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23 July 2021

Dynamic Containment Terms and Conditions

Dear Alastair,

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 (EBGL), National Grid ESO is required to propose terms and conditions related to balancing.

On 27 April 2021 National Grid ESO proposed amendments to the Article 18 terms and conditions related to Dynamic Containment (DC), in order to address a move to an automated procurement platform, and those amendments are currently awaiting approval by Ofgem. Those amendments, if approved, will constitute version 3.0 of the various DC contract documentation.

In the meantime, National Grid ESO now wishes to propose further amendments to those DC terms and conditions, in order to facilitate the introduction of DC-high frequency to complement the existing procurement of DC-low frequency. These amendments if approved, and subject to approval of the version 3.0 amendments will constitute version 4.0 of the various DC contract documentation.

In accordance with EBGL, a consultation with industry on the Article 18 DC Terms and Conditions was launched from 18 June 2021 to 19 July 2021 to outline our proposed updates to the DC documents and Article 18 mapping. We have received 10 responses as outlined in Annex 2, and commented appropriately to each of these, also included in Annex 2.

This letter confirms proposed terms and conditions for DC and how they comply with Article 18 of EBGL. Detailed references to the relevant service terms for the Terms and Conditions have been included in Table 1 in Annex 1 of this letter.

If approved, these DC terms will then form part of the Article 18 terms and conditions as envisaged in CUSC section 4, paragraph 4.2B.5 and as required in that paragraph any subsequent amendments to the Article 18 terms within the DC terms will follow an amendment process which is compliant with the EBGL amendment process requirements.

If you have any queries regarding this proposal, please contact us on box.futureofbalancingservices@nationalgrideso.com.

Yours sincerely

John Twomey

Market Change Delivery Senior Manager

Annex 1
Amendment of EBGL Article 18 mapping to update for revised Dynamic Containment Terms and Conditions

Please note: In accordance with EBGL 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 EBGL. Its purpose is to demonstrate where Terms and Conditions for DC in the scope of EBGL 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 EBGL Article 18 with highlighted references for DC 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 Service Terms** 5-Service Availability 6-Service Delivery 7-Availability Payments 15- Monitoring and Metering Data **DC Auction Rules** 5 – DC Buy Orders
		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 **DC Glossary** Part 4 Dynamic Containment 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 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 **DC Auction Rules** 4 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 Participation Guidance Document** 3 - Registration 4 – Daily Auctions
			DC General Terms and Conditions 7- Assignments and transfer
			DC Auction Rules 5 – DC Buy Orders 6 – DC Sell Orders 7 – Market Clearing Rules 10 – Formation of DC Response Contracts 12 – Exceptional Circumstances **DC Service Terms** 17 – Transfer of DC Response Contracts
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	**DC Participation Guidance Document** 1 - Service Overview 16 - Transitional Arrangements
		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	**DC Participation Guidance** 3 - Registration 4 – Daily Auctions 5 - Testing 6 - Settlement 8 – Operational and Performance Baselines 12 - Data 16 - Transitional Arrangements **DC General Terms and Conditions** 8 - Confidentiality and Announcements 18 – EMR

			DC 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
		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 Service Terms 16- ABSVD **DC 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), Article 158(1)(e), Article 158(4)(b), Article 161(1)(f) and Article 161(4)(b) of Regulation (EU) 2017/1485;	Standard Contract Terms	**DC Service Terms** 13 - Communication 15 - Monitoring and metering data
		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 Participant Guidance Document** 6 - Settlement

			DC Service Terms 7- Availability Payments 8- Payment procedure Schedule 2 - Availability Payments **DC General Terms and Conditions** 4- 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
		BSC	U2.2
		CUSC	Section 4.3.2.6
18.5. k	the consequences in case of non-compliance with the terms and conditions applicable to balancing service providers.	Standard Contract Terms	**DC General Terms and Conditions** 6- Termination of Balancing Services Contracts **DC Auction Rules** 6.13/6.14- DC Sell Orders **DC 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 6.5 - failure to prep baseline - deemed unavailable 6.12 - non compliance with SOE rules - deemed unavailable

		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	NG ESO does not expect to require this exemption. Such data is published on BMRS.

	bids due to market abuse concerns pursuant to Article 12(4)	
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)	DC A derogation has been approved under Regulation (EU) 2019/943 Article 6(14) from the requirements of Regulation (EU) 2019/943 Article 6(2)
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
EBGL Article 18 Dynamic Containment Terms and Conditions consultation responses summary

We have received 10 responses to the consultation issued on the proposed changes to the Terms and Conditions for Dynamic Containment. Scottish Power Renewables also submitted a support letter confirming that they fed into the response that RenewableUK have prepared, and therefore fully support RenewableUK's submissions to the individual questions laid out in the consultation.

Parties are approving of our proposal to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on day one, with a minded to position that his would be held at 14:30. Several participants asked for clarification on the addition of paragraph 12.1.5 of the auction rules allowing the ESO to "take such other actions or steps as it reasonably considers to be necessary or desirable". In response, we have highlighted that the new clause 12.1.5 is intended to give ESO additional flexibility to take other actions or steps, which may for example include inviting manual tenders as part of enacting our business continuity process, should the automated auction process fail. We will also be removing "or desirable" from the clause so that those actions or steps are limited to those considered to be necessary.

We recognise from the responses we received that baselines and aggregation at grid supply point remain priority areas of concern for providers. Whilst this DCH consultation did not address the application of GSP directly, we are committed to continue engaging with industry on this topic, and we have asked stakeholders to provide feedback on the recent announcement confirming the end of the GSP group transitional arrangement on 30 Sept 2021. We understand stakeholders would like to understand in more detail the reason behind our decisions for moving to GSP and that this service parameter, along with baselines, creates a barrier to entry for aggregators and DSR providers. We intend to publish a paper in early autumn setting out our requirements for a more granular level of visibility for future system operation. In the meantime, we are continuing to engage with industry on the visibility challenge, and we welcome suggestions for alternative solutions from industry stakeholders.

On baselines, we have committed to working with industry to explore additional baseline methodologies that could provide system visibility and facilitate performance monitoring and state of energy management, in order to explore potential barriers to entry that the current requirements may present to certain asset types, namely behind-the-meter and non-dedicated assets. We welcome the opportunity to engaging with industry on this topic further in the coming weeks.

Please see in the table below the full list of industry feedback to this consultation together with the ESO's detailed responses.

