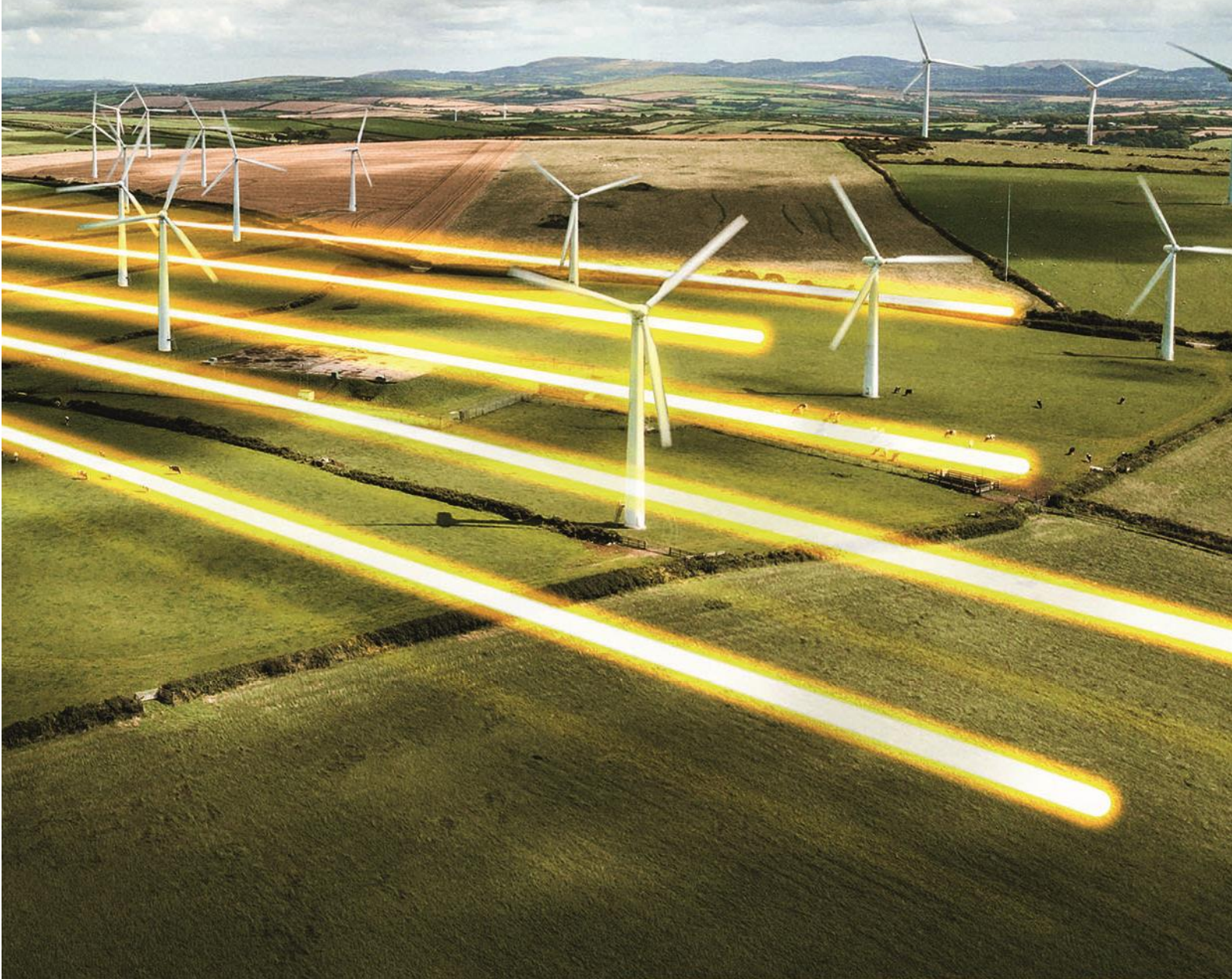


Frequency Response Market Information Report

Monthly Report – March 2022



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Introduction

The report covers essential information related to procurement of frequency response products, such as month ahead tender for Firm Frequency Response (FFR) and day ahead auction for Dynamic Containment (DC) Low and High Frequency (DC-LF and DC-HF). We provide our forecast requirements for these products and give guidance on how to participate in the tenders and auctions. Within this document you will also find information on the new frequency response services, Dynamic Regulation (DR) and Dynamic Moderation (DM). 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 (P,S,H) and new (DC, DM, DR) frequency response products will be procured. Our end state is to meet our dynamic pre- and post-fault frequency response needs with the new suite of dynamic products (Containment, Moderation and Regulation).

