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Quick Reserve (Phase 2) Enduring Service and Procurement Design Proposal

Version 1.0 – October 2024

Following engagement with industry stakeholders during the development of the initial Quick Reserve service (Phase 1) we have now completed our proposed service and procurement design for the enduring (Phase 2) Quick Reserve service, incorporating both BM (Balancing Mechanism) and non-BM (non-Balancing Mechanism) market participants.

On 30 August 2024 NESO submitted a formal EBR Article 18 to Ofgem in relation to the Quick Reserve service (Phase 1), and as part of this submission, we published a Quick Reserve Summary document version 2.0 (6 September 2024). For consistency, we have used the Quick Reserve Summary document as the basis for this Quick Reserve (Phase 2) Enduring Service and Procurement Design Proposal document, updated to include details of our proposals for the enduring Quick Reserve service.

As part of the Ofgem decision letter, we anticipate that there may be feedback from the regulator also that we would consider as part of our later formal consultation process for Phase 2.

Throughout this document we have clarified the additional service and procurement design requirements applicable in Phase 2 for non-BM units and where necessary provided further Phase 2 clarification for both BM and non-BM units with all updates indicated in blue – see Section 2 for a summary of these changes.

Please note, in line with our other Balancing Services we continue to incorporate (where applicable) the latest Energy Networks Association (ENA) Flexibility Services Standard Agreement into the Service Terms and Procurement Rules for Quick Reserve.

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1. Introduction

Through our Reserve Reform work, NESO are updating the Reserve products we procure to comply with the Clean Energy Package and to better meet system and statutory requirements. Quick Reserve (QR) is aimed primarily at reacting to pre-fault disturbances to restore the energy imbalance quickly and maintain system frequency close to 50.0 Hz. As such, it will replace the legacy Optional Fast Reserve service. Quick Reserve aims to minimise the duration of events outside of operational limits and those outside of 0.15 Hz (the point at which response requirements are calculated).

Following engagement with industry stakeholders we have now completed our proposed service and procurement design for the enduring (Phase 2) Quick Reserve service ahead of formal EBR Article 18 consultation.

Positive Quick Reserve (PQR) and Negative Quick Reserve (NQR) form part of a suite of new Reserve products which NESO are developing to maintain the safe and secure operation of the network.

Reserve is needed for frequency management when there is an imbalance between supply of energy and demand for energy. When instantaneous supply is not enough to meet the demand, the frequency falls; where supply outstrips demand, the frequency rises. Additional generation or demand is needed to re-establish this balance. Initially, this is provided by Frequency Response which initiates automatically according to system frequency. More information on our Response services (Dynamic Containment, Dynamic Moderation and Dynamic Regulation) can be found on the NESO website here.

Reserve is then instructed to replace the energy delivered by frequency response in accordance with system requirements. For NQR, units are instructed to increase demand or decrease generation in full within 1 minute. The inverse is true for PQR. Quick Reserve is open to any technology with the ability to provide a net change in demand/generation of at least 1MW.

2. Updates from Quick Reserve Summary version 2.0

As part of our formal EBR Article 18 to Ofgem in relation to the Quick Reserve service (Phase 1) NESO published a Quick Reserve Summary document (version 2). For consistency, we have used the Quick Reserve Summary document as the basis for this Quick Reserve (Phase 2) Enduring Service and Procurement Design Proposal document,

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updated to include details of our proposals for the enduring Quick Reserve service (Phase 2) and therefore wish to signpost the following updates to industry;

Section 5. Technical Design Summary – Page 7	Updated to clarify baselining requirements and Ramp Rates for Baselining
Section 7. Technical Design ‘key technical design features for Quick Reserve’ – Page 9	Clarification for non-BM for Dynamic Parameters, Physical Notifications, Operational Metering, Stacking/Splitting
Section 7. Technical Design ‘Provider Eligibility’- Page 11	NBM clarification on Control Telephony
Section 7. Technical Design ‘Service Utilisation & Dispatch Mechanism’- Page 11	Clarification for non-BM dispatch via OBP
Section 7. Technical Design ‘Time to Full Delivery – Page 12	Link added to analysis to support 60 second value
Section 7. Technical Design ‘Ramp rates for baselines for energy limited assets’ – page 15	New BM and non-BM clarification
Section 7. Technical Design ‘Operational data Requirements’ page 16	Clarification for non-BM and proposal for publication of data
Section 7. Technical Design ‘Operational Metering’ page 17	BM and non-BM clarification
Section 7. Technical Design ‘Physical Notifications (Operational Baselines)’ page 18	New section for non-BM clarification.
Section 7. Technical Design ‘Submission of Operational Metering and Baselines from non-BM providers’ page 18	New section for non-BM clarification.
Section 7. Technical Design ‘Performance Metering’ page 20	BM and non-BM clarification
Section 7. Technical Design ‘Performance Monitoring’ page 20	Clarification for BM and non-BM
Section 7. Technical Design ‘Baselining’ page 25	Clarification added for non-BM
Section 7. Technical Design ‘Cross Overs’ page 26	BM and non-BM clarification

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Section 8. Procurement Design 'Optional Service' page 27	Clarification added for non-BM
Section 8. Procurement Design 'Auction Timing' page 30	Clarification on proposed enduring auction timing
Section 8. Procurement Design 'Linked Buy-Orders' page 32	BM and non-BM clarification on future use of linked buy-orders
Section 8. Procurement Design 'Revenue Stacking' page 33	BM and non-BM clarification
Section 8. Procurement Design 'Locationality' page 35	Update provided
Appendix 2. Quick Reserve Transition Plan 'Control-room Management' page 41	Further clarity over use of Optional Fast Reserve in real-time.

3. Phased Implementation of Quick Reserve

Our proposed delivery plan for Quick Reserve takes into consideration the need to provide near-term value and savings to end-consumers while acknowledging the NESO IT system development roadmap. The new Reserve products are therefore to be introduced in alignment with the delivery of our new and enduring Open Balancing Platform (OBP) in order to minimise any regret spend on existing systems.

The OBP delivery roadmap is extensive and complex, and as a result, we are unable to launch the full Quick Reserve market (with BM and non-BM dispatch routes) until 2025. However, we identified an opportunity to bring forward consumer value and deliver the service with a BM dispatch route in winter 2024, utilising the new OBP platform in combination with our existing BM systems.

- Phase 1 - Participation through combined BM/OBP systems in November 2024
- Phase 2 - An additional OBP only route to participation in June 2025.

4. Quick Reserve Transition Plan

As we progress with the implementation of the new Quick Reserve service, we have set out how we intend to transition away from existing fast-acting reserve services.

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- We will leave the existing Optional Fast Reserve (OFR) market open until December 2025.
- Quick Reserve and Optional Fast Reserve (OFR) will be operational together from December 2024 (subject to Quick Reserve A18 approval) to December 2025.
- We expect to meet our firm contracted fast-acting reserve (circa 500MW positive and 300MW negative) from the Quick Reserve service, and if additional fast-acting reserve is required, then additional optional services (OFR / Spin Gen) may be used.
- During the transition period we will include the prices of OFR units with similar parameters to Quick Reserve to guide the price of alternative action to help derive the buy-order for Quick Reserve.

