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10 January 2022

Dynamic Moderation (DM) and Dynamic Regulation (DR) Terms and Conditions

Dear James,

In accordance with Article 18 of COMMISSION REGULATION (EU) 2017/2195 of 23 November 2017 (as applicable and as amended in Great Britain) establishing a guideline on electricity balancing (EBR), National Grid ESO is required to propose terms and conditions related to balancing. Once those terms and conditions have been approved by Ofgem, Article 6 of EBR envisages that National Grid ESO will consult and seek approval to amendments to such terms and conditions, as further required by CUSC Section 4, paragraph 4.2B.5.

In accordance with EBR, a consultation with industry on the Terms and Conditions of Dynamic Moderation (DM) and Dynamic Regulation (DR) services was undertaken from 15 November 2021 to the 15 December 2021 in order to agree the terms for these new services. If approved, these documents will constitute version 1 of the contractual documentation for both servicers. Both are pre-fault services.

DM provides rapid response to keep frequency within operational limits whereas DR is designed to slowly correct continuous but small deviations in frequency with the aim to continually regulate frequency around the target of 50Hz. These are part of our new faster-acting frequency response products alongside Dynamic Containment (DC).

If you have any queries regarding this proposal, please contact us using the above email address.

Yours sincerely,

Kyle Martin
Electricity Market Change Delivery Manager

Annex 1

Amendment of EBR Article 18 mapping to update for revised Dynamic Moderation and Dynamic Regulation Terms and Conditions

Please note: In accordance with EBR Article 18, this table provides references to relevant parts of the GB codes and additional Service Terms which place obligations on registered service providers.

This document does not constitute compliance with Article 18 of the EBR. Its purpose is to demonstrate where Terms and Conditions for DM and DR in the scope of EBR Article 18 can be found. Where there is any conflict between this document, the Service Terms and GB Codes, the Service Terms and GB Codes shall take precedence.

Table 1

Below is the mapping of EBR Article 18 with **highlighted** references for DM and DR service terms. This remains unchanged.

Article	Text	Code	Section
18.2	The terms and conditions pursuant to paragraph 1 shall also include the rules for suspension and restoration of market activities pursuant to Article 36 of Regulation (EU) 2017/2196 and rules for settlement in case of market suspension pursuant to Article 39 of Regulation (EU) 2017/2196 once approved in accordance with Article 4 of Regulation (EU) 2017/2196.	Grid Code	OC9.4
		BSC	G3
18.4	The terms and conditions for balancing service providers shall:	-	-
18.4.a	define reasonable and justified requirements for the provisions of balancing services;	SCT	DC/DM/DR Service Terms 5-Service Availability 6-Service Delivery 7-Availability Payments 15- Monitoring and Metering Data DC Auction Rules 5 – DC Buy Orders DM/DR Auction Rules 6 – DM/DR Buy Order DM/DR/DC Participation Guidance Document

			16 – Transitional Arrangements (DM only)
		BSC	BSC Section A, H3, H4.2, H4.7, H4.8, H5.5, H6, H10, J3.3, J3.6, J3.7 and J3.8
		CUSC	Section 4.1.3
18.4.b	allow the aggregation of demand facilities, energy storage facilities and power generating facilities in a scheduling area to offer balancing services subject to conditions referred to in paragraph 5 (c);	BSC	K3.3, K8, S6.2, S6.3 and S11
		Grid Code	DRSC 4.2, BC1.4
			DC Participation Guidance document 1 - Service Overview 16 -Transitional Arrangements DM/DR Participation Guidance document 1 – Service Overview DC/DM/DR Service Glossary Part 4 Dynamic Containment (DM/DR – Part 3) Specific Terms- - Eligible Asset definition - Response Unit definition-
18.4.c	allow demand facility owners, third parties and owners of power generating facilities from conventional and renewable energy sources as well as owners of energy storage units to become balancing service providers;	BSC	K3.2, K3.3, K8
18.4.d	require that each balancing energy bid from a balancing service provider is assigned to one or more balance responsible parties to enable the calculation of an imbalance adjustment pursuant to Article 49.	BSC	T4, Q7.2, Q6.4
18.5	The terms and conditions for balancing service providers shall contain:	-	-

18.5.a	the rules for the qualification process to become a balancing service provider pursuant to Article 16;	Standard Contract Terms	DC/DM/DR Participation Guidance Document 1 - Service Overview 3 - Registration 5 - Testing 8 – Operational and Performance Baselines 10 - State of Energy 12 - Data 14 - Capacity Market 15 - Active Network Management 16 - Transitional Arrangements (not DM) DC Auction Rules 4 DM/DR Auction Rules 5 – Registration
		Grid Code	BC5, BC4.4.2
		CUSC	Section 4.1
		BSC	J3.3, J3.6, J3.7, J3.8, K3.2, K3.3 and K8

Article	Text	Code	Section
18.5.b	the rules, requirements and timescales for the procurement and transfer of balancing capacity pursuant to Articles 32, 33 and 34;	Standard Contract Terms	DC/DM/DR Participation Guidance Document 3 - Registration 4 – Daily Auctions
			DC General Terms and Conditions 7- Assignments and transfer DM/DR Service Terms 20 – Assignment 21 - Transfer
			DC Auction Rules 5 – DC Buy Orders 6 – DC Sell Orders

			<p>7 – Market Clearing Rules</p> <p>10 – Formation of DC Response Contracts</p> <p>12 – Exceptional Circumstances</p> <p>DM/DR Auction Rules</p> <p>6 – DM/DR Buy Order</p> <p>7 – DM/DR Sell Order</p> <p>8 – Market Clearing Rules</p> <p>11 – Formation of DM/DR Response Contracts</p> <p>13 – Exceptional Circumstances</p> <p>DC Service Terms</p> <p>17 – Transfer of DC Response Contracts</p> <p>DM/DR Service Terms</p> <p>21 – Transfer of DM/DR Response Contracts</p>
18.5.c	the rules and conditions for the aggregation of demand facilities, energy storage facilities and power generating facilities in a scheduling area to become a balancing service provider;	Guidance document	<p>DC/DM/DR Participation Guidance Document</p> <p>1 - Service Overview</p> <p>16 - Transitional Arrangements (not DM)</p>
		BSC	K3.3 and K8
		Grid Code	BC1.4 and BC1.A.10
18.5.d	the requirements on data and information to be delivered to the connecting TSO and, where relevant, to the reserve connecting DSO during the prequalification process and operation of the balancing market;	Standard Contract Terms	<p>DC/DM/DR Participation Guidance</p> <p>3 - Registration</p> <p>4 – Daily Auctions</p> <p>5 - Testing</p> <p>6 - Settlement</p> <p>8 – Operational and Performance Baselines</p> <p>12 - Data</p>

			16 - Transitional Arrangements (not DM) DC General Terms and Conditions 8 - Confidentiality and Announcements 18 – EMR DM/DR Service Terms 22 – Confidentiality 34 - EMR DC/DM/DR Service Terms Section 5 Service Availability 5.1, 5.2, 5.3 Section 6 Service Delivery 6.2, 6.3, 6.4, 6.5 13 -Communication 15 - Monitoring and metering data DC Auction Rules 4 - Registration 6 - DC Sell Orders DM/DR Auction Rules 5 - Registration 7 - DC Sell Orders
		BSC	BSC Section O
		Grid Code	DRC, BC5 BC1.4,
		CUSC	Section 4.1.3.14 and 4.1.3.19
18.5.e	the rules and conditions for the assignment of each balancing energy bid from a balancing service provider to one or more balance responsible parties pursuant to paragraph 4 (d);	BSC	T4
			DC/DM/DR Service Terms 16- ABSVD DC/DM/DR Participation Guidance Document 6 - Settlement
18.5. f	the requirements on data and information to be delivered to the connecting TSO and, where relevant, to the reserve connecting DSO to evaluate the provisions of balancing services pursuant to Article 154(1), Article 154(8),	Standard Contract Terms	DC/DM/DR Service Terms 13 -Communication 15 - Monitoring and metering data

	Article 158(1)(e), Article 158(4)(b), Article 161(1)(f) and Article 161(4)(b) of Regulation (EU) 2017/1485;	Grid Code	Grid Code BC1.4, BC1.A.10,
		CUSC	4.1.3.19
18.5. g	the definition of a location for each standard product and each specific product taking into account paragraph 5 (c);	Grid Code	BC1.4
18.5. h	the rules for the determination of the volume of balancing energy to be settled with the balancing service provider pursuant to Article 45;	BSC	BSC T3
18.5. i	the rules for the settlement of balancing service providers defined pursuant to Chapters 2 and 5 of Title V;	Standard Contract Terms	DC/DM/DR Participant Guidance Document 6 - Settlement DC/DM/DR Service Terms 7- Availability Payments 8- Payment procedure Schedule 2 - Availability Payments DC General Terms and Conditions 4- Payments DM/DR Service Terms Schedule 3 - Payments
		BSC	T1.14, T3 and U
		CUSC	Section 4.1.3.9 and 4.1.3.9A
18.5. j	a maximum period for the finalisation of the settlement of balancing energy with a balancing service provider in accordance with Article 45, for any given imbalance settlement period;	Standard Contract Terms	DC General Terms and Conditions 4- Payment DM/DR Service Terms Schedule 3 - Payments
		BSC	U2.2
		CUSC	Section 4.3.2.6

<p>18.5. k</p>	<p>the consequences in case of non-compliance with the terms and conditions applicable to balancing service providers.</p>	<p>Standard Contract Terms</p>	<p>DC General Terms and Conditions 6- Termination of Balancing Services Contracts DM/DR Service Terms 14 – Termination of DM/DR Response Contracts DC Auction Rules 6.13/6.14 - DC Sell Orders DM/DR Auction Rules 7.13/7.14 - DM/DR Sell Orders DC/DM/DR Service Terms 4, 5, 6, 11, 12, 14 5.5 - settlement period of unavailability 5.6 – exception where complied with SOE rules 5.7 - Unable to meet requirements - deemed unavailable <u>5.8 – inability to comply with disarming/rearming instructions (DM only)</u> 6.5 - failure to prep baseline - deemed unavailable 6.12 - non compliance with SOE rules - deemed unavailable <u>6.18 – non compliance with disarming/rearming instructions (DM only)</u> DM/DR/DC Participation Guidance Document</p>
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			16 – Transitional Arrangements (DM only).
		BSC	H3, Z7 and A5.2
		CUSC	Sections 4.1.3.9, 4.1.3.9A and 4.1.3.14
18.6	The terms and conditions for balance responsible parties shall contain:	-	-
18.6. a	the definition of balance responsibility for each connection in a way that avoids any gaps or overlaps in the balance responsibility of different market participants providing services to that connection;	BSC	K1.2, P3 and T4.5
18.6. b	the requirements for becoming a balance responsible party;	BSC	A, H3, H4.2, H4.7, H4.8, H5.5, H6, H10, J3.3, J3.6, J3.7, J3.8,, K2, K3.3 and K8
18.6.c	the requirement that all balance responsible parties shall be financially responsible for their imbalances, and that the imbalances shall be settled with the connecting TSO;	BSC	N2, N6, N8, N12, and T4,
18.6. d	the requirements on data and information to be delivered to the connecting TSO to calculate the imbalances;	BSC	BSC Section O, Q3, Q5.3, Q5.6, Q6.2, Q6.3, Q6.4
		Grid Code	BC1.4.2,3,4, BC1 Appendix 1 BC2.5.1,
18.6. e	the rules for balance responsible parties to change their schedules prior to and after the intraday energy gate closure time pursuant to paragraphs 3 and 4 of Article 17;	BSC	P2
		Grid Code	BC1.4.3,4,
18.6.f	the rules for the settlement of balance responsible parties defined pursuant to Chapter 4 of Title V;	BSC	T4, U2

Article	Text	Code	Section
18.6.g	the delineation of an imbalance area pursuant to Article 54(2) and an imbalance price area;		GB constitutes one imbalance area and imbalance price area and they are equal to the synchronous area

18.6.h	a maximum period for the finalisation of the settlement of imbalances with balance responsible parties for any given imbalance settlement period pursuant to Article 54;	BSC	U2.2
18.6.i	the consequences in case of non-compliance with the terms and conditions applicable to balance responsible parties;	BSC	H3,Z7 and A5.2
18.6.j	an obligation for balance responsible parties to submit to the connecting TSO any modifications of the position;	BSC	P2
18.6.k	the settlement rules pursuant to Articles 52, 53, 54 and 55;	BSC	T4, U2
18.6.l	where existing, the provisions for the exclusion of imbalances from the imbalance settlement when they are associated with the introduction of ramping restrictions for the alleviation of deterministic frequency deviations pursuant to Article 137(4) of Regulation (EU) 2017/1485.	Deterministic frequency deviation is a continental European concept and is not a characteristic of the GB system. Therefore, this requirement does not apply to GB.	N/A

Non- Mandatory elements

Article	Text	Comment
18.7. a	a requirement for balancing service providers to provide information on unused generation capacity and other balancing resources from balancing service providers, after the day-ahead market gate closure time and after the intraday cross-zonal gate closure time;	NG ESO does not expect to require this from Balancing Service Providers.
18.7. b	where justified, a requirement for balancing service providers to offer the unused generation capacity or other balancing resources through balancing energy bids or integrated scheduling process bids in the balancing markets after day ahead market gate closure time, without prejudice to the possibility of balancing service providers to change their balancing energy bids prior to the balancing energy gate closure time or the integrated scheduling process gate closure time due to trading within intraday market;	NG ESO does not expect to require this from Balancing Service Providers, except where balancing capacity or energy has been contracted. Although in the BM defaulting rules apply if data is not updated, there is no legal requirement for parties to offer unused generation capacity or any other balancing resource.
18.7.c	where justified, a requirement for balancing service providers to offer the unused generation capacity or other balancing resources through balancing energy bids or integrated scheduling process bids in the balancing markets after intraday cross-zonal gate closure time;	NG ESO does not expect to require this from Balancing Service Providers, except where balancing capacity or energy has been contracted. Although in the BM defaulting rules apply if data is not updated, there is no legal requirement for parties to offer unused generation capacity or any other balancing resource.

18.7. d	specific requirements with regard to the position of balance responsible parties submitted after the day-ahead market timeframe to ensure that the sum of their internal and external commercial trade schedules equals the sum of the physical generation and consumption schedules, taking into account electrical losses compensation, where relevant;	NG ESO does not expect to require this from Balancing Service Providers. No BSC party is required to contract to match its Final Physical Notifications (FPNs).
18.7. e	an exemption to publish information on offered prices of balancing energy or balancing capacity bids due to market abuse concerns pursuant to Article 12(4)	NG ESO does not expect to require this exemption. Such data is published on BMRS.
18.7. f	an exemption for specific products defined in Article 26(3)(b) to predetermine the price of the balancing energy bids from a balancing capacity contract pursuant to Article 16(6)	DM/DR A derogation has been sought under Regulation (EU) 2019/943 Article 6(14) from the requirements of Regulation (EU) 2019/943 Article 6(2) and this is pending Ofgem approval.
18.7. g	An application for the use of dual pricing for all imbalances based on the conditions established pursuant to Article 52(2)(d)(i) and the methodology for applying dual pricing pursuant to Article 52(2)(d)(ii).	NG ESO does not expect to apply for the use of dual pricing for all imbalances. A single imbalance price was adopted by the GB market in November 2015.

Annex 2

EBR Article 18 Dynamic Regulation and Dynamic Moderation Terms and Conditions Consultation Responses Summary

Table 1

Summary of responses and key themes from the consultation responses and NGESO comments. For responses provided on the official template we have only included the specific questions the provider responded to, all other questions should be assumed as “no comment” from the provider. Where providers have submitted detailed letters, or their response is very detailed on the response template NGESO has summarised the response into key themes.

Respondent	Response or Key Theme	NGESO Comments
The ADE	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>In overall terms, the proposed updates for DM and DR appear to reflect what has already been discussed in consultation with industry.</p> <p><u>Locationality</u> The ADE especially welcomes the change to the position allowing aggregation at GSP group level, as this will aid the ESO in achieving its vision of liquid balancing service markets that provide a level playing field to all market participants. However, this alteration must be considered as further impetus to ramp up IT upgrades so that any of the concerns raised by ESO about coping with small units at the edge of the grid are not realised.</p> <p><u>Baselining</u> While acknowledging the drive to advance a minimum viable product (MVP) to market expeditiously, given the progress made between the ESO and the ADE on developing a functional data-derived baselining method for DM and DR it is concerning that the Day 1 MVPs are slated to employ nomination baselines without any definitive transition to data-</p>	<p><u>Locationality</u> Thank you for your feedback on GSP Group aggregation. In terms of our IT plans and timelines, these were agreed as part our RIIIO-2 business plan and changes to this will be considered as part of business plan two which will be consulted on with industry.</p> <p><u>Baselining</u> Thank you for your feedback on baselines. As you have stated we have been engaging with ADE and its members on the feasibility of a data-derived baseline methodology. As this is still in the exploratory phase, we have kept baseline requirements the same as Dynamic Containment until we can be sure there is an alternative solution. We appreciate flexibility providers consider the current baseline requirements a barrier to entry and we look forward to engaging with you further on potential resolutions.</p> <p><u>Initial Volume Requirement</u> Studies are currently being undertaken but are time consuming given the highly complex behaviour of this phenomenon. While disarming is a mitigation, there is no guarantee that stopping the source of the oscillation will ensure damping fast enough to avoid an issue. We will share the outcome of this with industry in due course.</p> <p><u>Stacking</u> Enabling stacking across different response services (e.g. simultaneous delivery of DR and DC) will have large impacts on ESO systems and business processes</p>

derived baselines being in place. Likewise, the lack of provision made for closer to real time adjustments has the potential to exclude certain flexibility providers and does not enable best system accuracy.

In order to ensure a level playing field of outcome as opposed to process, as has been the case with provisions made for renewable generation (eg 'Power Available'), it is essential that baselining methodologies do not represent undue obstacles to flexibility providers. Therefore, continued and consistent workshopping of proposals with the ADE and industry stakeholders ought to be prioritised.

Initial Volume Requirement

The initial volume cap of 100MW appears slightly low, although the ADE appreciates the ESO's desire to mitigate oscillation concerns. However, the required studies into understanding these issues should be undertaken without delay in order for volume requirement to be increased. Furthermore, it is unclear why oscillation concerns persist since it has been confirmed that an arming/disarming function will be built into the product design. It seems that such a capability assuages any oscillation risks.

Stacking

The ADE is concerned by the proposal to only allow stacking with the Balancing Mechanism. This approach limits market access and participation by disallowing the simultaneous use of assets. Inhibiting the efficient use of flexible assets is incongruent with the objectives of FES and the Smart Systems Flexibility Plan.

Auction Approach

Linked to the above is the auction approach which disallows providers merely from offering products simultaneously since the auctions will run concurrently on the same platform. This could lead to certain auctions being flooded and others being under offered. Again, this impedes healthy market activity and participation. It is unclear why such an approach is

Our end goal of achieving a fully co-optimised Response market will be achieved with the Enduring Auction Capability. This project is currently going through a competitive tender process, with the aim to choose a successful supplier in spring 2022. We're currently exploring when we can bring in this functionality and further enhance procurement of the new ancillary services.

