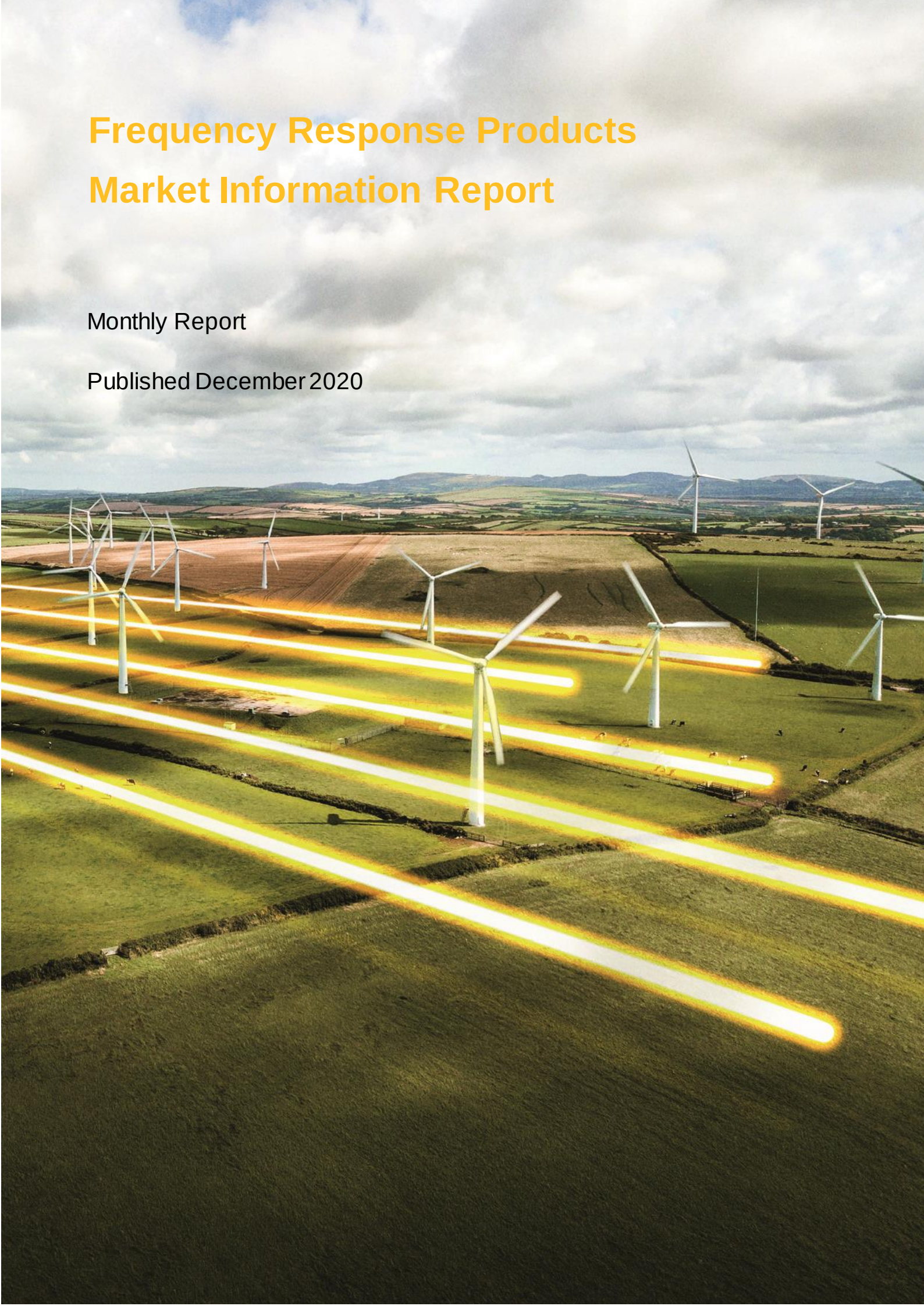
Frequency Response Products Market Information Report

Monthly Report

Published December 2020



Contents

Preamble

The report covers all essential information related to procurement of frequency response products, such as month ahead tender (FFR), week ahead auction (Phase 2 Auction) and day ahead tender (DC) where we will provide our forecasted requirement for those products and give a guidance on how to participate in tenders and auctions.