See **Appendix 2** for full details.

5. Technical Design Summary

Technical Design Element	Proposal
Direction	Positive and Negative
Minimum Contract Size	1 MW
Provider eligibility	Non-BM & BM units with control/ system telephony during contracted windows
Time to full delivery	1 minute from instruction
Minimum Activation Period	Not greater than 5 minutes
Maximum Recovery Period	Not greater than 3 minutes
Energy Requirement	The unit must be able to deliver the full contracted capacity per QR Window
Operational Metering	1 Hz for both BM and non-BM units
Dispatch mechanism	BOA for BM units OBP dispatch instruction for non-BM units
Notice to Start Ramping	0 minutes
Ramp rates	No maximum ramp up or ramp down rates. Minimum ramp-up and ramp-down rate to be in line with Time to Full Delivery.
Performance Metering	1 Hz
Performance Monitoring	Time to Full Delivery, Availability and Utilisation – Payment Penalties for over (>120%) and under (<95%) delivery
Baselining	All providers will be expected to provide a nomination baseline, equivalent to the BM Physical Notification, at all times, with Final Physical Notifications 60-mins ahead of contracted Settlement Period. Both zero and non-zero baselines allowed.
Aggregation	Yes, per GSP group
Operational data requirements	BM units as per current BM operations Non-BM units to submit BM-like operational data
Ramp rates for baselines	Aligned with Dynamic Response – no limit proposed
Passing through zero	Allowed

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6. Procurement Design Summary

Procurement Design Element	Proposal
QR Window	30-minute Settlement Period blocks
Maximum Bid Size	300 MW
Frequency of Procurement	Daily (day-head) – QR Contract firm procurement. Within day – optional procurement (non-BM only).
Locationality	National
Auction Platform	EAC
Auction Timing	Results by D-1 14:30
Stacking & Splitting	Same MW cannot be sold twice – refer to Revenue Stacking section for more detail
Bid Sizing	≥1MW, integer bids
Linking of bids	By Service Window and Product (Positive and Negative only)
Bid Curtailment Rules	User defined
Payment Structure	QR Contract: Availability + Utilisation Optional (non-BM only): Utilisation only
Payment Mechanism	Availability: Pay-as-Clear Utilisation: Pay-as-Bid

7. Technical Design

The key technical design features for Quick Reserve are:

- The service is open to BM (Balancing Mechanism) and non-BM (non-Balancing Mechanism) market participants.
- Minimum 1MW capacity of generation reduction/increase or demand reduction/increase from any technology. The unit can be a single asset or an aggregated unit (aggregated at GSP group level) comprising more than one constituent asset. For BM units the BSC aggregation rules apply.
- All Quick Reserve units must be able to;
 - Submit relevant service parameters, location, and prices (similar to the Balancing Code requirements).

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- Achieve full delivery of the contracted capacity within the submitted data, if instructed.
 - Be able to achieve full delivery of contracted volume in 1 minute or less from when the instruction is sent. No maximum ramp rate limit is required.
 - Have Minimum Activation Periods not greater than 5 minutes and a Maximum Recovery Period not greater than 3 minutes.
 - **BM and non-BM to submit Physical Notifications and Operational Metering at all times whilst pre-qualified for Quick Reserve.**
- Units can be aggregated at GSP Group level to meet the 1.0MW minimum participation threshold, with location submitted during pre-qualification.
 - The maximum bid volume has been limited to 300 MW. This is so that a single instruction is limited to a maximum of 300 MW, which allows dispatch of the unit within operational limits.
 - Contracts will be awarded upon acceptance of bids (QR Contract) in whole MWs (minimum 1MW) submitted into the daily auction.
 - Providers with a QR Contract will receive an availability payment (£/MW/hour) and a utilisation payment (£/MWh) when dispatched.
 - Providers will be required to provide metering data with 1Hz granularity **at a latency of no more than 5s**, at all times whilst pre-qualified for Quick Reserve. This requirement is inclusive of BM and NBM providers.
 - BM units need to provide NESO with dynamic parameters which are defined in BC 1.A.1.5. Dynamic Parameters and Physical Notifications are to be submitted 24 hours in advance, with final notifications 60-mins ahead of gate closure and relevant price bands.
 - **Non-BM units must submit all relevant non-BM dynamic parameters during all contracted windows along with Physical Notifications submitted 24 hours in advance, with final notifications 60-minutes ahead of gate closure and relevant price. Non-BM units must also submit the above relevant dynamic parameters and price during any uncontracted Settlement Periods both immediately before and after any QR Contract period for control room visibility.**
 - **Stacking with other ancillary services is allowed, as defined in the Revenue Stacking section below. Units may split their Quick Reserve capacity with Response (any direction) and opposite Reserve (e.g., Positive with Negative), Voltage and Stability services along with the Balancing Mechanism. Co-delivery with the Capacity**

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market and Balancing Mechanism are also allowed. Please see Revenue Stacking section for NESO's revised stacking definitions and further information.

- NBM providers will have their energy position corrected through the ABSVD process.
- QR units will be performance monitored using 1s performance metering data submitted after the contracted day to be evaluated on availability, time to full delivery and utilisation. [If stacking/splitting with any other ancillary services, then the more granular metering is applicable and should be submitted to NESO.](#)

Provider eligibility

To participate in the Quick Reserve market, providers must:

- 1) have control telephony for the entire duration of a QR Contracted Settlement Period, which could be Control Telephony or System Telephony as per Grid Code definitions – to allow for dispatch during planned or unplanned outages of the EDT/EDL system (or wider access equivalent). [For non-BM this will require an operational telephone so that NESO can contact the non-BM unit to allow for dispatch during planned or unplanned outages of the OBP system interface.](#)
- 2) be capable of providing 1MW or more of reserve volume in line with the service design. Bids must be made in integer MWs.

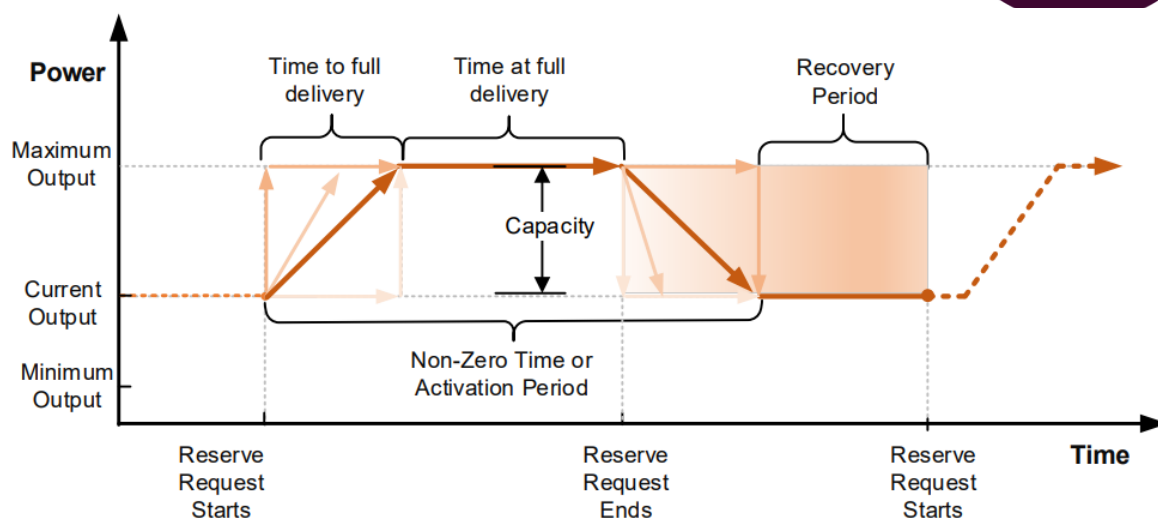
Both BM and non-BM participants with a connection to either the electricity transmission or distribution network will be eligible to provide Quick Reserve.

