Consultation responses

Respondent A

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
Respondent A supports the consolidation of the DC, DM and DR documents. **Volume caps and EAC** It would be helpful to understand the timeline and process for re-examining the volume cap. Similarly, we are concerned with the delays to delivering the EAC and its concurrent impact on optimisation and stacking. As we have said before, parallel auctions for balancing services can lead to over and under subscription to different services, with inefficient results. However, we accepted that the delivery of the EAC by the end of the 22/23 financial year would help resolve these issues. Now with further delays to this delivery, it is difficult to continue to accept the prolonged inefficient running of these markets.	Thank you for your feedback and continued engagement on response reform. **Volume caps** Following the significant change delivered in launching the three new services and improvements delivered to the frequency response markets since 2020 (attached timeline of delivery for reference), we are working on delivering a managed transition to these new services alongside a refinement of the new services which include the raising of the volume caps and the migration to the new auction platform delivered through the BP2 Enduring Auction Capability (EAC). As pre-requisites to lifting the volume cap we communicated that we would need both: 1. A minimum of a 6-month window to assess and validate service performance (which is now nearing completion) 2. To deliver IT changes into the control room: operational metering and arming/disarming. The IT changes are part of Release 1, which has a delivery date of 31 March 2023, however the IT programme is currently reporting potential delays. Access to subject matter experts is currently limited, due to winter readiness activities, and this is impacting our IT development timeframes. Once these prerequisites are satisfied, we will aim to proceed with the offsetting of legacy services in line with an increased volume cap on the new services.

	We will provide updates on progress made regarding offsetting dynamic FFR, and volume cap removal in our monthly Market Information Reports, including further details of our expected volume requirements for FFR, DC, DR and DM. These reports can be found on the ESO Data Portal. **Enduring Auction Capability (EAC)** The project commenced in September 2022 with the conclusion of its procurement process and the selection of a strategic partner to deliver on this RIIO objective. The project team has been working to agree revised project delivery timeline and project scope. The project scope will include delivery of co-optimisation and stacking in the early stages of go-live. The launch of the EAC is now planned for late 2023. We intend to update further on the project and its delivery timelines in December 2022 via the Future of Balancing Services newsletter.
State of Energy (SOE) Furthermore, greater clarity and exploration of the state of energy rules for batteries was requested given its effects on the ramping patterns of batteries and therefore their efficiency.	**State of Energy (SOE)** We are working on a comprehensive updated guidance document which will include a range of topics including detailed state of energy guidance, performance monitoring and market participation to support new and existing market participants. We plan to have the document ready to share in early 2023 to allow time for review prior to service go-live. We are planning for this guidance document to sit outside of the contractual terms to allow us to update and improve this outside of the annual consultation cycle timelines.
Do you have any comments on the highlighted mapping for the services?	
N/A	
Annex 1: Do you have any comments on the highlighted mapping for DC service?	

N/A	
Do you have any other comments on the proposed changes to DC, DC, DR?	
Baselining Although we appreciate that resources have been diverted to prepare for the upcoming Winter, it is disappointing that so little progress has been made on the baselining issue. While we had fruitful engagement up until March that has somewhat stalled due to a number of factors. We are, and have been, more than happy to engage on the topic and would like to see a resolution as soon as possible so that this issue does not persist beyond the Release 1 date. Given this barrier to entry impacts the level of low carbon, and critically at present - low gas, flexibility being offered to the grid, ESO should be leading on finalising this solution without any further delay.	**Baselining** Thank you for your detailed feedback and the work you have done with us to progress this discussion on baselining. It is an important topic for us and as such are committing the resources available to advance this topic to its conclusion including hosting further meetings and workshops with industry participants. We greatly appreciate Respondent A's support and input in championing this topic with us through the start of the year and look forward to progressing the discussion with you in our meeting 1 December and beyond. We are keen to hear your feedback on risks from the gaming examples provided earlier in the year, to validate that our derived baselines proposal is a workable method for moving this forward, and enable us to work towards removal of this barrier for the market. We are equally keen to remove barriers to entry across the market and must ensure that the changes and solutions we deliver provide the most benefit proportional to the scale of change required. Given the potential requirements for significant changes to our use of baselining methodology as well as IT and metering systems we welcome your support in quantifying the commensurate market benefits to support us in ensuring we can prioritise these changes. Based on stakeholder feedback we have mapped out a clear annual consultation process. At the start of each cycle we will re-assess and prioritise the requested changes to ensure that the maximum benefit is realised for the service.
Improvement Cycle and Aggregation With the DFS, we have now seen the speed at which entirely new services can be brought forward and so, there is no reason why an alternative baselining approach should not be	**Improvement Cycle and Aggregation** The Demand Flexibility Service has been rapidly developed to enable demand reduction this winter, and will only be used as a last resort service for this winter. The DFS is targeted at additional flexibility

introduced, if only on a trial basis at first – as was done with allowing aggregation at GSP Group as opposed to GSP. Again, we are very sensitive to the numerous areas of work the ESO are currently undertaking and appreciate the difficulty of the times. However, this issue has been ongoing for well over a year and a solution feels very much in reach.	which the ESO cannot currently access via its usual market routes. There are learnings that we will take from the rapid development of this new type of service. Based on the Respondent A's feedback, we have implemented a formal annual service development cycle. The aim of introducing an annual cycle gives all stakeholders a repeatable, reliable plan which takes into account the fixed timelines for the formal Energy Balancing Regulation (EBR) consultation, and provides sufficient timelines for engagement, onboarding and systems development. This coordinated approach for developing and improving our current services mitigates undue pressure on industry, Ofgem or ESO. Thorough engagement activities will be held ahead of the consultation, ensuring all voices are heard, and importantly, the majority of changes are developed by the ESO, ahead of the consultation launch. This mitigates the challenge of making significant changes in the review period, post-consultation. Allowing a grace period for aggregation at GSP Group is slightly different to trialling new baselining approaches: the GSP aggregation level doesn't change the delivery of the service, just the size of the units by allowing wider aggregation. Having a different baselining approach can change the expected and measured delivery of a service.
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
N/A	