A key milestone in meeting our end state is the phasing-out of monthly FFR tenders. This will happen gradually as we launch, grow, and establish the new pre-fault dynamic frequency response products - Dynamic Regulation (DR) and Dynamic Moderation (DM).

We recently shared a report providing details of how we intend to transition to our new services, as well as indicative requirements for 2022 based on our current assumptions regarding system needs and delivery timeframes, the report can be accessed via the [ESO Data Portal](#).

Firm Frequency Response

Requirements for May 2022 (TR 148)

This section provides information to FFR providers on the requirement for the tender (TR 148) for delivery in May 2022 and onwards.

As System Operator, we are required to operate the system economically and efficiently. The liquidity in the FFR market has initially decreased following the introduction of Dynamic Containment (DC). In TR 147 we accepted all the dynamic FFR which cost us less than the alternative actions.

In TR 147 static volume was accepted which cost us less than the alternative actions, for this tender round we have accepted volumes in excess of our published requirement for EFA 1, as this resulted in a more efficient overall outcome across all EFA blocks due to the structure of the tenders received.

As a prudent System Operator, we seek to optimise our requirements to ensure system security at least cost. As we transition to new response products, we are therefore applying a procurement strategy to our PSH dynamic requirements, as there is operational benefit in optimising across the services of which FFR only forms part of our total frequency requirement. Next month we require 300MW for dynamic FFR during EFA 1-4 and up to 550MW during EFA 5-6. This is the same requirement as in the previous Market Information Report.

Month	EFA block	Dynamic Response Required (MW)			Static Response Required (MW)
		Primary	Secondary	High	Secondary
May 2022 onwards	EFA 1	300	300	300	250
	EFA 2	300	300	300	250
	EFA 3	300	300	300	250
	EFA 4	300	300	300	250
	EFA 5	550	550	550	250
	EFA 6	550	550	550	250

Figure 1: FFR requirements for May 2022 onwards.

Please note that, where there is operational benefit and it is deemed economic to do so, the requirement will be taken from either dynamic or non-dynamic providers. This means that part of the requirement for an EFA block may be reallocated in either the non-dynamic market or dynamic market if considered more beneficial.

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. In light of this transition, the minimum dynamic requirement remains a key component to be satisfied and outstanding volume against this will continue to be procured for operational purposes.

April 2022 Contracts Awarded

135 active FFR contracts are due to provide FFR in April 2022. These contracts are made up of:

- **70** dynamic contracts
- **65** non-dynamic contracts

Figure 2 displays the number of tenders submitted in the FFR market for the last 12 months by service type.