Service Utilisation & Dispatch Mechanism

Utilisation for BM units will be in line with normal Balancing Mechanism operation in accordance with BC2 via Bid-Offer Acceptances. Dispatch instructions to BM providers will be by way of Bid-Offer Acceptances (BOAs) via EDT/EDL or telephone instruction if required.

[Non-BM providers will be dispatched via new Open Balancing Platform \(OBP\) system and will be issued a start instruction followed by a stop instruction at a later point. The Start and Stop instructions may be sent in advance, with effective date-time for action. Non-BM providers control point will need to receive these instructions and only action at the specified effective date-time points.](#)

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Notice to Start Ramping

Units participating in Quick Reserve, both Positive and Negative, should have set their Notice to Start Ramping to 0 minutes to allow units to meet Time to Full Delivery of 1-minute from the instruction being sent.

Time to Full Delivery

The time to full delivery is recommended to be 60 seconds or less, inclusive of any notice to start ramping. [A full analysis outlining the reasoning for the value assigned to this parameter can be found here.](#)

This recommendation rests on two separate analyses:

- an evaluation of historic frequency deviations: A time to full delivery of 60-seconds or less would assist in reducing the exposure to deviations of ± 0.1 Hz from around 8% of the time to around 3.3% of the time (a reduction of 4.7%). This implies a drop from 700 to 290 hours per year (net reduction of around 410 hours).
- a characterisation of the capabilities of existing units: Most of the hydro pump storage (PS) units (89%) can achieve full output within 60-seconds from instruction. In terms of capacity (MW), around 90% of the PS installed capacity can deliver full output within 60-seconds from instruction (or around of 3,050MW). It is estimated around 30% of the non-BM OFR capacity (close to 320 MW) can achieve the 1-minute time to full delivery, with much of the remaining capacity working towards this requirement in order to participate in Quick Reserve. We also

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believe that batteries, wind generation and secondary response capable conventional machines can meet this requirement.

Cease Time

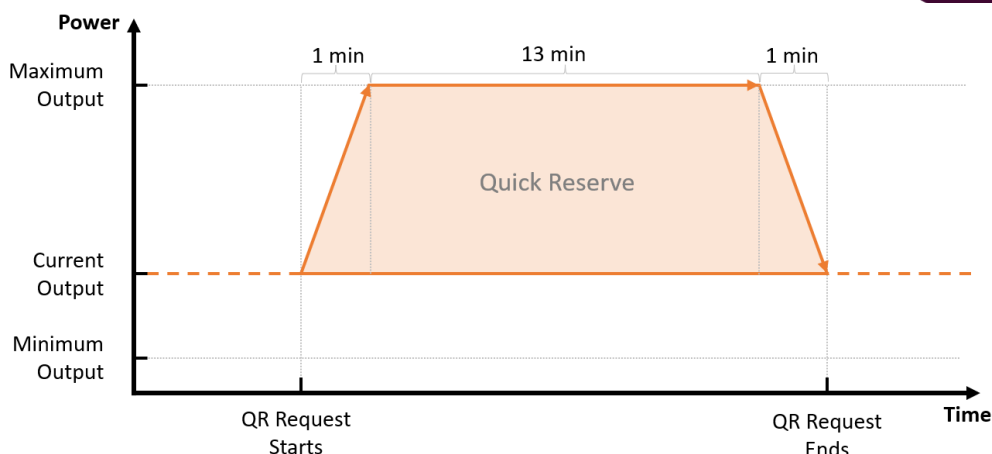
The cease time is defined as the converse of time to full delivery. That is, the time a unit takes for a unit to ramp down from a Quick Reserve request ending to its FPN. As can be seen in the infographic above, the non-zero delivery envelope is a symmetric trapezium, meaning the ramp up and ramp down times are the same. A unit can ramp up and ramp down however it sees fit, so long as it is bound within the defined activation envelope.

Minimum Activation Period

Minimum Activation Period is defined as the minimum duration for which an instruction can be issued, and it is specified by providers. Quick Reserve providers will be able to specify a Minimum Activation Period of between 1 and 5 minutes inclusive, which means that NESO can only issue an instruction for a minimum of between 1 and 5 minutes. This will facilitate enough flexibility in dispatching and ceasing units to respond to the operability challenges while giving providers certainty about the minimum time that they can be dispatched. A typical usage of Quick Reserve is illustrated in the below figure.

Minimum Activation Period is inclusive of ramp to instruction, time at full delivery and ramp from instruction.

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Quick Reserve energy requirements state that a unit should be able to deliver the full contracted MW capacity for the entire QR Contract. A participating QR unit should therefore be capable of delivering the service for any length of time between its defined Minimum Activation Period and the full QR Contract 30-minute QR Window.

Quick Reserve units are expected to reflect their Minimum Activation Period through their Dynamic Parameters (or non-BM equivalent) for each relevant QR Contract window.

Recovery Period

We propose a maximum Recovery Period for Positive and Negative Quick Reserve of up to 3 minutes. This means that an asset has 3-minutes to return to availability before the NESO can send another dispatch instruction.

To help explain this proposal we have published a detailed explanation for the 3-minute recovery requirement in our ['Maximum Recovery Period – justification and analysis'](#) document.

Quick Reserve units are expected to reflect Minimum Recovery Period (Minimum Zero Time) through Dynamic Parameters (or non-BM equivalent) for each relevant contracted window.

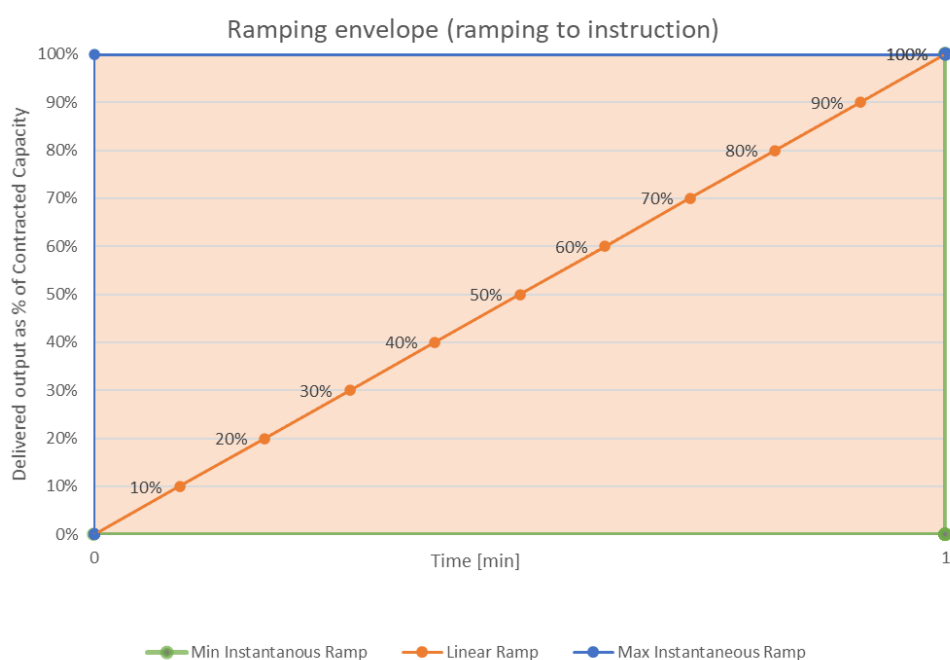
Ramping Envelope

Within the ramping to instruction and ramping from instruction ramp rates, participating units must deliver Quick Reserve subject to the following elements:

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- No maximum ramp rate limit when ramping up or to instruction. The unit can ramp to and from instruction freely (continuously or instantaneously) with no maximum ramp rates.
- The minimum ramp up is directly set from the time to full delivery service design – the unit may not deliver at a rate less than 100% of instructed capacity per minute (minimum ramp rate). Similarly, the unit may not ramp from instruction with a rate smaller than 100% of instructed capacity per minute (minimum ramp rate).
- The unit may start delivery immediately after accepting a dispatch instruction.

Example of ramping envelope for ramping up or ramp to instruction is presented on figure below. Ramping from instruction is proposed to have identical envelope in an opposite direction.



Instructions will have a 1-minute ramp up and ramp down period. Providers are encouraged to deliver within 60-seconds of receipt of an instruction, with any imbalance risk factored into their utilisation price.

Ramp rates for baselines for energy limited assets.

The Maximum Ramp Rate limits the rate of change of power for energy limited assets as shown by Performance Baselines. Previous Dynamic Response Service Terms stated a

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Maximum Ramp Rate of 5% of the contracted MW/minute. We propose removing this restriction from the Service Terms, subject to approval by Ofgem in Q4 2024.

We understand the Maximum Ramp Rate requirement has represented a pain point for participants, imposing an opportunity cost through constraining opportunities for wholesale market participation and more efficient state of energy management. We recognised this cost may have driven higher prices and ultimately caused costs to be passed on to energy consumers. We introduced the Maximum Ramp Rate to protect against effects of herded energy recovery. Service Terms previously required units to recover their state of energy if they do not have enough energy (or capacity to import energy). Following a large high/low frequency event where units charge/export (respectively) to deliver the response service, many or all units may be required to recover energy at the same time. The Maximum Ramp Rate was to protect against the cumulative effect of such behaviour. We have carried out analysis, including modelling, review of historical provider behaviour, and stakeholder engagement, to consider the system security impact of changing or removing the ramp rate restriction. We concluded the benefits of removing the Maximum Ramp Rate likely outweighed the cost associated with additional actions to protect against herded energy recovery. As the system operator, it is essential we take such decisions cautiously and we will continue to monitor participant behaviour and the effect of removing this restriction. Quick Reserve ramp rates for baselines are aligned with the Dynamic Response services. Ramp rates for baselines are therefore not required for Quick Reserve until such time as if and when these requirements are updated for the Dynamic Response services, should they be required for system security purposes.

Operational data Requirements

BM units are to submit operational data as current BM operations.

Non-BM units are required to submit Physical Notifications (baselines) and Operational Metering at all times for control room visibility purposes. Non-BM units must also submit relevant service parameters, as defined within this document, and pricing during all QR Contract windows, whilst providing the Optional Service, along with during uncontracted periods immediately before and after any contracted period.

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Proposed non-BM data requirements and publication

1. Time to Full Delivery / Response Time
2. Ramp-up rate
3. Ramp-down rate
4. Minimum non-zero time (MNZT)
5. Recovery Time (equivalent to MZT)
6. Availability (MW and Util Price)
7. PN values
8. NTS (NTO/NTB)

In response to provider feedback and in the interests of data transparency, NESO propose to publish the above non-BM technical data on our data portal.

We are keen to seek further industry views on this proposal and we will give careful consideration to all feedback we receive before making our final proposals.

Operational Metering

All providers (BM and non-BM) will be required to submit operational metering at a frequency of once per second (1 Hz) with a latency of no greater than five (5) seconds, at all times whilst prequalified for the service. For the avoidance of doubt, this includes where the unit is declared unavailable.

All operational metering, including active power and system frequency data, should be provided at an accuracy according to the relevant Code of Practice (e.g., 1.0% for assets >10MW & ≤100MVA).

BM providers should submit operational metering via the existing processes.

Non-BM providers should submit operational metering via new OBP system.

We recognise that some non-BM technology types, such as demand side flexibility, aggregators of smaller assets, etc, may wish to discuss how this data should be presented to NESO. Please reach out to us and we will be happy to arrange a 1-2-1 session.

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Physical Notifications (Operational Baselines)

Physical notifications are defined in the Grid Code as a forecast or an indication of the generation or demand levels a unit expects to operate at during specific periods. Physical notifications are required by NESO for real-time operational awareness, margin assessments and during the settlements process.

BM units are already required to submit Physical Notifications per requirements in the Grid Code.

Non-BM providers, prequalified for the Quick Reserve service, are required to submit Physical Notifications at all times, as set out below.

We recognise that some non-BM technology types, such as demand side flexibility, aggregators of smaller assets, etc, may wish to discuss how this data should be presented to NESO. Please reach out to us and we will be happy to arrange a 1-2-1 session.

Submission of Operational Metering and Baselines from non-BM providers

In line with the recent Article 18 consultation for Response services, we are proposing the requirement for non-BM providers, prequalified for the Quick Reserve service, to submit operational metering and operational baselines at all times, rather than just during QR Contract service periods as has been the case historically for balancing services. This mirrors the existing Grid Code requirements on BM units that provide Quick Reserve.

For the avoidance of doubt this means that once a unit is prequalified for the Quick Reserve service, they are required to submit operational metering and operational baselines continuously – 24 hours a day, 7 days a week, 365 days per year regardless of whether they have a QR Contract or are offering the Optional Service.

The challenges of limited visibility of Distributed Energy Resources (DER) are well-established and through the NESO DER Visibility programme, we are developing a roadmap for fuller DER visibility. However, adding this requirement to the Quick Reserve service represents a practical and targeted way to accelerate the benefits of DER visibility.

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We do not see this as a barrier to providers accessing this market, as Quick Reserve providers will already need the capability to submit this data (as a requirement during contracted service periods) and a large proportion of providers expected to participate in Quick Reserve also participate in Response services where this obligation also applies.

For the avoidance of doubt, we are not proposing any penalties due to the accuracy of operational metering or operational baselines, other than those associated with contracted service periods, where we will deem participants unavailable where they do not submit operational data or operational baselines.