Respondent B

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
We support the consolidation of the service documentation, the re-introduction of GSP Group aggregation for DC and the clarifications that have been included on performance monitoring grace periods. We are grateful that the work the ESO has done to progress these changes, especially the decision to revert to GSP Group aggregation in response to stakeholder feedback We had been expecting further improvements as part of Release 1 – previously known as 'Day 2 improvements. We cover this in our response to Q4 below.	Many thanks for your feedback and continued engagement on response reform.
Do you have any comments on the highlighted mapping for the services?	
No	
Annex 1: Do you have any comments on the highlighted mapping for DC service?	
No	
Do you have any other comments on the proposed changes to DC, DC, DR?	
Stacking, EAC and Markets Roadmap As mentioned under Q1, we had expected further improvements to be made as part of Release 1. We previously discussed these with the ESO bilaterally as 'Day 2 asks' and in our engagement on the Day 1 release of DM and DR. From our previous engagement with the ESO (bilaterally and through trade associations) we had understood that this Release 1 would include substantial improvements on	**Stacking and EAC** Recognising the importance of service stacking we have investigated the option to update our current platform with this functionality but from our assessment it was determined that the scope of changes required to the platform would be too complex to deliver in time to achieve a significant benefit before we transition to our enduring auction platform. Instead of committing further resources to delivering changes to a platform we are actively transitioning away from we are working to prioritise our delivery of these changes in our new EAC platform. The project team has been working to agree revised project delivery timeline and project scope. We can confirm that the project scope will include delivery of co-optimisation and stacking in the early

stacking, including options for providers and the ESO to better optimise procurement decisions. We therefore share the concerns expressed in Respondent D's response on the lack of progress towards enabling the stacking of DC, DM and DR services together. We have seen delays in the delivery of several key ESO IT projects, including the Enduring Auction Capability (EAC) platform. We believe the ESO should publish an update to the Markets Roadmap as soon as possible that shows the new delivery dates for things like full response product stacking, the EAC, the different components of reserve reform, when STOR will be phased out etc. Please could this use a standard format for dates – preferably calendar dates?	stages of go live. The launch of the EAC is now planned for late 2023. We intend to update further on the project and its delivery timelines in December 2022 via the Future of Balancing Services newsletter. **Markets Roadmap update** Our markets roadmap is updated on an annual basis and the 2023 roadmap will be circulated in line with the annual cycle early next year. We report on our progress against incentives using financial years (FY) and dates and so also report our project delivery dates in FY format for consistency. Before Christmas, and ahead of the new markets roadmap, there will be an update on transformational projects (such as the EAC) in the Future of Balancing Services newsletter
Baselining We are keen to see the ESO deliver on its promise to update the baselining rules to provide solutions that work for smaller and aggregated assets. We support the comments in the Respondent A's response on the baselining issue. We share other industry participant's frustration that progress has stalled on introducing an alternative baselining approach.	**Baselining** We greatly appreciate Respondent B's support and input on this topic with us and look forward to progressing the discussion with you in our meeting 1 Dec and beyond. We are equally keen to remove barriers to entry across the market and must ensure that the changes and solutions we deliver provide the most benefit proportional to the scale of change required. Given the potential requirements for significant changes to our use of baselining methodology as well as IT and metering systems we welcome your support in quantifying the commensurate market benefits to support us in ensuring we can prioritise these changes. As soon as a viable solution is found to deliver improvements to the market we will endeavour to include it in our widely-supported annual consultation-delivery cycle which we have transitioned to.

State of Energy (SOE) - ramp constraints At the ESO's 25 August 2022 webinar on the Release 1 changes, the ESO indicated that clarifications would be included on SOE monitoring, and that the ESO was also reviewing the 5% requirement. As far as we can see this was not included in the final document. We are disappointed not to see these changes made. We support the commentary in Respondent D's response – which originated from other stakeholders. We share the concerns expressed in Respondent D's response that by not updating these rules it is creating market inefficiencies and ultimately increasing costs for consumers. Also on SOE, Respondent B would like clarification from the ESO on application of the rules on SOE ramp constraints when stacking the DC service with day-ahead (DA) and intraday (ID) trades. If the rules extend to DA and ID trades, then they will result in less efficient optimisation of battery assets (ultimately a disbenefit to consumers as well as battery investors.) To conclude on SOE, whilst we support in principle the ESO's plans to have a predictable annual cycle of improvements to the DC/DM/DR terms, we are concerned that the decision not to include SOE refinements in Release 1 means that any improvements would not now be introduced until April 2024.	**State of Energy (SOE) - ramp constraints** Alongside merging the service terms this year, it is also our intention to produce a guidance document and it is in there that you will find clarifications on SOE. This comprehensive guidance document will include a range of topics including detailed state of energy guidance, performance monitoring and market participation to support new and existing market participants. We plan to have the document ready to share in early 2023 to allow time for review prior to service go-live. We are planning for this guidance document to sit outside of the contractual terms to allow us to update and improve this outside of the annual consultation cycle timelines. We committed at the August roadshows to review the 5% ramp rate requirement. We conducted an internal review on the impacts of changing the ramping rate, and concluded that increasing it would impact system stability. A way to mitigate this risk is by overholding response and reserve services. We will need to assess the impacts on balancing cost if we were to overhold. This impact assessment could not be completed during the autumn because our teams were focused on winter readiness activities. We will revisit this opportunity in Release 2.
Residential Response As the ESO further develops its response products (and plans to drive forward reserve reform) we underline the importance of	**Residential Response** The ESO recognises the potential from using the range of demand-side flexibility. Following the launch of the Demand Flexibility Service, ESO are expecting to increase the utilisation of the potential in