Auction Approach

Thank you for your comment. We considered sequential auctions (i.e., three auctions each day, so that participants could roll over uncleared volumes). However, the relative value of the services may be different for low-frequency and high-frequency response, and between the different EFA periods, and from day to day. For this reason, we concluded that a simultaneous auction would result in lower procurement costs (compared to staggered auctions). We are currently exploring different options to implement some form of market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RII0-2 Business Plan.

Performance Reporting

With effect from 1st April 2022 performance monitoring will be carried out on a monthly basis. For DC, performance factors have been supplied for the period 1st April 21 to mid-September and the intention is to include a penalty adjustment for this in either January or February 2022, to be applied retrospectively. This assessment process will be repeated for the performance period mid-September through to the end of December. Account managers will be engaging with those providers affected. Once these adjustments have been completed this will move to a monthly assessment process. We anticipate that DM and DR would be included in this monthly performance monitoring from the launch of both services.

Performance Tolerance

We have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis

	<p>necessary and owing to the negative impact it will have on the competitiveness of auctions it should be revised.</p> <p><u>Performance Reporting</u> It is important that data on historic performance be provided on a monthly basis as soon as possible from launch date.</p> <p><u>Performance Tolerance</u> Recalling the tolerance parameters for Firm Frequency Response, it appears that the 3-7% tolerance for DC, DM and DR is relatively narrow. This is especially true for DR since it will vary continuously and therefore more easily exceed limits.</p> <p><u>Symmetrical Bids</u> The ADE considers, given that the issue also arose with DC, that a worked example on simultaneous high and low bids would be beneficial since there may be varying interpretations of this from market participants.</p> <p><u>Note</u> All of the above relate to both DM and DR proposals.</p>	<p>to assess the impacts to the service of adjusting the requirements to address barriers to entry.</p> <p>Whilst we believe the DR parameters remain appropriate (we also didn't receive any specific recommendations for changes to the parameters), we have proposed changes and exceptions to the DR performance monitoring rules to address the concerns raised. This includes not penalising response from synchronous generation in the deadband, exceptions for delivery beyond +/- 0.2Hz, increasing the performance tolerances (from 3%-7% to 5%-25%), and changing the error calculation rolling window from a rolling mean to a rolling minimum.</p> <p>We are committed to refining the performance monitoring rules to support removing any barriers to entry whilst maintaining the integrity of the services, and as such we will be reviewing the rules for DR and DM 6 months after launch. We welcome further engagement and feedback regarding opportunities to support any future changes. Whilst DC is outside of the scope of this consultation, we also encourage any feedback regarding potential improvements to the service to inform future developments.</p> <p><u>Symmetrical bids</u> High-frequency and low-frequency products (from the same service) may be offered simultaneously. The products can be offered to clear independently or offered so that the acceptance of one product is conditional on acceptance of the other. A number of worked examples were presented at the Consultation overview webinar on 23 November. You can watch a recording here (https://players.brightcove.net/867903724001/default_default/index.html?videoId=6283529134001) and access slides here (https://www.nationalgrideso.com/document/222496/download). We will conduct a mock auction prior to go-live, and further support and guidance will be provided as part of the mock auction process.</p> <p>In the meantime, if more clarity is required please contact us via Future of Balancing Services email address and we will be happy to discuss further.</p>
Arenko Group	<i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i>	<u>Programmatic access to auctions</u>

Please provide rationale.

(Please mark whether this relates to DM only or DR only or both)

We welcome the introduction of these services. We have some concerns about some of the rules and definitions in the consultation documents:

Programmatic access to auctions

Previously, ESO have told providers not to use the CTS++'s built-in API for submitting bids and retrieving auction results.

This leaves providers with no way to submit bids in an automated way, and means we have to rely on the ESO Data Portal for retrieving results programmatically. The Data Portal was not designed with this use-case in mind and has been unreliable on many occasions we've communicated previously.

With the increase in complexity following the introduction of the new markets, this situation seems unsustainable, and causes more work for both ESO and providers than using the APIs the CTS++ platform already has built-in. Is there a plan to permit use of this API or provide a reliable alternative?

ABSVD

The terms state that ABSVD will not be provided for non-BM units, but do not state why. The process for submitting ABSVD for non-BMUs has been in place since Apr 2020.

Why are they excluded from ABSVD for this service, and what is the plan to include them in future?

Bidding across service types

The FAQ states that units cannot stack DM/DC/DR together, but also, confusingly, that they cannot bid for multiple services at the same time, even if they were only able to be awarded one contract.

Why is this restriction in place? Does ESO expect this to split the possible pool of possible providers across the services or

There is currently no plan for providers to be able use the APIs on the CTS++ platform. This is being reviewed by both NGESO and EPEX and we will advise further on this in due course.

For our Enduring Auction Capability, we are planning to provide an API enabled Auction Service. This will allow the Single Markets Platform to provide the single uniformed views for all Market Participants. It is considered that API-driven services should be enabled for use by Market Participants.

ABSVD

We are currently developing a new settlement system and will incorporate ABSVD for DC, DM, and DR when development is complete. We are open to considering ways to capture and share known issues with providers and welcome a discussion with interested parties.

Bidding across service types

Thank you for your comment. A number of worked examples were presented at the Consultation overview webinar on 23 November. You can watch a recording here

(https://players.brightcove.net/867903724001/default_default/index.html?videoid=6283529134001) and access slides here

(<https://www.nationalgrideso.com/document/222496/download>). We will conduct a mock auction prior to go-live, and further support and guidance will be provided as part of the mock auction process.

We will be analysing the business case for stacking (simultaneous delivery) of more than one of the services, considering the benefits that service stacking could bring in terms of a more efficient market for response as well as the complexity of the system and business process changes needed to support the procurement and operation of multiple services delivered by a single unit. Furthermore, we are currently exploring different options to implement some form of market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through

are the markets for DM vs DR vs DC intended to be very separate anyway?
Will this restriction be lifted in future?

Response Energy Volume

The stored energy with which an energy limited asset must start the service and maintain a level above for availability (the Response Energy Volume) has been defined in energy only. This assumes that an energy limited asset can deliver any power up to its contracted power throughout the full stored energy range. For battery storage assets this assumption is not valid, they will curtail to zero power as the stored energy approaches zero. For most of these assets the ability to deliver full power stops while there is a significant volume of energy stored, up to 10% of the total storage. This means that as the Response Energy Volume is currently defined, using energy only, the duration the asset could deliver the contracted power could be much less than the required 30 minutes.

We suggest that the definition of Response Energy Volume is adjusted to explicitly exclude any energy volume for which the contracted power cannot be delivered. For example a clause could be added as follows:

The **Response Energy Volume** excludes any energy for which the **Contracted Quantity** cannot be delivered.

The diagram below attempts to demonstrate the difference between the definition currently in the Service Terms and the amended definition:

the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan.

Response Energy Volume

Thank you for your feedback. It is the duty of service providers to maintain their SoE at a level that the full Response Energy Volume could be delivered. If this means accounting for energy that is not deliverable (for the reasons you describe, or any other reason) then the service provider has the responsibility to do this. Further information on State of Energy and examples of this are provided within the Participation Guidance.

Service Terms

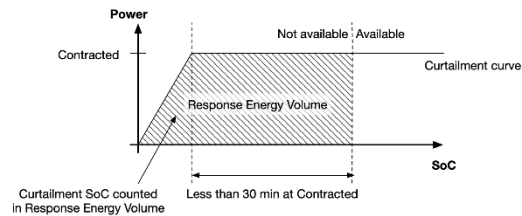
Thanks for your feedback.

- 1) Registered Quantity has been removed from section 15.4
- 2) we were unable to find this listed twice. If the repetition remains, please contact us via the Future of Balancing Services email account and we will rectify.

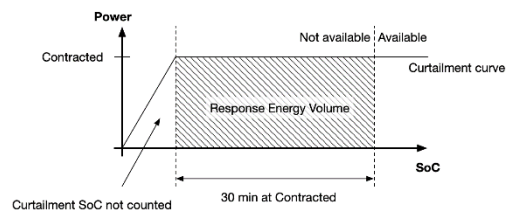
We will consult on any changes to Dynamic Containment service terms, and at which point we would ensure where appropriate they are aligned.

We do expect to need to occasionally update the service terms of all three services but not necessarily in convergence.

Response Energy Volume as Currently Defined



Response Energy Volume Excludes Curtailment Region



Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?

(Please mark whether this relates to DM only or DR only or both

The Service Terms for DM and DR appear to be based on the pre-consultation version of v4 of the Dynamic Containment service terms, and some things that were changed as part of that consultation are repeated here:

1. Registered quantity is included in high-frequency performance monitoring despite it not changing for the duration of a monitoring period. It's not clear why a value that never changes within the hour needs to be in place, or what it should be in the case of both high- and low-frequency contracts.

2. DM Glossary lists Maximum ramp rate for Baselines twice

	<p>On the future of these services, given how close the terms are to each other and DC:</p> <p>Does SO intend to change DC to bring it closer to these new terms?</p> <p>Does ESO intend to evolve all three services in tandem or are they expected to diverge?</p>	
Centrica	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i> <i>Please provide rationale.</i> <i>(Please mark whether this relates to DM only or DR only or both)</i></p> <p>The final proposals for DM and DR are largely reflective of the product design and service terms discussed with industry during the co-creation process.</p> <p>We welcome the areas where the ESO has responded to stakeholder requests in the final service design – notably the decision to allow aggregation at GSP Group level. We thank the ESO for its extensive engagement with stakeholders in the weeks immediately adjacent to the consultation launch date.</p> <p>We are recommending below improvements to some aspects of the service design, including in response to some last-minute changes to the service that we were not expecting. We also understand that the ESO says it cannot deliver some elements until Day 2. For these reasons we cannot fully agree with the proposal being consulted upon.</p> <p>We provide comments by topic below. Our rationale for enhancing the procurement arrangements, which is a key area for us, is presented on a separate row.</p> <p><u>Disarming instruction</u> (DM & DR) - The ESO has not confirmed how the disarming and rearming instructions will</p>	<p>Thank you for your feedback on our engagement to date and on GSP Group aggregation, we are pleased you see this as a positive change for these services.</p> <p><u>Disarming instruction</u> Thank you for your feedback. We are currently working with our IT team to finalise the details of the disarming process. We will provide further information later in January.</p> <p><u>Baselining</u> Thank you for your feedback on baselines. We have been engaging with industry on the feasibility of a data-derived baselines methodology. As this is still in the exploratory phase, we have kept baseline requirements the same as Dynamic Containment until we can be sure there is an alternative solution. We appreciate some providers consider the current baseline requirements a barrier to entry and we look forward to engaging with you further on potential resolutions.</p> <p><u>Performance Metering</u> Thank you for your feedback. To enable us to sufficiently monitor that performance is within the defined tolerances, we require a resolution of at least 2Hz for performance monitoring for Dynamic Regulation. We explored 2Hz as an option in the workshops back in June with most of the feedback from providers saying it wouldn't be difficult to implement, however, we appreciate there are exceptions and have therefore provided a 6-month grace period post go live to allow for this.</p> <p><u>Onboarding</u> There are no onboarding activities that cannot be undertaken before Ofgem's final approval. However, some of these activities, such as</p>

be delivered to participants. The ESO has said that it is still working on this and hopes to provide more information soon. We are keen to receive this information as soon as possible so that we can prepare our systems and assets to be able to respond to the signal. This is most important for Non-BM assets where we understand this will be a completely new IT system/signal.

Baselining (DM & DR) - We encourage the ESO to continue work to develop a functional data-derived baselining methodology for DM and DR. We ask that the ESO sets out a clear and timed work plan to deliver data-derived baselines.

Performance metering (DR) – We were surprised to see a 2Hz requirement for DR introduced in the Art 18 proposal. During the co-creation workshops the ESO had indicated that it would be 1Hz. 2Hz will be a struggle for Residential DSR. If the ESO could keep the requirement at 1Hz it would enable participation from a wider range of flexible resources.

Onboarding (DM & DR) – We need sufficient notice and time to prepare our systems and assets to participate in these new services. The regulatory timetable for the Article 18 process means that Ofgem may not issue its decision until a couple of weeks before go-live. We support the ESO's plans to start onboarding from early February on the Single Market Platform. To reduce the regulatory risk from onboarding before publication of the final service terms (post Ofgem decision) we ask that the ESO share all post-consultation changes included in its final submission to Ofgem.

Can the ESO clearly identify any elements of pre-qualification that it envisages cannot be undertaken until Ofgem has given its decision?

Volumes (DM & DR) – We have heard the ESO explain its plan to launch the DM and DR prod with initial market volume

testing would be done under a degree of risk. To mitigate this, we would be looking to publish our 'Minded To' positions for any changes through the consultation responses and a summary document of key changes made through the consultation prior (and subject to) Ofgem approval. Account managers will work closely with providers to provide reassurance that we are doing everything we can to mitigate the regulatory risk. If you would like to discuss this further, please contact the team at the Future of Balancing Services email address.

Volumes

Requirements are subject to change, but we expect to buy up to 150MW of each service in 2022. This is likely to rise to 300MW of each service by 2025. All of our requirements are published monthly in the Market Information Report.

Active Network Management Zones

We discuss ANM in section 15 of the Participation Guidance. There is ongoing work within Open Networks look to at service provision from assets who are subject to ANM provisions. We are actively engaged in this work and will progress relevant findings to facilitate market entry where possible.

Procurement

Firstly, thank you for the detailed response and suggestions. See NGENSO's replies below for each request:

Request n1 - Enabling a virtual split of assets would have large impacts on the EPEX platform and clearing algorithm, as well as internal ESO systems and processes.

Request n2 - Co-optimised procurement of the services is the target market design. An implementation plan for this market design is being assessed. In the meantime, the ESO plans to introduce a 4-day rolling forecast of the requirements for each service in order to improve market transparency and efficiency.

Request n3 - Integer MW is a constraint of most core ENCC systems, rather than a limitation on the procurement of frequency response.

caps of 100 MW, and then to gradually raise these as it reduces procurement of the legacy services. What we are missing is a forecast of procurement volumes for DM and DR once the legacy services are fully phased out. We need to know what size the DM and DR markets will be when fully implemented. We, and our customers, need this information to build the business case for investing to provide these products. When can such a forecast of this be shared in the Market Information Reports published on the ESO Data Portal?

Active Network Management Zones (DM & DR) – We do not currently have assets under ANM. We have actively avoided locating flexible assets in areas where they could be subject to ANM because of the impact this has on their ability to participate in ESO markets. We encourage the ESO to continue working with DNOs and the ENA Open Networks project to implement efficient mechanisms enabling assets with flexible connections to participate, including through improved curtailment information.

Procurement (DM & DR)

The procurement arrangements proposed for Day 1 will result in inefficient use of battery storage, risk of increased procurement costs, and may even mean the ESO is not offered the volume it requires for certain products. This results from the decision to hold a combined auction for DC, DM and DR auctions at 2.30 pm on EPEX with no linking of bids across products, which forces a provider to choose only one of the three products to offer all of the capacity of a Unit, when that Unit could very well take part in the other products. The ESO has explained that its auction choices for Day 1 result from a) constraints caused by the EPEX platform and b) plans to delay additional functionality until the ESO can launch its Enduring Auction Capability around March 2023. We do challenge this feedback and ask NG ESO to reconsider available options, as the proposed design does

Updates to the ESO's core balancing and control systems are an ongoing initiative.

We will be analysing the business case for stacking (simultaneous delivery) of more than one of the services, considering the benefits that service stacking could bring in terms of a more efficient market for response as well as the complexity of the system and business process changes needed to support the procurement and operation of multiple services delivered by a single unit. Furthermore, we are currently exploring different options to implement some form of market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022.

If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com

Other comments

Thank you for your feedback. We will be sharing our plans for day 2 in the spring once we have reviewed the activities and prioritised accordingly. We will be taking feedback from industry and our operational colleagues into consideration as part of the prioritisation process. The teams working on the Enduring Auction Capability project and Single Market Platform will be involved in the discussions on improvements to the procurement process.

seem to be far from the best (if not the worst) option available in terms of social welfare.

We set out below three improvements we are seeking to correct the defects with the Day 1 proposal. Whilst some aspects of these are likely not achievable until Day 2, the ESO must at least for Day 1 consider what it can do to mitigate the risk that it could face shortages of some products because providers must choose which market to enter for the combined 2.30 pm auction. The full details of these proposals can be found in the attached Annex to our response.

Request n°1:

Solve the stacking issue in the short run by allowing providers to virtually split (on a dynamic basis, i.e., with changes allowed from EFA block to EFA block, so no physical split) the capacity and energy of a physical Unit into different Virtual Units, each able to take part in one of the three products. Such a virtual split would allow for a decentralized solution for stacking and unlock a much faster rollout. However, Centrica remains open for a more centralized approach, where NG ESO would be in charge of electing and carrying out the capacity and energy split from a physical asset offering to take part in multiple products during the same EFA block. However, this more centralized option looks more complex and time consuming to develop and does therefore not appear to be an option for Day 1 or even Day 2.

Request n°2:

Allow for the submission of 'smart bids' for multiple products for the same EFA block and volume from the same asset and allowing the ESO to optimise. This could avoid a situation where the ESO is short of bids for one product because all parties have bid for a different product. If not possible for Day 1, at least consider going for sequenced auctioning of the

	<p><i>products, to avoid forcing providers to randomly decide in which product to offer their capacity for a given EFA block.</i></p> <p><u>Request n°3:</u> <i>Accelerate the rollout of sub-1MW minimum threshold to participate and bid granularity, to further unlock the optimization of the offered volumes and contribute to reduction of procurement costs.</i></p> <p><i>Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals? (Please mark whether this relates to DM only or DR only or both)</i></p> <p>We have covered all our comments on the Day 1 products in Q1.</p> <p>We are attaching to our consultation response a short paper covering our proposed improvements to the procurement and auction arrangements to enable more efficient use of battery storage.</p> <p>As soon as possible post-consultation, we ask that the ESO shares a detailed plan for implementation of the Day 2 products, including how these link to planned IT projects such as the Enduring Auction Capability project.</p>	
Drax Group	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>No, not as currently designed.</p> <p><u>Onboarding</u></p>	<p><u>Onboarding</u> Thank you for your feedback. We discussed this with you prior to the consultation closing and clarified points with you following this. We believe the points mentioned in Annex 1 have been responded to via other individual points you have raised. If you need any further clarification, we are happy to discuss further.</p> <p><u>Procurement/ Performance Metering</u></p>

Regarding the testing regime, we note that this is a significant departure to the testing regime specified under the Grid Code (GC) for Mandatory Frequency Response (MFR) services. Fundamentally, the rules are asking for large, synchronous plants to control output to tolerances that simply are not possible under transient conditions and are more stringent than GC requirements under steady state conditions. As the rules currently stand, for a generating unit providing response using a 4% droop governor, the required 0.2Hz response band only uses 10% of the unit's **registered capacity** to provide the "contracted quantity". Hence deviating by 0.3% of **registered capacity** will lead to payment reduction and deviating by 0.7% will lead to zero payment when these deviations could, in fact, be in a direction to help control system frequency.