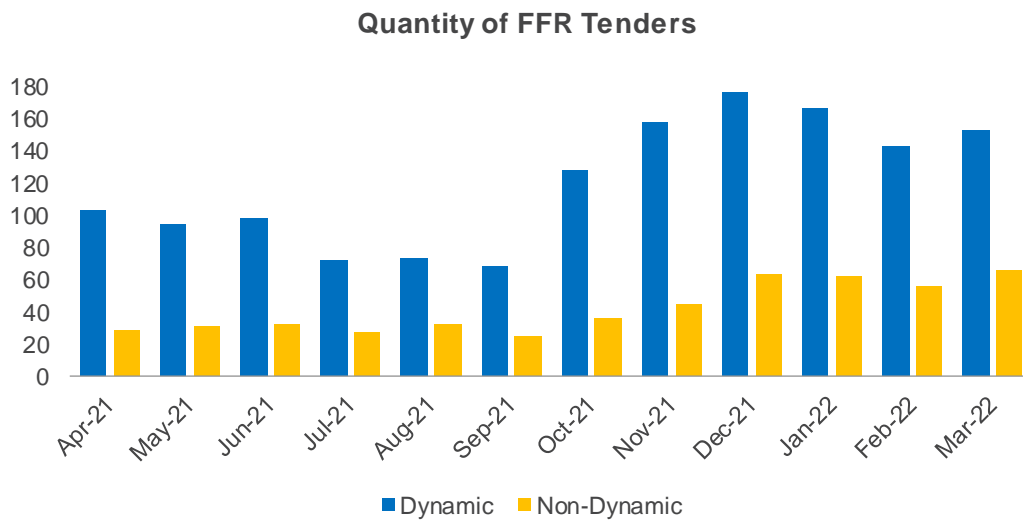


Figure 2: Quantity of FFR Tenders

Key Dates

This Market Information Report is relevant for tenders submitted in **April 2022 for delivery in May 2022**

Tenders from eligible service providers for Firm Frequency Response should be submitted on **1st April 2022 by 17:00** (1st business day) for all tenders.

National Grid ESO will notify service providers of the outcome of the tender assessment, and preliminary nominations, by **Wednesday 20th April 2022** (12th business day).

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

Dynamic Containment

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.

DC-LF Requirements for 2022

Figure 3 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 3.

