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Short Term Operation Reserve (STOR) Terms and Conditions - Assessment Principles: Algorithm Changes

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.

This letter confirms changes to the terms and conditions (in accordance with the EBGL amendment process) for the Day Ahead procurement of STOR, and how they comply with Article 18 of EBGL, for which we request approval from Ofgem. Detailed references to the relevant service terms for STOR have been included in Table 1, Annex 1 of this letter. For the avoidance of doubt, there are no changes to the mapping of EBGL Article 18 against the STOR documentation as a consequence of the changes to the Assessment Principles.

If approved, these amended STOR 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 STOR terms will follow an amendment process which is compliant with the EBGL amendment process requirements.

In accordance with EBGL, a consultation on the Article 18 STOR terms was undertaken from 12 August 2021 to the 13 September 2021. During this period NGESO engaged with industry via a webinar with Q&A session. Following the EBGL consultation for STOR, we have made only minor charges to the Assessment Principles based on the email response from yourselves which we agree with and improve the terms. These changes are covered in Table 2 in Annex 2. In total, we received 4 consultation responses, and have responded to each of these. Table 2 in Annex 2 of this letter includes these responses, and NGESO's reply to the points raised.

If you have any queries regarding this proposal, please contact steve.dugmore@nationalgrideso.com.

Yours sincerely

David Wildash

Market Services - Senior Manager

Annex 1

Amendment of EBGL Article 18 mapping for STOR Terms and Conditions requirements

This document does not constitute compliance with Article 18 of the EBGL. Its purpose is to demonstrate where new Terms and Conditions for STOR in the scope of EBGL Article 18 can be found within the new STOR documentation. Where there is any conflict between this document and the STOR documentation, the STOR documentation shall take precedence.

Table 1

Below is the mapping of EBGL Article 18 against the STOR documentation.

EBGL Article	Subject Matter	STOR (Day Ahead) documentation
Article 18.4a	Define reasonable and justified requirements for the provision of balancing services	STOR (Day Ahead) Service Terms – paragraphs 4, 5, 6, 7, 8, 9, 10, 11 and 19
Article 18.5a	Rules for the qualification process to become a balancing service provider pursuant to Article 16	STOR (Day Ahead) Guidance Document – Registration/Prequalification for STOR, Active Network Management Zones STOR (Day Ahead) Auction Rules - paragraph 4
Article 18.5b	Rules, requirements and timescales for the procurement and transfer of balancing capacity pursuant to Articles 32, 33 and 34	STOR (Day Ahead) Guidance Document – Daily Auction STOR (Day Ahead) Auction Rules - paragraphs 5, 7, 8 and 9 STOR (Day Ahead) Assessment Principles) STOR (Day Ahead) Service Terms – paragraph 20 STOR (Day Ahead) General Terms and Conditions – paragraph 7
Article 18.5c	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;	STOR (Day Ahead) Guidance Document - Registration/Prequalification for STOR
Article 18.5d	Requirements on data and information to be delivered to the connecting TSO and, where relevant, to the connecting DSO during the prequalification process and operation of the balancing market	STOR (Day Ahead) Guidance Document - Registration/Prequalification for STOR, Daily Auctions, Availability Declarations STOR (Day Ahead) Auction Rules – paragraphs 4, 5 and 11.3 STOR (Day Ahead) Service Terms – paragraph 19
Article 18.5f	Requirements on data and information to be delivered to the connecting TSO and, where relevant, to the 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;	STOR (Day Ahead) Service Terms – paragraph 19
Article 18.5i	Rules for the settlement of balancing service providers defined pursuant to Chapters 2 and 5 of Title V	STOR (Day Ahead) Guidance Document – Clearing Price. Settlement STOR (Day Ahead) Assessment Principles STOR (Day Ahead) Service Terms – paragraphs 10, 11, 12 and Schedules 1 and 2 STOR (Day Ahead) General Terms and Conditions – paragraph 4
Article 18.5j	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 period	STOR (Day Ahead) General Terms and Conditions – paragraph 4
Article 18.5k	Consequences in the case of non-compliance with the terms and conditions applicable to balancing service providers	STOR (Day Ahead) Auction Rules – paragraph 4 STOR (Day Ahead) Service Terms – paragraphs 9 and 18