In order to ensure NESO is receiving the required data, and again in line with the recent Article 18 consultation for Response services, we are proposing to monitor data submissions. The acceptable submission rate is 80% of the time, measured on a rolling 28-day assessment period, and calculated daily. If a provider has not submitted data in relation to a Reserve Unit for at least 80% of the time across 28 days prior to a particular service day, then sell orders submitted for that unit on that service day shall not be valid.

We will calculate the submission rate for each set of data separately. That is, the provider must submit both operational metering and operational baselines for the unit at least 80% of the time; for example, a submission of less than 80% for operational metering cannot be offset by a higher than 80% submission of operational baselines.

For a newly created Quick Reserve unit, the assessment will be done on a cumulative daily basis for 28 days. At which point, the calculation will revert to a rolling 28-day assessment. Therefore, a newly set up Reserve Unit can participate in auctions before 28 days.

This requirement is applicable to both BM and non-BM participating units. In practice, BM units are already required to submit this data per requirements in the Grid Code, and we will consider submission of Physical Notifications and Operational Metering per the Grid Code as conforming with this requirement.

We are interested in feedback for all types of participants, such as demand side flexibility, aggregators of smaller assets, etc, to help us understand the various IT implications. We will give careful consideration to all feedback we receive before making our final proposals.

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Performance Metering

All providers (both BM and non-BM) are required to submit data to NESO for real time monitoring of service availability and post-event performance monitoring. This data is required by NESO to ensure operational security of the network and to validate the performance where units are dispatched to deliver an instruction for the QR Contract and Optional Quick Reserve services.

The data will be required for each operational day, for each unit awarded a QR contract/s. We are currently finalising the data and method for submission (e.g. API), and this will be confirmed at the earliest opportunity.

Performance Monitoring

Service Availability

NESO will monitor the availability of units in order to confirm that they are holding sufficient headroom/footroom and can therefore deliver their contracted MW if instructed. In addition to monitoring delivery against individual contracts, this monitoring can be regularly performed at various timeframes.

We will evaluate the conditions below for each contracted window, individually. Failure to deliver at 100% of contracted availability will result in the Availability Payment being withheld for all the relevant QR Window.

For the avoidance of doubt, and if not contained in the tables below, a unit must make available the contracted MWs for the required service(s) within the specified Service Window(s), and NESO should not have to send an instruction greater than a unit's contracted capacity due to a limitation of the unit. That is to say:

- The available capacity should be \geq the contracted QR volume.
- The minimum instructible capacity should be \leq the contracted QR volume.

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For Positive Reserve – BM

Provider Type	Conditions	% of availability payment received for that service window	K factor
Generator, Through-zero	$MEL - PN \geq (\text{Contracted Volume})$	100	1
Generator, From zero	$SEL \leq (\text{Contracted Volume})$	100	1
Through-zero (additional)	$SIL - PN \geq (\text{Contracted Volume})$ or $SEL - PN \leq (\text{Contracted Volume})$	100	1
Supplier	$SIL - PN \geq (\text{Contracted Volume})$	100	1
Intermittent Generator	$PA - PN \geq (\text{Contracted Volume})$	100	1
Generator, Through Zero	$MEL - PN < (\text{Contracted Volume})$	0	0
Generator, From Zero	$SEL > (\text{Contracted Volume})$	0	0
Through-zero (additional)	$SIL - PN < (\text{Contracted Volume})$ or $SEL - PN > (\text{Contracted Volume})$	0	0
Supplier	$SIL - PN < (\text{Contracted Volume})$	0	0
Intermittent Generator	$PA - PN < (\text{Contracted Volume})$	0	0

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For Negative Reserve – BM

Provider Type	Conditions	% of availability payment received for that service window	K factor
Generator, Intermittent Generator	$PN - SEL \geq (\text{Contracted Volume})$	100	1
Supplier, Through-zero	$PN - MIL \geq (\text{Contracted Volume})$	100	1
Through-zero (additional)	$PN - SEL \geq (\text{Contracted Volume})$ or $PN - SIL \leq (\text{Contracted Volume})$	100	1
Generator, Intermittent Generator	$PN - SEL < (\text{Contracted Volume})$	0	0
Supplier, Through-zero	$PN - MIL < (\text{Contracted Volume})$	0	0
Through-zero (additional)	$PN - SEL < (\text{Contracted Volume})$ or $PN - SIL > (\text{Contracted Volume})$	0	0

For Positive Reserve – NBM

Provider Type	Conditions	% of availability payment received for that service window	K factor
Generator, Supplier, Intermittent Generator	$(\text{Available MWs}) \geq (\text{Contracted Volume})$	100	1
Generator, Supplier, Intermittent Generator	$(\text{Available MWs}) < (\text{Contracted Volume})$	0	0

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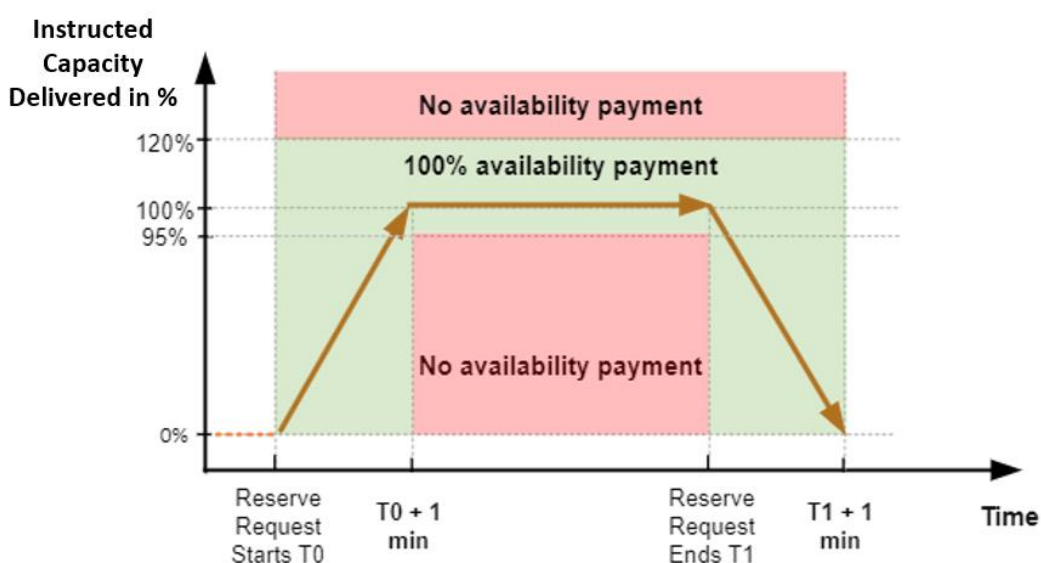
For Negative Reserve – NBM

Provider Type	Conditions	% of availability payment received for that service window	K factor
Generator, Supplier, Intermittent Generator	$(\text{Available MWs}) \geq (\text{Contracted Volume})$	100	1
Generator, Supplier, Intermittent Generator	$(\text{Available MWs}) < (\text{Contracted Volume})$	0	0

For non-BM, new tables have been added above for clarification.

Service Delivery

NESO will conduct performance monitoring of service delivery for all contracted QR Windows. Consequences of non-delivery and unavailability are set out in full in the Service Terms covering the under-delivery and over-delivery penalties. The figure below presents the overall acceptable delivery envelope for the Quick Reserve service.