Respondent	Response	NGESO comments
ADE	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** The ADE supports updates that facilitate the introduction of DC HF, and accepts the majority of amendments to the consultation documents. However, the ADE would like to question some of the alterations made to the DC New Auction Rules and DC Participation Guidance Document. These concerns are outlined below. **Q1: New Auction Rules** Only minor amendments were proposed by ESO to this document. However, the ADE would like to question the validity of the addition of paragraph 12.1.5, allowing the ESO to "take such other actions or steps as it reasonably considers to be necessary or desirable". The ADE would like further information on the exceptional circumstances that ESO is looking to cover with this paragraph, and scope of actions that this paragraph would enable. In particular, the ADE questions whether it is reasonable for this paragraph to enable ESO actions to take discretionary actions when it is "desirable"; this could comprise actions that the ESO considers economically beneficial, which would undermine the market and impact liquidity. The ADE therefore thinks this paragraph should be revised and the term "desirable" removed. EBGL Article 18 Proposal - Summary of changes **Q2: Participation Guidance Document** The majority of changes to this document reflect changes that facilitate DC HF, and the ADE supports these changes. However, the ADE would like to contest parts of the amendments in Section 8: Operational and Performance Baselines. According to the Summary of Changes, the objective of the addition of the subsection title Operational vs Performance baselines is to provide clarification on the distinction between the two. However, the ADE believes that some of the wording in this section is problematic, especially given the engagement between the ESO and ADE on the topic of baselining. In this engagement we have stressed the importance not to conflate the needs for visibility and measuring performance when talking about baselining. The inserted statement "(a feature upon which the Balancing Mechanism and NGESO balancing strategy relies)" implies that the provision of visibility is a crucial objective for submitting baselines for DC. This is not the case, as visibility can be provided outside of these baselining arrangements. We	Q1: Thank you for your feedback. As currently written, clause 12 sets out specific measures that the ESO may take in the event of exceptional circumstances I.e. system failure. The new clause 12.1.5 is intended to give ESO additional flexibility to take other actions or steps, which may for example include inviting manual tenders as part of enacting our business continuity process. We will also be removing "or desirable" from the clause so that those actions or steps are limited to those considered to be necessary. Q2: Thank you for your feedback. We believe that Section 8 recognises the difference between operational and performance baselines and the purposes they are designed to fulfil, so propose that this clause is not amended. Operational baselines, provided 60 minutes ahead of real-time, serve multiple purposes: 1/ the operational baseline is critical to managing State of Energy (SoE) as participants communicate charge positioning actions ahead of time in accordance with SoE rules to facilitate control room planning, and; 2/ the operational baseline also facilitates a mechanism for participants to deviate from a known pre-determined output, for example where a unit is generating at 50% output and additional headroom could be offered instead of a deviation from zero (e.g. what a SEL to MEL instruction would show). This also aids visibility and looks to align ancillary services with

	would ask that NGESO remove this addition from the amendment. In addition, the ADE is not aware of any evidence to suggest the operational baseline protects against the gaming of DC. We would therefore ask that the sentence "In addition the Operational baseline serves to protect NGESO against provider 'gaming' of the service." is removed until this evidence is provided	BM baselining requirements. We appreciate that baselines remain a key issue that providers would like NGESO to explore further across response and reserve reform. NGESO is working with the ADE and other industry stakeholders on exploring alternative baselining methods with the key distinction between system visibility and performance in mind. We look forward to engaging with industry on this topic further in the coming weeks. Any changes to the contractual suite of documents related to Baselines will be subject to ongoing discussions with industry and changes will be consulted on in line with the EBGL process.
	2. **We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this.** The ADE has no views on this change.	N/A
	3. **Annex 1: Do you have any comments on the highlighted mapping for DC service?** The ADE has no comments here.	N/A
	4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q3: State of Energy** In Section 10: State of Energy Management, part 3a) of the provided example, when describing the 1-hour gate before baselines can apply, the document states that "this is the convention applied to physical notifications in the BM and 3 needs to be mirrored by non-BM providers to ensure fairness across all market players". This is a subjective statement reflecting a value judgement made by NGESO, and should not be included. For instance, the ADE and its members would argue that hour-ahead baselines do not ensure fairness across all market players as they disproportionately disadvantage non-dedicated assets, and consistency between BM and non-BM providers can be provided in other ways (see previous ADE-ESO engagement for details). The ADE would therefore ask that this statement be removed. **Q4: GSP**	Q3: Thank you for your feedback. The Balancing Mechanism is GB's most frequently used balancing tool and outlines many fundamental principles which help to keep the lights on. The 60-minute baseline at gate closure provides crucial system visibility for the control room to manage short-term imbalances between supply and demand. For ancillary services, it is important that we ensure fairness across all market participants and it is therefore a clear requirement that non-BM providers should comply with BM rules on operational baselines. However, we recognise that NGESO markets must be designed to encourage competition and address barriers to entry for non-dedicated assets. NGESO is working with industry stakeholders on additional baselining methods with the key distinction between system visibility and performance

	While not directly reflected in changes to the service terms or participation document, the ADE notes the ESO's recent decision not to extend the transitional arrangement for GSP group-level aggregation and return to aggregation at GSP later this year. The ADE also notes the indications that this decision to pursue GSP-level aggregation is likely to be favoured by the ESO for not only DC, but across all new response and reserve products. The ADE strongly urges the ESO to reconsider this stance, especially on future products. Limiting DSR aggregation to GSP for DC will limit the ability of many assets from participating in this service, but to adopt a similar position across all response and reserve products would have very serious implications for the DSR sector as whole, and especially for domestic DSR. Such a stance across several balancing services would send a clear market signal undermining DSR aggregation and thereby the goal to reach net zero at lowest cost. The ESO's FES 2021 report states that 63 GW of DSR will be required in 2050 under the "Leading the Way" scenario, with 13 GW of I&C DSR, 19 GW of residential DSR and 31 GW of DSR related to EV charging. FES 2021 also states that investment signals for flexibility are currently driven by ancillary services, of which frequency response and reserve are the primary competitive services. Broadly limiting aggregation across these services would therefore send a market signal across I&C and domestic DSR that would stall investment in these areas and would prohibit the achievement of the FES targets above. 4 Domestic DSR (including EV smart charging) would be particularly impacted by this decision. The sector, while still in a nascent stage, is growing rapidly, and the ESO's analysis through FES has shown that it must continue to do so in order to unlock the flexibility value presented by the electrification of transport and heat in homes required for net zero. Given the small size of domestic assets, reaching the de minimis threshold to provide a service such as DC is nearly impossible; for example, one ADE member has indicated that they would need over 150,000 customers within one GSP in order to average the 1 MW needed for DC at this GSP. Lowering the de minimis value would help to alleviate this, but it would have to be lowered from 1 MW to 0.01 MW to avoid serious disruption – some ADE members have indicated that ~50% of their domestic assets would still be ineligible if the de minimis value for aggregation at GSP was 0.1 MW. Furthermore, increasing the granularity of aggregation would mean that within an aggregated portfolio a greater proportion of total available capacity would be between de minimis increments (e.g. between 1 MW and 2 MW) and therefore would be unable to be monetised. This impact is significant – for one ADE member, this aspect of the aggregation	in mind. We look forward to engaging with industry on this topic further in the coming weeks. Any changes to the contractual suite of documents related to Baselines will be subject to ongoing discussions with industry and changes will be consulted on in line with the EBGL process. Q4: Thank you for the detailed response to your concerns regarding grid supply point and its impact on aggregation. Whilst this DCH consultation did not address the application of GSP directly, we are committed to continue engaging with industry on this topic, and we asked stakeholders to provide feedback on the recent announcement confirming the end of the GSP group transitional arrangement on 30 Sept 2021. We understand stakeholders would like to understand in more detail the reason behind our decisions for moving to GSP and that this service parameter, along with baselines, creates a barrier to entry for aggregators and DSR providers. We intend to publish a paper in early autumn setting out our requirements for a more granular level of visibility for future system operation. In the meantime, we are continuing to engage with industry on the visibility challenge, and we welcome suggestions for alternative solutions from industry stakeholders.