The GC testing requirements (CC.A.3.2) recognise that large items of rotating mass controlled by a governor will inevitably have a degree of overshoot when delivering response. Such overshoots are invariably beneficial to system security. The GC requirements for MFR recognise the inherent characteristics of the large hydro and thermal plant and carry out tests using ramps rather than steps which, in our opinion, is a better representation of actual system frequency. As with MFR testing, results will not be polluted by inertia or response to power system faults, both of which could significantly impact actual performance to the extent that payments may be withheld when the plant has been acting in a manner to stabilise the system.

To demonstrate our issues please see the confidential presentation in Annex 1 of this submission which applies the proposed monitoring rules to data from our previous compliance testing as detailed in Grid Code section OC5.A.3.6. Figures 1 & 2 tests 1, 2, 3, 6, 9, 10, 11, 12, 13, 19, 20, 24, 25, F & G results in us receiving no payments.

We have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis to assess the impacts to the service of adjusting the requirements to address barriers to entry.

Whilst we believe the DR parameters remain appropriate (we also didn't receive any specific recommendations for changes to the parameters), we have proposed changes and exceptions to the DR performance monitoring rules to address the concerns raised. This includes not penalising response from synchronous generation in the deadband, exceptions for delivery beyond +/- 0.2Hz, increasing the performance tolerances (from 3%-7% to 5%-25%), and changing the error calculation rolling window from a rolling mean to a rolling minimum.

We are committed to refining the performance monitoring rules to support removing any barriers to entry whilst maintaining the integrity of the services, and as such we will be reviewing the rules for DR and DM 6 months after launch. We welcome further engagement and feedback regarding opportunities to support any future changes.

Duration for Energy Limited assets

If an asset is classed as Energy Limited (see definition in Glossary) then the relevant rules will apply. We have tweaked our definition slightly. At the moment we are not in a position to introduce further classes or sub-classes of assets. We are happy to engage on this further if you would find it helpful.

Stacking

Thank you for the feedback. The clause 12.5 has been clarified to confirm stacking of DM or DR with the BM. The normal performance monitoring rules will apply if/when a service is stacked with the BM. Providers will need to consider if their ability to deliver DM/DR within the performance tolerances can be maintained alongside BM BOA delivery.

Disarming Instruction

Also note we can provide further illustrative data upon request.

Procurement

We understand this product is aimed at existing providers of MFR, which are mostly synchronous generators. For this reason, we think there are a number of areas which need reconsideration as there are aspects of the service design which do not recognise the inherent nature of synchronous plant. Many of these aspects of synchronous plant provide beneficial system stability attributes. Therefore, to design a service which disincentivises them would seem wrong, as well as anti-competitive.

Duration for energy limited assets

We think the inclusion of pumped storage assets as energy limited is inappropriate. We accept they are energy limited, but the timescales over which energy duration becomes an issue is far, far greater than for batteries and we do not think it is a factor in the provision of this service.

Performance Metering

We think this is unduly harsh and, if implemented as written, would result in perfectly fine response provision incurring penalties. We discuss this elsewhere and give some suggested solutions further below.

Stacking

We welcome the ability to stack with the BM although response delivery during a ramp up or down is unlikely to be perfect for a synchronous asset so will need to be allowed for in the rules. Also, we note that the drafting of clause 12.5 may unintentionally obstruct stacking to some extent. This is

We have taken this decision to ensure the new services meet the technical requirements. ESO is working on upgrading its balancing systems across this RIIO period in order to remove the need for manual steps in these sort of instruction processes. As part of this transition, we will be reviewing the method and type of instructions to ensure that they are fit for the new suite of services and reflect the situational awareness and control that the ESO requires to operate the system.

We are happy to continue engaging on this topic and welcome your feedback on disarming following go-live.

Frequency Measurement Specifications

Thank you for the feedback. We have taken this on board and changed the measurement for DR to 0.01Hz.

DR Terms

Our response has been included in Annex 2 of this document.

Other Comments

1. Following the concerns you raised during our 1-2-1 call and also in your consultation response regarding not being able to respond in the deadband, we have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis to assess the impacts to the service of adjusting the requirements to address barriers to entry. Please see above in response to procurement and performance metering.
2. The contract terms have been written to allow us in future to change the target frequency, thus all the set-points would change as well, as these are derived with reference to the target frequency.
3. Mandatory requirements and LFSM-O/U must still be met during the provision of the new services. The two services are additive. DM/DR 'end' at 0.2Hz deviation while LFSM-O/U starts at 0.4/0.5Hz deviation. Providers need to ensure that they can deliver the DM/DR quantity and the additional LFSM quantity.
4. Please see our response above we believe covers this comment. Please do let us know if you would like to discuss this further.
5. No retesting for existing services would be required.

discussed further in our detailed legal review presented in Annex 2 below.

Disarming instructions

Moving away from the ESO issuing an instruction to commence delivery of such a service is a significant departure for BMUs and possibly also for the ESO. We are not entirely convinced this is the correct way forward and would ask that the ESO re-consider this position. We also would ask that whatever route it goes down on this point it strives for consistency across ancillary services.

We struggle to see why the ESO would need to issue a disarming instruction but welcome the fact it will be issued via EDL for existing BMUs.

Frequency Measurement Specifications

We do not think measurement to 0.001 Hz, as required for this product, is warranted and would advocate that 0.01 Hz is perfectly adequate. Over stipulation of the frequency measurement could act as a barrier to entry (unnecessarily in our opinion) and therefore reduce competition.

Drax provided a detailed legal review of the DR terms which could be found in a separate attachment (Annex 2 DRAX legal review of DR terms).

***Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?
(Please mark whether this relates to DM only or DR only or both)***

Yes (still related to DR only)

6. Participation in DR doesn't change the level of evidence required for compliance with protection settings. These settings and the compliance requirements are not part of the DM/DR consultation.
7. The penalty is issued according to errors, therefore the payment deduction is related to the degree of the error that the late delivery or trip can cause. This can be found in Schedule 2 of the Service Terms.
8. This is covered above.

We believe in our response we have covered your 6 points in summary.

1) This DR commercial service appears to be significantly changing the requirements and intent of the dead-band (or frequency insensitivity). Currently Grid Code sections CC.6.3.7(c)(iii), ECC.6.3.7.3.3 and BC.5.2.1(c)(i) specify a maximum permitted dead-band of 0.03Hz (for the avoidance of doubt, $\pm 0.015\text{Hz}$). This means equipment needs to start providing response before the frequency error reaches 0.015 Hz and this is written with the intent of ensuring there is no undue delay to providing response.

However, the new DR service is written such that the new DR service provider shall not start to provide any response until the frequency error has reached 0.015Hz and goes on to test there is no response to a 0.01Hz change in the testing requirements document. These requirements appear contradictory and appears to restrict existing users and non-inverter-based technologies from providing this DR service.

2) Is the specified frequency of 50Hz absolute or does it really mean Target Frequency as can be reset by the ESO? If absolute, are providers then expected to ignore ESO Target Frequency change instructions? If not, do all the key frequency set-points such as 49.8, 49.985, 50.15 & 50.2Hz move with the Target Frequency changes? Similarly, how will the transitions be handled in the payment tolerance factor K?

3) How does this service fit in with the mandatory frequency requirements such as LFSM-U & LFSM-O which mandate certain Users must start to de-load or load-up when the frequency is either above 50.4 Hz or below 49.5 Hz, given some of these requirements are legal requirements?

4) This modification also changes the time for the delivery of Secondary response by using step responses for testing as opposed to ramped responses as required in the Grid Code to evaluate Primary, Secondary and High response. The way the proposed DR service is being specified means there is a

change to the time that users need to provide the same level of response from 30 seconds to provide Secondary Response to 12 seconds for the proposed Dynamic Response service.

The changing of these requirements is significant for existing users as the Grid Code tests use ramp responses because these are more representative of the actual behaviour of the GB transmission system and hence existing users are likely to respond more slowly than the proposed tests will suggest. Hence although the tests could be passed, the actual response to a real event, which will be more like a ramp, may not be compliant and hence result in a reduced or no payment.

5) If the governor software is changed to add this functionality, will all existing functions and services i.e. FSM, FFR, LFSM all need retesting?

6) What level of evidence is required to show protection settings are compliant?

7) What happens if a unit is two seconds late or trips off during the four hour period? Are all payments lost with a K factor of 0?

8) Also as drafted the accuracy refers to absolute errors measured over any two second period, whereas current Grid Code requirements relate to standard deviations and hence the new requirements do not allow any overshoots. Equally there is no facility to deal with excursions which are outside the control of the Provider, such as electrical faults on the transmission network which when cleared initiate output oscillations on the network and generator outside the acceptance band.

We are proposing the following possible considerations to address our concerns above:

	<ol style="list-style-type: none"> 1. Align accuracy tolerance to Genset's Registered Capacity 2. Have wider tolerance where direction is assisting system frequency 3. Reduce measurement resolution 4. Change error from absolute to a standard deviation to allow temporary overshoots, inertia and system faults 5. Remove the no response requirement in dead-band requirements 6. Extend response band to cover LFSM activation frequency bands <p>If you would like to discuss the contents of our response further, please get in touch.</p>	
E.ON Energy Solutions Ltd	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>Both - Yes we agree in principal although we would welcome the publication of expected volume requirements across the products in order to help parties in decision making of how to market their assets.</p> <p>This has already been delayed multiple times in the DC market resulting in unstable prices in the service.</p> <p>Both – During accreditation for the DC service NG didn't meet some of the service terms regarding timeliness and criteria of testing requirements. We would like to see consistency between deliverables for service qualification and the documentation that has been published. These "variables" between the documents caused slight delays in our qualification being completed and us being able to market our asset</p>	<p><u>Volume Requirements</u></p> <p>Thank you for your feedback. Requirements are subject to change, but we expect to buy up to 150MW of each service in 2022. This is likely to rise to 300MW of each service by 2025.</p> <p>Requirements are shared in the monthly FFR Market Information Report which can be found on the ESO Data Portal: https://data.nationalgrideso.com/</p> <p><u>Accreditation</u></p> <p>Thank you for your feedback. The Participation Guidance Document for DM and DR already states on Page 3 that the Provider will only complete prequalification (as evidenced by receipt of the signed Form C or SMP equivalent), once all prequalification documentation has been received. In essence, the 13 day turnaround period is subject to complete documentation from providers.</p> <p><u>Disarming</u></p> <p>Thank you for your feedback. We agree and therefore, decided to use an electronic interface to communicate with providers rather than a phone call. We will provide further information on this later in January.</p>

Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?

(Please mark whether this relates to DM only or DR only or both)

Both - Section 6.14 - There needs to be consideration regarding how the arming and disarming instructions are communicated to parties. This needs to allow for an automated instruction that can be processed within out of hour EFA's that are being serviced by an asset. As this is yet to be defined parties are unable to build a response service in their automated systems and time will be required once defined to deliver such a response.

Another consideration needs to be of how frequently this service is expected to be used. Assuming it is infrequent then surely a longer lead time than 2 minutes would be sufficient particularly when DM/DR services have 30-60 minutes delivery durations.

Both – From our experience we find there is numerous inefficiencies within this service offerings. We feel it would be more efficient if you only had to register once and then confirmed which services you could deliver via ITE testing. As lots of battery assets are going to be able to deliver all three services, (DC, DM and DR) then will have to register three separate times and accede to three sets of very similar contract documents. It would be more efficient to register for the service package and be able to evidence your offerings in a single ITE test. This would be better delivered through a single set of dynamic service contract documentation with appendices for each specific service.

This would need to be communicated more effectively than the Flexibility Service General T&Cs. Although we were

Service Usage

Disarming may be needed to avoid or dampen a national frequency oscillation and therefore a short duration notice period is required. We considered longer than 2 minutes but as disarming is key to correct a sudden frequency oscillation, responding quickly is critical. Also, this aligns with other BM notice periods such as Notice To Offer/Notice To Bid.

Pre-qualification

The introduction of the Single Markets Platform (SMP) for onboarding will be the start of the streamlining process. SMP is designed so that the provider registers a unit/units once with the boiler plate information and then only has to complete service-specific pre-qualifications.

As we move towards detailed design for the next phase, we are running small group workshops with interested parties to define how the solution should work for registration and pre-qualification as well as provide training and testing opportunities to interested parties.

The next planned workshop date is:

13 January 2022 - Training in advance of on-boarding go live from early February for the new response products.

The team are also seeking volunteers for SMP testing from w/c 17 January. If you would like to participate in testing please email box.futureofbalancingservices@nationalgrideso.com and one of the team will be in touch.

	<p>aware this agreement was being discussed we were not aware that these terms were in use for DC, DM or DR yet, these seem to have just been added into this version of the documentation (section 12)</p>	
EDF	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>Overall, we are satisfied with the proposed updates for DM and DR. We are pleased at the level of stackability between the different products and have no major concerns. That said, we do have a few points we would like to raise for clarification:</p> <ol style="list-style-type: none"> 1. Operational baselines – “Response Units that are not registered in the BM (‘non-BM’) will only be required to submit an operational baseline that conforms with the rules referenced above as and when NGESO implements a communications channel that can receive these submissions.” Could you please confirm when this communications channel will be implemented? It was initially part of the DC Low soft launch and expected by April 2021. We are now 9 months beyond that point and the delivery date for the new communications channel is still not known. We believe that not needing to provide an operational baseline ahead of the settlement period provides a material advantage over assets in the BM which have to submit a PN 2. The guidance for MEL/MIL calculation when stacking differs between FFR and DC, with neither being a perfect solution given the definitions of MEL/MIL in BC1 (a stacked FFR asset may report a MEL below its export level if discharging and 	<p><u>Operational Baselines (1)</u></p> <p>Thank you for your feedback on baselines. As you have stated we have been engaging on this during the DC Low soft launch. We also had feedback from some providers the current Operational Baseline requirements provided a barrier to entry for some parties. We agreed to consider alternative solutions and as we are still in exploratory phase of this, we have kept baseline requirements the same as Dynamic Containment. Once we have confirmed to either keep the current Operational Baselines as is or implement and consult on a new methodology, we will then be able to implement the required IT solution to enable this. We look forward to engaging with you further on this topic.</p> <p>Operational Baselines for non-bm units are retrospectively submitted to ensure the appropriate response for the purposes of performance monitoring.</p> <p><u>Stacking (2)</u></p> <p>Through the EBR consultation Ofgem review the process we have been through to create the requirements and specification for our services. Ofgem do not 'approve' the technical parameters we need to effectively ensure the services act as they should in regards to our system needs. The current stacking document has been created as guidance should providers want to stack with the BM as well as DC. This will be updated to incorporate stacking between DM or DR with the BM too, however this document does not form part of the consultation documents. We'd be happy to discuss any concerns further.</p> <p><u>Energy Recovery (3)</u></p> <p>In this case, the Unit would not be captured by the definition of 'Energy Limited' (see the Glossary) and therefore not beholden to the rules specific to that class of provider.</p> <p><u>Non-delivery penalties (4)</u></p>

	<p>responding to low frequency at the same time, whilst a stacked DC asset will MEL itself unavailable whilst it still has energy to discharge). Are you able to confirm that the approaches for MEL/MIL calculations have been discussed with and are supported/endorsed by Ofgem?</p> <p>3. Energy recovery – is the concept of energy recovery a ‘must’ or a ‘should’? If a longer duration asset can deliver maximum MW of DM/DC High/Low for 2 EFA blocks, does it still HAVE to hold MW back for Energy Recovery?</p> <p>4. Non-delivery penalties – this relates to (3). If the penalty for not delivering DC/DR/DM as a result of not following the Energy Recovery rules is simply a loss of revenues for that EFA block, does this not incentivise providers to take the risk and tender for the full volume as the downside from not delivering the service in a significant frequency event is actually quite limited?</p> <p>5. Over/under-holding, when will this be introduced for DC/DR/DM as per STOR? We are seeing occasions where the cost of procuring DC is significantly more expensive (from a £ point of view) than if a few more MW had been procured. The ability to over/under hold has the potential to significantly reduce the cost of delivering the service. potential to significantly reduce the cost of delivering the service.</p> <p>6. Delivery duration – this is defined in several places as being 60 minutes yet the examples use 30 minutes. Could you please confirm the correct value?</p>	<p>We will monitor provider behaviour and reserve the right to change the incentive/payment/penalty structure if it is not delivering the level of service that we require. We will consult on any changes to the service terms and/or performance monitoring penalties.</p> <p><u>Over/under holding (5)</u> We are continually exploring improvement opportunities for our ancillary services, and over/underholding is one of the options we are currently investigating for the new response suite. The nature of the frequency response and STOR markets, as well as the assessment algorithms used for these services are fundamentally different. We work closely with our STOR colleagues, sharing data and learnings. With DC/DR/DM being new markets, we intend to capture more data and conduct extensive analysis to determine whether there is commercial and operational case for introducing over/underholding.</p> <p><u>Delivery Duration (6)</u> Thank you for highlighting this. You are correct, DR is 60 minutes so the examples provided within the Participation Guidance are incorrect and this will be updated. We apologise for this error.</p> <p><u>Phase out of other services</u> There are several dependencies that need to be delivered before we completely cease the procurement of the monthly FFR tender. Full delivery of disarming and frequency measurement specification are two key deliverables under response reform that the ESO will be prioritising in 2022. Once the full functionality for the above has been delivered, we expect to increase the volume cap on DM and DR. This will enable a stepped decrease in the DFFR volume procured in the monthly FFR tenders.</p> <p>The delivery of quick reserve is critical to the closure of the monthly static service and we will continue to engage on the development of reserve reform. We believe sharing dependencies gives more transparency on what needs to happen in order for the monthly tenders to cease. We welcome feedback on this.</p> <p><u>Volume requirements</u></p>
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Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?

(Please mark whether this relates to DM only or DR only or both)

- Our current understanding is that both Dynamic and Static FFR will continue until DR/DM are embedded, with DFFR likely to cease in the middle (Q2/3) of 2022 and SFFR potentially persisting through to the end of 2022 / into 2023. It would be really helpful to have any further clarification on this, as and when NGESO is able to update participants. If you are able to provide a more accurate timeline, please do notify us of this.
- Procurement requirements – we have had over a month of EFA block DC and still there is no process to inform us of National Grid's requirements. When will this information be provided for DC and will it be available from Day 1 for DR/DM?
- Energy recovery – “This equates to 3 minutes of energy when Tsus is 15 minutes” confuses matters when Tsus for DR is 60 minutes...
- Response Energy Volume – “The volume of stored energy required to be delivered before State of Energy management is required to avoid unavailability = $(T_{sus} / 60) \times Q_{contract} \text{ MWh}$ ” – since an energy limited asset is not 100% efficient, this conflicts with the definition of Delivery Duration which states “Time that an energy limited provider must be capable of sustained delivery of

Requirements are shared in the monthly FFR Market Information Report which can be found on the ESO Data Portal:
<https://data.nationalgrideso.com/>

We are currently further developing our model to provide a 4-day forecast on a rolling basis. We plan to publish in this in a format providers will find easy to use. This forecast will be for both DCL and DCH. This will be introduced for DM and DR in the future.