Annex 2

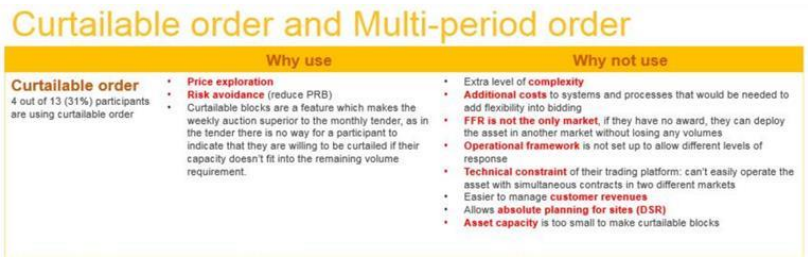
EBGL Article 18 Short Term Operating Reserve Terms and Conditions Consultation Response Summary

Table 2

Summary of responses and key themes from the consultation, including NGESO responses and comments. For responses provided on the official template we have only included the specific questions the providers responded to, all other comments where no response was given we have assumed 'no comment' from the provider. Where providers have submitted detailed responses, NGESO has summarised the response into key themes.

	Response or Key Theme	NGESO Comments
1	Flexitricity does agree with the approach to amend the algorithm to allow for the true lowest cost option to be calculated and selected, thus providing better value for customers.	Thank you for your response. We appreciate your feedback and support on these changes.
2	Limejump We are supportive of the proposed changes which we believe will result in a less volatile prices and reduce the costs of providing the service. We support the comparison suggested where NGESO exclude non-curtailable supply. Will this methodology be applied to the Slow Reserve product when it is launched in April 2022?	Thank you for your response. We appreciate your feedback and support on these changes. We are still working up the details of the methodology, but our aim is to be consistent across services.
3	Centrica Yes We believe the proposed changes are sensible and address shortcomings in the previous approach. The new approach will allow the ESO to choose the cheapest option, ultimately leading to lower costs for consumers.	Thank you for your response. We appreciate your feedback and support on these changes.
4	Sembcorp No. We do not believe that the proposed modifications serve either to benefit the STOR market or	Thank you for your response. We appreciate your feedback on the proposed changes.

	provide better value for the end consumer. We would highlight that the STOR market is relatively freshly launched and that it is also scheduled for replacement by a new Slow Reserve service next year – we are not convinced sufficient time has been spent in the current market to start to make informed changes, especially as it has not experienced a winter environment or that such changes are worthwhile when they are by design short lived.	Since go live we have monitored the results of each auction including the overall cost of procurement. We have listened to and sought further feedback from across the industry, including having detailed discussions with Ofgem. We have seen a low uptake of curtailable bids, which consequently has led to a higher number of auctions with paradoxically rejected bids than originally expected. We further engaged with industry to provide further education on curtailable bids, including how to submit them into the auction platform, but the uptake has remained low. Applying a test and refine approach, we feel that it is the right time now, to make changes to the algorithm. The changes to the algorithm will result in each auction always selecting the lowest total cost. This ensures the savings to the end consumer are realised at the earliest opportunity, rather than delaying further and waiting for the implementation of future reserve products.
	We consider National Grid having the mechanism to automatically vary its procurement volume targets in order to reduce the clearing price to be against the interests of a transparent pay as clear auction in the STOR DA market. Providers tender their capacity in the specific knowledge of the MW levels targeted for the auction and these levels being changed after the fact (either by the counterparty or an algorithm) invalidates much of the markets ability to price itself correctly and undermines the working of the auction as a transparent and fare mechanism. This is particularly the case in a pay as clear mechanism where such post fact changes can radically change commercial thinking. Furthermore, we do not see how the proposed changes will make curtailable capacity tenders more attractive, indeed we consider it likely to be the opposite. The market already sees several curtailable tenders present from	When capacity is offered, NGESO will only procure it when the overall cost of procurement is lower than the alternative cost of procurement, when the cheapest option per MW/h is accepted. The procurement target remains unchanged from what is currently being used. The changes to the algorithm are to enable the lowest cost solution to be chosen out of the existing curtailable option, over holding and under holding. The algorithm will select the lowest cost out of these 3 options. The overall aim of the new algorithm is not only to encourage more providers to be curtailable, but more importantly is aimed at lowering the overall procurement cost as much as it can in order to maximise consumer benefits. The new algorithm is aimed at lowering the overall procurement cost as much as we can in order to maximise consumer benefits. Feedback from providers on curtailability has been mixed with some providers being clear in the consultation that this was a good methodology and utilising this functionality in their bid submission, whilst others making it clear that it is not their intention to utilise curtailable bids. One provider has said that curtailable bids are pointless from their perspective as if they