	decision alone would automatically exclude 13.5% of their current fleet from the market. The ADE accepts and supports the view that no given technology or business model should be given preferential treatment from the ESO. However, it is within the ESO's remit to reach net zero at lowest cost. Clearly, the decision to limit aggregation would impact the DSR sector as a whole and domestic DSR in particular. This would be tenable if DSR presented little value as a sector towards widespread decarbonisation. However, this directly contradicts ESO modelling which indicates that aggregated DSR (both I&C and domestic) is essential in reaching net zero at lowest cost across all modelling scenarios. The ADE therefore urges the ESO's to reflect on how this decision fits within the ESO's broader strategy and its development of competitive flexibility markets. Industry is eager to work with the ESO on a solution to the issues it sees with broader aggregation. However, little consistent, well documented evidence of the risks has been presented to industry to date, and feedback on solutions that industry have put forward has been 5 limited and not widely distributed. The ADE urges that any internal material outlining the need the ESO sees for GSP-level aggregation across the board be made public as soon as possible. Furthermore, the ADE must insist that this work outlines rigorous, quantified evidence in support of any ESO position to broadly limit aggregation to GSP. To not provide such evidence when the impacts on an entire sector could be so significant would be unacceptable. The ADE understands that the ESO's reasons for this measure concern instances where an aggregated asset sits behind a constraint that occurs at GSP. However, the solution to this problem should not automatically be to limit aggregation and therefore participation in the market without first considering alternative ways in which the constraints themselves can be addressed. Currently, the existence of constraints close to real-time coupled with response and reserve markets operating at longer timescales mean that competition in the latter is having to be restricted to cope with the former. This does not need to be the case – for example, a different approach to constraint management could be considered. To reach a balanced decision, the ESO should perform a cost-benefit analysis to determine whether any additional costs of managing constraints to prevent their knock-on impact on reserve and response is less than the inefficiencies introduced into reserve and response by not allowing a significant part of the market to participate. For specific volumes that the decision to limit aggregation would exclude from DC, see the ADE's previous member evidence that will be attached alongside this proforma from 12 March 2021. Note that this evidence relates solely to the impacts on assets participating in DC – the impact of adopting this position across all	

	response and reserve products would be far greater. The ADE would urge the ESO to conduct a thorough industry consultation on the impact of limiting aggregation to GSP across all response and reserve products if this is indeed the route the ESO intends to take. This decision will be immensely impactful on many market participants across the sector, and they should be given adequate opportunity to present detailed evidence on what these impacts may be in a dedicated consultation. It is not sufficient to expect this evidence to be presented in this consultation on 6 EBGL Article 18 changes for DC HF, especially given that there have been no changes to the service terms or consultation documents in relation to the transitional arrangement. ADE members have queried as to whether this consultation (EBGL Article 18 DC HF) is the appropriate place to raise this issue, which would indicate that the ESO are unlikely to get the detailed evidence required to have an informed view on this issue from this proforma. This issue warrants its own consultation process (which is indeed alluded to in Section 16 of the Participation Guidance Document), in which industry are given the opportunity to quantify the impacts that an ESO-wide position on aggregation would have on their business and on the sector.	
Arenko	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** Please find below our feedback categorised by document: **Q1: Performance monitoring** 1a: Ref 15.4(iii): What is the reasoning for including Registered Quantity, a value which is not likely to change often if at all, in the 20Hz performance data? Is this intended to be Contracted Quantity? Should it be the DC-high or DC-low quantity? 1b: The main settlement value calculation in Schedule 2 still has confusing use of indexes. Whether an index is subscripted or not is inconsistent between i, j and e, and all appear where they are not clearly applicable. [Square brackets have been used to represent subscripts for compatibility with Word] “P[ije]”: Price is market-wide for each EFA block, so could be “P[e]” “V[ije]”: Quantities for each unit are consistent across an EFA block, so could be “V[ie]” Retrieving data. Wait a few seconds and try to cut or copy again. 1c: Performance Bounds: We welcome the clarification of how the time delay is treated when a unit begins delivery or had missing data. If the	Thank you for your feedback on the proposed changes. Q1a: Thank you for your feedback. We agree that we do not require Registered Quantity as part of the performance data ad have therefore removed clause 15.4 (iii) Q1b: Thank you for your feedback. Please see our response in regards to the formula: “P[ije]”: If market price is the same for all Settlement Periods in an EFA block, it can be represented as P[e]. This was relevant for Settlement Period analysis. “V[ije]”: Ils more relevant when V changes in an EFA block. The current notation is specific and detailed, so it is useful for any further development to the service. Q1c: Thank you for your feedback. This initiation time applies to upper and lower bounds. Since there is no "lag lower bound"

	"0.55 seconds" value here is intended to be the initiation time plus the tolerance here, could that be noted so the source of the number is clearer? 1d: In the "Service Parameters", tr[min] (Ramp time lower bound) and T[dMIN] (Min time to full delivery) are still included despite their usages being removed. "Maximum ramp rate for Baselines" now appears twice. 1e: Performance Bounds: The P and Q terms in the performance bounds equations appear to have been erroneously moved outside of the parentheses of these functions. They were previously multiplying the ramp-limit terms (rrmin), which was necessary to make the dimensions of these functions work. If placed outside the RLU/RLD functions, they are multiplying the resulting ramp-limited power by another power, which is wrong. This is particularly noticeable on the new "double-sided" DC functions where the use of P or Q depends on whether the bound is low or high. **Q2: Participation Guidance** The definition of an energy limited asset is a little unclear. Condition (a) would appear to exclude, for example, battery assets linked to independent generation like wind turbines, and condition (b) refers to both a DC Service Day and "that" EFA Block. Does it mean just Block 1? If so, why? Does this mean that whether a response unit is Energy Limited can change from day to day depending on its SoE at 11pm, and its Contracted Quantity for the day? How does this definition interact with bi-directional DC? **Auction Rules** No comment. **Glossary** No comment.	anymore, if we refer to the maximum initiation time for upper bound and tolerance, we believe this risks creating confusion for providers. Q1d: Thank you for your feedback. We have removed these references from the Service Terms. Q1e:Thank you for your feedback. RLU and RLD are now normalised. The linearity of the equation allows to take the P/Q term out of the parenthesis. The value of RLU and RLD in a normalised quantity range from -1 to 1, so for "double-sided" DC functions, the condition depends on negative or positive values resulting from this. Q2: In relation to condition (a), we agree this would not capture battery assets linked to independent generation, although conditions (a) and (b) are drafted to apply either together or in the alternative, and so such an asset could still be energy limited if condition b were met. In relation to condition (b), state of energy is assessed at the start of each relevant EFA block, and an asset could therefore be energy limited in one EFA block and not in another. We therefore agree that condition (b) could usefully be clarified, and we propose to replace reference to 'DC service day' with reference to 'relevant EFA block'. For clarification, storage assets linked to independent generation are not excluded from providing DC as long as they meet all the required delivery and technical specifications
	2. **We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this.**	Thank you for providing feedback on the proposed changes to auction times, we appreciate the time you have taken to respond.