Energy Recovery

Thank you for the feedback. We have corrected the error in the document.

Response Energy Volume

We cannot know the efficiencies of all participating assets (which will change over time, conditions etc). We define the Delivery Duration which each asset must then comply with, depending on its efficiency and any other factors.

If you would like to discuss this further please contact the team on the Future of Balancing Services email.

Performance Monitoring

During any Grace Period granted, Availability Payments will be made for any contracts awarded. During the granted Grace Period, the ESO will performance monitor the data received and feedback any issues that are noted but will not apply any penalties against the Unit.

Auction Capabilities

We are currently exploring different options to implement market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded). A possible solution, which we are exploring, would be mutually exclusive offers, whereby a participant could make more than one offer into the frequency response auction, but only one would be accepted. We are actively investigating the feasibility of a co-optimised solution to follow the Day 1 launch of DM and DR, and we are also designing a solution for a fully co-optimised market that will be delivered through the Enduring

	<p>Qcontract(h,l) = 60 minutes". In order to meet the delivery duration, an asset (not 100% efficient) must have more than $(T_{sus} / 60) \times Q_{contract}$ MWh in store. Could you please confirm which is correct?</p> <ul style="list-style-type: none"> Performance Monitoring – “NGESO may at its sole discretion (but shall not be obliged to) ignore a performance score when determining factor K in the calculation of the settlement value for any particular Contracted EFA Block:- where that Contracted EFA Block falls in a ‘grace period’ to which NGESO has given its prior agreement in writing (which shall not exceed fourteen (14) consecutive days) to recognise on-boarding by the relevant Service Provider of control systems and other IS interfaces necessary for the delivery and monitoring of Dynamic Regulation.” – could you please confirm what this means? In what circumstances could we be paid for 14 days for delivering the service whilst onboarding? <p>1. Auction Capabilities – is there an ambition to improve/enhance auction capabilities? For example, if we could offer 50MW DR Low or 50MW DR High or 40MW DR Both, this would provide NG greater flexibility with which to balance the system as would the ability</p> <ul style="list-style-type: none"> Stacking across services – this will not be possible with the DR/DM launch, but do you have a view as to when it will be available? Will there be a separate consultation on stacking once DR/DM are embedded? 	<p>Auction Capability in 2023. This latter project is part of our RII0-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com</p> <p><u>Stacking</u></p> <p>Our end goal of achieving a fully co-optimised Response market will be achieved with the Enduring Auction Capability. This project is currently going through a competitive tender process, with the aim to choose a successful supplier in spring 2022. We’re currently exploring when we can bring in this functionality and further enhance procurement of the new ancillary services.</p>
Energy UK	<i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i>	<u>Overarching points</u>

Please provide rationale.

(Please mark whether this relates to DM only or DR only or both)

No, for Dynamic Regulation (DR), as the rules stand existing synchronous plant is excluded, which we do not agree with. This is explained further in the rest of our response.

Overarching Points

We note that originally it was indicated that Dynamic Regulation (DR) would be broadly similar to Mandatory Frequency Response (MFR). However, this no longer appears to be the case. Some Energy UK members believe that the performance criteria are far too prescriptive for all existing synchronous plant (CCGT, coal, including biomass conversions and pumped storage plants). We would also like to highlight that there appears to be a lack of recognition of the tolerances (k factor) that apply to these plants to the extent that a plant that is currently a very reliable provider of frequency response will not pass the tests and, even if it were to pass the tests, it would likely fail the performance monitoring criteria for minor but unavoidable transgressions (which may have negligible impact on system frequency or may be helping the system frequency).

Given the costs to modify and test plant, as well as set up the data requirements for the ESO, there is very little incentive for existing plants to attempt to provide this service as it is currently designed. Moreover, there is no recognition in the service terms of the impact of inertia-based response which will always be in a direction to help the system frequency.

ESO also need to set out how DR will interact with existing Grid Code requirements, notably Limited Frequency Sensitive Mode (LSFM).

We have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis to assess the impacts to the service of adjusting the requirements to address barriers to entry.

Whilst we believe the DR parameters remain appropriate (we also didn't receive any specific recommendations for changes to the parameters), we have proposed changes and exceptions to the DR performance monitoring rules to address the concerns raised. This includes not penalising response from synchronous generation in the deadband, exceptions for delivery beyond $\pm 0.2\text{Hz}$, increasing the performance tolerances (from 3%-7% to 5%-25%), and changing the error calculation rolling window from a rolling mean to a rolling minimum.

We are committed to refining the performance monitoring rules to support removing any barriers to entry whilst maintaining the integrity of the services, and as such we will be reviewing the rules for DR and DM 6 months after launch. We welcome further engagement and feedback regarding opportunities to support any future changes.

LSFM

LFSM can still be delivered by DM and DR units as the response is fully delivered by 50.2Hz and LFSM does not start until 50.4Hz, and so we would expect units to continue to provide LFSM. DC can provide LFSM above 50.5 as per Grid Code BC3.7.1 c) (treated as delivering high response).

Unit Cap

The 50 MW cap on response volume per asset is designed to limit concentration risk, i.e., the proportion of the total response being provided by any single asset or from any single network location. As the ESO gains more experience of operating these new response services, the cap will be reviewed, and larger response volumes from a single asset will be permitted if it is prudent to do so.

Procurement

We also have concerns around the 50MW asset cap size. We recommend that this is raised to 100MW bearing in mind the growth of battery developments.

Below we have set out our views on specific issues:

Procurement

In terms of procurement Energy UK welcome the procurement by GSP Group and thank ESO for engaging with us and accommodating this change.

GSP group means that greater volumes will be eligible to provide these services, which should increase competition, allow DSR providers and flexible assets to participate and therefore deliver greater consumer value.

However, we do continue to ask the ESO to be fully transparent as to the reasons why it has so far been unable to allow aggregation by GSP Group for Dynamic Containment (DC). We request that ESO works collaboratively with market participants and relevant trade associations to look into how ESO can refine the design of DC to satisfy all relevant technical requirements while allowing wider aggregation at GSP group level.

We also support the move to the Single Market Platform from February. We believe this will support a more efficient registration process.

Unbundling Procurement

We believe that the proposed arrangements are unlikely to lead to efficient procurement as participants are effectively asked to pick which service they wish to participate in. This could mean some services are under or oversubscribed and not all requirements met. We understand that that National Grid ESO believe the cost of co-optimisation are too great

Thank you for your feedback. We expect to publish a paper in January exploring the visibility challenges we are facing, and our proposed next steps.

Unbundling Procurement

Thank you for your comment. We considered sequential auctions (i.e., three auctions each day, so that participants could roll over uncleared volumes). However, the relative value of the services may be different for low-frequency and high-frequency response, and between the different EFA periods, and from day to day. For this reason, we concluded that a simultaneous auction would result in lower procurement costs (compared to staggered auctions). We are currently exploring different options to implement some form of market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com

Duration for energy limited assets

The duration limits for each service are designed to ensure the service can still deliver post fault when accounting for normal frequency variation pre-fault (where the frequency may run above or below 50Hz for some time). The delivery curve is also factored in, hence the longer duration requirement for DR, as it is more active closer to 50Hz, and will be more drained by a frequency running at 49.95Hz than DM would be. As the frequency can run either side of 50Hz, it is important for symmetrical delivery to be able to cope with either scenario.

If an asset is classed as Energy Limited (see definition in Glossary) then the relevant rules will apply. We have tweaked our definition slightly. At the moment we are not in a position to introduce further

ahead of moving to their enduring platform. We recommend that this is monitored and the costs to implement are shared.

Duration for energy limited assets

In General, Energy UK members feel that having a 30-minute reserve energy for DM and 60 Minutes for DR to be fairly onerous for a symmetrical service and would lead to significant cuts for short duration batteries. We would welcome more information and an explanation of what is behind these figures.

We also do not think the energy limited asset rules should apply to pumped storage assets due to the fact that the energy duration is much greater than for batteries. We also believe that rules should only be applied where there is an obvious need, in this case a realistic possibility of an asset becoming unavailable to provide DR in the event of the storage capability being empty or full.

Performance Metering

As mentioned above, we think the performance criteria is too tight and could result in plant responding well (but slightly in excess of the required amount) losing four hours' worth of payments which will act as a significant disincentive to tendering.

We accept that the Grid Code definitions of Primary, Secondary and High response need incorporating into a form of performance criteria, but we think the ESO has over specified this for DR. We do not think metering resolution greater than 1 Hz is required on what is meant to be a 10 second response product. Similarly, we do not think metering accuracy of 0.001 Hz for system frequency is warranted.

classes or sub-classes of assets. We are happy to engage on this further if you would find it helpful.

Performance Metering

1) We have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis to assess the impacts to the service of adjusting the requirements to address barriers to entry.

Whilst we believe the DR parameters remain appropriate (we also didn't receive any specific recommendations for changes to the parameters), we have proposed changes and exceptions to the DR performance monitoring rules to address the concerns raised. This includes not penalising response from synchronous generation in the deadband, exceptions for delivery beyond $\pm 0.2\text{Hz}$, increasing the performance tolerances (from 3%-7% to 5%-25%), and changing the error calculation rolling window from a rolling mean to a rolling minimum.

We are committed to refining the performance monitoring rules to support removing any barriers to entry whilst maintaining the integrity of the services, and as such we will be reviewing the rules for DR and DM 6 months after launch. We welcome further engagement and feedback regarding opportunities to support any future changes.

2) Thank you for the feedback. We have taken this on board and changed the measurement for DR to 0.01Hz.

3) Thank you for the feedback, 1% refers to 1% of the unit capacity.

Stacking

Thank you for your comment. We are currently in the process of implementing a change to the EPEX procurement platform that will removing some of the constraints on the clearing solution (the "merit order constraints"). Our analysis has demonstrated that this will significantly improve the efficiency of market clearing. Furthermore, we will be analysing the business case for stacking (simultaneous delivery) of more than one of the services, considering the benefits that service stacking could bring in terms of a more efficient market for response as well as the complexity of the system and business

We are also unclear as to what the ESO means by 1% accuracy for metered output. Is this 1% of the size of the plant or 1% of the size of the response? Further clarity around this would be welcomed.

Stacking

Energy UK consider that the stacking of any of the dynamic products and the BM to be sensible. Energy UK consider that the stacking of any of the dynamic products and the BM to be sensible. However, our understanding is that National Grid ESO have made it clear that you cannot stack across the dynamic products for the same EFA block. We would like to re-emphasise our remarks on unbundling procurement and ask that the ESO considers improving the overall procurement arrangements for day 1 and day 2 to enable the more efficient use of assets.

Disarming instructions

We are concerned around the lack of clarity regarding the disarm and re-arm signal. We would encourage ESO to ensure that information is released on this as quickly as possible to allow for system development pre the Go live date.

We note also that 6.14 of the Service Terms for DM state the rules regarding interruption from a disarming signal. We would welcome clarity on the consequence to the availability payment if the 2-minute response period is not complied with.

Some Energy UK members have pointed out that for existing BM assets, providers are used to receiving instructions to commence and cease providing services e.g., MFR. It is our understanding that for DR that this will no longer be the case. Whilst not all Energy UK members necessarily agree with this stance, we welcome further clarity from the ESO as to

process changes needed to support the procurement and operation of multiple services delivered by a single unit. Finally, we are currently exploring different options to implement market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com

Disarming Instructions

Thank you for your feedback. We are currently working with our IT team to finalise the details of the disarming process. We will provide further information later in January.

Please refer to Paragraph 6.16 of the service terms. This states after 2 minutes no response should be provided. In Paragraph 6.19 it references that Contract Quantity will be set to 0 in Performance Monitoring, and errors will occur if still armed. We have added to this clause to provide further clarity.

ESO is working on upgrading its balancing systems across this RIIO period in order to remove the need for manual steps in these sort of instruction processes. As part of this transition, we will be reviewing the method and type of instructions to ensure that they are fit for the new suite of services and reflect the situational awareness and control that the ESO requires to operate the system.

Frequency Measurements Specification

We will initiate a consultation on the Frequency Measurement Specification in 2022. Stakeholders will be invited to input into the detail and will be given a full month for the consultation on the proposed documents. It does not form part of this consultation however we wanted to highlight our intention.

whether this is going to be the case for all new auction-based products as it has significant ramifications for processes, systems, custom and practice at existing BM assets.

Moreover, we are concerned about exactly how these instructions will be sent. In our members' view, retaining Electronic Dispatch and Logging (EDL) for the BM and Platform for Ancillary Services (PAS) for non-BM only would be preferable. However, we note that a compromise might involve using a MFR instruction as a cease instruction because that is the only reason that we could foresee the ESO sending a cease instruction.

Frequency Measurement Specifications

These do not appear to have been provided within document published. Energy UK therefore requests further detail in this area.

***Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?
(Please mark whether this relates to DM only or DR only or both)***

Yes.

We firstly would like to thank ESO for improved and clearer engagement with both Industry and Energy UK on the design of the DM and DR products. However, we still have a few concerns around the proposals which we will take this opportunity to draw your attention to:

Timescales

Other comments

Thank you for providing feedback on our engagement approach. We appreciate any comments you can provide as it helps us tailor our engagement accordingly to ensure providers can get the most out of it.

Timescales

The ESO is taking on an Agile development approach in both ancillary service design and IT development. This means that we avoid lengthy lead times and instead iterate on working versions and respond to feedback, challenging and validating assumptions about the product requirements.

The next two new response services are being launched in the spring with a 100MW volume cap across each service. This gives us the opportunity to analyse and assess how the services, and providers' assets are performing, whilst continuing to operate the system in a safe and secure manner.

One of our commitments under Role 2 is to phase out the existing FFR service. In order to do that, and to keep improving our ancillary services procurement, we need to bring in DM and DR. Implementing new services requires a period of transition as we review how the new products perform on the system and interact with the control room's toolkit, as well as reviewing providers' ability to deliver the services. This test and refine approach will be conducted over a period of time, during which the procurement of the legacy services will be slowly reduced as the volumes of the new services increase. We acknowledge there will be a period of time where FFR and the new response services will be procured in parallel, and that is a conscious decision we are making to ensure the system is secured.

We are committed to meeting the delivery dates of DR and DM in the spring and we will continue to engage and share updates with industry on our progress. If there are any changes to the timeline, we will ensure we share this as soon as possible with industry as appreciate providers also have timelines to work towards.

We have concerns with regards to the timescales for the implementation of both of these products.

Energy UK members would prefer that the products are 'right' but take slightly longer to complete than for the ESO rush to complete products that are not in line with industry expectations.

There are concerns amongst Energy UK members around the risk of insufficient lead time between confirmation of product design following consultation and the 'go-live' date. The problem here is that it does not give operators enough time to develop their systems adequately and prepare for these products. This then risks hampering overall market readiness and has the knock-on effect of delaying consumer benefits from a competitive market with more participants. The capability to send data to the ESO is not something existing MFR providers currently have. This could take months to set up as it will require scoping, approval, design, procurement, installation, implementation, testing, etc. ESO will need to consider this when moving forward.

Energy UK considered there to be insufficient lead time between consultation and implementation with Dynamic Containment (DC). The lack of market readiness and therefore participation meant that in the first half of 2022 the ESO managed the shortfall in DC volumes by procuring services such as Mandatory Frequency Response (MFR), which we believed to be at the detriment of consumers as it was not done by open procurement.

Energy UK therefore, requests that ESO are realistic in their timings and transparent with industry in terms of any change in timelines for DM and DR.

Approach to product design

Approach to product design

Requirements are subject to change, but we expect to buy up to 150MW of each service in 2022. This is likely to rise to 300MW of each service by 2025.

Requirements are shared in the monthly FFR Market Information Report which can be found on the ESO Data Portal:
<https://data.nationalgrideso.com/>

We would be happy to engage with you further on your concerns regarding making information clear on the measurement and verification on DM and DR.

Next Steps

Timeline of Ancillary Service reform

Our annual Markets Roadmap document (the next iteration of which will be published in early March 2022) includes high-level delivery plans for Ancillary Service reform over the next five years across Response, Reserve, Thermal, Stability, Voltage, Restoration, and the Balancing Mechanism. We can see that there may be benefit in providing more detailed, shorter term delivery plans (possibly a six-month view as suggested in this consultation feedback). and we are exploring ways in which to do so effectively. We welcome suggestions on engagement approaches from industry stakeholders.

Interactions between products

Developing interoperable balancing services markets is a key objective for our reform programmes. Service stacking and auction co-optimisation for response and reserve are both part of our product backlogs for delivery in later product releases as part of our ongoing reform programmes. We are also including some information about service stacking across all of our products in the upcoming Markets Roadmap publication.

	<p>Energy UK have concerns with the approach ESO has taken with regards to making information clear on the measurement and verification of these products. We would welcome the publication of expected volumes requirements across the products in order to help industry prepare for delivering them.</p> <p><u>Next Steps</u></p> <p>We would also welcome a timeline from ESO on where they expect all the proposed products (not just DM and DR) within the Ancillary service reform to be over the next 6 months. We would also be interested to see how ESO see these products playing out and interacting with each other over the next two years (RIIO-2 Business Plan 1 period).</p>	
Flexitricity Limited	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>Flexitricity is satisfied, and agrees with, the proposals. The only point which causes concern (DM) is the lack of clarity or detail around the dis-arming/re-arming instruction; how this will be communicated, differences for BM and non-BM units, and penalties in the event this instruction is missed.</p>	<p>Thank you for your feedback. We are currently working with our IT team to finalise the details of the disarming process. We will provide further information later in January.</p>
Gravitricity	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>In general, yes, the updates in the proposal for DM and DR are welcomed. Particularly the change from the originally</p>	<p>Thank you for your feedback.</p>

proposed “continuous” duration delivery of DR to the revised 60 minutes delivery duration.

As a developer of an energy-limited technology this is an important change for us.

Having the new DM/DR services aligned with DC is also welcomed.

Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?

(Please mark whether this relates to DM only or DR only or both)

Both: Contracting delivery for 30-minute settlement periods rather than 4-hour EFA Blocks would be a welcome change. For energy-limited assets this would allow providers to better assess the opportunity cost of any Response Energy which might be called upon (and as I understand it, is not directly compensated so must be priced into the offer price for DM/DR availability).

Both: It would have been helpful during the consultation for NGENSO to provide an indication of the forecast expected price-caps – to allow comparison with the ~£17/MW/h price cap seen for DC.

Thank you for your comment. Since the launch of Dynamic Containment in September 2020, the first service in the new suite of Frequency Response Services, we have moved from a 24-hour procurement to a more granular procurement by EFA blocks within a year. We are actively exploring options of further improvements, such as settlement period delivery, which is being reviewed as part of market reform and developing our auction capability under our RIIO-2 business plan. As we strive for standardisation and consistency across services, DM and DR will be launched on the EPEX SPOT platform where they will be procured in day-ahead auctions via EFA blocks as per DC.

