-	3	97	-
EFA6	-	-	-	-	84	16	-
2023-09							
EFA1	-	-	-	-	-	100	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	13	87	-
EFA4	-	-	-	-	-	100	-
EFA5	-	-	-	-	3	97	-
EFA6	-	-	-	-	77	23	-
2023-10							
EFA1	-	-	-	-	-	100	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	68	32	-
EFA4	-	-	-	-	58	42	-
EFA5	-	-	-	-	74	26	-
EFA6	-	-	-	-	97	3	-
2023-11							
EFA1	-	-	-	-	17	83	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	83	17	-
EFA4	-	-	-	-	93	7	-
EFA5	-	-	-	-	100	-	-
EFA6	-	-	-	-	100	-	-
2023-12							
EFA1	-	-	-	-	58	42	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	71	29	-
EFA4	-	-	-	-	100	-	-
EFA5	-	-	-	-	100	-	-
EFA6	-	-	-	-	100	-	-
2024-01							
EFA1	-	-	-	-	71	29	-
EFA2	-	-	-	-	13	87	-
EFA3	-	-	-	-	87	13	-
EFA4	-	-	-	-	100	-	-
EFA5	-	-	-	-	100	-	-
EFA6	-	-	-	-	100	-	-
2024-02							
EFA1	-	-	-	-	66	34	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	86	14	-
EFA4	-	-	-	-	86	14	-
EFA5	-	-	-	-	100	-	-
EFA6	-	-	-	-	100	-	-
2024-03							
EFA1	-	-	-	-	26	74	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	65	35	-
EFA4	-	-	-	-	68	32	-
EFA5	-	-	-	-	84	16	-
EFA6	-	-	-	-	100	-	-
2024-04							
EFA1	-	-	-	-	23	77	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	63	37	-
EFA4	-	-	-	-	13	87	-
EFA5	-	-	-	-	23	77	-
EFA6	-	-	-	-	100	-	-
2024-05							
EFA1	-	-	-	-	-	100	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	52	48	-
EFA4	-	-	-	-	6	94	-
EFA5	-	-	-	-	3	97	-
EFA6	-	-	-	-	100	-	-
2024-06							
EFA1	-	-	-	-	-	100	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	50	50	-
EFA4	-	-	-	-	3	97	-
EFA5	-	-	-	-	3	97	-
EFA6	-	-	-	-	100	-	-
2024-07							
EFA1	-	-	-	-	-	100	-
EFA2	-	-	-	-	-	100	-
EFA3	-	-	-	-	29	71	-
EFA4	-	-	-	-	-	100	-
EFA5	-	-	-	-	-	100	-
EFA6	-	-	-	-	100	-	-

DCH	-	200	400	600	800	1,000	1,300
2023-08							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	-	100
EFA5	-	-	-	-	-	-	100
EFA6	-	-	-	-	-	-	100
2023-09							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	-	100
EFA5	-	-	-	-	-	-	100
EFA6	-	-	-	-	-	-	100
2023-10							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	6	94
EFA5	-	-	-	-	-	6	94
EFA6	-	-	-	-	-	-	100
2023-11							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	17	83
EFA4	-	-	-	-	-	80	20
EFA5	-	-	-	-	-	90	10
EFA6	-	-	-	-	-	10	90
2023-12							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	6	94
EFA4	-	-	-	-	-	81	19
EFA5	-	-	-	-	-	84	16
EFA6	-	-	-	-	-	35	65
2024-01							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	32	68
EFA4	-	-	-	-	-	90	10
EFA5	-	-	-	-	-	97	3
EFA6	-	-	-	-	-	42	58
2024-02							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	31	69
EFA4	-	-	-	-	-	72	28
EFA5	-	-	-	-	-	86	14
EFA6	-	-	-	-	-	10	90
2024-03							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	55	45
EFA5	-	-	-	-	-	55	45
EFA6	-	-	-	-	-	3	97
2024-04							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	7	93
EFA5	-	-	-	-	-	7	93
EFA6	-	-	-	-	-	7	93
2024-05							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	-	100
EFA5	-	-	-	-	-	-	100
EFA6	-	-	-	-	-	-	100
2024-06							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	-	100
EFA5	-	-	-	-	-	-	100
EFA6	-	-	-	-	-	-	100
2024-07							
EFA1	-	-	-	-	-	-	100
EFA2	-	-	-	-	-	-	100
EFA3	-	-	-	-	-	-	100
EFA4	-	-	-	-	-	-	100
EFA5	-	-	-	-	-	-	100
EFA6	-	-	-	-	-	-	100

The forecast is split into 200MW volume bands. For each month, EFA block and product, the % of time we expect the requirements to fall within the associated band (based on current assumptions).