

Storage Behind Constraints webinar

6 August 2026

Q&A pack

This document sets out responses to questions raised during and after NESO's Storage Behind Constraints webinar in August 2026. The webinar outlined NESO's work to address repetitive re-trading by storage assets behind transmission constraints. It covered the short-term options under consideration, including Options 3A and 3AA, and the wider programme of enduring constraint management solutions.

These responses reflect the information available at the time of publication. Where supporting analysis remains in development, this is noted in the relevant response. Further quantitative analysis and details of any preferred option would be provided through the relevant Balancing Principles Statement consultation process.



List of Abbreviations

Abbreviation	Definition
ADE	Association for Decentralised Energy
BESS	Battery Energy Storage System
BFS	Boundary Flow Smoothing
BM	Balancing Mechanism
BMU	Balancing Mechanism Unit
BOA	Bid-Offer Acceptance
BPS	Balancing Principles Statement
BSUoS	Balancing Services Use of System
CBA	Cost-benefit analysis
CCP	Constraints Collaboration Project
CCGT	Combined Cycle Gas Turbine
CMM	Constraint Management Market
CMIS	Constraint Management Intertrip Scheme
DSO	Distribution System Operator
EMAC	Electricity Markets Advisory Council
FPN	Final Physical Notification
GTMA	Grid Trade Master Agreement
LDES	Long-duration energy storage
Ofgem	Office of Gas and Electricity Markets
PN	Physical Notification
PSH	Pumped Storage Hydro
RES	Renewable energy source
RRT	Repetitive re-trading
SoC	State of Charge
TCLC	Transmission Constraint Licence Condition
TNUoS	Transmission Network Use of System

	Question	Answer
1.	Given likely second order impacts arising from 3A or 3AA outside of balancing costs. A) Will NESO publish the detailed modelling, assumptions and cost-benefit analysis prior to seeking approval of any BPS amendment? B) Why does not NESO focus only on recommendations to Ofgem for long-term options.	A) In amending the Balancing Principles Statement, we will seek to show that the changes put forward are consistent with our duties and licence obligations. These include licence conditions C1.7 and C1.11. We expect to provide quantitative analysis in support of our preferred position during that consultation process. B) We have a mandate under our licence, duties and existing responsibilities to implement many of the options that have been put forward. We assigned some of the proposals to Ofgem or DESNZ because they could involve powers or jurisdiction that go beyond our licence.
2.	Why is storage being singled out when pumped hydro and wind also schedule themselves for max export even when they know there is a constraint and they will get bid off?	The storage we are focusing on in this programme covers both Battery Energy Storage Systems (BESS) and pumped storage hydro. We are considering storage as this is where the same energy is repeatedly put back into the system and curtailed. For wind, any generation that is curtailed in any period cannot come back in a subsequent period. FPN accuracy for wind units has been a focus for NESO since 2024. Following the release of guidance on Good Industry Practice, we have observed significant improvements in wind PN accuracy.
3.	Does NESO consider Ofgem approval will be required before implementing 3A or 3AA, and what is the anticipated timeline from recommendation to implementation for each?	For 3A and 3AA, implementation timelines would follow a Balancing Principles Statement consultation. Implementation timescales are estimated as <6 months from a decision with Option 3AA being slightly longer than 3A due to needing more process change. Ofgem approval is not part of the C9 process; however, we engage Ofgem on this work for their input. Ofgem have the right to direct changes to the BPS, but not to veto our changes. This change in our licence was made as part of the transition from National Grid ESO to NESO.

4.	What CBA estimate has NESO made on the additional cost of selecting other generators over storage during constraints, and how this compares to the estimated total savings of 3A and 3AA respectively?	This analysis is currently underway and will be shared with industry, most likely via the C9 consultation process.
5.	What is NESO's view of the opinion expressed in this article, that NESO should 'limit pricing of retrading actions, rather than their volume'? https://modoenergy.com/research/en/banning-storage-balancing-mechanism-cost-consumers-constraints-repetitive-retrading-neso-july-2026	It is an interesting proposal, but it wouldn't help from a scheduling perspective because there would still be infeasible energy clearing in wholesale trade that would need to be bid down in the BM. This adds to the real-time workload in the control room. Having infeasible energy in wholesale trade deprives units which may have been able to physically deliver energy from clearing in the wholesale market.
6.	How does Option 3a satisfy the criteria to not aggravate emissions - surely if you don't charge storage during the constraint then it can't export after the constraint, therefore you use more gas overall?	Option 3A reduces the volume of energy needed to be bid off behind a constraint and so reduces the amount of replacement energy needed. Storage assets could still self-dispatch to import during a constraint, delivering system benefit. The alternate supply of generation could also be met by assets other than gas on the other side of the constraint. Option 3AA could be net neutral from an emissions perspective if storage units discharge as many times as they charge.