The price cap for DM and DR will be different for low-frequency response and high-frequency response and in each EFA period and is expected to vary from day to day. The ESO buy orders are not published in advance but are published daily on the ESO’s data portal after each auction. The DM and DR services will be procured in a pay-as-clear auction, with the same clearing and settlement rules as for the current DC auction. Participants are assured of not being awarded a contract below their offer price (i.e., the price below which they do not wish to offer response), but otherwise are paid the clearing price for awarded contracts.

The ESO does share the volume requirements for frequency response in advance of procurement. This information is in the monthly FFR

<p>I understand that the choice of 30 mins delivery duration for DM, and 60 mins for DR is based on long frequency excursions (>1hr) which need to be corrected, and that these durations will be reviewed as the service is rolled out and network dynamics evolve. However, building these durations into the product definitions themselves will mean any change will require a change to the service definition, and potentially re-qualifying assets. If energy availability could somehow be made part of the bidding process that would potentially remove this issue, or it could perhaps be dealt with by allowing fractional availabilities (rather than just {0,1}) – depending on an assets state-of-energy.</p> <p>A very minor point – there is a broken paragraph reference (“Error! Reference source not found.”) in 12.1.3 of the DM auction rules.</p> <p>Comments on consultation process</p> <p>The webinars and the worked examples (for example in the Participation Guidance) have been very helpful.</p> <p>One potential area for improvement is that quite a high level of familiarity is assumed in some of the QnA answers and</p>	<p>Market Information Report which can be found on the ESO Data Portal: https://data.nationalgrideso.com/. Additionally, we are currently further developing a rolling 4-day forecast in order to better signal the ESO’s volume requirements on a short-term basis. This forecast will be published initially for DCL and DCH. DM and DR volume requirements will be capped at 100 MW at the launch of the services, and this cap will be reviewed after a period of monitoring the operation and performance of the services. We recently ran a procurement webinar where we discussed how we forecast our requirements; this can be viewed here: https://www.nationalgrideso.com/balancing-services/frequency-response-services/dynamic-containment?market-information.</p> <p>We are interested to explore this suggestion for a future consultation. Please contact us via the Future of Balancing Services email address and we would be happy to facilitate a discussion.</p> <p>Thank you for the feedback. We will correct the error in the document.</p> <p>Thank you for your feedback, we will take this on board and ensure we provide further details for new providers. We would be happy to facilitate a meeting to go through this in more detail if this is required ahead of the services going live.</p>
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	<p>webinar sessions (assuming acronyms are known for example).</p> <p>I think this is perhaps an issue for us, as a storage technology developer, being one more step removed from the markets than most other interested parties. As a technology developer we need to understand some aspects in a lot of detail (response times, ramps rates, delivery durations, expected prices/volumes of the services), but other areas in much less detail. Perhaps in subsequent consultations there might be scope for sessions aimed at storage technology developers with a slightly different focus than those aimed at asset owners/operators.</p>	
Grid Battery Storage Limited	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>We accept NGESO's proposals for DM and DR with the following exceptions for Dynamic Regulation only:</p> <p style="padding-left: 40px;">1. DR Service Terms: Delivery duration for energy limited assets is specified at 60 minutes. DR is intended to replace FFR which requires a delivery duration of only 30 minutes.</p> <p>We appreciate that NGESO has analysed the services required to maintain frequency stability before specifying 60 minutes. However, NGESO needs to consider not only what is theoretically required but also whether the existing fleet of assets can provide the new service – and the impact on customer cost of the long duration.</p> <p>As an example we calculate that our 6MW 1 hour battery system that is presently providing 5MW of FFR and is</p>	<p>1. DR Service Terms: Originally our proposal was to not accept energy limited assets for this service, but as part of feedback we explored through modelling, a 60-minute duration to allow energy limited assets to participate. The 60-minute duration is not related to the time it takes to recover frequency, but to account for the fact the frequency often runs on one side of 50Hz for a prolonged period as part of normal operation. The 60 minutes is to ensure that there is sufficient state of charge to operate within this situation, and still provide full delivery when required. DR is a different service than FFR particularly that full delivery is at 0.2Hz deviation rather than the 0.5Hz of FFR. This means that for the same frequency, the state of energy for the same contracted amount of DR will deplete faster than that of FFR. Hence the increased amount of 60 minutes has been chosen to account for this.</p>

	<p>also able to provide 6MW of DCL or 5MW of DCL+DCH will be restricted to providing 2MW of DRL+DRH. With that restriction we would need to price DR significantly higher than DM or DC for what is a slower response service. Or for new units, the additional cost of batteries would be very significant.</p> <p>In specifying 60 minutes – together with the SoE management arrangements – we believe NGESO is at significant risk of making a decision with severe customer cost impact. Given the actual time to restore frequency in the most severe historic real incidents, for example less than 7 minutes for the 9 Aug 2019 event, GBSL believes that 30 minutes delivery duration would be more than sufficient.</p> <p>2. DR performance monitoring data inconsistency with DC and DM. The performance monitoring data CSV files for DC and as planned for DM provide one file an hour of 50ms interval data. We understand that NGESO does want to impose this relatively onerous metering on the whole FFR fleet for a relatively slow service; and that the data content of the file proposed for DR is the same as DC and DM but with data at 500ms intervals. However, for those providers who wish to offer DC, DM and DR – and for the NGESO data concentrator – it would avoid many likely errors if the performance monitoring was consistent across the three new services.</p> <p>GBSL suggests that NGESO amends the DR documentation so that 50ms data files as used for DC and proposed for DM are also acceptable for DR, even if the minimum requirement remains 500ms data.</p>	<p>2. DR performance monitoring data inconsistency with DC and DM: DR is a slow service; hence, higher granular data is not required. However, if the provider has the ability/desire to provide the same granular data with DC/DM, this is also acceptable. We will clarify this in the Service Terms.</p>
Grid Beyond	<i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i>	

Please provide rationale.

(Please mark whether this relates to DM only or DR only or both)

The following points relates to both.

Point 1: We are struggling to understand why an asset cannot take part in multiple response services at the same time, e.g., 20% of the asset capacity in DR, 20% in DM and 60% in DC as an example.

We fail to see a technical issue why this is not possible and even if auctions run at the same time, an asset should be given the possibility to bid elements of capacity into each service in the same auction.

It would be more complex to performance monitor but technically assets can do it and give better optionality for providing response services to the ESO. We understand this point has been raised previously. If the plan is to allow this eventually, a timeline of when this would be possible would be very helpful.

Point 2: While procuring DM and DR on a GSP group level makes the scheme more appropriate for aggregation (as opposed to at GSP level), it still does limit any significant growth in assets more appropriate to aggregated participating, e.g. assets that are less than 1MW in size or assets that need to be hybridised with others to deliver service. To expand participation possibilities, enabling units less than 1MW to be procured would mitigate some of the asset loss to these rule changes. As a reference other large systems worldwide purchase capacity for ancillary services down to 0.1MW sized units (e.g., ERCOT in the USA).

Point 3: With regards to baseline, the baseline methodology for DR and DM should follow the methodology being used and that is proposed to be used for DC. E.g., the same

Point 1: Thank you for your comment. It may be technically feasible but at this stage the ESO is not prepared to facilitate asset splitting between response services. This is something we will revisit post-launch.

We will be analysing the business case for stacking (simultaneous delivery) of more than one of the services, considering the benefits that service stacking could bring in terms of a more efficient market for response as well as the complexity of the system and business process changes needed to support the procurement and operation of multiple services delivered by a single unit. Furthermore, we are currently exploring different options to implement market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com

Point 2: Thank you for your feedback. We expect to publish a paper in January exploring the visibility challenges we are facing, and our proposed next steps.

baseline generation methodology that eventually comes out of the engagement with the ADE (around “derived” baseline) for Dynamic containment should also apply to DR and DM. Essential for scheme consistency and enabling different assets the capability of providing any of the response services.

Point 4: Dynamic Regulation Participation Guidance v.1, section 10 State of Energy Management: In the example shown (page 8) the minimum energy requirement is shown as 25MWh. As this is a 60-minute delivery duration service, should this not be 50MWh? Should the minimum energy recovery be 10MWh as a result? Or is it the rules apply on settlement block basis, the example is correct? (If this is the case what differentiates this from DM if this is the case from a performance monitoring point of view?). Please confirm?

Point 5: Performance Monitoring CSV File Format v1.5 document explains what additional states are required for the new services when communicating availability in the performance report. It would be good to see an equivalent for the operational metering signal list to understand what additional digital inputs are required. We would assume a new digital input per service; DRL, DRH, DML, DMH is required (FAQ no 72 suggests this if we are interpreting this correctly).

Point 6: A minor point on the performance monitoring CSV file format v1.5 document; p5 for the example CSV file format, the availability for row 2 and 3 is value 2 (which would mean the unit is available for DC High only), however the armed value is 3 (armed for DCL and DCH). We understand this is not possible (i.e., to be armed for a service a unit is not available for). To avoid confusion, it would be good to update.

Point 7: In the testing guidelines doc there are minor inaccuracies in the plots; x-axis timings not always accurate.

Point 3: Thank you for your feedback on baselines. As you have stated we have been engaging with ADE and its members on the feasibility of a data-derived baselines methodology. As this is still in the exploratory phase, we have kept baseline requirements the same as Dynamic Containment until we can be sure there is an alternative solution. We appreciate some providers consider the current baseline requirements a barrier to entry and we look forward to engaging with you further on potential resolutions.

Point 4: Thank you for the feedback. We will correct the error in the document.

Point 5: We will only require the availability in the performance monitoring data for now. There is no longer a need for any availability signals for DRL, DRH, DML, DMH via operational metering as they have in the past for DC. We will only ask for the parameters stated in Appendix F5. We would be happy to discuss this further with you. Please contact us at the Future of Balancing email address to arrange.

Point 6: Thank you for the feedback. We will update the template.

	<p>900 where it should be 1800 seconds and vice versa. One figure reference also missing on page 7 of Dynamic Moderation Testing Guidelines v.1.</p>	<p>Point 7: The examples given are for the various tests throughout the Guidance Document and are for illustrative purposes only. We have updated the documents to clarify this.</p>
KrakenFlex	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>For all services: We welcome the move to GSP group aggregation as this will allow more smaller aggregated assets to participate in the service. We support unbundled procurement as we believe this brings the lowest cost to the consumer because different volumes of low and high can be procured (rather than symmetrical).</p> <p>We support 1hz operational metering across the three products as this standardises requirements and also provides enough transparency to the National Grid Control Room. However, could you please provide clarity on the importance of real-time data and the tolerance/acceptance of missing data chunks (few seconds periods) does this impact revenue? At the moment you have 1-5s to submit operational metering however if there are bits of data that are late due to a 4G connection does that impact the service?</p> <p>When aggregating readings from distributed devices it is often impossible to determine a single point in time when these readings were taken without interpolating. We would welcome guidance on how this interpolation should be done.</p> <p>We are very disappointed to see that we will not be able to stack the frequency response services from day one, it would</p>	<p>Thank you for your feedback on GSP Group aggregation and unbundling procurement.</p> <p>Operational metering is just for live metering for our control room which is taken as taken into a calculation for use in the demand predictor. This is does not impact revenue in the short term because the payments are made from Performance monitoring data however operational metering should be fixed as soon as possible if there are any issues.</p> <p>Thank you for your comment. We will be analysing the business case for stacking (simultaneous delivery) of more than one of the services,</p>

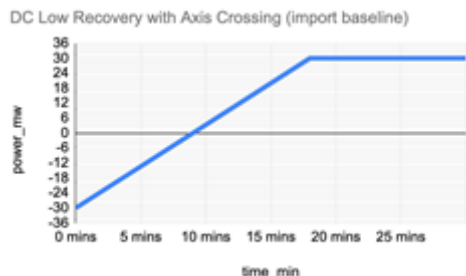
be useful to have a clear roadmap and view of when this will be possible to do.

We are disappointed that all frequency services (DC, DR, DM) will be tendered in a concurrent auction. This will preclude the ability to bid into one auction and then re-bid any spare capacity into another auction once the first has cleared, which would lead to more efficient resource distribution across the three services. There is also a system risk that all providers could choose to bid for the same service, so that there was no capacity offered to the others.

considering the benefits that service stacking could bring in terms of a more efficient market for response as well as the complexity of the system and business process changes needed to support the procurement and operation of multiple services delivered by a single unit. Furthermore, we are currently exploring different options to implement market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com

Thank you for your comment. We considered sequential auctions (i.e., three auctions each day, so that participants could roll over uncleared volumes), but this solution was problematic. Our initial studies demonstrated that the three auctions would need to be scheduled in descending order from most expensive to least expensive, to avoid that the clearing price of an earlier auction would be bid up to the anticipated price of a later, more valuable auction, thus significantly increasing overall procurement costs. However, the relative value of the services may be different for low-frequency and high-frequency response, and between the different EFA periods, and from day to day. For this reason, we concluded that a simultaneous auction would result in lower procurement costs (compared to staggered auctions). We are currently exploring different options to implement market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022.

	<p>For Dynamic Regulation: We question the need for 2Hz performance metering for Dynamic Regulation given that the response time required is 10 seconds and the ramp is 8 seconds. Is the value of 2Hz worth the additional performance metering if 1Hz operational metering is already submitted. The additional overhead of submitting 2hz performance (when 1hz operational data has already been submitted) data seems costly and unnecessary.</p> <p><i>Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals? (Please mark whether this relates to DM only or DR only or both)</i></p> <p>We would welcome the provision of a reference implementation of the algorithms surrounding service provision (calculation of response power) and SoE management, written in a simple high-level language and comprehensively documented.</p> <p>SoE Management: Baselines should be able to recover 20% of the REV. In the High+Low stacked case, the previous baseline could be negative meaning that significant time is spent ramping before any energy can be recovered:</p>	<p>If you have any questions on the Enduring Auction Capability, please contact .box.futureofbalancingservices@nationalgrideso.com</p> <p>To enable us to sufficiently monitor that performance is within the defined tolerances, we require a resolution of at least 2Hz for performance monitoring for Dynamic Regulation. Most of the feedback we have received from providers is that this would not be difficult to implement, however, we appreciate there are exceptions and have therefore provided a 6-month grace period post go live to allow for this.</p> <p>Thanks for your feedback. We will look to provide further guidance for providers on this however it is not necessary as part of this consultation and will be published at a later date. We would be happy to engage on this further.</p> <p>SoE Management: There is no requirement for Performance Baselines to be integers. They can have up to 4 decimal points. This feature was introduced partly to allow smaller assets to efficiently manage their SoE.</p> <p>On the points regarding baseline ramp-rates limiting merchant opportunity, yes this can sometimes be the case and we would expect this to feed through to the availability price offered by the provider.</p>
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This ramp rate restrictions affect many configurations that are desirable when using the baseline to trade, e.g. a 100MW asset cannot do HighLow with a symmetric 50MW Contracted Quantity because it does not recover sufficient volume (unless the baseline in the previous SP is 0).

Current guidance assumes baselines start at 0. This may not be true if manual SoE management is occurring (or other activities such as trading).

The current ramp rates limit the volume of trading when partitioning the battery. For example, your wholesale trades for the rest of the battery would be limited by the ramp rates applied to the given contract size.

We would Like National Grid to consider non MW integer baselines so that smaller assets can effectively manage their SoC and also smaller volumes can participate in the market for a symmetric service and not be limited by baselining rules. Currently, integer requirements for baselines mean that there is a minimum volume that can be recovered, and this is a large proportion of smaller assets' energy capacity.

Operational baselines – “Response Units that are not registered in the BM ('non-BM') will only be required to submit an operational baseline that conforms with the rules referenced above as and when NGENSO implements a communications channel that can receive these

Operational baselines - Thank you for your feedback on baselines.

Non-BM units do submit baselines, albeit retrospectively, to ensure the appropriate response for the purposes of performance monitoring.

We had feedback from some providers the current Operational Baseline requirements provided a barrier to entry for some parties. We agreed to consider alternative solutions and as we are still in

	<p>submissions.” Are you able to provide more clarity on when this will be available and how long providers will have to comply with the new method? It does not seem like a level playing field for assets in the BM vs not.</p> <p>How will the disarming/arming messages be sent to service providers? Will the method be the same for BM and non BM providers? Please could you provide some more information on this.</p>	<p>exploratory phase of this, we have kept baseline requirements the same as Dynamic Containment. Once we have confirmed to either keep the current Operational Baselines as is or implement and consult on a new methodology, we will then be able to implement the required IT solution to enable this. We look forward to engaging with you further on this topic</p> <p>We are currently working with our IT team to finalise the details of the disarming process. We will provide further information later in January.</p>
Limejump Ltd	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>Bilateral discussions: We would like to thank National Grid (NG) for providing and proactively offering a bilateral meeting to discuss the documents supporting the DM and DR consultation. We found this a useful way to cover our specific questions.</p> <p>Symmetrical bids: We have requested that NG provide an example of how they expect an Energy Limited Asset to participate in the dynamic products with symmetrical bids. Whilst we appreciate that NG does not know the efficiency and particulars of a specific asset, we ask that they include an example in the Participation Guidance Document. Currently we are seeing a wide variation in interpretation across market participants and therefore guidance is needed to ensure a consistent methodology across participants. We believe this should be a treated as a high priority as it has a</p>	<p>Bilateral discussions: Thank you for providing feedback on our engagement approach. We will look to continue taking this approach for other ancillary service consultations.</p> <p>Symmetrical bids: We will look to provide guidance examples for providers on how Energy Limited Assets should be able to provide symmetrical bids, however it is not necessary as part of this consultation. We are working to publish guidance on this during the onboarding phase.</p>

financial impact for those participating in DC as well as future dynamic products.

Performance: We understand that NG has analysed historical DC performance. We ask that they provide a date when this will be provided to participants and that there is sufficient time for participants to review. Can NG also provide a firm date as to when they will be in a position to provide monthly performance on a timely basis for DC and whether they intend to start this for DM and DR when they launch?

Performance tolerance: We believe that the performance tolerance of 3-7% is too tight for DR, especially when compared to FFR. We recommend that this is reviewed and widened to say 5-10%. We also believe that this wider tolerance level would also be more appropriate for DM and DC and ask that NG review and provide a technical update as to how they have reached the appropriate tolerance level.

Performance: With effect from 1st April 2022 performance monitoring will be carried out on a monthly basis. For DC, performance factors have been supplied for the period 1st April 21 to mid-September and the intention is to include a penalty adjustment for this in either January or February 2022, to be applied retrospectively. This assessment process will be repeated for the performance period mid-September through to the end of December. Account managers will be engaging with those providers affected. Once these adjustments have been completed this will move to a monthly assessment process. We anticipate that DM and DR would be included in this monthly performance monitoring from the launch of both services.