	both BM and nBM parties – by allowing Grid to alter its MW procurement targets these units will suffer more when part accepted compared to whole units which will proportionately receive a higher rate across their entire capacity – the logical response of these units would be to make their units uncurtailable so that Grid are forced to over procure to accept them, thus increasing their site revenue and the cost to the consumer. We would highlight from our point of view the barrier to curtailable tendering is not one of the auction mechanisms MW caps but are twofold… ➢ nBM providers are required to declare their curtailed MW into the PAS interface – this means any curtailed capacity is pushed out of the market – this compares to a BM unit where curtailed capacity would still receive dispatch payments if instructed. ➢ The lack of child bids in the STOR DA mechanism means providers can not split capacity by price to allow volume to price into the market at different steps as was the case for the week ahead FFR trail. Curtailing capacity or generating at a reduced setpoint often has a economic impact on the plant in question and so parties would be more likely to offer curtailable capacity if there was the feature to set capacity at different prices in the auction.	are curtailed they have effectively sterilised that capacity but are not being paid for it. The other direct feedback received was that curtailing aggregated units is not beneficial and not an option due to operational issues with which assets to run/not run, control platform constraints (asset selection etc) and with financial reconciliation “would be messy, having to cross-reference which assets were contracted and/or utilised each day”.' It is purely a provider’s choice to decide whether to submit a curtailable bid or not. If they feel it is more beneficial for them to make their bid non-curtailable, they absolutely can do it. ESO only over procure when the over holding cost is more cost effective. If a provider is happy to take the risk that they may get fully rejected thus £0 revenue, ESO won’t have a problem and the impact of this is that it won’t increase the cost to consumer as we are choosing the cheapest option. The STOR service cannot be stacked with any other service. BM units are required to MEL to the STOR contracted value during firm STOR windows. With regards to child bids, these were introduced for the auction trial as for some providers, the costs (£/ MWh) to run the machine to SEL might be more expensive than the cost to increase the output from SEL to MEL or a certain level between SEL and MEL. Child bids gave these types of providers a chance to reflect this and make themselves more attractive by allowing the child order to “ save” its parent, this means they can spread their starting costs. Analysis has shown that, we don’t believe providers are using the parent and child block in the way we originally designed. The providers used it more as a “hockey stick strategy” to test our cap price or push the MCP close to cap price. Auction Trial feedback on this can be found below: 

	Finally, we believe that Grid should under no circumstance aim to under procure for the STOR DA service when available capacity remains priced below the clearing price. On the concept that the administered cap price set by National Grid is a valuation of the cost of alternative actions any under holding would trigger the requirement that National Grid would need to procure these alternative products likely in the BM or through bilateral agreement at a greater price than what was saved by underholding.	The cost calculation for underholding is extracted below for ease. **Underholding cost** Using the same order reject the first unit that crosses the max MW threshold and then don't look for any other options and work out the new total MW and new clearing price $$\text{Total underholding cost} = \text{cost of underholding} + \text{missed opportunity cost}$$ $$\text{cost of underholding} = \text{total MW (underholding)} * \text{clearing price (underholding)} * \text{hrs}$$ $$\text{Missed opportunity cost} = \text{Max MW (from buy order)} - \text{total MW (underholding)} * \text{Price (from buy order that corresponds with Max MW)} * \text{hrs}$$ We have considered the potential cost to fulfil the residual volume as the 'Missed opportunity cost'. The buy order cap price is based on the alternative costs of taking the action in the BM.