Frequency Risk and Control Report

The Frequency Risk and Control Report is being introduced following the approval of Security and Quality of Supply Standards (SQSS) modification GSR027: Review of the NETS SQSS Criteria for Frequency Control that drive reserve, response and inertia holding on the GB electricity system.

The first edition of the FRCR is focusing on the following key areas:

- establishing a clear, objective, transparent process for assessing reliability vs. cost to ensure the best outcome for consumers
- making the assessment of the risk from the inadvertent operation of Loss of Mains protection transparent
- identifying quick, short-term improvements for reliability vs. cost, including:
    - the delivery of the Dynamic Containment and Accelerated Loss of Mains Change programmes,
    - assessing the frequency standard that different size loss risks are held to, and
    - the impact of transmission network outages on radial connection loss risks

This is due to be published on 01 April 2021, and will directly inform our future requirements for frequency response services.

Key Points - FFR

This section of Market Information Report is relevant for tenders submitted in January 2021 for delivery in **February 2021.**

Tenders from eligible service providers for Firm Frequency Response should be submitted on **Monday 4th January 2021** (1st business day) for all tenders.

National Grid will notify service providers of the outcome of the tender assessment, and preliminary nominations, by **Wednesday 19th January 2021** (12th business day).

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

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 February 2021 delivery.
A presentation that summarises the FFR results can be found here.

Real-time data i.e. demand and frequency data, over the last 60 minutes can now be found on the Realtime Extranet section on the National Grid website. Historic frequency data as far back as 2014 can also be accessed for GB data at 1 second resolution.

For further information please contact your account manager or:
Andy Rice
Andrew.Rice@nationalgrideso.com

Firm Frequency Response Monthly Tender

This section provides information to FFR providers on the requirement for the tender (TR 133) for delivery in February 2021.

Requirements for February 2021 (TR 133)

Primary Response:

A dynamic primary requirement exists in all EFA blocks.

Secondary Response:

A dynamic secondary requirement exists in all EFA blocks.
There is no non-dynamic secondary requirement.

High Response:

A dynamic high requirement exists in all EFA blocks.

Image 1: Requirement for next six months

Month	EFA Block	Dynamic Response Required (MW)			Static Response Required (MW)
		Primary	Secondary	High	Secondary
Feb – Mar 2021	1	362	362	262	0
	2	362	362	262	0
	3	450	450	350	0
	4	450	450	350	0
	5	450	450	350	0
	6	450	450	350	0
Apr May June July 2021	1	450	450	350	0
	2	450	450	350	0
	3	450	450	350	0
	4	450	450	350	0
	5	450	450	350	0
	6	450	450	350	0

Assessment Update

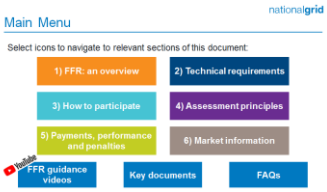
As part of our continuous improvement, we have implemented an improved assessment tool to help us evaluate FFR tenders. This automates part of the process and evaluates the optimum combination of tenders which meets the requirement with the highest combined benefit. We no longer reduce the benefit of a tender based on overholding; each tender is assessed on the benefit per MWh that we expect to utilise. Where applicable any change of utilised volume is accounted for. In these periods, tenders are assumed to offer no benefit where the requirement has already been satisfied. Tenders are then restacked against the recalculated perceived benefit.
The concept of a marginal unit no longer applies because we find the best combination of tenders to satisfy the requirement. Consequently, rejection code 1.1 is no longer used.
These improvements ensure better overall value for end consumer.