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Under-delivery

Where a unit has a QR Contract, a minimum of 95% of the instructed MW must be delivered by the relevant unit throughout the instructed period. Failure to deliver will result in the Availability Payment being withheld for the relevant QR Contract.

Utilisation payments for QR Contracts and Optional Services (Non-BM only) will be made for energy delivered.

Over-delivery

Where a unit has a QR Contract, a maximum of 120% of the contracted MW can be delivered by the relevant unit throughout the instructed period. Delivery beyond 120% will result in availability payments being withheld for the relevant Service Window.

Utilisation payments for QR Contracts and Optional Services (Non-BM only) will be made for energy delivered. For the avoidance of doubt, availability payments will be made when a unit delivers between 95% and 120% of its contracted MW volume. Where a unit delivers outside of these limits, the Availability Payment will be withheld for the relevant QR Contract. [Details of how the utilisation monitoring will work will be published shortly.](#)

In addition to the performance penalties, NESO will conduct regular performance monitoring of the reserve units service delivery over a greater period than the individual service day in order to establish overall delivery against the 95% performance measure. There will be no further financial penalties associated with this performance monitoring, but in order to ensure that we do not award Quick Reserve contracts to reserve units with continued poor performance, we will link the performance monitoring to the reserve unit's prequalification status. Where a provider continues to deliver below their offered MW, we will ultimately seek to suspend the prequalification status of the relevant QR Unit or Registered Service Provider. Depending on the root cause, we would expect either a re-proving test or possibly revised base parameters (e.g. reduced maximum MW) before we would reconfirm prequalification status and access to the daily auction process.

Additionally, providers who do not fulfil their contract from the Day Ahead auction and do not provide the contracted headroom or footroom may be responsible for covering the costs of alternative actions taken to replace the missing volume.

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Furthermore, the providers will be penalised for over-delivery and under-delivery when utilised via the usual route of imbalance charges, so there is a natural incentive for units to follow expected delivery profiles.

Baselining

All providers will be expected to provide a nomination baseline, equivalent to the Physical Notification in the BM. This is a forward-looking view of asset output and is locked in for the forthcoming two settlement periods at Gate Closure.

- BM units should continue to provide future looking data of their operational position, which should be submitted 24 hours in advance of delivery.
- [NBM units should provide future looking data of their operational position, which should be submitted as soon as reasonably practical, but in any case, no more than 2 hours following the publication of the QR auction results – see above Submission of Operational Metering and Baselines from non-BM providers section for details on acceptable submission rates.](#)
- For crossover purposes, the unit should submit operational baselines for one Settlement Period after the last Contracted Window in the operational day.

This provides operational visibility to the control room and acts as a datum against which performance can be monitored by Settlements.

State of Energy Management

We are keen to ensure that any learning and industry feedback from other Balancing Services (such as Balancing Reserve), relating to certain behaviours from energy limited assets, are appropriately addressed for the Quick Reserve service.

Regardless of technology type, we expect all QR units to be capable of delivering the full contracted quantity for the duration of each QR Contract and that capability shall not impair any subsequent QR Contract.

Through our learning from other Balancing Services we have identified instances where some energy limited assets have had insufficient energy to honour their full contracted period and have maintained market positions (such as discharging PNs) and increased their Bid-Offer prices during contracted periods such that their high prices make the

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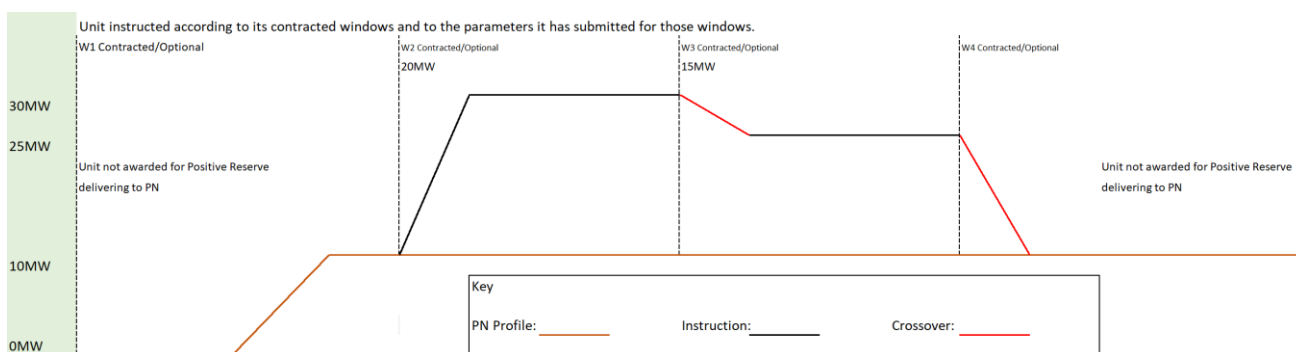
units unlikely to be selected as they are economically out of merit, but ensure they continue to receive the capacity Availability Payments.

We believe that withholding the Availability Payment does not provide a sufficient sanction to deter this behaviour. Therefore, for Quick Reserve we are introducing new terms that deal with excessively high or excessively low Bid-Offer prices and provide the NESO, at our discretion, with a range of enforceable sanctions.

In line with other Balancing Services, we have provisions within the Service Terms to penalise units that pursue other commercial use of their assets, and renege on their Balancing Service contract as a consequence. We intend to introduce a similar method of recovering the cost of alternative action needed to be taken and, at our discretion, will treat instances of unavailability for a QR Contract, due to insufficient state of charge, as commercial unavailability and penalise with the cost of alternative action taken.

Crossovers

The unit must be able to continue delivering the dispatch instruction for the next settlement period following the end of the QR Contract service window. The maximum this could be is in line with the unit's defined Minimum Activation Period.



The above shows how a unit should ramp if contracted or offering optional volume in adjacent windows but with differing MW volumes. That is, any ramping should start at the beginning of the next Settlement Period where there is a change of offered MWs. Providers are expected to submit availability for their crossover delivery, which should be in line with the above requirements.

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Aggregation

Aggregated units can participate in the Quick Reserve auction. The aggregation will be allowed up to GSP group which is in line with our Grid Code requirement for aggregated BMUs.

8. Procurement Design

QR Contract (Firm Service)

Where there is a firm requirement in a QR Window, this will be defined by NESO and published on the NESO website. Where a service provider is contracted for a QR Window at day-ahead, this will be known as a QR Contract. Service Providers will be able to bid in their units to the day-ahead auction for one or more QR Windows in an operational day and if successful, will be awarded one or more QR Contracts for each discrete QR Window. This commits the asset to be available for the full duration of the QR Contract and Service Providers will be paid Availability Payments (pay-as-clear) over the duration of each contracted QR Contract, and a Utilisation Payment (pay-as-bid) if dispatched.

Historically for reserve services the QR Contract was referred to as the 'Firm Service'.

Optional Service

Where NESO do not specify a firm requirement for a Quick Reserve Window at day-ahead or the service provider has been unsuccessful in their bids at day-ahead, non-BM providers will be able to submit utilisation-only bids ([with parameters that meet the Quick Reserve service](#)) for the Optional Service within-day via the OBP platform. If Service Providers are dispatched under the Optional Service, they will receive a Utilisation Payment (pay-as-bid) only.