7.	How have NESO arrived at the decision that options 3A and 3AA are compatible with their license condition and do not require submission to Ofgem?	Currently we see both inefficiency from RRT behaviour and wholesale market distortions. The options we are considering are attempting to address this, which aligns with our licence obligations. In amending the BPS we will be seeking to show that the change will be consistent with our licence obligations such as C1.11. <i>"The licensee must carry out its operational actions in a way best calculated to ensure it does not unduly:</i> <i>(a) distort competition; or</i> <i>(b) create inefficiency,</i> <i>across the wholesale electricity market and Balancing Services markets."</i> Our licence also states that, <i>"the licensee must not unduly discriminate between any persons or class or classes of persons."</i> In this instance, we believe that different treatment is necessary to comply with C1.11 and C1.7 owing to the technical differences of storage relative to other technologies which are the cause of RRT. The process for changes to the BPS sits under licence condition C9 which do not need approval by Ofgem. We are however engaging Ofgem on this topic.
8.	If Storage is going to be de-prioritised, why is it not at least being remunerated on pay-as-clear in line with the highest clearing RES technology?	The purpose of deprioritising would be in pursuit of operational practices which are more economic and efficient. If we were to then forego some of that efficiency by paying storage, then the arrangement would be higher cost for consumers.
9.	Please could you elaborate on the concern that 3AA would reduce predictability of control room actions?	The reduction in predictability of actions is in comparison to option 3A. Under Option 3AA a unit may still be skipped at times if operators wish to delay charging a unit if there are operational concerns over the period where discharge may come back or where importing is operationally more beneficial (e.g. in the most difficult part of the constraint to manage).

10.	have you looked at the knock-on market impact and wider societal impacts in the CBA for 3B? As opposed to just looking at constraint costs per SP?	3B has been discounted on the basis that it wouldn't reduce constraint volumes.
11.	With option 3AA, is there a risk that a storage unit could redispatch itself to export following a BOAI to charge, starting the cycle of repetitive re-trading over the constraint period?	Yes, it is possible that a storage unit could redispatch to export following a BOA to charge. Under option 3AA that discharge would not be curtailed. This does mean in the extreme a storage unit could continually cycle between importing (BOA) and exporting (PN) throughout the duration of a constraint; however, we would expect the number of cycles to be limited by asset warranties in the case of BESS.
12.	Outside of a general understanding of grid systems, how can any asset know (with certainty) ahead of gate closure (pre-bid submission) that they are within a constraint? Surely any solution would require more transparency on this?	Under GTMA Schedule 7A, the asset does not need to determine independently that it is behind a constraint. NESO identifies a predictable constraint requirement and procures relief directly from relevant BMUs ahead of gate closure. Greater transparency may support participation, but as demonstrated by existing practice, for every asset is not a prerequisite.
13.	Why put in an interim solution with significant risks and impact, when Ofgem highlighted the biggest costs is from not having locational procurement of balancing services. So the priority should be speeding that first and then putting in an enduring solution and speeding that up	Many batteries that perform repetitive re-trading have reserve contracts, but we still see this behaviour in storage assets that do not have ancillary service contracts. Therefore, while locational procurement of services is beneficial, we do not believe it would necessarily reduce the instances of RRT and hence there is still value in this work.
14.	Is the aim in effect to ensure storage dispatches as it would with locational pricing?	Not explicitly, but the outcomes could be similar.
15.	Has the boundary flow smoothing project not already been discarded? Is this still being considered?	This is correct. The development of the storage behind constraints options pre-dated this decision.

16.	Are the NESO team working on this aware and linked in with the CCP team that a decision has been made not to progress with BFS and storage has been excluded from the CMIS tender. NESO should update slides to ensure they're aligned, these options have stopped so they cannot "continue in the current programme".	We were providing information from the March and April workgroups, including the categories that were assigned at the time. We have updated the slide pack to reflect the latest recommendations from the Constraints Collaboration Project.
17.	Has NESO considered the possibility that option 3A might reduce flexibility to the control room in some scenarios? Bidding a storage asset off towards the end of a constraint, so it is available to discharge once the constraint ends (and could lead to efficient use of transmission capacity) is a different scenario to bidding a storage asset off towards the start of a constraint. Has NESO considered the option of retaining flexibility in real time, but taking into account expectations of behaviour to minimise overall costs, rather than focussing on in-merit dispatch within settlement periods?	We agree that taking an action on storage when a constraint is ending versus taking the action at the beginning would have different implications of the behaviour of storage assets behind constraints when constraints are binding. We are considering if this could form another variation. However, options which involve having to pre-empt the end of a constraint could be complex to implement, and this may detract from the consistency of the solution.
18.	has neso explored the DSO flexibility market structured for 4b and 4c as the time to launch could potentially be reduced by coordinate with the market facilitator and learning from their availability markets.	We have experience in using such platforms from NESO's own flexibility markets.
19.	Is the NESO RRT team in touch with the Ofgem LDES team, given the proportion of minded-to LDES capacity located above B6?	Yes.
20.	Where can I find the latest information on the dispatch reform workstream?	The dispatch reform workstream was most recently discussed in the March meeting of NESO's <u>Electricity Markets Advisory Council (EMAC)</u> .