Key Points - FFR

Response BOA and Holding Volume and Cost

This information is in Appendix 7 of the adjoining excel file.

FFR service Overview



Product Roadmap

This document sets out the actions to be taken forward for frequency response and reserve.

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 February 2021, the unit must have passed testing prior to the tender submission window closing on the 1st business day in January 2021. 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.

Any outstanding shape will be satisfied, where necessary, closer to real time by the Electricity National Control Centre.

Enhanced Frequency Response (EFR)

100% of EFR is included in the requirements from July 2018.

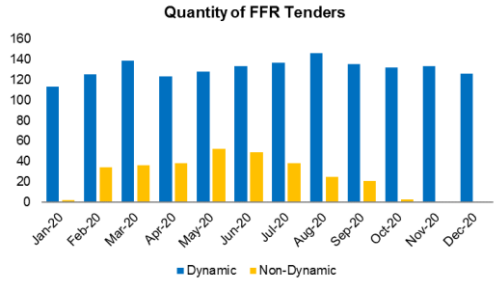
January 2021 FFR Delivery

106 active FFR contracts are due to provide FFR in January 2021. These contracts are made up of:

- **103** dynamic contracts
- **3** non-dynamic contracts
- **27** contracts by BMU providers
- **79** contracts by NBMU providers

The chart below displays the number of tenders submitted in the FFR market for the last 12 months by service type.

Image 2: Quantitiy of FFR Tenders



Tender rejection codes

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.

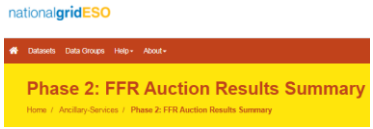
Key Points – Weekly Auction

For latest news and updates please refer to homepage for the weekly auction:

Phase 2 Auction Trial

The auction trial is an innovation project which is procuring Low Frequency Static (LFS) and Dynamic Low High (DLH) frequency products through the EPEX SPOT Auction Platform on a weekly basis.

Auction Results are published on DataPortal:



Weekly Auction – Phase 2

This section provides information to Weekly Auction providers on the requirement for Dynamic Low High and Low Frequency Static Products

As promised in the Response and Reserve Roadmap issued in December 2019, we would share with you our initial findings and learnings about the Auction Trial project in a project evaluation report. The **evaluation report** (provided by ESP Consulting) and the **ESO response letter** are now available.

Procured Volume (FFR and Weekly Auction)

As part of our regular review of our response requirements we have increased our minimum dynamic requirement for primary and secondary by 100MW for December delivery onwards.

In line with our ambition to move our markets closer to real time we are taking this opportunity to move 100MW of volume into the weekly response auction for Dynamic-Low-High.

As a result, our maximum buy order in December's weekly auction will be up to 200MW in each EFA block.

As a consequence of this change:

1. There is no longer a requirement for secondary only static in the month ahead tender
2. The requirement for dynamic high has reduced by 100 MW in the month ahead tender
3. The requirement for primary and secondary dynamic response is as per previous market information reports

Dynamic Containment

This section provides information on requirement for Dynamic Containment and gives an insight of product procurement.

The first few months of dynamic containment delivery have been a success and the ESO are now able to share future DC requirements. The requirements given in Table 1 outline the expected Dynamic Containment LF requirements per month for 2021.

The values given below are assumed to be available 24/7, procured daily and will allow the ESO to secure large losses on a low inertia system without the need to take more expensive alternative actions.

The values are dependent on multiple factors. These include forecasted demand, inertia, loss sizes including LoM loss groups and the FFR and stability pathfinder procurement strategies. Therefore, these requirements are subject to change as any of the factors listed above is updated. Please note these requirements are over and above current response holdings from non-DC products. As we transition to the new response services, we expect more volume to transition to DC, which may increase these requirements.

Requirements for 2021

Image 3: Minimum and Maximum forecast LF DC requirements for 2021 per month.