	We are supportive of the change to a 14.30 auction time, as long as market results are published in a timely manner.	
	3. **Annex 1: Do you have any comments on the highlighted mapping for DC service?** No comment	N/A
	4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q3: Stacking with BM** In the "Summary of Changes" document it is mentioned that the "Participation Guidance" document has been changed to cross reference a separate NGESO document entitled "Unlocking Stacking of BOAs in DC' (Ref. 11). However, we cannot comment on this stacking document, because the latest version available (27/01/21) does not include DCH.	Q3: Thank you for your feedback and bringing this to our attention. We apologise this was not included as part of the suite of published documents. This has now been updated on our website. As this is not a contractual document it does not need to be consulted on. However, we do welcome any feedback you may have.
Centrica	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** **Settlement calculation** We welcome the change to the settlement calculation (change to minimum lag time and lower bound of ramp time). This should make prequalification and normal service delivery easier. **Q1: Testing** The testing tool (version 4) still has a number of the issues. For example, the Frequency window appears incorrect (if TImin delay is removed as proposed and ufw is the minimum of f(t – tlag); where tlag is between 0 and (TImax + Tol_imax) it should encompass 0.55s and include the current reading f(t) e.g. for LFW if you are on row 13 it should be **Min(B13:B2)** and not **Min(B12:B2) which is only 0.5s**. The same issue applies to UFW this would have an effect on the performance calculation checks. **Q2: Registered quantity** The addition of 15.4 (iii) iii. the aggregate Registered Quantity of each relevant Eligible Asset; Is required at 20Hz. We believe that this is disproportionate. As this is a fixed number based on testing, we do not believe this is needed in the 20Hz data?	Q1: Thank you for bringing this to our attention. We recognise that in the current version of the testing tool (v4), the fields described (i.e. LFW and UFW) do not match the equations in the performance monitoring document and are updating this following your feedback. In your response you suggest there are a number of other issues with the testing tool. To ensure these are addressed, could we please ask you to elaborate on any additional issues identified? Please contact us via the future of balancing services .box [box.futureofbalancingservices@nationalgrideso.com] Q2: The intent of the proposed change to 15.4 was to allow for the submission of partial availability. At present we will be removing this from the service terms to allow for further investigation of the impact this may have and will consult further with industry at an appropriate time.

	Q3: Housekeeping See pg 1 of Centrica's response -ramp time lower bound Lags and ramp limits ~~Lag lower bound (minimum initiation time): $T_{LMIN} = 0.25\ s$~~ Ramp time lower bound — The lower time bound of start of delivery to — tr_{min} — 0.25 s — Equivalent to ($T_{dMIN} - T_{LMIN}$). If the provider initiates response at earliest **Q4: Service terms** In our response to the DC low consultation, we noted that in the DC Service terms it states for the 1 Hz data: 15.1 (ii) whether or not the Response Unit is available for Dynamic Containment pursuant to paragraph 5, and if so whether for DC-low or DC-high The clause and use of the phrase "Available for " is a bit ambiguous. We do not fully agree with NG ESO that this this links back to clause 5 regarding the service provider making the ESO aware if the asset becomes unavailable for any reason. Plant may become unavailable (or partially unavailable) for a multitude of reasons it is unlikely that any one signal will cover all these criteria, additionally the vast majority of the reasons a plant may be unavailable is typically not be linked to any specific mode of operation, DC LOW / DC HIGH / FFR / DM / DR etc. We think this warrants further discussion which we are happy to have.	Q3: Thank you for your feedback. We have removed these references from the Service Terms. Q4: Thank you for your feedback. Section 5 of the Service Terms clearly states the requirements for Availability, ""It is a requirement of each DC Response Contract that, unless prevented by an unplanned outage or other unforeseen technical circumstances, a Response Unit will be available to provide Dynamic Containment in accordance with these DC Service Terms continuously throughout the Contracted EFA Block, regardless of its State of Energy where applicable."" We will use the availability field with the following values: • 0 = LF and HF Unavailable • 1 = LF Available • 2 = HF Available • 3 = LF and HF Available We would welcome the opportunity to discuss this further Please contact your account manager to arrange a convenient date.
	2. **We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this.** We support the change to the auction timings.	Thank you for providing feedback on the proposed changes to auction times.
	3. **Annex 1: Do you have any comments on the highlighted mapping for DC service?** No	N/A
	4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q5: Baselines**	

	We welcome that Baselining is being considered by NG ESO, and we believe the areas of focus by NG ESO are the right areas. However, we note that there has been extensive work by the ADE on potential options for baselining that would ensure NG ESO can verify delivery of DC, while maximising participation of assets, especially non-dedicated assets. Furthermore, Centrica developed proposals for baselining which we believe could help. Despite us sharing these potential solutions with NG ESO we have not had any response on this. We have re-attached these with our response and would be happy to discuss. **Q6: GSP** We are disappointed by NG ESO's decision to require aggregation to be limited to GSP level. As we have previously articulated, this will reduce the ability for customer-flexibility (especially at domestic level) to participate in the new frequency products. Firstly, we believe that NG ESO should justify in detail what the specific impacts on the networks that could arise from GSP Group level aggregation, and at what MWs level this impact becomes material. To date, we have understood there are some concerns around frequency oscillations or bulk transfer or power, but it should be made clearer and written down. Secondly, we strongly believe that NG ESO should ensure that aggregation is maximised, diversifying the providers of frequency response. This will better ensure NG ESO consistently has the response it requires to manage the system. By the end 2025, we estimate appliances with DSR potential will be installed in homes across the UK (e.g. EV chargers, home batteries, smart hot water tanks, heat pumps and smart storage heaters.) equating to 19 GW of flexible capacity. Much of this will be able to deliver accurate, sub-1 second response. Limiting to GSP level will likely reduce the maximum available market to less than 10%, which will render it uneconomic for smart appliance manufacturers to make their assets "DSR ready". This is because manufacturers would still have to ensure all appliances coming out of the factory are DC/DR/DM compatible, while only a small amount of these appliances would earn revenues taking part in these products. The vast majority of the appliances would thereby have to be equipped for a service for which they cannot participate. We believe a restriction on aggregation to GSP level would effectively prevent or delay (by over half a decade) any of the 19GW technical potential being brought to market with an economically positive outcome and prevent significant value being returned to consumers.	Q5: Thank you for your feedback. We recognise that baselines remains a key issue that providers would like NGESO to explore further across response and reserve reform. Operational baselines, provided 60 minutes ahead of real-time, serve multiple purposes: 1/ the operational baseline is critical to managing State of Energy as participants communicate charge positioning actions ahead of time in accordance with SoE rules to facilitate control room planning, and; 2/ the operational baseline also facilitates a mechanism for participants to deviate from a known pre-determined output, for example where a unit is generating at 50% output and additional headroom could be offered instead of a deviation from zero (e.g. what a SEL to MEL instruction would show). This also aids visibility and looks to align ancillary services with BM baselining requirements. NGESO will continue to work with industry on additional baselining methods with the key distinction between system visibility and performance in mind. We look forward to engaging with industry on this topic further in the coming weeks. Any changes to the contractual suite of documents related to Baselines will be subject to ongoing discussions with industry and changes will be consulted on in line with the EBGL process. Q6: Thank you for the detailed response to your concerns regarding grid supply point and its impact on aggregation. Whilst this DCH consultation did not address the application of GSP directly, we are committed to continue engaging with industry on this topic, and we asked stakeholders to provide feedback on the recent announcement confirming the end of the GSP group transitional arrangement on 30 Sept 2021. We understand stakeholders would like to understand in more detail the reason behind our decisions for moving to GSP and that this service parameter, along with baselines, creates a barrier to entry for aggregators and DSR providers. We intend to publish a paper in early autumn setting out our requirements for a more granular level of visibility for future system operation. In the meantime, we are continuing to engage with industry on the visibility challenge, and we welcome