21.	NESO noted in June webinar, much of 3A/3AA savings is from reduced replacement costs; what are assumptions behind this?	At a high level the logic is that if there is less volume of RRT then less replacement energy needs to be procured via the BM.
22.	At the two workshops earlier this year I asked NESO what evidence they had that reducing Scottish storage RRT & BM Bids (which usually sees NESO receive £s) would actually result in a reduction to Offer volumes in England & Wales BM Offers. I highlighted the regular occurrence of E&W storage behaving with their own RRT during Scottish constraints, repeatedly adding new FPN charges and gaining repeated BM Offers Up to 0MW, with NESO spending extra £s. Will less Scottish RRT definitely result in less E&W RRT? If not, then the risk is that NESO end up spending more £s, increasing their balancing costs.	If the volume of bids to manage constraints drops, then the volume of offers needed the other side of the constraint also drops. This would result in NESO having to take fewer offers, resulting in cost saving.
23.	Is there any intention to limit southern CCGTs setting low/zero FPNs during constraints (high northern wind) and setting high offer prices, far above trading prices, which NESO has to dispatch. Surely higher cost savings could be explored here?	This is outside the scope of the storage behind constraints programme.

24.	Why is 6C different from 3C? Whether it is a single cycle limit, or a 2x or 3x daily limit would seem to have the same set of requirements for NESO to manage & control. Not clear why 6A needs to go to Ofgem but 3C does not.	3C is an operational rule: NESO would limit redispatch to one cycle per constraint period, requiring real-time tracking and control. 6C was guidance on what constitutes a reasonable number of daily cycles, but no enforcement mechanism currently exists. If 6C became an enforceable limit, it would face many of the same implementation requirements as 3C. Also, 3C is not exempt from regulatory involvement, it's based on DESNZ and Ofgem support. The difference with 6A is that it creates a new capacity reserve market and associated payments, so it additionally requires regulatory clarity on TCLC and whether licence changes are needed.
25.	Scottish assets pay the highest rate of TNUoS across the BESS fleet. How does this align with the principle of firm access?	The locational element of TNUoS for generation is a charge that reflects the cost of transporting energy from generation to demand. Practically this means that the further from the main demand centres, the higher the TNUoS charge, as power has to flow over a greater distance of network infrastructure. The magnitude of TNUoS charge has no relation to the level of access rights a user has on the transmission network. Rather, under 'Connect & Manage', all users have firm access to the wider network, with the associated costs of constraints socialised via BSUoS which is flat rate and collected from final demand.
26.	The ST Storage Behind Constraints options are likely to have a significant impact on the revenue streams of existing assets located in behind a constraint - it may also affect investor confidence for future assets. Have NESO considered the impact on the Clean Flex Roadmap ambitions? How has NESO engaged with Ofgem and DESNZ to date?	Third party analysis finds that even with RRT removed, storage assets locating in Scotland could earn higher revenues than equivalent projects locating in the south. <u>Quantifying GB BESS revenue at risk from reform - Timera Energy</u> We are engaged with Ofgem and DESNZ on this work.

27.	Is there a risk that the "short term" option ends up being long term due to delays of deciding and implementing the agreed long term plan?	The short- and long-term categories refer to the amount of time that would need to implement them, i.e., 3-6 months versus 1-2 years. The options are not mutually exclusive and some of them could be combined in the enduring solution.
28.	How long will the temporary measures remain in effect. Is there a risk that they stay in effect in perpetuity?	As above, the short- and long-term categories refer to the amount of time that would need to implement them, i.e., 3-6 months versus 1-2 years. The options are not mutually exclusive and some of them could be combined in the enduring solution.
29.	What is the deadline for the feedback form and how will NESO reflect this feedback into any future BPS consultation?	28th August - we would look to address this feedback in any BPS consultation.
30.	Did the attendees at the short-listing framework workshop agree with NESO's short term proposals as presented here?	This was the outcome of the workgroup meetings. A summary was circulated afterwards to workgroup participants, and we didn't receive any feedback suggesting that this was not the agreed outcome of the workshop.
31.	Where can we find further detail on the materiality of the RRT issue? In particular, do NESO have a view of what proportion of storage BM activities/costs are causing the problems described, and can this easily be isolated from other factors?	The most detailed public source is Ofgem's RRT guidance June 2026 https://www.ofgem.gov.uk/sites/default/files/2026-06/Repetitive-Re-Trading-Policy-Paper.pdf
32.	Why are 3A / 3AA preferred over a monitoring-based "cap" approach (eg 3C/6C)? Can you also describe why 3AA is harder to implement than 3A (given potential significant cost implications per Modo analysis)?	3A would be more beneficial for scheduling and is significantly easier to implement than 3C/6C that involve tracking the number of cycles per constraint period or per day. Option 3AA requires more process and system change than Option 3A to ensure only bid to import actions are available at appropriate times in the bid options.