Month 2021	Min DC LF Requirement (MW)	Max DC LF Requirement (MW)
January	600	800
February	800	1100
March	800	1100
April	900	1200
May	1100	1400
June	1100	1400
July	1100	1300
August	1200	1400
September	1100	1400
October	1100	1100
November	800	1000
December	800	1100

As per our Dynamic containment soft launch development document our priority is to grow and secure our LF requirements. Further information on the procurement on the HF element of the service will be shared as we kick off the Wave 2 activities.

Future requirements for 2022 and beyond

The amount and type of response the ESO procure is continually under review in order to be most cost efficient. As the Accelerated Loss of Mains Change Program (ALOMCP) progresses and the FFR procurement and stability pathfinder procurement strategies are shaped by the Frequency Risk and Control Report, the ESO will update the requirements accordingly.

Future large losses due to connect over the next few years are likely to increase DC requirements. These include:

- Interconnector NSL link at 1400 MW scheduled to connect in December 2021
- Interconnector Viking link at 1400 MW scheduled to connect in 2023
- Hinckley-C at 1800 MW scheduled to connect in 2023
- More generation capacity is being added to the Dumfries & Galloway and Ayrshire loss groups, which will run at 1800MW
- The first of the several large offshore wind farms scheduled due to connect within next few years.

Taking into account the above factors these requirements are subject to revision.

New Suite of Products

This section provides information on developments related to our new suite of products (Dynamic Moderation and Dynamic Regulation).

Please refer to **new Dynamic Containment page** for details related to the new suite of products.

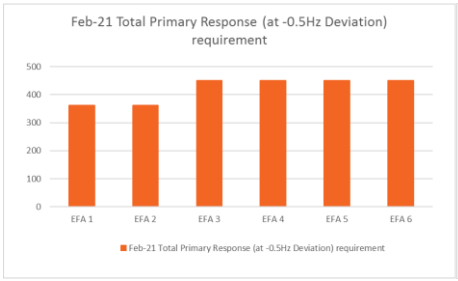
In order to implement the new product suite and avoid overholding of response volumes, it will be necessary to gradually reduce our long-term procurement of the existing P S H products. We will continue to hold monthly FFR tenders for month ahead volume and we will communicate how we will manage the transition from existing mix of products into new suite of products.

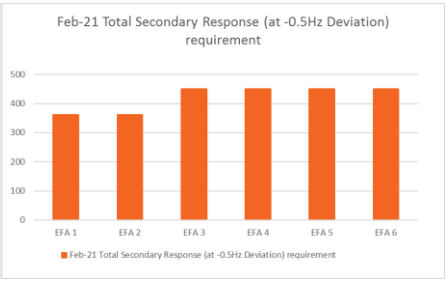
Appendix 1 FFR February 2021 Requirement

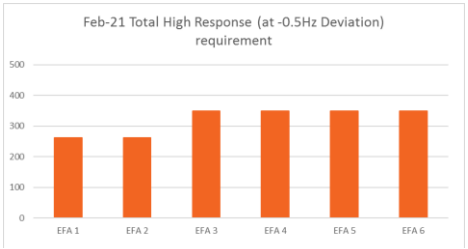
The three charts below display the volume of frequency response left to contract at month ahead against the total response requirements. The red bars represent existing contracted service provision (both dynamic and non-dynamic) including any optional non-FFR services routinely used that National Grid forecast to be cost effective for the month ahead. The grey shaded area is the remaining volume to contract.

For month ahead only, except for circumstances where there is a specific dynamic requirement, the requirement will be taken from either dynamic or non-dynamic providers where deemed economic to do so. This means that any requirement found in the non-dynamic market may be procured in the dynamic market if considered more beneficial. With no primary non-dynamic market in existence, procurement of this volume across any EFA block will instead be taken from the dynamic market.