	If NGESO were able to allow the DSR domestic market to grow, by allowing GSP Group aggregation, over time the domestic DSR market space would likely grow to a level where GSP level aggregation would be possible. Thirdly, NG ESO should continue to seek solutions to enable aggregation to be maximised. For example, depending on the analysis from the Control Room, we believe a certain level of GSP group aggregation should be permitted to maximise competition. Aggregated assets could commit to recalibrate its aggregated pool, to exclude MWs from certain GSP to provide the Control Room with confidence. This could be done as close to real-time as needed. Another option could be for NG ESO to consider allowing the DC providers to deliver the 5% provision (At +/- 0.2 Hz) separately to the 5-100% provision, using assets from another GSP level. As it is the 5% provision that is costly for domestic flexibility resources, putting the GSP level aggregation constraint only for the post-fault 0.2-0.5Hz part of the DC service, and allowing to aggregate these pieces with assets across other GSP levels to complete the 0.0 Hz to 0.2Hz part of the service would significantly lower the constraint on the providers and on the development of residential-scale flexibility. Centrica believes that such an option should be considered as we believe it addresses the main concerns raised by NG ESO. We note that when the system frequency moves from the DR range to the DC range, this will likely mean the frequency response will shift to different areas, which are likely to be in different GSPs. We believe that this alternative proposal is no different. In conclusion, we urge NG ESO to set out to the market the specific issues of GSP Group aggregation and the volume of aggregated response where these issues manifest. Using this analysis, NG ESO should consider solutions to allow some GSP group aggregation to enable the nascent residential flexibility to grow	suggestions for alternative solutions from industry stakeholders. Thank you for your feedback on this topic, and for your continued engagement with the DC team. We look forward to reviewing the new proposal you recently shared with us on a call.]
EDF	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** Overall, we are satisfied with the proposed changes. Importantly, however, we do have one key area of uncertainty which we would like to discuss in relation to assets transitioning between different DC contracts or markets.	Thank you for taking the time to respond to our consultation. Our response to the question raised around assets transitioning between different DC contracts and markets can be found in section 4 (please see below).
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this.	Thank you for providing feedback on the proposed changes to auction times.

We are happy with the changes to auction timings	
3. Annex 1: Do you have any comments on the highlighted mapping for DC service? No comment	N/A
4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q1 Transition between contracts** We are concerned about the current position on the duration of a transition (or 'grace') period between different DC contracts or markets. If there is a step change in volume requirements between different EFA blocks or we are required to transition out of a wholesale operating mode and into DC delivery mode, our asset(s) will be subject to a limit on the speed of transition. We have examples where this has taken >1.5 seconds. Currently, we believe NGESO are planning a grace period of 0.5 to 1.0 seconds, which is insufficient in our view. We would request that it is increased to a minimum of 2 seconds. Dependent on site configuration response times can vary significantly. We would welcome the opportunity to share some examples and build a case for why an increase would be beneficial, not just to us but to a number of market participants. NB. We are not asking for special treatment. We think this is important for accessibility. Please could you respond to this point and let us know if it will be possible to increase the transition period moving forward. **Q2: MIL/MEL** The change from service terms 2 to service terms 3 was as follows (see picture 1). Which leaves us with (see picture 2) Whilst the grid code states (see picture 3.) Is there a definition of 'appropriate'? In the past, we have had BM assets delivering FFR penalised for their MEL dropping below the contracted volume, which it did when the SoC fell. The solution in that case was to ensure the MEL/MIL was >= the contracted MW as we couldn't stack services.	Q1: Thank you for raising this point and we appreciate you sending us examples. Based on historic performance data we do not believe there is sufficient evidence to support extending the grace period to two seconds. We will continue to review the appropriateness of the duration, especially with the move to EFA blocks and welcome any further feedback on its suitability. We would welcome a conversation to follow up on this topic. In particular it would be useful to review the examples that you have offered to share. Please contact your account manager to arrange a convenient date to discuss further. Q2: Many thanks for raising this question. We broadly agree that this is a reasonable and pragmatic solution to allow stacking of BOAs in the short term (i.e. MEL and MIL reflect ""BOA-able MW"", not the overall capacity of the unit). However the MEL (and SEL) / MIL (and SIL) should be relative to the PN, not to zero MW, as we need to account for periods where they have a non-zero PN for managing their SoC In time, we need to move towards a world where MEL and MIL are used in the same way as the Grid Code (i.e. they reflect total unit capacity) but that we can reflect that some/all of a unit's capacity is sterilised by providing a contracted service (e.g. MEL = 50MW, but you can only use 1MW for BOAs, as 49MW is for reserved DC, DM, DR etc.). We appropriate you raising this topic and would welcome the opportunity to discuss further'

6.3 Where the **Response Unit** is **BM Participating**, the **Service Provider** shall confirm its **Operational Baseline** to **NGESO** by submission of a **Physical Notification** in accordance with the **Grid Code** (where applicable, rounding up or down to the nearest integer), and shall maintain that **Physical Notification** as at **Gate Closure** (with any subsequent **Bid-Offer Acceptance** adjusting the **Operational Baseline** accordingly), and the **Service Provider** shall further maintain ~~for each relevant **Settlement Period** (in each case as adjusted for any **Bid-Offer Acceptance**)~~ appropriate **Dynamic Parameters** throughout each relevant **Contracted EFA Block** to create sufficient headroom and/or footroom for delivery of the **Contracted Quantity**.

i. ~~a **Maximum Export Limit** and a **Stable Import Limit**~~**NGESO** shall notify **Registered DC Participants** in writing of ~~not less than~~ the ~~amount which equals the~~date when it is able to receive **Operational Baseline** ~~plus the **Contracted Quantity**~~; and

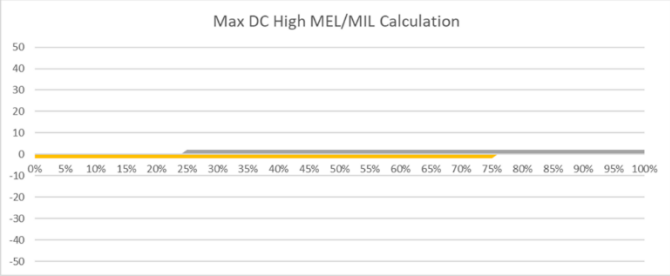
ii. ~~a **Stable Export Limit** and **Maximum Import Limit**~~**Baselines** in respect of ~~not greater than the amount which equals the **Operational Baseline** minus the **Contracted Quantity**~~.