BM providers should continue to offer reserve to NESO via the Balancing Mechanism and will be dispatched via Bid Offer Acceptances (BOAs).

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Registration and Prequalification

In line with the implementation of our Dynamic Response and Balancing Reserve products, registration and pre-qualification for the new Quick Reserve services will be completed via NESO's Single Market Platform (SMP).

Maximum Bid Volume

The maximum bid volume has been limited to 300 MW. This ensures that a single instruction is limited to a maximum of 300 MW, which allows instruction of the unit within operational limits. We do not believe this excludes any provider participation at present and there might also be the additional benefit of diversifying the contracts awarded and avoiding any single points of failure.

Procurement Requirements

NESO will publish separate Market Information Reports on our website which will set out the volume of each Quick Reserve product we will look to procure (QR Contract) each day.

QR Window

The QR Window is the Contracted Service Period that providers must have their power available for instruction. Historically for reserve services this was referred to as the 'Service Window'.

Longer windows generally lead to over-holding, as the NESO would need to procure the maximum requirement over the full window length. Moreover, longer windows present a challenge for Distributed Energy Resources (DERs), typically wind and PV plants, because of the inherent variability of the resource, and to energy-limited storage assets like batteries.

Shorter windows, on the other hand, lead to a higher number of transactions and associated costs, as well as the increasing number of window crossover occasions which make it more challenging for operational teams to ensure no capacity is lost across service window transitions.

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To make a trade-off between these two aspects, NESO will procure Quick Reserve in 30 minute QR Windows aligned to Settlement periods. This is chosen to maximise participation, and reduce service transition risk during higher system stress periods – e.g., Remembrance Day silence and exceptional sporting events, etc.

Daily Auctions

As per our obligations under the Clean Energy Package Article 6.9, we must aim to procure most or all Balancing Services no earlier than day-ahead. Daily day-ahead auctions will be running to procure our firm requirement for Positive and Negative Quick Reserve Services.

Co-optimised Auction

We plan to procure Quick Reserve with frequency response services (DC, DM, DR) in a single, simultaneous, day-ahead, pay-as-clear auction.

Quick Reserve and frequency response services will be cleared in a simultaneous auction, with market welfare being maximised across all services.

Quick Reserve will be co-optimised with the existing frequency response services (DC, DM, DR). Where a unit can provide both frequency response services and Quick Reserve services, a provider can make alternative offers to the auction. The clearing algorithm will allocate the unit's capacity to either Frequency Response or Quick Reserve to best optimise the market clearing. See [Enduring Auction Capability \(EAC\) Market Design Report](#) for additional information.

Requirements

NESO will publish separate Market Information Reports on our website which will set out the volume of each Quick Reserve product we will look to procure (QR Contract) each day. The daily requirement for Positive and Negative Quick Reserve are not yet defined.

Auction Platform

Quick Reserve auctions will be held daily on our [EAC Platform](#).

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Auction Timing

The timing of the auction refers to how long the procurement of the product is made ahead of its delivery. The auction should take place as close to real time as possible to mitigate uncertainty but leave enough time buffer to allow NESO to activate its Business Contingency Plan (BCP) if the auction process fails.

For Phase 1, to procure through a co-optimised auction we decided to co-optimize Quick Reserve with the existing established Response auction timing at 14:00. We believed there would have been substantial overlap of fuel types participating in both the Response and QR services and this therefore offered the most cost effective and efficient solution.

For Quick Reserve Phase 2, it is recommended to keep Quick Reserve co-optimised with the Dynamic Response services in the afternoon at 14:00 following lots of industry feedback and individual provider discussions during Quick Reserve Phase 1 and Balancing Reserve consultations.

Bid Submission

A Registered Service Provider can only participate in the daily auctions once they have completed pre-qualification. NESO will grant access to the Auction Platform and provide log-in details to the Registered Provider or their nominated Agent.

The Registered Service Provider will then be able to offer NESO its unit(s) for the Positive and Negative Quick Reserve QR Contract on the EAC Auction Platform by submitting sell-orders. For each product, a sell-order will include the required bid parameters, such as the availability price (£/MW/h), the volume (MW), confirmation if the bid is curtailable (the minimum capacity they are willing to accept) and any other additional parameter(s) as may be specified in the relevant EAC Market Design Report.

Bid validation, such as checking maximum (MW) not exceeding the pre-qualified asset MW, will be done at bid submission stage.

Each unit can bid for one or more of the Quick Reserve Windows within an Operational Day.

NESO submits the daily buy-order to the EAC platform which specifies a maximum volume (MW) NESO willing to procure at different price levels (£/MWh) for each product and QR Window.

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The auction platform will provide a Rolling Window function which means the auction gate will be open in advance such that orders can be submitted 14 days before each auction (timing to be confirmed).

Sell-Orders can be submitted, reviewed, modified, or deleted before auction gate closing.

Assessment Principles

To secure the system economically, the clearing algorithm will aim to first maximise the Total Welfare, then minimise the overall procurement cost (when there is a choice of clearing prices), as set out in the [EAC Market Design Report](#).

A buy curve (generated for each auction or QR Window) will be applied to reflect that the volume NESO is willing to procure varies with price. The cost of taking alternative actions, such as Spin Gen will be taken into consideration when generating the buy curve.

All bids will be ranked in price ascending order against the buy curve to identify the marginal bid.

Auction Results

Auction results can be accessed after each auction via the enduring auction platform by 14:30 and NESO Data Portal by 14:45.

Linked Sell-Orders

Provider Bids (sell-orders) that are linked can only be accepted or rejected all together. There are two types of linking: link by time (i.e., QR Windows) and link by products.

Linking by QR Windows means participants can link their bids across more than one QR Window. Due to commercial reasons, for example SOC management, some participants may want to do this (i.e., submitting multiple-period orders) to avoid that their units are accepted for some non-adjacent windows. Or some providers who have high start-up costs may want to span this cost over longer delivery periods to make themselves more attractive in the market.

Linking by products means participants can link their bids across products (i.e., Positive and Negative Quick Reserve). Without this function, providers who prefer getting

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awarded in dual directions will offer each service at a higher price to make sure they would be happy if only one product is cleared. Additionally, this will not breach Clean Energy Package Article 6.9 requirements, as NESO are running two separate markets: providers can submit different volume and price in each market; these two markets cleared separately with different volume and price; and two contracts are produced.

Linking functions will be supported by Enduring Auction Capability. There is no strong reason for us to put additional restrictions (and therefore additional costs) on bid submission/validation to stop participants submitting linked bids. Full flexibility will be given to all participants. We are expecting this will facilitate market participation and increase market efficiency.

Thus, linking bids (by QR Window or product) will be permitted for Quick Reserve.

Linked Buy-Orders

Crossovers occur at QR Window boundaries and require significant consideration during operations. They are routinely managed to maintain power output across Settlement Period and EFA block boundaries, as otherwise we will likely see significant change in output which could lead to a low or high frequency event, if significant enough, and are a key target of the Quick Reserve service.