Performance tolerance: We have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis to assess the impacts to the service of adjusting the requirements to address barriers to entry. Whilst we believe the DR parameters remain appropriate (we also didn't receive any specific recommendations for changes to the parameters), we have proposed changes and exceptions to the DR performance monitoring rules to address the concerns raised. This includes not penalising response from synchronous generation in the deadband, exceptions for delivery beyond +/- 0.2Hz, increasing the performance tolerances (from 3%-7% to 5%-25%), and changing the error calculation rolling window from a rolling mean to a rolling minimum.

We are committed to refining the performance monitoring rules to support removing any barriers to entry whilst maintaining the integrity of the services, and as such we will be reviewing the rules for DR and DM 6 months after launch. We welcome further engagement and feedback regarding opportunities to support any future changes. Whilst DC is outside of the scope of this consultation, we also encourage any feedback regarding potential improvements to the service to inform future developments.

Co-optimisation: We are actively investigating the feasibility of implementing some form of market co-optimisation for frequency

<p>Co-optimisation: The proposed arrangement which requires participants to choose which product they would like to participate in, is likely to lead to inefficient procurement. We believe that services will be under or oversubscribed and not all requirements met. We understand that NG believe the cost of co-optimisation across DC/DM and DR are too great ahead of moving to their enduring platform. We recommend that this is monitored and the costs to implement are shared.</p> <p>Dis-arming and re-arming: We understand that NG is yet to decide on the electronic communications for arming, but they are considering using the same codes used for the BM. We ask that NG communicate a decision no later than mid-January in order to allow sufficient time for any technical development.</p> <p>Frequency Measurement Specification: We understand that this will be defined via a separate consultation. We are not sure off the current issues with frequency measurement but request that sufficient time is allowed for the separate consultation.</p> <p>Operational Metering Communication: We request that an updated communication CSV file is provided as soon as possible to allow the technical team to map the additional fields required.</p> <p>ABSVD: We note that ABSVD is currently not being applied to non-BM units which means there is a disparity between BM and non-BM units. We understand that NG intend to remedy this in late 2022 when a new Settlement System is available. We request that this is captured as a known issue and fixed as soon as possible.</p>	<p>response services (simultaneous bidding for multiple services, with one service to be awarded) to follow the Day 1 launch of DM and DR. We are also designing a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com</p> <p>Dis-arming and re-arming: Thank you for your feedback. We are currently working with our IT team to finalise the details of the disarming process. We will provide further information in later January.</p> <p>Frequency Measurement Specification: Frequency measurement is deemed a priority for development, we will initiate a consultation on the Frequency Measurement Specification in 2022. Stakeholders will be invited to input to the detail and will be given a full month for consultation on the proposed documents. We expect this to be later this year post go-live of both services.</p> <p>Operational Metering Communication: The Performance Monitoring CSV template was published on the ESO website on the 14th December. It can be found here: https://www.nationalgrideso.com/document/225776/download</p> <p>ABSVD: We are currently developing a new settlement system and will incorporate ABSVD for DC, DM, and DR when development is complete. We are open to considering ways to capture and share known issues with providers and welcome a discussion with Limejump and other interested parties.</p>
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GSP Group: We are pleased that NG has decided to launch DM and DR at a GSP Group level after much discussion with the industry. This will allow a wider participation in DM and DR. We understand that NG continues to review this impact and ask that they share a report with the details of their assessment when available.

Timings: We request that the final unanswered technical and operational questions are provided to the market no later than mid-January, to allow sufficient time for participants to prepare. Please provide detailed timetables as soon as possible.

We would also welcome clarity on the planned timings for the rollout of the Reserve products in order to allow the necessary resource planning.

***Annex 1: Do you have any comments on the highlighted mapping for either the Dynamic Moderation and/or the Dynamic Regulation service?
(Please mark whether this relates to DM only or DR only or both)***

We are pleased that the supporting documentation for DM and DR are similar to that used for DC.

***Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?
(Please mark whether this relates to DM only or DR only or both)***

GSP Group: Thank you for your feedback. We expect to publish a paper in January exploring the visibility challenges we are facing, and our proposed next steps.

Timings: Thank you for your feedback. We aim to provide further information on the technical and operational requirements that impact providers later in January.

To manage change in the control room, we are delivering Response and Reserve products in sequence, starting with DR (March), followed by DM (April) and Negative Slow Reserve (NSR). We recognise the interactions between Response and Reserve products; for example, stacking and auction co-optimisation are both part of our product backlogs for delivery in later product releases. Our next step for NSR is to understand clear delivery timelines which reflect the changes required to key IT systems. We will communicate a launch date and the service design via an A18 consultation in early 2022.

Thank you for your feedback.

	<p>Future volume requirements: As requested before, we would welcome NG's view of the volume requirements for DC, DM, and DR both in the short and medium term (out to 2025). This would provide a useful market signal for investment.</p> <p>All comments in section 1 refer to DM and DR, unless otherwise stated.</p>	<p>Future volume requirements: Requirements are subject to change, but we expect to buy up to 150MW of each service in 2022. This is likely to rise to 300MW of each service by 2025.</p> <p>Requirements are shared in the monthly FFR Market Information Report which can be found on the ESO Data Portal: https://data.nationalgrideso.com/</p>
Octopus Energy	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>Both services: The move to aggregation at a GSP group level is a critical provision, as this will enable participation by smaller assets that are not large enough to participate on their own. It also allows for swapping units in/out of the active portfolio as devices become (un)available, which is necessary if many small assets are to act as a reliable resource in markets such as these.</p> <p>We are supportive of unbundling high and low services, allowing the procurement of asymmetrical volumes to give the lowest balancing cost.</p> <p>In order for the full range of frequency services to be procured at the lowest overall cost, we strongly feel that they must be stackable with one another. This needs to include the ability to re-bid any capacity that does not win a contract in one auction into another auction - which is not currently viable since the three services (DC, DR, DM) will be tendered concurrently. We are disappointed that these aspects are not allowed from the start of the service, and would appreciate clear signposting of steps being taken to change this.</p>	<p>Thank you for your feedback on GSP Group aggregation and unbundling procurement.</p> <p>Our end goal of achieving a fully co-optimised Response market will be achieved with the Enduring Auction Capability. This project is currently going through a competitive tender process, with the aim to choose a successful supplier in spring 2022. We're currently exploring when we can bring in this functionality and further enhance procurement of the new ancillary services.</p>

<p>The 1 Hz operational metering requirement presents a cost-barrier to entry for small, distributed assets, both in terms of hardware and communications infrastructure. In addition, the requirement that readings are provided with no more than 5 s delay will mean that portfolios of distributed assets (e.g. domestic) are in practice entirely unable to participate - as delays significantly exceeding 5 s will be observed in the communications pathway from each device to the aggregator's cloud to the Control Room. We strongly suggest relaxing this requirement to open up the market to a wider pool of potential entrants. Methods of data analysis should be used to complement less granular data with higher latency where necessary.</p>	<p>Operational metering from response is a critical part of making rapid decisions on how to respond to a large event. By comparing frequency data with generation metering, we are able to evaluate whether an event is likely to be due to a change in demand (sudden pick up) or change in generation (Trip). The approach to each may be different depending on the situation, for example either dispatching fast reserve for short events, or Short-Term Operating Reserve for events likely to last for a longer period. As the BM works on a nearest minute basis, if near the end of a minute, a delay in instruction could result in 60s delay in delivery. 5s has therefore been chosen to minimise this risk, while being a reasonable length to allow comms to take place. We would welcome discussion with the provider to establish what they believe is technically feasible.</p>
<p><i>Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?</i> <i>(Please mark whether this relates to DM only or DR only or both)</i></p>	
<p>To clarify the algorithms involved in the calculation of response power and SoC management, we would like to see reference implementations of these algorithms with comprehensive documentation.</p>	<p>Thanks for your feedback. We will look to provide further guidance for providers on this however it is not necessary as part of this consultation and will be published at a later date.</p>
<p>We seek clarification on the rules related to the use of energy limited asset types other than batteries, for example heat and V1G, as well as portfolios composed of a mix of different asset classes. We expect the rules to ensure that these services are accessible by all asset types and mixed portfolios.</p>	<p>If an asset is classed as Energy Limited (see definition in Glossary) then the relevant rules will apply. We have tweaked our definition slightly. At the moment we are not in a position to introduce further classes or sub-classes of assets.</p>
<p>As the ramp rates are dependent on contract size, when contracting small contract volumes (compared to overall asset size) this will greatly limit the ability to monetize the uncontracted portion of the battery. Effectively, this can</p>	<p>Baseline ramp rates are indeed dependent on the contract quantity (5% on contracted quantity per minute). We acknowledge that this will impact the uncontracted portion of an asset, however there is not currently any solution to submit two separate baselines (one for the contracted portion and one for the uncontracted portion). We would be</p>

practically rule out partitioning an asset between trading and DC/DM/DR.

We propose that baselines should be able to recover a higher proportion of the REV. The proposed rules limit the possible service contributions when moving from negative to positive provision in the High+Low case - as significant ramp time is needed before any energy can be recovered. Similarly, current guidance assumes baselines start at 0, which may not be true under manual SoC management or trading.

We seek clarity on the roadmap for non-BM units needing, in the future, to submit operational baselines.

We seek clarity on how (dis)arming messages will be sent to service providers, and whether that will vary between BM and non-BM providers.

The restriction to integer MW baselines limits the ability for smaller assets to effectively manage their SoC. This also limits the ability for small volumes to participate symmetrically

happy to discuss this with you further. Please contact us at the Future of Balancing Services email.

The baseline ramp rate limits have been designed to mitigate the risk of herding behaviours. We remain open to reviewing the specific limits but not until the services are launched and we have real-world data to investigate. This will be explored as part of the day 2 project. We will be further engaging with industry on our day 2 activities, and we will be reviewing and prioritising proposed changes to the new services later this year.

Thank you for your feedback on baselines.

Operational Baselines for non-bm units are retrospectively submitted to ensure the appropriate response for the purposes of performance monitoring.

We had feedback from some providers the current Operational Baseline requirements provided a barrier to entry for some parties. We agreed to consider alternative solutions and as we are still in exploratory phase of this, we have kept baseline requirements the same as Dynamic Containment. Once we have confirmed to either keep the current Operational Baselines as is or implement and consult on a new methodology, we will then be able to implement the required IT solution to enable this. We look forward to engaging with you further on this topic.

Thank you for your feedback. We are currently working with our IT team to finalise the details of the disarming process. We will provide further information in later January.

There is no requirement for Performance Baselines to be integers. They can have up to 4 decimal points. This feature was introduced partly to allow smaller assets to efficiently manage their SoE.

However, there is currently a limit of 1MW or above on unit participation, and systems currently only allow whole numbers. We expect to be exploring this as part of our Role 1 IT upgrade to control

	in the markets. We propose the allowance for sub-integer MW baselines to overcome these limitations.	room systems. This is a longer-term deliverable, and we communicate progress of this programme within our RIIO-2 deliverables tracker.
RWE	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p><u>DM & DR</u></p> <p>We have concerns around the inability for BMUs to offer the contracted level of Frequency Response whilst, at the same time, operating in the BM. This potentially removes a significant quantity of Operating Reserve from the market.</p> <p>The ESO has previously advised that BMUs contracted for DR should “price out” their unit in the BM in order to avoid receiving BOA instructions, or risk defaulting on their DR contract. We feel this would be an anti-competitive move.</p> <p>It appears that the Stacking Guidance document is yet to be updated to include DM & DR and therefore, based on clause 12.5, we are to assume currently that DM and DR (unlike DC) are not stackable with the BM, which does not seem appropriate, and an illogical disparity.</p> <p>If DR, for example, is not stackable with the BM and DC remains stackable, this represents an unfair advantage for storage assets in the tendering for frequency products.</p> <p><i>Annex 1: Do you have any comments on the highlighted mapping for either the Dynamic Moderation and/or the Dynamic Regulation service? (Please mark whether this relates to DM only or DR only or both)</i></p>	<p>Thank you for the feedback. The clause 12.5 has been clarified to confirm stacking of DM or DR with the BM.</p>

DM & DR

The proposed updates relating to EBGL Article 18 mapping across Dynamic Moderation and Dynamic Regulation seem reasonable.

***Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?
(Please mark whether this relates to DM only or DR only or both)***

DM & DR

Please could the ESO confirm whether there is any contingency in place in case the Single Markets Platform is not fully functional in time for the onboarding of DM and DR.

[REDACTED]

It is understood that a 50MW cap will be in place initially, however we urge the ESO to consider lifting the cap to at

Thank you for providing feedback, we appreciate the time you have taken to respond.

If for any reason, the SMP is not in place for onboarding, we would enable the current DC manual onboarding process and expand it to DM and DR. This is detailed in section 3 of the Participation Guidance.

Thank you for your feedback.
We have hosted Dynamic Containment on the EPEX platform since August, and this is the same platform used for the weekly auction, which received positive feedback from FFR participants. We are taking an Agile approach, which means we develop in sprints, and the initial launch of DR is set for March. Registration opens in February and providers are able to register at any time to suit them. We would be happy to support you through the onboarding process so please contact the team at the Future of Balancing Services email address, or your account manager for further support. We welcome feedback on how we support providers during the onboarding process; please get in touch if you have a suggestion for how we can improve.

	<p>least 100MW for DR, in order to recognise and capitalise on the existing frequency response capability of CCGTs.</p>	<p>The 50 MW cap on response volume per asset is designed to limit concentration risk, i.e., the proportion of the total response being provided by any single asset or from any single network location. As the ENCC gains more experience of operating these new response services, the cap will be reviewed, and larger response volumes from a single asset will be permitted if it is prudent to do so.</p>
<p>Sembcorp Energy UK</p>	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation? Please provide rationale. (Please mark whether this relates to DM only or DR only or both)</i></p> <p>Yes</p> <p>We support the deployment of DM and DR and are generally supportive of the frameworks and mechanisms set out to facilitate this.</p> <p>Our only point of concern would be that the holding energy requirements should be reviewed so as not to pose a barrier to entry for providers, we consider that the requirement to hold so much energy would pose a barrier to entry and could be better served by relaxing the baseline rules.</p> <p><i>Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals? (Please mark whether this relates to DM only or DR only or both)</i></p> <p>We thank National Grid for its efforts introducing DR and DM and are looking forward to taking part in their deployment.</p> <p>We would also greatly applaud Grids engagement on the development steps as it has allowed us to maintain great visibility of the products in difficult times thanks to covid</p>	<p>Thank you for the feedback. We will monitor performance and participation and study the impact of the energy holding requirements. We will be further developing the services through agile delivery, and we will be seeking feedback from industry via informal discussions as well as formal consultation - we invite you to continue engaging with us on this topic.</p> <p>Thank you for providing feedback on our engagement approach as it helps us tailor our engagement accordingly to ensure providers can get the most out of it.</p>

limitations. In particular the communication and webinars have been highly useful.

We would raise our concerns on certain elements of the design of the new products as highlighted below.

1. The baseline ramp energy requirements to hold providers to a 5% power per minute ramp rate poses a substantial barrier to entry, both making it more technically challenging to provide the minimum replacement energy levels but also making the delivery of the service less economically efficient as providers will need to pass the additional cost of managing their state of energy to National Grid, furthermore it will make the stacking of other services more challenging, further decreasing the economic benefit available to providers which will be passed on in more expensive prices. We believe this will decrease the amount of capacity providing such services as well as making it more expensive to do so.

We understand Grids previous raised concerns that they wish to avoid herding of providers recharging simultaneously but we do not believe this a justification to constrict providers as it is clearly the case when Grid no not contract providers that they will respond without any such ramp limitations to the same pricing signals.

We would ask that the ramp limit be removed from both DM and DR (as we have pressed for it to be removed from DC) or if this is decided against that it at least is increased to a more realistic number – as high a % as is possible, we would hope for a level more than 25% at least.

2. We are concerned that the lack of interaction between the products auctions will pose a substantial risk both to providers in making the delivery of the products uneconomic as well as operational risk to Grid in that you may be unable to procure capacity required for system security simply down

1. We accept that some of the SoE rules may reduce the total capacity that can be offered but we believe the rules are required to ensure the reliability of the services.

We remain open to reviewing the ramp rate limits once the new services are launched and we can study the effects and scale of any herding based on real data. We will be engaging further with industry on our day two developments.

2. Thank you for your comment. We considered sequential auctions (i.e., three auctions each day, so that participants could roll over uncleared volumes), but this solution was problematic. Our initial studies demonstrated that the three auctions would need to be scheduled in descending order from most expensive to least expensive, to avoid that the clearing price of an earlier auction would

	<p>to providers having made themselves available in the wrong product on the day.</p> <p>The inability to co-clear the auctions (or for Grid to hold the auctions sequentially initially until co-clearing is available) will place immense risk on providers correctly guessing where Grid will seek to procure volume for each product – as seen in the DC market when Grid started to vary demand per EFA block this led to providers not having a good view of the system operators targets for both the low and the high service which led to uneconomic decisions. We believe this would be exasperated greatly by the existence of potentially 6 different services with no ability for providers to take contracts in one service once the most valuable service is at full capacity – providers will be left guessing where target volume is.</p> <p>This is a further problem for National Grid who may and indeed will highly likely be unable to procure the required capacity because providers tendered into the wrong product and did not have a second chance or a co-clearing mechanism to allow them to secure contracts in the other markets – providers will naturally move to tender into the most economically attractive market which will leave the other markets undersupplied leading to both risks to security of supply or uneconomic drivers leading to greater cost to the consumer.</p> <p>We would ask that Grid look at introducing a co-clearing mechanism at go live or if this is not as possible then as soon as possible with a staggered auction timing to allow providers to retender rejected volume from the first product into the second product – we believe this would lead to a more economic outcome both for providers and for National Grid.</p>	<p>be bid up to the anticipated price of a later, more valuable auction, thus significantly increasing overall procurement costs. However, the relative value of the services may be different for low-frequency and high-frequency response, and between the different EFA periods, and from day to day. For this reason, we concluded that a simultaneous auction would result in lower procurement costs (compared to staggered auctions). We are currently exploring different options to implement market co-optimisation for frequency response services (simultaneous bidding for multiple services, with one service to be awarded), ahead of a solution for a fully co-optimised market that will be delivered through the Enduring Auction Capability in 2023. This latter project is part of our RIIO-2 Business Plan. As part of the development of the Enduring Auction Capability, we intend to engage with industry on the core functionalities of the enduring solution. This could be expected later in the year after the successful vendor has been onboarded in April 2022. If you have any questions on the Enduring Auction Capability, please contact box.futureofbalancingservices@nationalgrideso.com</p>
Scottish Power Renewables	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i></p> <p><i>Please provide rationale.</i></p>	

(Please mark whether this relates to DM only or DR only or both)

Yes, SP Renewables (SPR) welcome the proposed updates. The reform of the frequency response products will enable greater volumes of zero-carbon generation such as wind, and batteries to participate in response markets as requirement to operate the system zero carbon by 2025.