6.3 Where the **Response Unit** is **BM Participating**, the **Service Provider** shall confirm its **Operational Baseline** to **NGESO** by submission of a **Physical Notification** in accordance with the **Grid Code** (where applicable, rounding up or down to the nearest integer), and shall maintain that **Physical Notification** as at **Gate Closure** (with any subsequent **Bid-Offer Acceptance** adjusting the **Operational Baseline** accordingly), and the **Service Provider** shall further maintain appropriate **Dynamic Parameters** throughout each relevant **Contracted EFA Block** to create sufficient headroom and/or footroom for delivery of the **Contracted Quantity**.

BC1.A.1.3.1 Maximum Export Limit (MEL)

A series of MW figures and associated times, making up a profile of the maximum level at which the **BM Unit** may be exporting (in MW) to the **National Electricity Transmission System** at the **Grid Entry Point** or **Grid Supply Point** or **GSP Group**, as appropriate.

With DC Low (including stacking), we have kept the MEL at the DC Low Contracted MW and priced the offer side out of the BM. However, when we are stacking Low/High NGESO will need to understand the MEL as it will set the volume available for offers. For example, with a 50MW/50MWh asset that has a 49MW DC Low/High contract, we would expect the MEL/MIL to look like the below (see picture 4)



In this case, the MEL/MIL would reflect the remaining 1MW that would be available for NGESO to access through the BM:

The MEL drops to zero at ~25% SoC as the battery must be >= 25% to meet DC Low SoC requirements

The MIL drops to zero at ~75% SoC as the battery must be <= 75% to meet DC High SoC requirements

Could you please confirm that this is the correct process to follow? Alternatively, should we be including the contracted DC Low/High MW in

Q3: Thank you for your feedback. As the contracted quantity is the amount of MWs that has been contracted for DC Low and DC High, these volumes are shown independently in our published report, which forms the contract with the provider. This allows different volumes to be contracted for high and low.

	our MEL/MIL submissions and the calculations to determine MW available for bids/offers will be performed by NGESO? **Q3: Contracted quantity** The Contracted Quantity is a single term which is defined as "in respect of any Response Unit and EFA Block, the amount of Response (MW) which a Service Provider has agreed to provide as Dynamic Containment in accordance with a DC Response Contract". Clearly the contracted quantity may differ for DC Low and DC High. However, a single term is used in the description of the maximum export level and the maximum import level. Should the wording of 6.4 be tweaked to reference the DC Low Contracted Quantity and the DC High Contracted Quantity as it is not a symmetrical service and these may therefore differ? (See image 5) 6.4 **NGESO** shall notify **Registered DC Participants** in writing of the date when it is able to receive **Operational Baselines** in respect of **Response Units** which are not **BM Participating**, and with effect from such date and in relation to each such **Response Unit**, the **Service Provider** shall confirm its **Operational Baseline** to **NGESO** by submission, no later than sixty (60) minutes prior to the start of each relevant **Settlement Period**, of a **Non-BM Data Submission** (in such format as **NGESO** shall specify in the **DC Participation Guidance Document**) comprising, for that **Settlement Period**:- i. the **Response Unit** ID; ii. confirmation of its **Operational Baseline;** iii. a maximum export level or minimum import level which equals the **Operational Baseline** plus the **Contracted Quantity**; and iv. a minimum export level or maximum import level which equals the **Operational Baseline** minus the **Contracted Quantity**, which shall be submitted by the **Service Provider** by way of **DC Operational Data** or (only if directed by **NGESO**) by way of **Performance Data**, pursuant to paragraph 15.1.	
Flextricity	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** In the main, Flexitricity agrees with the updates. **Q1: Auction terms** We would question the details surrounding Clause 12 in the Auction Terms, in relation to 12.1.5. More detail is required as to the decision-making process which would lead to 12.1.5 being enacted.	Q1: Thank you for your feedback. As currently written, clause 12 sets out specific measures that the ESO may take in the event of exceptional circumstances I.e. system failure. The new clause 12.1.5 is intended to give ESO additional flexibility to take other actions or steps, which may for example include inviting manual tenders as part of enacting our business continuity process. We will also be removing "or desirable" from the clause so that those actions or steps are limited to those considered to be necessary.
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this. Flexitricity welcomes the timing to be as close after 12:00 as possible, and by 14:30 latest.	Thank you for your feedback. Interconnectors form an important part of the frequency loss risks in the GB system due to their relatively high capacity. Dynamic Containment mitigates these loss risks by replacing the energy lost if an interconnector trips and helps manage the frequency to within 49.2Hz for low frequency and 50.5Hz for high frequency events. As a result, reduced uncertainty in the interconnector positions day-ahead enables more efficient procurement of DC. Interconnector nominations are only known

		after 1330 day ahead, therefore we have recommended the DC auction be run at 1430 to allow interconnector flows to be included in the DC requirements.
	3. Annex 1: Do you have any comments on the highlighted mapping for DC service? No comments, Flexitricity agrees with the mapping.	N/A
	4. Do you have any other comments on the DC proposal? Participation Guidance Document None	N/A
Limejump	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** We are broadly supportive of the proposals set out in the consultation and welcome the opportunity to provide feedback. We are supportive of the removal of the lag lower bound which widens the response time and the removal of the upper bound ramp rate. We also agree with the asymmetric performance bounds changing to a single response curve. **Q1: Baselines** We are supportive of NG comparing the Operational and Performance Baselines. We understand that NG would prefer to use just one Baseline and would like to understand when they believe that their systems could be adapted to use a single baseline? **Q2: Performance monitoring** We note the Performance data needs to include what product the asset is available for. There is currently a single field in the NG data set which we send to NG and populate as 'available'. How will this process be adapted when there is the DCH and DCL products? i.e., will NG to amend the fields? **Q3: State of energy** The Service Terms include a clause that says that National Grid (NG) cannot receive the SOE as part of Operational Data and participants only	Q1: Thank you for your feedback. NGESO is working with industry stakeholders on additional baselining methods with the key distinction between system visibility and performance in mind. We look forward to engaging with industry on this topic further in the coming weeks. Any changes to the contractual suite of documents related to Baselines will be subject to ongoing discussions with industry any changes will be consulted on in line with the EBGL process. Q2: Thank you for raising this question. Yes, we will be amending the availability field with the following values: 0 = LF and HF Unavailable 1 = LF Available 2 = HF Available 3 = LF and HF Available Q3: This addition was added to the Service Terms to account for non-BM providers who currently have no route to provide this