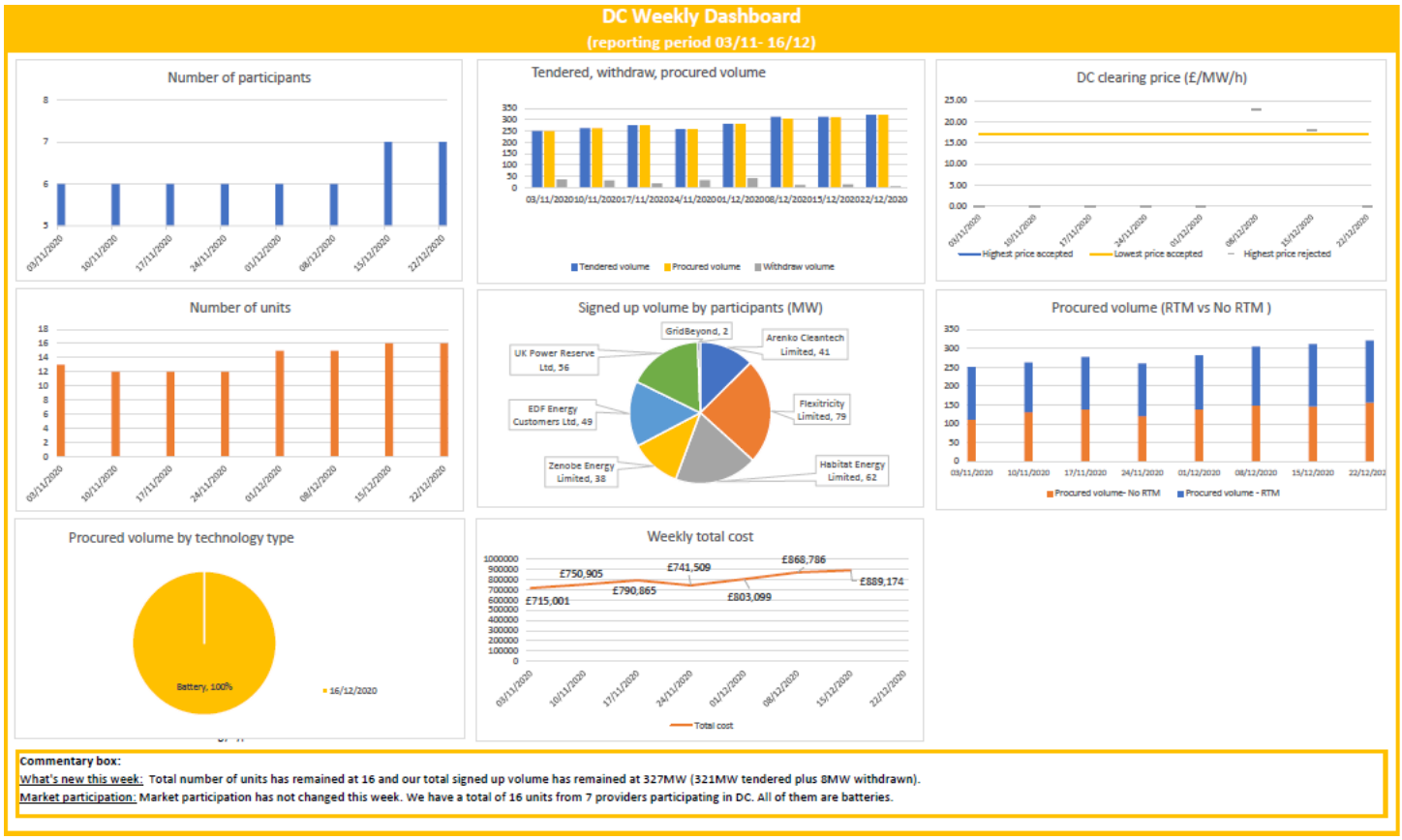
The breakdown of the requirement against dynamic and non-dynamic response can be seen in the tables in appendix 1.







Appendix 2 Dynamic Containment Analysis



nationalgridESO