SPR request greater clarity regarding submission of performance data and the communication medium required for it. It is crucial, as it is directly related to the settlement for the services. Especially regarding the type of communication interface required and if there should be any future considerations for future volume of data transfer to the ESO. (DM&DR)

Regarding the participation guidance in DM and DR response service, especially in the DM service NGESO expects full contracted quantity to be delivered no later than 1 (or 10 seconds in DR) second after a step-change in frequency. SPR will like more clarity on how the 1 second be measured by NGESO. The time stipulated here could be greatly affected by any communication latency during reporting. SPR will like NGESO to explain the requirement for timestamping in occurrence of the event and response from the contracted unit, to check compliance with NGESO requirements.

SPR request NGESO to provide availability requirements for DNO connected sides with ANM provision. (DM&DR)

Annex 1: Do you have any comments on the highlighted mapping for either the Dynamic Moderation and/or the Dynamic Regulation service?
(Please mark whether this relates to DM only or DR only or both)

We will be using the same mechanism as for DC. A FAQ document relating to the connectivity process is here:

<https://www.nationalgrideso.com/document/183536/download>

We also recently published the updated Performance Monitoring CSV file for DM/DR here:

<https://www.nationalgrideso.com/document/225781/download>

We rely on the Performance Data that providers submit via the data concentrator API. This data needs to include time-stamped input frequency and time-stamped active power, we use this (and your baseline) to determine performance.

We check your time-stamped input frequency against our own measure and will investigate any significant differences. Please get in touch if you require further clarification on this subject.

We discuss ANM in section 15 of the Participation Guidance. There is ongoing work within Open Networks look to at service provision from assets who are subject to ANM provisions. We are actively engaged in this work and will progress relevant findings to facilitate market entry where possible.

This has been answered above.

	As highlighted in Q1, and requirement 18.5.d and 18.5. f in the mapping document, more clarity is required regarding data and information that NGESO requires to correctly assess the performance of the response provider. This important for DM where there is a 1 second window for response.	
SSE Distributed Energy, SSE Thermal & SSE Renewables	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i> <i>Please provide rationale.</i> <i>(Please mark whether this relates to DM only or DR only or both)</i></p> <p>DM & DR</p> <p>Batteries</p> <p>Positives:</p> <ul style="list-style-type: none"> • GSP Group allocation for DM/DR is welcomed and we would encourage the ESO to revert DC to same as opposed GSP point. • Moving to the Single Market Platform from February is welcomed and will support a more efficient registration process. <p>Concerns:</p> <ul style="list-style-type: none"> • 50MW asset cap size – with growth of battery developments we would encourage this to be raised to 100MW (this is true for other technologies as well). • Lack of clarity regarding the disarm and re-arm signal. We would encourage the ESO to release information on this as quickly as possible to allow for system development pre the Go Live date. • 30 minutes Reserve energy for DM and 60 minutes for DR appear quite onerous for a symmetrical service and would lead to significant 	<p>Positives:</p> <ul style="list-style-type: none"> • Thank you for your feedback on GSP Group aggregation and registration via the Single Market Platform. <p>Concerns:</p> <ul style="list-style-type: none"> • The 50 MW cap on response volume per asset is designed to limit concentration risk, i.e. the proportion of the total response being provided by any single asset or from any single network location. As the ENCC gains more experience of operating these new response services, the cap will be reviewed, and larger response volumes from a single asset will be permitted if it is prudent to do so. • Thank you for your feedback. We are currently working with our IT team to finalise the details of the disarming process. We will provide further information later in January. • We discussed the duration length at the workshops back in June and we had feedback 30 minutes for DM was feasible.

haircut for shorter duration batteries. What is the substantiation behind these figures? Is it more appropriate for asymmetrical delivery to have such a high duration?

- 6.14 of service terms for DM state the rules regarding interruption from a disarming signal. What is not clear is the consequence to availability payment if the 2-minute response period is not complied with.

***Annex 1: Do you have any comments on the highlighted mapping for either the Dynamic Moderation and/or the Dynamic Regulation service?
(Please mark whether this relates to DM only or DR only or both)***

DM/DR

As we have set out in previous responses to these Article 18 consultations by the ESO there are concerns; in respect of both the Annex 1 mapping as well as the proposal submission to GEMA itself (in terms of compliance with, for example, Articles 4, 5, 7 and 10); as to the legal status / approach that the ESO has adopted in respect of the terms and conditions related to balancing in GB.

***Do you have any other comments on either of the Dynamic Moderation and/or Dynamic Regulation proposals?
(Please mark whether this relates to DM only or DR only or both)***

DR only

Also, originally for DR, the duration was set to continuous so following feedback we changed this to 60 minutes.

The duration limits for each service are designed to ensure the service can still deliver post fault when accounting for normal frequency variation pre-fault (where the frequency may run above or below 50Hz for some time). The delivery curve is also factored in, hence the longer duration requirement for DR, as it is more active closer to 50Hz, and will be more drained by a frequency running at 49.95Hz than DM would be. As the frequency can run either side of 50Hz, it is important for symmetrical delivery to be able to cope with either scenario.

- Please refer to Paragraph 6.16 of the service terms. This states after 2 minutes no response should be provided. In Paragraph 6.19 it references that Contract Quantity will be set to 0 in Performance Monitoring, and errors will occur if still armed. We have provided further clarity in Section 6 of the service terms.

Please refer to previous responses here:

<https://www.nationalgrideso.com/document/177201/download>

that address this concern. If you would like to discuss further, please contact us at our Future of Balancing email and we can arrange a meeting to discuss.

DR was billed as a replacement for FFR and, at first glance, the service description seems to fit the bill. The response time of 10s for DR-L and DR-H is the same as for primary and high response.

However, the service features a number of parameters and requirements which will preclude participation from thermal and renewable plant.

CCGTs:

- DR would require a change to the control system due to the deadband & response needing to be clamped at +/- 0.2Hz without any certainty of recouping expenditure through guaranteed income.
- MFR would still require to be provided, so the plant would need to be able to switch between Mode A and DR mode.
- Tests are onerous when compliance tests for MFR have already proven that 10s response can be provided.
- 2 Hz metering would need to be installed.
- Performance bounds are too tight and the K factor too onerous for thermal plant.
- Although stacking with BM is allowed in principle, it is not clear how service provision & payments are affected if, for example, the plant is BOAd to MEL or SEL and the contracted quantity can no longer be provided. This is unlike MFR where the level of deload (and the corresponding response capability) is taken account of by ESO.

Wind:

- Setting DR response time to 10s ignores the value of wind which can provide a much faster response time than all other forms of generation other than batteries (full delivery in < 5s potentially 3s).

CCGTs:

We have listened to the feedback received regarding the performance monitoring rules for DR and DM and have undertaken further analysis to assess the impacts to the service of adjusting the requirements to address barriers to entry.

Whilst we believe the DR parameters remain appropriate (we also didn't receive any specific recommendations for changes to the parameters), we have proposed changes and exceptions to the DR performance monitoring rules to address the concerns raised. This includes not penalising response from synchronous generation in the deadband, exceptions for delivery beyond +/- 0.2Hz, increasing the performance tolerances (from 3%-7% to 5%-25%), and changing the error calculation rolling window from a rolling mean to a rolling minimum.

We are committed to refining the performance monitoring rules to support removing any barriers to entry whilst maintaining the integrity of the services, and as such we will be reviewing the rules for DR and DM 6 months after launch. We welcome further engagement and feedback regarding opportunities to support any future changes. Please note if an asset overshoots delivery during a test, this doesn't necessarily mean that this has failed testing as there are tolerances within the test that would allow this to happen. In test 1, there is the 2.5% standard deviation taken across the entire duration period, this is described in the pass criteria for test 1. For test 2, there is a +/- tolerance band for delivery.

We have answered your other points below:

- We know that some providers may need to invest in new control systems
- MFR capability will need to be maintained
- The tests are required to provide assurance that the full range of service can be delivered and are necessary for all providers
- New metering may also need to be installed
- One of the principles of these new services is that we buy only the service and providers need to account for any repositioning costs. We will provide more information on how stacking can work by updating our guidance document.

- By having a 'slow' and 'fast' version of the DR product **should reduce the total DR volume required** and potentially also the volume of DM, resulting in lower response costs and unnecessary of building batteries by using the existing fast-acting zero carbon generation that will be installed
- This is further supported by the fact that the need for DR and DM is likely to increase with a low inertia – i.e when wind output would be expected to be high anyway
- If creating a 'fast' DR sub-category to access this benefit, considerations for the product should be:
 - Day-ahead auction timing; day-ahead forecasts for wind output are typically >80% accurate and it is likely that on a system with a high proportion of wind, there will often be day-ahead prices below £0/MWhr which could incentivise wind to take part in response markets instead of energy. (Note windfarms with CfDs affected by the 6-hour rule and AR4 CfDs, merchant windfarms and those whose ROC accreditation has expired could all be potential providers).
 - Power Available (PA) signal; if using wind, consideration how the PA signal is used for monitoring and referenced for payment is needed. E.g. would a windfarm be constrained to provide low-frequency response by constraining to a fixed MW value (and if so by BOA or by self-despatch?) or by constraining to a fixed MW value below the PA?
 - Wind can always provide a fast-acting (<5s) High response *without any de-load* or without any penalty to efficiency.
 - Wind output is more certain closer to real-time and hence a much shorter time-horizon product

Wind:

During internal workshops held in June, wind providers highlighted unbundling was the key blocker for participants which we reviewed as part of the service design. As part of the development of the services, we will continue to review the requirements following feedback from industry and our operational colleagues. In terms of a slow and fast version of DR, this will only be considered if our system studies suggest they are required or can offer better value. We would be happy to engage with you further on the points you have raised and consider any changes in the future product development subject to the specification meeting our operational requirements and the benefit this would be bring.

	<p>may be preferable for a 'fast-DR' product in order to obtain the lowest price.</p> <ul style="list-style-type: none"> ○ The sampling rate for a 'fast' DR service may need to be higher than 2Hz (but not as high as 20 Hz). 	
Statera Energy	<p><i>Do you agree with the updates in the proposal for Dynamic Moderation and Dynamic Regulation?</i> <i>Please provide rationale.</i> <i>(Please mark whether this relates to DM only or DR only or both)</i></p> <p>Both: The current performance scoring regime doesn't acknowledge how ramps due to changes in operational baseline or BOAs will be treated. Because battery assets response to setpoints for baseline or BOA response are not perfect i.e. not instantaneous this can lead to unwanted error when adjusting the active power response to baseline.</p> <p>This is particularly an issue for BOAs, where there is less flexibility in how the asset can ramp i.e. the asset is expected to ramp to full power immediately so does so within a few milliseconds. This means power adjusted by setpoint can result in large deviations from the expected response.</p> <p>We would propose that at a minimum there is guidance on treatment of these instance. Ideally periods either side of an asset receiving a ramp instruction would be excluded from performance monitoring. We think that the errors that result should not be considered genuine seeing as they don't reflect any deviation from desired behaviour in response to frequency and are only an effect of the data representation of assets receiving ramp instructions.</p>	<p>Providers should always ensure they can deliver response from their baseline at all times. We will continue to monitor performance and consider changes to baseline rules if these can facilitate more efficient delivery. Would it be useful to meet and discuss your suggestion of guidance to see if we can make improvements in this area?</p>

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

ESO response to individual points raised by Drax in Annex 2 of their submission

Section/Clause	Response	Proposed rewording	ESO Response	Amendments to final version
DR Auction Rules, clause 5.2 (Registration)	Given the severity of de-registration, we are of the view that whether a confirmation or declaration given by a Registered DR Participant is no longer true and/or accurate should be judged objectively and not based on NGESO's subjective findings. Registered DR Participants should have the right to make representations prior to their immediate re-registration.	<i>Where NGESO determines (acting reasonably) there is material evidence, that any details provided, including confirmations and declarations given, by a Registered DR Participant pursuant to the DR Participation Guidance are no longer true and/or accurate, then NGESO may (but shall not be obliged to), having first communicated the grounds for concern and given the relevant Registered DR Participant a reasonable opportunity to make representations, de-register the relevant entity as Registered DR Participant and/or Registered Service Provider (as the case may be). Such de-registration shall be notified by NGESO to the Registered DR Participant by email, whereupon no further DR Sell Orders may be submitted by that entity unless and until it is re-registered in accordance with the DR Participation Guidance Document.</i>	REJECTED. The current drafting requires NGESO to act reasonably when determining whether the provider's confirmations or declarations cease to be true and/or accurate, which means NGESO does not have an unfettered discretion. In practice, NGESO will likely communicate its concerns to the provider in advance of making any deregistration decision, but this will depend on the circumstances and is covered by the overarching obligation on NGESO to act reasonably when making these decisions, as mentioned.	None

DR Auction Rules, clause 5.5 (Registration)	As above, we feel that this is something that should be judged objectively and, in the case of a dispute, the parties should have the right to refer the matter to a suitable expert.	Where NGESO determines (acting reasonably) , having regard to declarations of unavailability notified by the Registered DR Participant pursuant to the DR Service Terms or otherwise, <i>it can be reasonably determined</i> that any Eligible Asset is no longer capable of providing its Registered Quantity, then NGESO shall may, <i>having first communicated the grounds for concern and given the relevant Registered DR Participant a reasonable opportunity to make representations and cure such concerns, so notify the Registered DR Participant whereupon that</i> the Eligible Asset shall be ineligible for allocation to any Response Unit until such time as it is pre-qualified by NGESO once more in accordance with the Testing Documents. <i>Either Party may refer any disputes arising in relation to this clause to an Expert for determination.</i>	REJECTED - see above comment on 5.2. By virtue of para 21, if a provider considers that NGESO has not acted reasonably, then under para 15 of the Common Flexibility Ts & Cs it may raise a dispute and both parties will be obliged to use good faith efforts to resolve the dispute, with subsequent escalation to senior management, after which if still resolved (including by mediation) then the provider can refer the matter to arbitration. It is not considered appropriate for this to be a matter referable to an expert, since the question is a legal one of whether in all the circumstances NGESO has acted reasonably, and NGESO needs to be able to rely on its own judgment in the control room scenario.	None
DR Auction Rules, clause 7.13 (DR Sell Order)	Whether a DR Sell Order is valid should be judged objectively against the provisions of clause 7 and not solely by the subjective judgment of NGESO (or the Auction Administrator) made without explanation to Registered DR Participants.	The beginning of Clause 7.13 to be replaced with " If, in the sole judgment of NGESO or the Auction Administrator, a Registered DR Participant has failed to submit a correct and valid DR Sell Order <i>in accordance with this paragraph 7</i> , NGESO or the Auction Administrator <i>(acting reasonably)</i> reserves the right to:- ..."	PARTIALLY ACCEPTED - NGESO needs to have absolute discretion on validation of sell orders, given that they will be made in short timeframes and will impact on the auction clearing process and hence other providers and cannot easily be reversed. In practice, we expect validation of sell orders to be undertaken automatically by the platform software, as stated in paragraph 7.8, however NGESO (and the auction administrator) require the backstop right to adjudicate on validity of sell orders.	Amend as follows: " <i>If, in the sole judgment of NGESO or the Auction Administrator, a Registered DR Participant has failed to submit a correct and valid DR Sell Order in accordance with this paragraph 7, NGESO or the Auction Administrator reserves the right to</i> "

			We can however agree to include the words "in accordance with this paragraph 7" in paragraph 7.13 after the words "correct and valid "DR Sell Order..."	
DR Auction Rules, clause 7.14 (DR Sell Orders)	Please see our comments above.	The decision of NGESO or the Auction Administrator as to whether or not a DR Sell Order is correct and valid shall be final, and the Registered DR Participant may be notified of such decision without prior consultation or explanation. Where NGESO or the Auction Administrator reasonably finds that, for the purposes of paragraph 7.13, a DR Sell Order is not in compliance with paragraph 7, NGESO shall notify the relevant Registered DR Participant of its intention to treat the DR Sell Order as invalid together with its supporting grounds for such intention.	REJECTED - see above comment on 7.13.	None
DR Auction Rules, clause 9.3 (Warranties and Undertakings)	Whilst provisions of clause 9.1.1 and 9.2 are mutual, the indemnity in clause 9.3 is one-way only in favour of NGESO which is highly imbalanced (especially since the indemnity is not subject to a reasonable cap or reasonable exclusions). We are of the view that the right to claim damages		PARTIALLY ACCEPTED - We agree to limit the indemnity to breach of 9.1.2 only, and to incorporate the limitations on liability contained in clause 11.1 to 11.3 of the Common Flexibility Service Terms and Conditions (although consistent with that clause the limitations in 11.1 and 11.3 will not apply to the indemnity which will remain uncapped).	Amend clause 9.3 as follows: "Each Registered DR Participant indemnifies NGESO from and against any losses, liabilities, claims, expenses and demands which NGESO might suffer as a result of the Registered DR Participant being in breach of the warranties and undertakings or any of them set out or referred to in paragraph

	<p>under clause 9.2 is sufficient and that the uncapped indemnity in clause 9.3 is disproportionate and should be removed. If NGESO is not minded to remove the indemnity, we ask that NGESO considers making this subject to an appropriate cap and that suitable exclusions (similar to those in clause 11.3 of the Common Flexibility Service Terms and Conditions) are included.</p>			<p>9.1.2." Amend clause 9.1 as follows: <i>"Without prejudice to its other obligations under and/or pursuant to the DR Procurement Documents and any DR Response Contract and subject to clauses 11.1 and 11.3 of the prevailing Common Flexibility Service Terms and Conditions which shall apply as if set out in full herein:-"</i> Amend clause 9.2 as follows: <i>"Without prejudice to any other right or remedy, NGESO and the Registered Reserve Participant shall each be entitled to claim damages from the other for any breach of the warranties and undertakings or any of them set out or referred to in this paragraph 9 subject to clauses 11.1 and 11.3 of the prevailing Common Flexibility Service Terms and Conditions which shall apply as if set out in full herein."</i></p>
DR Auction Rules, clause 16.4 (Warranties and Undertakings)	<p>We ask that the NGESO considers making this subject to an appropriate cap and that suitable exclusions (similar to those in clause 11.3 of the Common Flexibility Service Terms and</p>	<p>In relation to the final sentence of our comments in the Response column of this document, we propose that the words <i>"Save for any claims arising from or in connection with NGESO's breach of paragraph 16.5 or any claims for which NGESO is liable to indemnify the Registered DR</i></p>	<p>PARTIALLY ACCEPTED - As per above, we agree to incorporate the limitations on liability contained in clause 11.1 to 11.3 of the Common Flexibility Service Terms and Conditions (although consistent with that clause the limitations in 11.1 and 11.3 will not apply to the indemnity which will remain uncapped). In our view</p>	<p>None</p>