	need to provide 30 days after NG advises they can receive it. We are currently providing SOE data. Please confirm if this is the correct approach. **Q4: Auction rules** When there are exceptional circumstances and NG needs to cancel the auction, we do not support the change which allows NG to take steps which are 'desirable', as this may not drive efficient behaviours.	information, however we are working on a solution to this and it allows for this future development. Q4: Thank you for your feedback. As currently written, clause 12 sets out specific measures that the ESO may take in the event of exceptional circumstances I.e. system failure. The new clause 12.1.5 is intended to give ESO additional flexibility to take other actions or steps, which may for example include inviting manual tenders as part of enacting our business continuity process. We will also be removing "or desirable" from the clause so that those actions or steps are limited to those considered to be necessary.
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this. We are supportive of the new proposed auction time for DCH and DCL of 14:30. As per our previous responses, we are keen that the auction takes place after the DAH power auctions. We also support moving the Daily Auction Report to 16:30. **Q5: Auction times** We understand that the auction will move to 14:30 in October when DCH starts. Can NG please advise what time the DCL EFA auction will take place when it starts in August? Our understanding is that this will be 10am.	Q5: Yes this correct. DCL will continue to be held at 10am until DC High goes live at which point both auctions will move to 14.30pm as proposed in this consultation.
	3. Annex 1: Do you have any comments on the highlighted mapping for DC service? We have no comments	N/A
	4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q6: Performance monitoring** How does NG evaluate the 5% per minute maximum ramp rate? What other performance checks are necessary and do NG have a checker tool that the industry could also use? **Q7: Performance monitoring**	Q6: Thank you for your question. This evaluation will be done as part of the testing prior to entering into the service. The performance monitoring formulae have been duplicated within the Excel Test Analysis Tool.

	How do NG evaluate performance during a 'grace period' and would it be possible for NG to provide timely feedback during this period? **Q8: GSP** We understand that NG has not yet completed its work on locational requirements for the Dynamic products and has decided to stop its transitionary arrangement which permitted DC units to be at a GSP Group rather than GSP Point. NG said they will now consider the locational requirements across its full product range. We have reached out to NG to discuss this topic further as we believe there is benefit in understanding the issues faced by NG and for the industry to debate alternative solutions. We have had good engagement with NG to date and welcome their plans to perform network modelling as part of their assessment. As the market transitions to more distributed generation, it is the right time to review future NG system needs. Previously NG could see all assets on the Transmission system, and we need to understand if this is the right model for the future. The decision on the locational requirement will impact participants in terms of their technology build. It will be important to know whether assets can be optimised as a Virtual Power Plants and what level of visibility/aggregation is required for DER and domestic supply. We are supportive of NG reviewing its locational requirements across all products. This review will need to consider wider market design and timings for any changes. We are very happy to contribute to these discussions.	Q7: Thank you for your question. Performance during a grace period will be evaluated as per the standard performance monitoring process. We will continue to look at ways it improve the feedback look during the grace period. Q8: Thank you for the detailed response to your concerns regarding grid supply point and its impact on aggregation. Whilst this DCH consultation did not address the application of GSP directly, we are committed to continue engaging with industry on this topic, and we asked stakeholders to provide feedback on the recent announcement confirming the end of the GSP group transitional arrangement on 30 Sept 2021. We understand stakeholders would like to understand in more detail the reason behind our decisions for moving to GSP and that this service parameter, along with baselines, creates a barrier to entry for aggregators and DSR providers. We intend to publish a paper in early autumn setting out our requirements for a more granular level of visibility for future system operation. In the meantime, we are continuing to engage with industry on the visibility challenge, and we welcome suggestions for alternative solutions from industry stakeholders. Thank you for your feedback on this topic, and for your continues engagement with the DC team.
Open Energi	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** Broadly yes	Thank you for taking the time to review the proposed updates for Dynamic containment.
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this. 1430 is fine as long as results are published promptly by 1500 is this would allow 30 minutes before the HHly wholesale auction (1530).	Thank you for your feedback. Interconnectors form an important part of the frequency loss risks in the GB system due to their relatively high capacity. Dynamic Containment mitigates these loss risks by replacing the energy lost if an interconnector trips and helps manage the frequency to within 49.2Hz for low frequency and 50.5Hz for high frequency events. As a result, reduced uncertainty in the interconnector positions day-ahead enables more efficient

	Therefore it is necessary that the DC market be run no later than 1430. Earlier (eg 1200) would not pose an issue). Also it is important that results are published by 1500 in an API accessible way to facilitate automation. Given no API on the EPEX platform for DC the results must also be simultaneously published on the NGESO Data Portal.	procurement of DC. Interconnector nominations are only known after 1330 day ahead, therefore we have recommended the DC auction be run at 1430 to allow interconnector flows to be included in the DC requirements. Contracts are formed when EPEX publish the Auction Results on the platform and providers are able to access the data there. For transparency, the results of the auction are then published on the Data Portal, however we cannot guarantee this will be by 15.00pm. As stated in the Participation Guidance we commit to this being published by 16.30pm. We recognise that industry would like the ESO to utilise APIs in order to enhance the user experience and this is functionality that we will look to deliver over time. The foundational capability for the ESO Single Market Platform (SMP) will initially be the onboarding functionality (provider registration, unit and sub-unit registration and management, balancing service selection, acceding to contract(s) and prequalification) for the new and enduring Response and Reserve products scheduled to be launched from March 2022
	3. Annex 1: Do you have any comments on the highlighted mapping for DC service? No comment	n/a
	4. Do you have any other comments on the DC proposal? Participation Guidance Document No comment	n/a
	1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale RenewableUK agrees with the proposed updates in the proposal as they represent another step towards opening the frequency response commercial services to variable technologies such as wind. Unbundling High Frequency (HF) from Low Frequency (LF) response allows for wind operators to enter the market without compromising MWh production by reducing output to create headroom for LF. Given the expectation on high renewable penetration within this decade, particularly coming from 40GW of offshore wind by 2030, and significant developments in onshore wind, it makes sense to unlock provision of DC from this technology. This will certainly improve competition and promote	Thank you for providing feedback on our proposed updates, we appreciate the time you have taken to respond.