making these products work for smaller asset sizes, including residential response. Respondent B has registered to participate in the ESO's new Demand Flexibility Service (DFS) with British Gas residential customers. The ESO developed the new service at pace, and we are keen to see enduring solutions developed for smaller consumers.	demand side flexibility. ESO are continuing to explore ways of reducing the barriers (including in this consultation changing the aggregation rules from GSP to GSP group) to facilitate entry into frequency response services, without introducing gameable flaws or reducing the Control Centre team's capacity to forward plan. Recognising the potential of small, aggregated assets we have worked with industry to investigate potential changes to baselining in addition to launching the Demand Flexibility Service and will continue to pursue these and other opportunities
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
Not answered	

Respondent C

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
NGESO's decision to consolidate the separate terms and conditions applicable to each of the new responses services DC, DM and DR into one is welcome. Numerous documents existed previously across the different services, which risked creating confusion for providers.	Thank you for your comment supporting these changes. We are committed to developing these services and improving the ease of participation for new and existing providers.
Do you have any comments on the highlighted mapping for the services?	
No comments	
Annex 1: Do you have any comments on the highlighted mapping for DC service?	
No comments	
Do you have any other comments on the proposed changes to DC, DC, DR?	
State of Energy (SOE) - ramp constraints Regarding the 5% per minute ramp rate rule for energy-limited assets: this restriction inhibits the effective operation of fast-	**State of Energy (SOE) - ramp constraints** We committed at the August roadshows to review the 5% ramp rate requirement. We conducted an internal review on the impacts of

acting assets. If the battery is recharging after it has provided the service, NGESO dictates the rate at which the battery may recharge. This is not only restrictive for battery providers in managing their own assets in the most efficient way but it may also undermine efficient stacking with other services. NGESO justifies this requirement as being necessary to help give the control room more time when the system is under particular stress. But the rest of the time, this does not really seem necessary to maintain system stability. Co-optimising the procurement of services is currently one of NGESO's main points of focus. This rule goes against that ambition. SOE (State of Energy) management rules: in our opinion, these rules are too prescriptive. They do not seem to add much value to the system, while they do add burden and complexity for battery providers. We would suggest leaving the SOE position to providers: if they are not able to deliver the service, they will be penalised for non-delivery. That would help simplify the service terms and providers' operations. **DC participation** For customers that simply have load (demand turn-down), it is impossible to participate in DC under the current rules: the tiny dead-band (due to the requirement for a small linear response even for small frequency deviations) means that accurate response must be provided almost all the time, even though the frequency events that the service is meant to contain occur only rarely. In practice, almost all energy throughput of this service relates to this linear response in pre-fault conditions: only very little relates to managing the post-fault conditions that is the service's purpose. If the intention is to open up the market for flexibility and flexibility services from all sources (incl. behind-the-meter, domestic scale, etc.), it should modify these rules to unlock these services for wider use.	changing the ramping rate, and concluded that increasing it would impact system stability. A way to mitigate this risk is by overholding response and reserve services. We will need to assess the impacts on balancing cost if we were to overhold. This impact assessment could not be completed during the autumn because our teams were focused on winter readiness activities. We will revisit this opportunity in Release 2. We are working on a comprehensive updated guidance document which will include a range of topics including detailed state of energy guidance, performance monitoring and market participation to support new and existing market participants. We plan to have the document ready to share in early 2023 to allow time for review prior to service go-live. We are planning for this guidance document to sit outside of the contractual terms to allow us to update and improve this outside of the annual consultation cycle timelines. **DC participation** The services have been designed to meet different requirements and the new dynamic suite are designed to support system stability with small frequency deviations. We have a wide range of services available to allow the widest range of participation. We will continue to review the service design and adapt the services to improve the benefits of delivery. We are happy to discuss 1:1 to support providers' participation in the best markets for them.

Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
No comments	

Respondent D

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
Combined service terms Respondent D welcomes the combination of services terms for the dynamic services into a single document. This significantly reduces the administrative burden and also ensures cohesion amongst the service terms and procurement rules for all three dynamic services. **Volume Caps** We also welcome increasing the volume cap of 100MW for each service. Being in an extended "transition phase" creates market uncertainty and leads to inefficient investments in systems and technical developments. Members would also like to see a faster transition out of the transition phase to a longer term solution more quickly. Alongside this, we would like to ask ESO whether the intention is to continue having fixed caps, and if so, what the reasons are for this?	**Combined service terms** Thank you for feedback and continued engagement with response reform. We are committed to developing services to increase competition and remove barriers to entry for providers. **Volume Caps** Following the significant change delivered in launching the three new services and improvements delivered to the frequency response markets since 2020 (attached timeline of delivery for reference), we are working on delivering a managed transition to these new services alongside a refinement of the new services which include the raising of the volume caps and the migration to the new auction platform delivered through the BP2 Enduring Auction Capability (EAC). As pre-requisites to lifting the volume cap we communicated that we would need both: 1. A minimum of a 6-month window to assess and validate service performance (which is now nearing completion)

	2. To deliver IT changes into the control room: operational metering and arming/disarming. The IT changes are part of Release 1, which has a delivery date of 31 March 2023, however the IT programme is currently reporting potential delays. Access to subject matter experts is currently limited, due to winter readiness activities, and this is impacting our IT development timeframes. Once these prerequisites are satisfied, we will aim to proceed with the offsetting of legacy services in line with an increased volume cap on the new services. We will provide updates on progress made regarding offsetting dynamic FFR, and volume cap removal in our monthly Market Information Reports, including further details of our expected volume requirements for FFR, DC, DR and DM. These reports can be found on the ESO Data Portal. Until we have implemented the changes for offsetting our DR and DM requirement plus overholding is expected to be 100MW at most times. However, whilst the services are not being used to offset our alternative actions, if there is a significant risk that market depth across our services could result in an undersupply in existing dynamic services, we will reduce the requirements in the DR and DM markets as necessary to support participation in markets used to manage the system. Where a decision is made to reduce the requirement, it will be signalled with as much notice as possible.
Grace Periods We are pleased to see ESO changing the grace period for changing between different frequency response contracts to 2 seconds based on provider feedback. Some providers	**Grace Periods** ESO will provide further guidance on the application of the grace periods. This will include examples of different transitions among the available services to provide clarity on the grace period rules.

would prefer to see a controlled transition between services (for DM and DC) as they feel it is more in line with the rest of the service terms Furthermore, we would very much appreciate ESO providing scenario examples for participants of how the error in the grace period will be calculated, including real examples of moving from a DRH to a DCL contract for example. Any guidance or practical examples would help clarify the transition and reduce ambiguity for participants, Finally, we note that the new grace period as set out in the Service Terms still does not cover changes from FFR to the new response services. Respondent D's members note that a 0.55second Grace period is not nearly sufficient in the case of switching from a two-sided FFR contract to a one-sided Dx contract. We therefore ask ESO to please change the terms to clarify how penalties will be applied when switching between service types in this instance.	The grace period rules cover the transition from FFR contracts to dynamic contracts. This transition takes into account two-sided FFR contracts into dynamic response. This clarification will be added into the guidance document for grace periods.
Aggregated Domestic Scale accessibility We also welcome the move to allow GSP group procurement for DC, brining it in line with DM and DR. Many thanks for engaging with Respondent D on this issue and taking on feedback from providers. We encourage ESO to continue efforts to make the service suite accessible to more types of service providers including aggregated domestic scale resources that have the technical capability	**Aggregated Domestic Scale accessibility** Thank you for your feedback and continued engagement on response reform. We are certainly planning to continue our efforts to reduce barriers to entry including continued work investigating baselining methodologies, which we are actively engaged in. We have added a new deliverable in our BP2 document that focuses on removing barriers to entry across new ancillary services (deliverable D4.6.3).

to deliver frequency response and which represent an important large untapped resource for system stability. **Performance Monitoring** Respondent D are pleased to see ESO moving to K factor separation for bundled services. This is consistent with EBGL that states low and high frequency response services must be procured separately and therefore it makes sense that the delivery of them should be assessed separately. **Calculation tool** Members were also keen to highlight that ESO should provide a calculator/tool to test performance with new service terms, as currently they need to build calculation themselves (which would take days of work due to its complexity). Providing this tool would be in line with previous changes to service terms and promotes transparency and certainty in how the service terms are applied by ESO. **Additional review phase** In addition to that, members would welcome an additional "review" phase for the new performance calculation after it has been included in the new Service Terms. There are some nuances that are difficult to capture during this review and may only be revealed via real assets operating daily in DC/DM/DR. It will be important to capture any such nuances	**Performance Monitoring** Performance monitoring calculators for the new service terms will be released for providers to test the new approach. Further improvements to the calculator tools will help providers to identify the Performance monitoring updates including the K factor separation for high and low service. **Calculation tool** The calculation/testing tools that we have previously made available will be updated to reflect the updated calculations and will be re-shared in time for testing prior to go-live. If there are tools, or support, required additional to this please let us know. **Additional review phase** The new Performance rules are designed to improve the overall score of the service delivery. This will not negatively impact the current performance of the units providing the DFR services. A review of the performance data to study the improvement of the scores will be carried out after the go-live date. However, penalties will apply from the launch.