33.	For how long do you expect the "Short Term" options to be in place before an Enduring option is ready for implementation? Will NESO commit to a timeline?	We would expect the option to be in place until any further decisions on alternate options or market reform are made. Short term refers to the timescale in which options could be delivered and deployed as opposed to the length of time that they may be active for.
34.	Will classification and restrictions apply at site or BMU level?	BMU.
35.	Are you going to restrict repetitive re-trading of assets not in a constrained area? Assets in unconstrained area can repetitively schedule charge and be offered off in the opposite manner when bids required in a constrained area.	We are currently only seeking to resolve the repetitive re-trading issue in constrained areas.
36.	Were any options considered looking at pricing behaviour rather than volume (as per the proposal put forward by Modo recently)? You mentioned that the costs of replacement energy are much higher than those of the repetitive re-trading itself; that option could substantially reduce the costs without radically altering the rights of a whole asset class in the BM.	The proposal is similar to 3C or 6C and will be considered in future work. Option 3A does not infringe on anyone's rights. Storage assets behind constraints could still be traded in the wholesale market, or PN and receive the cash-out price.
37.	Could some of the potential benefit of option 4B be unlocked early by the NESO trading team transacting bilaterally with parties with eligible assets, in advance of a long-term solution of creating a new market?	This is being considered through wider work on pre-gate closure options including CMMs and the Octopus/ADE proposal for regional flexibility markets.
38.	Can you please clarify Ofgem's role in the BPS process. I understand Ofgem can veto any NESO revisions and has done for other statements that fall under licence condition C9.	Ofgem have the right to direct changes to the BPS, but not to veto our changes. This change was made as part of the formation of NESO.

39.	The length of a constraint period is not known (it can be 1 hr or 12 hr going into multi-day), this causes significant commercial and operational uncertainty for storage units, and may require updates to CM and ancillary services contracts, not just BPS wording update. If 80% of RRT is caused by PSH why not just use 7A trades as targeted short-term actions instead of implementing complex all industry restriction on all storage assets. You also have to wait for the outcomes of Locational procurement of Response and Reserve and P462	A combination of resource impact (for conducting trades) and desire to run a competitive process due to the fact multiple parties could meet requirements mean that Schedule 7A trades are less favourable. We are however considering this through wider work on pre-gate closure options including CMMs and the Octopus/ADE proposal for regional flexibility markets. While locational procurement of services is beneficial, we do not believe it would necessarily reduce the instances of RRT as we still see this behaviour in storage assets that do not have ancillary service contracts.
40.	Will NESO publish a full Q&A following this session?	Yes
41.	What are the timelines for next steps?	We will be seeking informal feedback from stakeholders until 28th August and following that will undertake a BPS consultation in Autumn.
42.	What proportion of NESO's projected savings for 3A is driven by (a) preventing storage from acquiring additional SoC through BM charging during constraint periods and then sending positive PNs, versus (b) allowing storage to exhaust its existing SoC via exports and cease submitting positive PNs	We will seek to answer this via analysis that we are currently undertaking.

43.	Is preferential access to the BM for certain asset classes (generation only in this case) compatible with NESO's license condition and the BPS?	NESO is tasked with operating the system in an efficient and effective manner. Our licence states that "the licensee must not unduly discriminate between any persons or class or classes of persons." In this instance, we believe that different treatment is necessary to comply with licence conditions C1.11 and C1.7 owing to the technical differences of storage relative to other technologies which are the cause of RRT. This is permissible under our licence condition C9.2: <i>C9.2. The licensee may consider relevant price and technical differences between persons or classes of persons in its procurement or use of Balancing Services.</i>
44.	When will the consultation phase start?	Autumn 2026.
45.	C9 Balancing Principles statement also falls under the requirements for NESO to comply with Condition B6 – Prohibition on discriminating between users	Yes, it says "the licensee must not unduly discriminate between any persons or class or classes of persons." Licence condition C9.2 also states: <i>The licensee may consider relevant price and technical differences between persons or classes of persons in its procurement or use of Balancing Services.</i> In this instance, we believe that different treatment is necessary to comply with C1.11 and C1.7 owing to the technical differences of storage relative to other technologies which are the cause of RRT and this is permissible through condition C9.2.

For further information on the Storage Behind Constraints programme, please visit the NESO website or contact the relevant NESO Markets team.