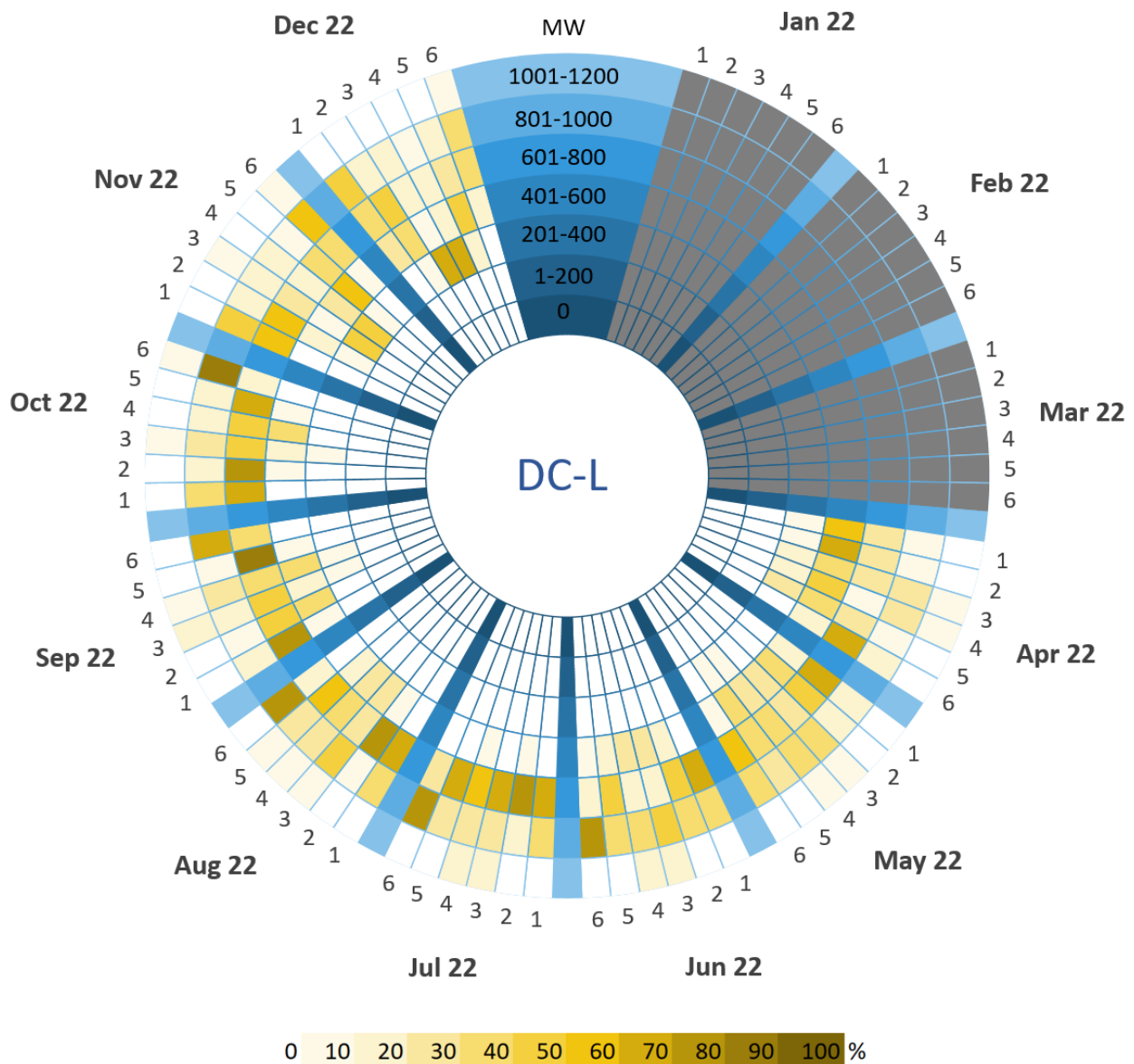


Figure 3: Indicative DC-L Requirements 2022

For example, in July 2022, the shading in the 801-1000MW band in EFA 6 suggests that our requirement will be at this level ~80% of the time, and ~20% of our requirements (indicated by the lighter shade) between 601 - 800 MW.

These indicative volumes are driven by our expectations for demand, inertia and infeed loss sizes (including progress in the ALoMCP), and also reductions in the contracted volumes of legacy services (Enhanced Frequency Response).

DC-HF Requirements for 2022

Figure 4 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 4.