and appropriate improvements in a timely way rather than having to wait months or years to be included.	
Formatting of Performance section in Service Terms	**Formatting of Performance section in Service Terms**
The formatting of the performance calculation section is not as clear as it should be. Members would like to see headers added to pages to indicate whether this refers to DM, DC, DR and clearer parameters, or, even better, a single "new response" performance section (referring to DC/DM/DR variables in the "Service Parameters" section of the document	The schedule 2 of the Service Terms has been divided into Part 1 (DM), Part 2 (DR) and Part 3 (DC). The objective is to keep the definition of each performance monitoring approach unrelated to avoid confusion. The services share most of service parameters definitions, therefore, the service parameters table in schedule 1 was designed to allow the comparison of the values across DC/DM/DR services. If however, there is additional information that we could provide in the supporting guidance, we'd be happy to discuss.
Finally, Respondent D would like to seek reassurance from ESO that the changes made to the performance methodology calculations will go live from 1st April 2023, along with the rest of the changes to the Service Terms, and that the new calculations applied by ESO settlements team will also be applied from this date onward. Ultimately, Respondent D's members would like to avoid a situation whereby ESO are having to back-date calculations and retrospectively apply performance penalties. Unfortunately, participants have previously experienced this situation and avoiding this scenario will ensure there is no unnecessary burden placed on participants.	All changes proposed in the dynamic service terms will go-live together, along with the guidance document. The delivery date we are working towards is 1 April 2023, however it is possible through the continuation of the winter activities work, and with the potential for additional issues to arise over the period, there may be further impacts to BP1 activities with subsequent prioritisation decisions made. Updates on timelines will be communicated via the Future of Balancing Services newsletter and directly to response providers via their account managers.
State of Energy (SOE)	**State of Energy (SOE)**
Respondent D's members are disappointed not to see ESO producing any further guidance around the rules for State of Energy (headroom and foot-room). Some members	We are working on a comprehensive updated guidance document which will include a range of topics including detailed state of energy guidance, performance monitoring and market participation to support new and

supported the relaxing of these rules, or a conscientious review of the need for and effects (including unintended consequences) of the ramp rate rule as suggested verbally by ESO at the Frequency Response Roadshow in August 2022. The strict rules also feel like an additional and unnecessary compliance obligation placed on providers, limiting flexibility and creating market inefficiencies that increase costs for consumers. Ultimately some members feel that this should be less prescriptive and more in the hands of providers to monitor. We would welcome further discussions with ESO on how this could be achieved. On the other hand, other members do not think the rules should be relaxed per se, as they ensure a high quality service is provided. All members however, are in agreement that existing guidance is not currently in line with the service terms and further clarity is urgently needed. **Service Stacking** Members also shared concerns on the lack of progress towards enabling stacking DC, DM and DR services together. The current market design which does not allow stacking across DC, DM and DR in the same EFA block (coupled with capped DM/DR procurement) means that if an asset bids for a service and is not cleared, it is left idle and therefore not providing any frequency response service. Leaving resources underutilised in this way is a waste of resources and simply increases the costs to consumers for delivering frequency response services. ESO has already explicitly acknowledged that allowing stacking will create a	existing market participants. We plan to have the document ready to share in early 2023 to allow time for review prior to service go-live. We are planning for this guidance document to sit outside of the contractual terms to allow us to update and improve this outside of the annual consultation cycle timelines. We committed at the August roadshows to review the 5% ramp rate requirement. We conducted an internal review on the impacts of changing the ramping rate, and concluded that increasing it would impact system stability. A way to mitigate this risk is by overholding response and reserve services. We will need to assess the impacts on balancing cost if we were to overhold. This impact assessment could not be completed during the autumn because our teams were focused on winter readiness activities. We will revisit this opportunity in Release 2. **Service Stacking** Recognising the importance of service stacking we have investigated the option to update our current interim platform with this functionality but from our assessment it was determined that the scope of changes required to the platform would be too complex to deliver in time to achieve a significant benefit before we transition to our Enduring Auction Platform. Instead of committing further resources to delivering changes to a platform we are actively transitioning away from, we are working to prioritise our delivery of these changes in our new EAC platform. The Enduring Auction Capability (EAC) project kicked off in September 2022 with the conclusion of its procurement process and the selection of a strategic partner to deliver on this RIIO objective. The project team has been working to agree revised project delivery timeline and project scope. We can confirm that the project scope will include delivery of co-optimisation and stacking in the early stages of go live. The launch of the

more efficient market. It is important therefore to enable co-optimisation in a timely way to help alleviate this problem and remove the procurement cap to enable service procurement to fully reflect the system need. Respondent D would like to see ESO prioritise work on service stacking and note that members would be very keen to work collaboratively with ESO on the service design to enable this. We note that ESO had indicated to some members that improvements to stacking and options for procurement optimisation would be rolled into the Day 2 release of DC, DM, DR. Members are concerned by the lack of clarity on why this has been delayed. Given the uncertainty this creates for market participants, Respondent D would like to see greater transparency from ESO when delivery dates are pushed back and better communication on new target dates.	EAC is now planned for late 2023. We intend to update further on the project and its delivery timelines in December 2022.
Do you have any comments on the highlighted mapping for the services?	
No further comment. They are in line with members' expectations.	
Annex 1: Do you have any comments on the highlighted mapping for DC service?	
No further comment. They are in line with members' expectations.	
Do you have any other comments on the proposed changes to DC, DC, DR?	
State of Energy (SOE) - ramp constraints ESO's stated purpose of this rule (as stated in the Participation Guidance) is to prevent coordinated "SOE management" following a low frequency event – ie to give the control room more time to make decisions when the	**State of Energy (SOE) - ramp constraints** We committed at the August roadshows to review the 5% ramp rate requirement. We conducted an internal review on the impacts of changing the ramping rate, and as before, concluded that increasing it would impact system stability given we have currently found no way to practically manage. A way to mitigate this risk is by overholding response