Renewable UK	cost effective procurement	
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this. We welcome the proposed change as this moves the procurement gate closer to service delivery. We encourage NGESO to work towards real time procurement of the commercial frequency response services as this will facilitate participation of a wider range of technologies such as onshore and offshore wind. Real time procurement will allow wind operators to limit the risk of non-delivery as the accuracy of the wind resource forecast improves closer to the service delivery.	Thank you for providing feedback on the proposed changes to auction times, we appreciate the time you have taken to do so. Our current commitment in our RIIO-2 business plan is to deliver a day ahead response market, and we welcome further engagement, seeking ways to facilitate participation in balancing services across a range of technologies.
	3. Annex 1: Do you have any comments on the highlighted mapping for DC service? No comments	
	4. Do you have any other comments on the DC proposal? **Participation Guidance Document** We believe the proposed changes represent another step towards enabling and encouraging the participation of wind, however, we ask NGESO to facilitate further critical changes as soon as possible such as: **Q1: EFA blocks** We acknowledge NGESO intentions to move to EFA block procurement this year and support the idea that breaking down Day ahead procurement into EFA block will facilitate wind participation further as it will be possible for wind operators to match wind conditions to specific EFA blocks without the need to commit for the whole day delivery. We encourage NGESO to work towards real time procurement of the commercial frequency response services as this will facilitate participation of a wider range of technologies such as onshore and offshore wind. **Q2: Power available** NGESO and RenewableUK have been working together in the last years to design and agree a Power Available Best Practice Guidance in order to build the confidence on the utilisation of wind farms into balancing services. We understand that Power Available will be critical to ensure NGESO has the right and accurate information in real time to provide services such as DC-HF so we believe it would be necessary to integrate this functionality in the DC systems and processes, including the DC Service Terms and Conditions. This will be an acknowledgement that the service is open to	Q1: Thank you for your feedback. Procuring by EFA block is our first step in procuring services at a more granular detail. We will continually look to develop our products and services further to ensure they are fit for the future and maximise competition in markets. Q2: For contracted response, we expect providers to submit baselines which ensure that they can deliver the contracted volume of response. We expect to use Power Available in the real time monitoring of delivery. Performance data would still need to be submitted through our Data Concentrator. In the long term, if there is aspiration to move the market towards real time, Power Available will be increasingly important, and

	variable technologies that are capable of providing Power Available signals using the best industry practice. **Q3: Testing** We encourage NGESO to work with the industry to agree a Testing Guidance for Wind to provide DC-HF to indicate the necessary requirements for wind participation in the procurement process as DC-HF units. In past experiences with frequency response commercial services, the lack of a suitable testing guidance for wind was considered a barrier for participation. **Q4: Stacking with BM** We welcome NGESO's announcement in regard to facilitating stacking of BOAs and DC for service providers. We recognise that for the case of wind farms, which may be located behind constraints or regularly subject to BM actions, there is a strong case to allow for stacking of both LF and HF DC at the time of experiencing curtailments and constraints. As part of NGESO's Project Offshore Coordination (Phase 1 report), the System Operator indicated that the level of wind curtailment could go above 20% average across GB by 20301. Allowing for dispatch of LF and HF DC at the moment of curtailments creates an opportunity to optimise wind output, reducing systems costs and adding value for consumers.	continues to be crucial to provision of MFR. We welcome further engagement on this. Q3: Thank you for your feedback. The approach that we take is to specify the requirements for any technology type wishing to participate in a frequency response service. The DC Testing Guidelines specifies a range of frequency injection profiles to be used for testing and assesses whether the test result meets the pass criteria. These pass criteria are based on how we would expect the unit to respond when delivering the service. We would welcome the opportunity to engage further with Renewable UK and the wider industry on testing guidance for Wind and learn more about any barriers to entry. Q4: Thank you for your feedback. This would require a real time market and we are not yet in a position to explore this. Unfortunately due to the provision for Bid Offer data to change at day ahead, as well as market positions changing, we would be unable to identify constrained units at day ahead when the auction was being run.
Sembcorp	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** The changes proposed largely are appropriate and necessary for the development of Dynamic Containment High Frequency service. **Q1: Asymmetric performance** We would request clarification on whether asymmetric performance of low and high frequency is still allowed, or whether delivery must be symmetric.	Thank you for your feedback on the proposed changes to DC high frequency. Q1: As described in Section 1 of the Participation Guidance, DC Low and DC High will be procured separately and as such asymmetrical delivery for high and low is allowed as part of the service.
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this. No comment	

	3. Annex 1: Do you have any comments on the highlighted mapping for DC service? No Comment	
	4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q2: State of energy** Whilst not part of this consultation, we would repeat our previously communicated view that the current rules around DC state of energy limitation are too prescriptive and lead to the uneconomic dispatch of plant. We believe it would be beneficial to increase the 5%/minute baseline movement rule substantially. **Q3: GSP** We believe there is potential advantages to locational procurement, and this should continue to be explored.	Q2: The current rules around SoE allow the asset to charge in a controlled way, without impacting on frequency or control room actions. The rules are provided to protect against combined movement of all assets. Although introducing DC-H will mean that battery charge levels are likely easier to manage in general, it does not prevent a full 15 minute activation of the service, which will lead to a synchronised charging event at the next available opportunity, which the 5% limit is used to control. We are not currently looking to change the SOE rules on this basis. Q3: Thank you for the feedback. We would welcome a further discussion on this to understand the advantages you foresee.
Social Energy	**1. Do you agree with the updates in the proposal for Dynamic Containment? Please provide rationale** Social Energy does not have any comment on this	N/A
	2. We are proposing to change auction timings for DCH (and DCL) to occur between 12:00 and 16:00 on D-1, with a minded to position this would be held at 14.30pm. We would welcome your views on this. Social Energy does not have any comment on this	N/A
	3. Annex 1: Do you have any comments on the highlighted mapping for DC service? Social Energy does not have any comment on this	N/A
	4. Do you have any other comments on the DC proposal? Participation Guidance Document **Q1: GSP** Social Energy believes that this decision will have significant and lasting, negative consequences for providers of dynamic containment (and other ancillary services) from small (kW)-scale assets, such as residential battery storage, electric vehicle chargers, and heat pumps etc, and will in effect lock these providers out of the market. Social Energy currently operates one of the largest fleets of domestic battery storage system in the UK. We regularly provide 10MW of dynamic firm frequency response exclusively from thousands of home battery	Q1: Thank you for the detailed response to your concerns regarding grid supply point and its impact on aggregation. Whilst this DCH consultation did not address the application of GSP directly, we are committed to continue engaging with industry on this topic, and we asked stakeholders to provide feedback on the recent announcement confirming the end of the GSP group transitional arrangement on 30 Sept 2021. We understand stakeholders would like to understand in more detail the reason behind our decisions for moving to GSP and

	systems and intend to provide dynamic containment from the same assets in the near future. Like many of our peers, our fleet is substantially uniformly distributed across the whole of GB. For example, our fleet spans almost 250 GSPs with a median and maximum capacity per GSP of 0.042MW and 0.37MW respectively. Given that no GSPs meet the de minimis 1 MW threshold, the entire fleet will be excluded from participating in DC once the current transitional arrangement comes to an end in September. This could inadvertently result in the exclusion of significant flexibility volumes from domestic providers. Furthermore, there is no straightforward way to identify the GSP to which a particular domestic customer is connected without manually consulting the DNO network topology/GIS maps. This is impractical for large numbers of households and where hundreds or thousands of new customers join per month. Given the severity of the impact and the planned winding down of the monthly FFR tender rounds, Social Energy urges ESO to at least consider a further extension to this timeline to allow alternative solutions to be proposed and evaluated by industry stakeholders.	that this service parameter, along with baselines, creates a barrier to entry for aggregators and DSR providers. We intend to publish a paper in early autumn setting out our requirements for a more granular level of visibility for future system operation. In the meantime, we are continuing to engage with industry on the visibility challenge, and we welcome suggestions for alternative solutions from industry stakeholders. Thank you for your feedback on this topic, and for your continues engagement with the DC team.