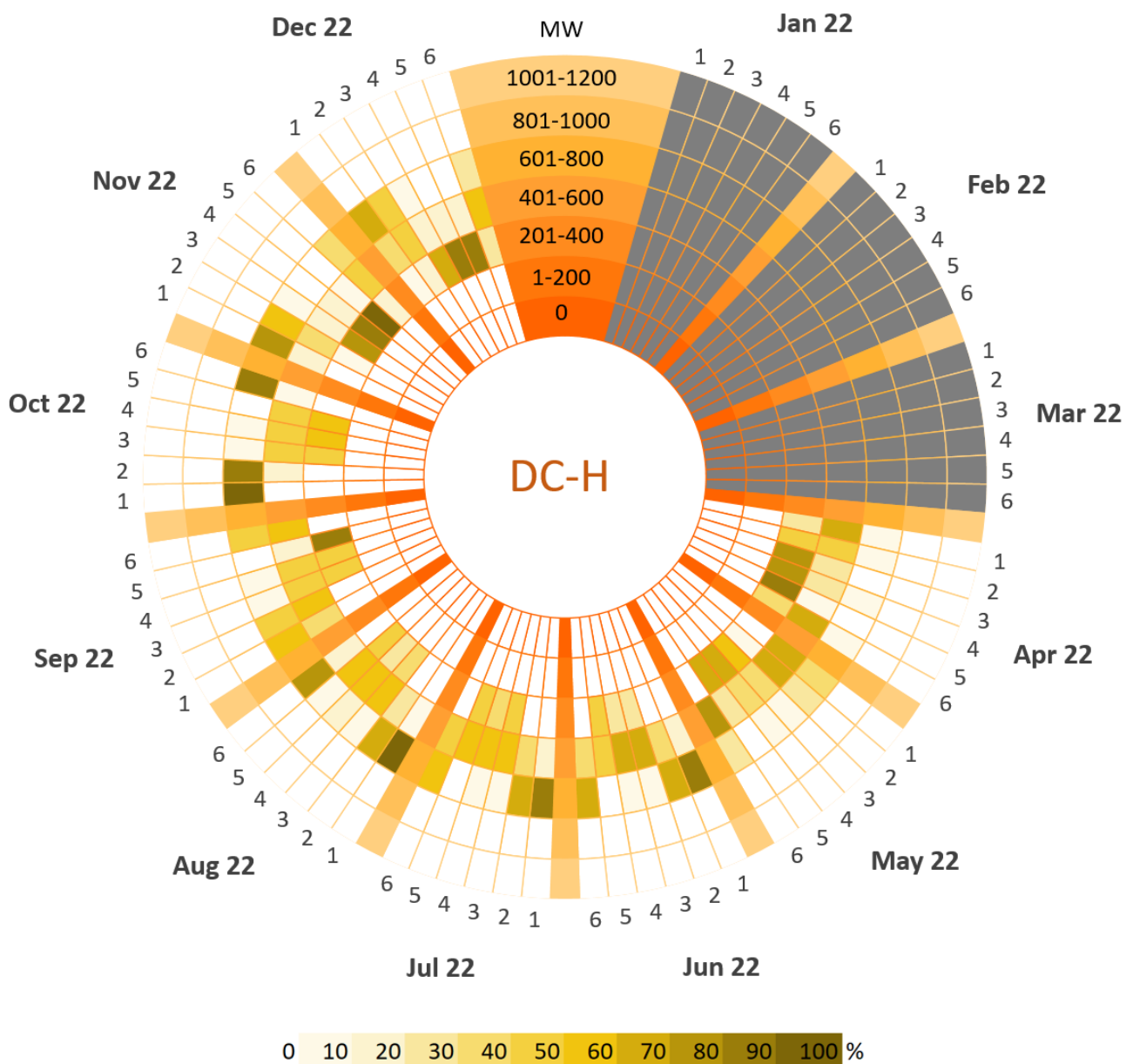


Figure 4: Indicative DC-H Requirements 2022

For example, in July 2022, the shading in the 601-800MW band in EFA 1 suggests that our requirement will be at this level ~90% of the time, with around 10% of our requirements (indicated by the lighter shade) between 401-600 MW.

The DC-H requirements in Figure 4 are indicative requirements based on our expectations for demand, inertia and outfeed loss sizes in 2022. 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

Update: 4 Day Ahead Forecast

We have been working on the development of a D-1 to D-4 forecast for our DC requirements to be published on the ESO Data Portal and have made good progress on developing the tools we need to enable this and plan to start publishing the forecast at the end of March. We will communicate the link to these forecasts on the ESO Data Portal, and confirm the go-live date via the Operational Transparency Forum and via the Future of Balancing Services newsletter.

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](#).

Dynamic Regulation & Dynamic Moderation Requirements

For an initial period (of around 6 months), we will validate the performance of the products on the live system, during which time there will not be a corresponding reduction of the quantity of monthly FFR that we buy, and our requirements for these two new services will be capped at 100MW in the interim period.

To support the development of the market whilst also capturing sufficient data regarding performance, our requirement is expected to be 100MW at most times throughout this period. However, whilst the services are not being used to offset our alternative actions, if there is a significant risk that market depth across our services could result in an undersupply in existing dynamic services, we will reduce the requirements in the DR and DM markets as necessary to support participation in markets used to manage the system. Where a decision is made to reduce the requirement, it will be signalled with as much notice as possible.

Further details regarding our planned transition to DR & DM can be found in the [ESO Frequency Response Requirements Update – February 2022](#).

Appendix 1: FFR 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 May 2022, the unit must have passed testing prior to the tender submission window closing on the 1st business day in April 2022. 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, quarter ahead and per season. 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 FFR 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 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. Tenders should therefore be submitted for May 2022 delivery.

Results

The full set of FFR results for the late tender round (TR 147) 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 National Grid 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

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.

Response BOA and Holding Volume and Cost

This information is in the CSV file for this tender published in [Firm Frequency Response \(FFR\) Market Information](#)

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](#)

Weekly Auction Trial

[The weekly auction trial](#) has now ended, the last auction was on the 26th November for service delivery until the 3rd December.

Other Useful Links

- [Register for Future of balancing services updates](#)
- [ESO Operational Transparency Forum](#)