system is under stress. However, this does not justify the blanket application of this rule during all other times at which DC,DM or DR is being provided. Firstly, the rule perversely impairs efficient market operation and forces fast acting resources to mimic the slower ramping behaviour of traditional assets which is not in keeping with ESO's ambitions on Net Zero operability. Secondly, it is entirely incorrect to treat all baseline changes as SOE management actions and subject them to the ramp rate rule. Changing baselines can (amongst other things) reflect commercial traded positions and forcing providers to limit the way in which they charge/discharge to fulfil those awards is an unfair interference on how they operate in the market and dampens the market price signal for assets to charge / discharge to help meet supply and demand. To achieve co-optimisation of services and more efficient market behaviours that help to keep overall costs down, the maximum ramp rate limit should be removed or refined to specifically address the problem it is intended to solve. If the issue is about visibility over when assets are going to change operational baselines, the Control Room already has this information for BMUs via the FPNs submitted 1 hour in advance. Non-BMUs currently are unable to submit operational baseline information as ESO has yet to make that functionality available. However, given that the proportion of non-BMUs vs BMUs providing DC,DM,DR is very low, it does not seem to be proportionate to have such a significant distortion imposed on market participants. Members therefore urge ESO to remove the maximum ramp rate rule.	and reserve services. We will need to assess the impacts on balancing cost if we were to overhold. This impact assessment could not be completed during the autumn because our teams were focused on winter readiness activities. We will revisit this opportunity in Release 2.

Residential Response We are concerned that DC,DM and DR are not technology agnostic across different participant sizes. In practice, the terms and conditions prevent other types of service providers (such as aggregated small-scale resources) that are fully capable of technically providing the frequency response services from participating due to restrictive registration and participation requirements that are not suitable or proportionate for aggregated small-scale participants. One of the primary aims of evolving ESO's suite of frequency response services is to better enable net-zero operability of the system and open up access to new types of service providers – especially the growing fleet of domestic scale resources. But ironically, the transition from FFR to the new suite of services has made it harder (rather than easier) for such aggregated resources to participate. We urge ESO to reform the service rules (eg testing process, performance monitor strategy, data submission requirements and unit level registration requirements) to reduce barriers to participation so that compliance requirements are proportionate for small-scale resources. Restricting access to these types of resources is an unfair restriction on competition that makes these services more expensive than necessary.	**Residential Response** Thank you for highlighting this area for development to improve access for domestic-scale assets. We are continuing to assess options to improve the service and reduce barriers to entry whilst maintaining system security and would welcome further discussions with Respondent D and its members on methods of achieving this. Thank you for your feedback. As this is not specifically part of this Response Consultation, we would welcome the opportunity to engage with you separately on this topic and understand the future developments that could be made in this area. We would welcome your contribution on the designs and ideas you have.
Using multi-pair BODs ESO previously published a document entitled *"Unlocking stacking of BOAs with frequency response services".* This	**Using multi-pair BODs** Since this topic sits outside of the Release 1 consultation, we would be happy to discuss this with you separately. Please contact Fergus Clunies-Ross to follow up on the discussion. Many thanks.

piece of work proposed a method for using multi-pair BODs to present the cost of sacrificing a response contract's payment, allowing the BM control room to "erode" DC/DM/DR provision. The document states that this proposal would not be completed and implemented until ESO was satisfied with current performance. We would like to ask: is this still on the roadmap for these services? If so, we would welcome the opportunity to contribute to the design and trialling of this scheme.	
Publication of Responses As part of previous consultation processes, ESO have published all questions and responses from participants in an anonymised format. We would welcome the publication of this document again. Alternatively, if ESO is unable to publish all consultation responses, where there are questions and answers that ESO thinks will be useful/ relevant to industry we ask that these specific responses are published in an anonymised form.	**Publication of Responses** We will ask each respondent if they are comfortable for the ESO to anonymously publish the responses, and if possible, we will address your suggestion.
Publication of Performance Data Some Respondent D members recall that ESO announced the intention to publish anonymous performance data from all assets across the frequency response services. Some Respondent D members believe this data (albeit anonymous) will be incredibly helpful for industry to maintain high standards of the service and allow providers to benchmark themselves against the industry average.	**Publication of Performance Data** We don't currently intend to publish performance data from all assets participating in frequency response services. If this is something that providers see having benefit, we are open to discussing this with industry as a future opportunity.

Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
Respondent D asks ESO to defer to members directly regarding this question.	

Respondent E

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
These comments are in relation to consistency between the new service terms and other supporting documents. **DM Testing Analysis Tool** It would be helpful if the next release of the DM Testing Analysis Tool was updated to receive 1800s of data for Test 4, rather than 900s. And the same for the example graph shown in the Tool User Guide (to show 0-1800s rather than the current 0-900s). These have caused confusion for some clients over whether Test 4 has a 15mins or 30mins duration. **DC Testing Analysis Tool** As RRmax has been removed from the service parameters, it would also be helpful if the T+fast first pink dotted line was removed from the DC Testing Analysis Tool for tests 1.5-1.12. This has been causing confusion regarding whether there still is a restriction on the max ramp rate for the DC frequency injection tests.	Thank you for your feedback and engagement in this Release. **DM Testing Analysis Tool** DM testing tool will be amended to reflect the 1800 seconds testing duration required for Test 4 **DC Testing Analysis Tool** T+Fast line for early response can be removed – this appears to be a legacy requirement when the service had a 0.25 lag
Do you have any comments on the highlighted mapping for the services?	
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Annex 1: Do you have any comments on the highlighted mapping for DC service?	
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Do you have any other comments on the proposed changes to DC, DC, DR?	