	Conditions) are included.	<i>Participant pursuant to clause 16.6, ...</i> are added at the beginning of the clause.	however the suggested additional words at the start of para 16.4 are unnecessary - the indemnity from the provider is limited to third party software infringement claims resulting from a breach by the provider of the auction platform user licence of terms of use. If NGESO fails to procure the necessary user licence/authorisation in the first place, then the provider has the protection of the indemnity from NGESO in 16.6, but it should still be liable to indemnify NGESO under 16.4 for any losses caused by non-compliance with the user terms/licence. As for capping the indemnity, both the indemnity from the provider and the indemnity from NGESO are uncapped, which is not unusual in relation to software infringement indemnities. As for genuine/bona fide claims, NGESO considers that the risk of any claim - even if spurious - should be with the provider under 16.4 as it does with NGESO under 16.6. Each party has the added protection of conduct of claims under 16.7.	
	In any case, clause 16.4 should clarify that this indemnity does not apply where a matter is subject to indemnification by NGESO under clause 16.6 or due to NGESO's breach of clause 16.5. The indemnity should only apply to genuine and bona fide claims.	The words " <i>genuine and bona fide</i> " shall be added before the word " <i>claims</i> ".		None
DR Auction Rules, clause 17.2 (Viruses)	Please can NGESO explain the extent and nature of the assistance that NGESO intends to ask of Registered Participants in relation to mitigating any losses and restoring the Designated Auction Platform (for example, will	If, notwithstanding the provisions of paragraph 17.1, Malicious Software is found on the Designated Auction Platform, the Registered DR Participant shall provide reasonable co-operation with to NGESO to assist with reduce the effect of the Malicious Software and, particularly if Malicious Software causes loss of operational efficiency to the Designated Auction Platform,	ACCEPTED - we are content to include the additional words requested (although will say "to assist in reducing the effect of the Malicious Software" not "to assist with the effect of the Malicious Software.").	Amend as follows: " <i>If, notwithstanding the provisions of paragraph 17.1, Malicious Software is found on the Designated Auction Platform, the Registered DR Participant shall provide reasonable co-operation withto NGESO to assist in reducing the effect of the Malicious Software and,</i>

	Registered DR Participants only be required to cooperate with NGESO's simple instructions (such as to disuse the corrupted system or install an update to the system) or does the obligation go further and require Registered DR Participants to expend its own resources to help resolve the issue? We suggest limiting this obligation to reasonable assistance.	provide reasonable assistance to NGESO to assist NGESO to mitigate any losses and restore the Designated Auction Platform to its original operating efficiency.		<i>particularly if Malicious Software causes loss of operational efficiency to the Designated Auction Platform, provide reasonable assistance to NGESO to assist NGESO to mitigate any losses and restore the Designated Auction Platform to its original operating efficiency."</i>
DR Service Terms, clause 5.6 (Service Availability)	The wording " <i>and no further such management is possible</i> " introduces uncertainty. Compliance with the State of Energy rules should suffice.	Delete the words " <i>and no further such management is possible</i> " at the end of clause 5.6.	REJECTED - These words are necessary to ensure ongoing compliance with the SoE rules throughout the relevant EFA Block. Any benefit derived from the deemed availability under clause 5.6 is only available where the service provider has complied with the SoE rules to the point where further compliance is no longer possible."	None
DR Service Terms, clause 5.7(Service Availability)	We feel that the matters in sub-clauses (i) and (ii) should be judged objectively and there should be the right for a party to refer a dispute to an Expert.	Where either:- i. in the absence of notification from the Service Provider pursuant to paragraph 5.2, NGESO there are nonetheless has reasonable grounds for believing to determine that a Response Unit is unable to meet the requirements of the DR Response Contract in all or any	REJECTED. The current drafting at 5.7i and ii requires NGESO to have "reasonable grounds" for believing that a unit cannot meet the service requirements or that a unit has been withdrawn from service improperly. which means NGESO does not have an unfettered discretion. Furthermore, it is more accurate to refer to those reasonable grounds as being in the mind of NGESO since it is NGESO which is	None

		<p>part of a Contracted EFA Block; or</p> <p>ii. NGESO has there are reasonable grounds for believing to determine that any notification from the Service Provider pursuant to paragraph 5.2 is for reasons other than related to an unplanned outage or other unforeseen technical circumstances and/or that the Service Provider has deliberately or recklessly failed to comply with the State of Energy management rules in accordance with paragraph 6.11,</p> <p>then, notwithstanding paragraph 5.4 and for the purposes of paragraph 7, NGESO reserves the right, following notification to the Service Provider and proper substantiation of the grounds on which it deems either paragraph 5.7 (i) and (ii) to apply, to treat that Response Unit as deemed unavailable to deliver Dynamic Regulation for the entirety of the Contracted EFA Block in question (including any part thereof prior to the commencement of unavailability).</p> <p>Either Party may refer any disputes arising in relation to this clause to an Expert for determination.</p>	<p>making the decision. As per paragraph 5.5 above, by virtue of para 27, if a provider considers that NGESO did not have reasonable grounds for making its decision, then under para 15 of the Common Flexibility Ts & Cs it may raise a dispute and both parties will be obliged to use good faith efforts to resolve the dispute, with subsequent escalation to senior management, after which if still resolved (including by mediation) then the provider can refer the matter to arbitration. However, because deemed unavailability impacts on payments to the provider, under schedule 3 of the service terms the provider will have an opportunity to raise a dispute against the relevant monthly statement pursuant to the process in Schedule 3, which requires the parties to engage in good faith to attempt to resolve the dispute, failing which the provider may refer the matter to expert determination. The terms therefore already provide for expert determination, and to avoid there being two parallel or consecutive remedies NGESO will clarify that arbitration is not an option for such disputes and that expert determination is the sole remedy.</p>	
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DR Service Terms, clause 6.14 to 6.19 (Service Delivery)	It is not clear from these provisions what the consequences are, if any, should a Service Provider fail to react to a Dis-Arming instruction within the required time. Please can NGESO provide clarification.		The issue of a dis-arming instruction and the output/demand of the unit subsequent to that will be required to be included in the operational data per para 15.1. Under para 6.18 availability payments will continue, however per 6.19 performance monitoring will take place based on a deemed contracted quantity of zero MW. This is picked up in the formulae at Schedule 2, meaning any deviation from that will potentially be picked up as a performance factor K which will impact on payments.	Amend clause 6.19 as follows: <i>"For the purpose of Performance Monitoring, and unless and until otherwise specified by NGESO (after prior consultation with Registered DR Participants), for the duration of a Dis-Arming Instruction (and for the avoidance of doubt until any Re-Arming Instruction) the Response Unit shall be deemed to have delivered Dynamic Regulation with a deemed Contracted Quantity of zero (0) MW. For the avoidance of doubt, for the purposes of the settlement value pursuant to Schedule 2, the Contracted Quantity variable Vije shall have the original Contracted Quantity for that Contracted EFA Block."</i>
DR Service Terms, clause 7.3 (Availability Payments)	The clause reference to paragraph 14.2(ii) appears incorrect. Please can NGESO confirm the intended clause reference (was the intention to refer to clause 15.1.ii?).		ACCEPTED - Yes this is a typo - reference should be to paragraph 15	Amend typo to refer to clause 15.
DR Service Terms, clause 11.2 (Third Party Claims)	We feel that an uncapped indemnity is disproportionate. We ask that the NGESO considers making this subject to an	In relation to the last sentence of our comments on the Response column, the words " <i>genuine and bona fide</i> " shall be added before the word " <i>claims</i> ".	REJECTED - compliance with connection and supply agreements is a matter entirely within the control of the provider, and over which NGESO has no visibility or influence. In the (perhaps	None

	<p>appropriate cap and that suitable exclusions (similar to those in clause 11.3 of the Common Flexibility Service Terms and Conditions) are included.</p> <p>Also, the indemnity should apply to only genuine and bona fide claims.</p>		<p>unlikely) event that NGESO may be exposed to third party claims as a result of the provider being in breach of any such agreements, these claims could in theory be unlimited and hence a cap on liability here would be inappropriate. The provider should also take the risk of spurious claims, and in this regard paragraph 11.3 gives the provider conduct of claims.</p>	
DR Service Terms, clause 11.3 (Third Party Claims)	<p>This clause states that Service Providers shall be entitled to take conduct of such third party claims subject to providing “<i>such reasonable undertakings as NGESO shall reasonably require to protect NGESO against damage to its name and reputation</i>”.</p> <p>It is not clear what such undertakings will look like and the extent of the obligation to protect NGESO’s reputation that may be imposed. We request that this is specifically clarified in the drafting or that the provision is removed since Service Providers should be able to take conduct of a claim without having the hurdle of</p>	<p>Delete the words “<i>and subject to NGESO receiving from the Service Provider such reasonable undertakings as NGESO shall reasonably require to protect NGESO against damage to its name and reputation</i>,”.</p>	<p>REJECTED - paragraph 11.3 gives sole conduct to the provider to contest claims in the name of NGESO, which introduces a reputational risk for NGESO that the provider will behave unreasonably in litigation to the detriment of NGESO. Undertakings from the provider to protect NGESO’s reputation must be “reasonable” and “reasonably required”, which should give assurance to providers that NGESO will not impose unreasonable constraints on defending claims.</p>	None

	negotiating undertakings with NGESO.			
DR Service Terms, Clause 12.5 (Provision of Other Services)	We have concerns with this provision from a commercial perspective. The clause, as currently drafted, reads such that the parties agree and acknowledge up front that DR cannot be provided simultaneously with other Balancing Services. However, our understanding from the Service Terms webinar was that both parties would have to agree (presumably on a contemporaneous case by case basis as and when the issue of service stacking arises) that the different services cannot be provided simultaneously. We do not think that the drafting of the clause	Where, during any one or more Settlement Periods in a Contracted EFA Block, a Service Provider is required under the terms of any agreement with NGESO to provide from any Eligible Asset any other Balancing Service (except with respect to Reactive Power, Black Start, Super SEL and the Balancing Mechanism and any other additional Balancing Services that the Parties may agree in writing from time to time) and the Parties (acting reasonably) agree and acknowledge that Dynamic Regulation cannot be provided simultaneously with such other Balancing Service and to the extent that the Parties (acting reasonably) agree that such service provision either overlaps to any extent with a Contracted EFA Block and/or is otherwise inconsistent or in conflict with the delivery of Dynamic Regulation then without prejudice to the operation of the terms for provision of and payment for such	For BM, provider can still stack because Bids and offers are not submitted "under the terms of an agreement with ESO". Include wording to allow BM stacking. Disputes under this provision are covered by paragraph 27 whereby under para 15 of the Common Flexibility Ts & Cs a provider may raise a dispute and both parties will be obliged to use good faith efforts to resolve the dispute, with subsequent escalation to senior management, after which if still resolved (including by mediation) then the provider can refer the matter to arbitration. It is not considered appropriate for this to be a matter referable to an expert.	Amend clause 12.5 as follows: <i>"Where, during any one or more Settlement Periods in a Contracted EFA Block, a Service Provider is required under the terms of any agreement with NGESO to provide from any Eligible Asset any other Balancing Service (except with respect to Reactive Power) the Parties agree and acknowledge that, to the extent that such service provision is inconsistent or in conflict with the delivery of Dynamic Regulation (as determined by NGESO acting reasonably) then Dynamic Regulation cannot be provided simultaneously with such other Balancing Service. Accordingly, unless pursuant to the terms for provision of and payment for such other</i>

	reflects NGESO's intentions (and what would be commercially appropriate in relation to service stacking) and would be grateful if NGESO could review this clause with this point in mind. We would have thought that the intention of NGESO is not to prevent parties from stacking different services which can be provided technically on a simultaneous basis.	other Balancing Services the relevant Response Unit shall be deemed unavailable to provide such other Balancing Service pursuant to such terms, and availability of the Response Unit to provide Dynamic Regulation pursuant to these DR Service Terms shall prevail.		<p><i>Balancing Services the relevant Response Unit is deemed unavailable to provide Dynamic Regulation or except as may otherwise be specified by NGESO, the relevant Response Unit shall be deemed unavailable to provide such other Balancing Service, and availability of the Response Unit to provide Dynamic Regulation pursuant to these DR Service Terms shall prevail."</i></p> <p>Amend clause 12.6 as follows: <i>"1.1 For the avoidance of doubt, paragraph 12.5 shall not affect the submission by a Service Provider of bids and offers (and the issue of Bid-Offer Acceptances) under the Balancing Mechanism where not made pursuant to terms agreed with NGESO for provision of any other Balancing Service, and furthermore unless otherwise indicated by NGESO in the prevailing DR Participation Guidance Document, different DR Products shall be capable of being provided by a Response Unit simultaneously. Further information regarding simultaneous provision of Balancing Services is contained</i></p>
		Either Party may refer any disputes arising in relation to this clause to an Expert for determination.		
	Also, the only exception listed in this clause is with respect to Reactive Power, however we can think of others (in particular, Black Start, Super SEL and the Balancing Mechanism) that are also suitable services to be excluded here.			

				<i>in the Stacking Guidance as published by NGESO from time to time."</i>
DR Service Terms, Clause 12.8 (Provision of Other Services)	Clause 12.8 contains a reference to clause 14.2(iii) however we think this may be an incorrect clause reference. Please can NGESO confirm the intended clause reference (we think the intention was to perhaps refer to a sub-paragraph in clause 15).		ACCEPTED - Yes this is a typo - reference should be to paragraph 15	Amend typo to refer to clause 15.
DR Service Terms, Clause 13.3 (Communications)	There is a reference to clause 14.2(iii) in the context of data in clause 13.3 however we think this is an incorrect clause reference (we think the intention was to refer to a provision in clause 15). Please can NGESO confirm.		ACCEPTED - Yes this is a typo - reference should be to paragraph 15	Amend typo to refer to clause 15.

<p>DR Service Terms, Clause 14.1 (Termination of DR Response Contracts)</p>	<p>The Service Terms incorporate the termination provisions in clause 8 of the Common Flexibility Service Terms and Conditions. Under these provisions, each party has the right to terminate the DR Response Contract for various reasons including, if a Force Majeure event continues for two calendar months (as referred to in clause 10.4 of the Common Flexibility Service Terms and Conditions) or for service failures which are not rectified in accordance with clause 9 of the Common Flexibility Service Terms and Conditions. The incorporation of these termination rights for Force Majeure and continuous service failures do not fully work from our perspective since our understanding is (from clause 1.3 of the DR Service Terms) that each DR Response Contract applies to a single EFA Block and DR product (as opposed to being a</p>		<p>We agree with the analysis. A DR Response Contract is for a duration of a single EFA Block, and each is largely discrete from other DR Response Contracts (although there are interactions where one ends, and another starts in adjoining EFA Blocks). There are currently no cross-default provisions such that a DR Response Contract might be terminated by NGESO based on default by a provider under another DR Response Contract. That said, NGESO may decide to de-register a unit under the auction rules where there is persistent default across one or more DR Response Contracts. See comment below ref Force Majeure clause</p>	<p>None</p>
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	<p>long term contract). Are NGESO intending there to be cross default implications across multiple DR Response Contracts such that default can accrue based on performance under previous contracts? We had envisaged that each DR Response Contract would be distinct and standalone (i.e. NGESO would not have rights against Service Providers under a DR Response Contract in respect to the performance of previous DR Response Contracts). Please can NGESO review these provisions and clarify its intentions in this regard.</p>			
DR Service Terms, Clause 14.2 (Termination of DR Response Contracts)	Clause 14.2 (i) should be limited to material breach.	Without prejudice to paragraph 14.1, and in addition to any other rights of termination available under the DR Procurement Documents, NGESO may in its absolute discretion terminate a DR Response Contract in respect of a Response Unit with immediate effect by notice in writing to the Service Provider in the following circumstances:-	REJECTED - NGESO must have total discretion as to whether it wishes to terminate a DR Response Contract where it has grounds to do so.	None

		(i) where the Service Provider is in material breach of a warranty or declaration given under any of the Registration Documents and/or the DR Procurement Documents;	ACCEPTED - follows wording in the Common Flexibility Service T&Cs.	Amend as follows: " <i>where the Service Provider is in material breach of a warranty or declaration given under any of the Registration Documents and/or the DR Procurement Documents;</i> "
	In relation to clause 14.2(ii), please can NGESO clarify the reference to " <i>one or more Contracted EFA Blocks</i> " since clause 1.3 states that a separate DR Response Contract is formed in relation to each Response Unit and shall apply only to a single EFA Block and DR Product? Also, the right to terminate under this provision should be judged objectively and a Service Provider should have the ability to refer any dispute to an Expert.		These words do not add anything and can be deleted.	Remove " <i>one or more Contracted EFA Blocks</i> "
		(ii) where NGESO (acting reasonably) determines that the Response Unit, and/or one or more Eligible Assets comprising the Response Unit, is not ready for commercial operation and/or delivery of Dynamic Regulation in one or more the relevant Contracted EFA Blocks; or	REJECTED - this is a matter for NGESO's discretion with the protection for providers that it must act reasonably.	None

	In relation to clause 14 (iii), a Service Provider and its Technical Expert should have the right to make representations or a period to cure any alleged default prior to termination instead of the right to terminate being subject to NGESO's unilateral determination.		REJECTED - since the duration of a DR Response Contract is limited to an EFA Block, the concept of cure periods and rights to make representations are inappropriate. By virtue of para 27, if a provider considers that NGESO has not terminated in accordance with paragraph 14.2iii, then under para 15 of the Common Flexibility Ts & Cs it may raise a dispute and both parties will be obliged to use good faith efforts to resolve the dispute, with subsequent escalation to senior management, after which if still resolved (including by mediation) then the provider can refer the matter to arbitration.	None
		(iii) where the Service Provider fails to comply in any material respect with its obligations under the Testing Documents, including where NGESO it is reasonably determined that the Service Provider's Independent Technical Expert is failing to meet the required technical standard and/or is not sufficiently independent (each as defined in the Testing Documents) and the Service Provider and/or the Service Provider's Technical Expert fail to remedy such non-compliance within a reasonable period.		
		Either party may refer any disputes arising in relation to the application of paragraphs 14.2 or 14.3 to an Expert for determination.		
DR Service Terms, Clause 17 (Force Majeure)	As mentioned in our comments in relation to clause 14.1 (Termination of DR Response Contracts) of the DR Service		ACCEPTED - we agree that clause 10 of the Common Flexibility Service Terms and Conditions in its entirety is not appropriate, and we therefore propose to	Amend as follows: "Save for sub-paragraphs 10.2.2 and 10.4 which shall not apply, paragraph 10 of the prevailing Common Flexibility Service

	<p>Terms, Clause 10 of the Common Flexibility Service Terms and Conditions are incorporated into the Service Terms. We do not consider that these fully work in the context of DR Response Contracts. The provision in clause 10.4 which allows parties to terminate if the FM event lasts longer than two months does align with the short term nature of DR Response Contracts. Please can NGESO review the suitability of the incorporation of these provisions in the context of DR Response Contracts.</p>		<p>amend para 17 to disapply sub-clauses 10.2.2 and 10.4.</p>	<p><i>Terms and Conditions shall apply as if set out in full herein."</i></p>
<p>DR Service Terms, Clause 27 (Dispute Resolution)</p>	<p>We note that this clause inadvertently refers to "<i>these Reserve Auction Rules</i>" instead of the DR Service Terms.</p>		<p>ACCEPTED - typo</p>	<p>Amend typo to "<i>these DR Service Terms</i>".</p>