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Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
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Respondent F

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
Removed due to confidential information	***Removed due to confidential information***
Do you have any comments on the highlighted mapping for the services?	
No Comments	
Annex 1: Do you have any comments on the highlighted mapping for DC service?	
Respondent F has no further comments on the mapping of the services	
Do you have any other comments on the proposed changes to DC, DC, DR?	
ABSVD The new service terms state that ABSVD will continue to only be applied to BM assets. NGESO needs to approach ABSVD in the same way for both BM and non-BM assets. Applying ABSVD to BM only will cause disparity in market participants pricing, which in a Pay as Clear market could result in a higher overall cost of service.	**ABSVD** Thank you for your feedback. We have assessed the option to apply ABSVD to non-BMUs the same as BMUs. There is a system change required which is in the process of being delivered under the new Settlements programme. This development is expected to be completed in Q2 of FY 2023/24 and it may require a change to the service terms. This could form part of Release 2, depending on the system development timescales. We will be engaging with industry on Release 2 early in 2023.
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
Removed due to confidential information	***Removed due to confidential information***

Respondent G

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.

	Thank you for feedback and continued engagement with response reform.
Durations tests, tolerances and activation points between services 1 – Relates to ALL Reference: Page 25 of Procurement rules document. “Please note that a single duration test can be used for all Response Services (i.e., DC, DM and DR) provided the duration test is for the longest duration required by any service, e.g., the duration test of 60 minutes for DR can be used for DM and DC.” This is a sensible approach and will surely shorten the test times. However, there’s a discrepancy between tolerances of DR and the other two. While the duration tests for DC and DM have a +/- 3% tolerance (our understanding), DR looks at the minimum response achieved within the 10 seconds to 60 minute timescale. This means there’s no minus tolerance and the plant should never fall below its rated/contracted power even slightly. If the same tolerance gets introduced for DR, then a duration test for DR sampled at 20 Hz could be used for the other two. Frequency signals are also different between the services. E.g. 49.8Hz is used for full contracted power while testing for DM whereas it’s 49.5 for DC. Would this present a problem with the above amendment?	**Durations tests, tolerances and activation points between services** We can, if required, test the duration for the 60 minutes required for DR and then accept this contracted power level for DM and DC. The required delivery duration is shorter for DC and DM, therefore we have included the option for units to be tested separately at higher contracted power levels for units which can offer increased output over shorter periods than those required for DR. As you note due to the different delivery requirements for each service the frequency signals are also different between the services. As a result we need to run individual response tests using different test signals for each service that the unit is qualifying to participate in. The duration test for DM DR and DC service all have a 2.5% standard deviation allowed for the duration of the test. For the duration test as it a test that demonstrates full power then the deviation point used is less important than the time and MW elements of the duration test.
Appendix D vs Table 1 2 – Relates to DC	**Appendix D vs Table 1**

Reference: Table 1 - Service Specification: Full Delivery (1s (but no faster than 0.5s)) Is changing to: Full Delivery (1s). This contradicts example graphs in Appendix D – please state which is correct.	We have reviewed the graphs provided in Appendix D and cannot find any contradiction. With the removal of the wording limiting faster delivery, the graphs should all show delivery within 1 second as required.
3 – Relates to DM Reference: Page 27, Table 9, Test 1. Frequency Injection Profile corresponding with times seems to be there by mistake (this table is for DM).	**3 – Relates to DM** Thank you for highlighting this error on the included frequency injection profile. As you note this table was for Dynamic Moderation only and we have removed from the Dynamic Containment Test Requirements section.
Difference in sample rates 4 – Relates to DR Reference - Page 65 “The minimum sample rate for Test 1 is 10Hz and for Tests 2 and 3 2Hz. See Appendix A for information on test signals.” Why is the minimum sample rate for Test 1 different from 2 and 3? 10 Hz is harder to achieve and once established, it could be used for 2 and 3 as well.	**Difference in sample rates** There is a code requirement (ECC6.6.2.1 and ECC 6.6.3.2) for units to be tested at 10Hz sample rate for frequency control tests. This can be demonstrated in Test 1 allowing for Tests 2 and 3 to be conducted at the lower sample rate of 2Hz.
Ramp time lower bound removal for DC 5 – Relates to DC Reference – Service Terms Document, page 42	**Ramp time lower bound removal for DC** We have been working to update both our tools and our guidance documentation and we expect to have these ready to share early in the new year.

Lags and ramp limits Lag upper bound (maximum initiation time): $T_{iMAX} = 0.50\ s$ Lag upper bound tolerance: $tol_{iMAX} = 0.05\ s$ Ramp time upper bound: $rr_{max} = T_{dMAX} - T_{iMAX} = 0.50s$ Ramp rate (proportional) lower bound: $rr_{min} = \frac{1}{rr_{max}} = 2\ s^{-1}$ We can see that the “ramp time lower bound” has been removed from the current service terms. This should mean that there is no limitation to how fast the asset can respond. Will the testing guidance, analysis tool and the tool user guide be updated to reflect this? **Review for response curves for DM and DR** Reference: General comment DM and DR operate in a much narrower frequency band (+/- 0.2Hz) than DC. It’s further tighter for DM, as the plant needs to deliver 95% of its contracted power within a 0.1Hz frequency band (this is from 50.1 to 50.2 or 49.8 to 49.9). What we noticed is that this may bring more noise than stability on the grid in places. The risk is: As the power change is expected to be fast and in big amounts due to the narrow frequency band, this causes measurement instability on the frequency monitors. This can result in spikes in the measurements, therefore causing more spikes in the power response. We have witnessed during DM testing at a few sites, the plant wasn’t able to recover until the frequency moved back to within 49.9 to 50.1Hz. We were able to minimise the noise by slowing the change of response but even that wasn’t enough on some sites. Therefore, we recommend a review of the response curves for DM and DR services.	**Review for response curves for DM and DR** Thank you for your feedback and communicating your concerns about measurement instability caused by DM and DR response curves. The service design parameters have been carefully considered and have been chosen to deliver the optimal support to grid stability with the aim to use DM and DR to offset PSH and to maintain stability we are only using DM in combination with DR. We have run the services at capped volumes to test the service delivery and it is only following this successful assessment phase that we are looking to increase this volume cap. We are always open to suggestions for improvements to the services and would be happy to discuss these suggestions further for consideration in future system design. We are also in the process of developing a Frequency Measurement Standard document which will include further guidance on frequency measurement. We are planning to finalise and release this during FY 23/24 and your input and experience would be most welcome.
Do you have any comments on the highlighted mapping for the services?	
None	

Annex 1: Do you have any comments on the highlighted mapping for DC service?	
None	
Do you have any other comments on the proposed changes to DC, DC, DR?	
Please see above.	
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
I have not. Entering into a single-directional service will be more beneficial than being rejected for both services for our purposes. With a more complex strategy, looped offers may be useful in the future.	Thank you for the feedback

Respondent H

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
No	
Do you have any comments on the highlighted mapping for the services?	
No	
Annex 1: Do you have any comments on the highlighted mapping for DC service?	
No	
Do you have any other comments on the proposed changes to DC, DC, DR?	
Grace periods Yes. Is it going to be applied retroactive? To be asked for in the consultation We want it to be retroactive due to the level of penalties that all market agents, us included, have experienced	**Grace periods** Performance monitoring proposed changes will be effective from the go-live date and will not be applied retroactively – we are working to a deadline of April 2023. The ESO has implemented a grace period approach for penalties applicable from April 2022. This approach does not penalise for the first second for Dynamic Containment (DC) and Dynamic Moderation (DM) or the first 10 seconds for Dynamic Regulation (DR) after switching among DC/DM/DR contracts including from Firm Frequency Response (FFR) to DC/DM/DR contracts. This was communicated and agreed with providers on 13 July 2022 via the Settlement Queries mailbox. This approach did not constitute a change to the service terms in place.
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
No	

Respondent I

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
Alignment and streamlining of the quantity of relevant documents is supported.	Thank you for feedback.
Do you have any comments on the highlighted mapping for the services?	
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Annex 1: Do you have any comments on the highlighted mapping for DC service?	
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Do you have any other comments on the proposed changes to DC, DC, DR?	
GSP Group Aggregation 50MW Cap removal is appropriate given relevant assets are being built bigger than this threshold and would be de-rated as a consequence. No other balancing service or ancillary market has a MW cap and hence the removal aligns the boundaries of DC/DM/DR with other services. The Summary document confirms the intention to align DC to DM and DR from GSP-group aggregation perspective; but further clarity on why GSP group aggregation has been deemed acceptable, should be provided by the ESO.	**GSP Group Aggregation** Thank you for your feedback, we are more than happy to provide further clarity on the GSP group aggregation rationale. We have further reviewed the risks related to aggregating at GSP Group for DC. Following this review, we proposed to re-instate aggregation at GSP Group. We will be exploring other options to improve visibility with aggregators, increasing monitoring of units aggregated at GSP Group, and exploring the level at which a cap on the overall volume of aggregated units could be set. A full list of actions we set out to enable the aggregation of DC at GSP Group level is in the 'next steps' section of Reintroduction of aggregation at GSP Group for DC document that we published earlier in the year. The timelines differ to what was depicted in the document, as we move to an annual development cycle.
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
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Respondent J

Do you have any comments on the proposed changes to the service terms for DC, DM, DR? Please provide rationale.	
Removed due to confidential information	***Removed due to confidential information***
Do you have any comments on the highlighted mapping for the services?	
Removed due to confidential information	***Removed due to confidential information***
Annex 1: Do you have any comments on the highlighted mapping for DC service?	
Removed due to confidential information	***Removed due to confidential information***
Do you have any other comments on the proposed changes to DC, DC, DR?	
Removed due to confidential information	***Removed due to confidential information***
Have you used looped offers (i.e., offers of a low-frequency product linked to an offer of the high-frequency product within the same service, where both products must be either accepted or rejected, a looped order's block code is C88 in DC/DM/DR auctions) in DR? If yes, could you please explain what motivates you to use looped offers? If no, could you please explain what discourages you from using looped offers?	
Removed due to confidential information	***Removed due to confidential information***