As a solution to effectively manage the above risks, the NESO are introducing Linked Buy-Orders. Such Linked Buy-Orders issued by the NESO state that the submission and/or acceptance of a sell-order is conditional on the submission and/or acceptance of sell-orders of identical MW volume for each QR Window described in the Linked Buy-Order section, ensuring there are consistent units contracted across key crossover periods, allowing for their effective management of the risk posed. [Such Linked Buy-Orders will be communicated appropriately with market participants ahead of the auction opening. We will assess the requirement for Linked Buy-Orders during Phase 1 and may introduce, with enough notice to industry, if we see a system security need, in in Phase 2.](#)

Phase 1 Quick Reserve is planned to go live without this functionality being used. NESO will keep the contracted volume under review to identify whether significant changes of units are causing operational issues at key times of day during Phase 1. If these transitions are seen to be an issue, then we would look to implement a linked window at that time, appreciating that minimising the duration and quantity of linked windows will maximise flexibility for the market.

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Bid Curtailment Rules

The Quick Reserve requirement could be changing considerably throughout the day. Given the design choice to allow participants to link their bids together across time it is important to have flexibility within the bidding structure to meet NESO’s Quick Reserve requirement, which changes across the day and between half hours. NESO would allow QR providers to user-define the curtailment of their bid (i.e., the minimum capacity they are willing to provide).

Revenue Stacking

Stacking is the ability to use the same unit to provide different products simultaneously (i.e., in the same window), effectively allowing for multiple revenues from different markets with a single unit.

For clarity we are using the following definitions for stacking;

Co-delivery

Definition: Being paid multiple revenues from the same asset, using the same capacity, in the same time period (in the same direction).

Quick Reserve providers can Co-deliver their capacity with the Capacity Market (CM). Where a CM Notice (CMN) is issued, these providers should continue to make headroom available to us as per any active Quick Reserve commitments. To ensure that providers are protected from penalties for breach of their CM agreement, should a System Stress Event occur following the CMN, QR has been added to the list of Relevant Balancing Services.

In some cases, it may also be appropriate for providers to Co-deliver the QR capacity with the BM.

Splitting

Definition: Being paid multiple revenues from the same asset, but with different capacity, in the same time period.

For a given QR Window, splitting is allowed between Positive and Negative Quick Reserve and the Dynamic Response Services (in both directions), as long as different capacity from the asset is used for each service. Splitting is also allowed between Quick Reserve and

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opposite direction Reserve services (i.e., PQR and NBR), as outlined in the table below, as well as Voltage and Stability services.

However, Splitting is not allowed between the same polarity Reserve products, i.e., PQR & PBR. Availability payments will be withheld for any units holding >1 Reserve service in the same direction for a given Settlement Period.

Splitting Matrix

Splitting Matrix			Response						Reserve					
			DC		DM		DR		BR		QR		SR	
			DCL	DCH	DML	DMH	DRL	DRH	PBR	NBR	PQR	NQR	PSR	NSR
Response	DC	DCL	Not allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	
		DCH	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	
	DM	DML	Allowed	Allowed	Not allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	
		DMH	Allowed	Allowed	Allowed	Not allowed	Allowed	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	
	DR	DRL	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	
		DRH	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Not allowed	Allowed	Allowed	Allowed	Allowed	
Reserve	BR	PBR	Not allowed	Allowed	Not allowed	Allowed	Not allowed	Not applicable	Allowed	Not allowed	Allowed	Not allowed	Allowed	
		NBR	Allowed	Not allowed	Allowed	Not allowed	Allowed	Not allowed	Not applicable	Allowed	Not allowed	Allowed	Not allowed	
	QR	PQR	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Not applicable	Allowed	Not allowed	Allowed	
		NQR	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Not applicable	Allowed	Not allowed	
	SR	PSR	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Allowed	Not allowed	Allowed	Not applicable	Allowed	
		NSR	Allowed	Allowed	Allowed	Allowed	Allowed	Allowed	Not allowed	Not allowed	Allowed	Allowed	Not applicable	

Allowed
 Not applicable
 Not allowed

It is not the intention to prevent providers from Revenue Stacking Reserve with non-active power services, such as SpinPump or SpinGen, as this would significantly reduce the availability of other assets. However, if a unit is required to be in SpinGen etc, to be able to deliver the service, they should not be separately paid for that service.

It is worth noting that the standard stacking or BM participation rules apply and need to be followed. That is, if a unit is Revenue Stacking multiple services, then the data submitted to NESO must be that of the most granular service.

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Locationality

Throughout the development of this product design, the merits and costs of introducing some locational valuation to the assessment process for the product were considered. This would be in respect to the location of individual BMUs and not in respect to aggregated units.

Locational assessment would allow NESO to avoid contracting for reserve on units located behind an anticipated network constraint. This is not an approach that has been taken in any Balancing Services market to date.

Work has commenced on Locational Procurement capability but unfortunately, we don't yet have any timelines to share with industry and any future proposal would be subject to full industry consultation.

Active Network Management Schemes

Eligible Assets will not normally be registered by NESO for participation in Quick Reserve if they have a condition in their DNO connection agreement whereby they are signed up to an Active Network management (ANM) Scheme / Flexibility Connection.

However, NESO will consider this on a case-by-case basis and may (at its sole discretion) enable such participation if there is reasonable evidence to demonstrate that the asset has very high forecasted availability (e.g., as shown by Curtailment Assessment Reports from DNOs). NESO shall continue to keep this under review and any changes to this position will be consulted on accordingly.

Availability Declarations

Once a QR Contract has been awarded, or the Service Provider wishes to declare themselves available for the Optional Service (Non-BM only), they will be required to submit an availability declaration for the relevant unit.

For Non-BM providers these (re)declarations will be submitted into the appropriate OBP route and must be submitted no later than sixty (60) minutes prior to each QR Window.

Availability declarations must be submitted in accordance with the Service Terms and include;

- confirmation of MW available,
- a utilisation price (£/MWh)

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For BM Service Providers, declarations must be made by way of Grid Code BM unit Data submissions via EDL/EDT (or wider access equivalent), by no later than Gate Closure.

Declarations can be submitted ahead of time (either before, during or after auction/contract award) provided that the MW value in a Service Provider's QR Contract and availability declaration match. Where no (re)declaration has been submitted by the deadline, or the declared available MW value does not match the contracted MW, the unit will be assumed to be unavailable.

Unavailability for commercial or non-technical reasons is not permitted for a QR Contract.

Settlement and Pricing

There are two forms of payment that NESO will make for the Quick Reserve services.

1. Availability Payments

Where a Service Provider (BM and non-BM) secures a QR Contract, the NESO will make an Availability Payment subject to the relevant market clearing price (£/MW/h) for the QR Window covered by the QR Contract. Availability payments are subject to performance monitoring.

2. Utilisation Payments

For each Quick Reserve instruction, non-BM providers will receive a payment for the energy delivered on a £/MWh basis if instructed to deliver a QR Contract in a QR Window. Additionally, where NESO instructs an Optional Service from a Non-BM unit which is declared available for the QR Window, then it will pay for the energy delivered on a £/MWh basis.

All Utilisation Payments will be calculated using the Utilisation Price on a pay-as-bid basis submitted by the Service Provider for the relevant QR Window. Utilisation payments will include the energy delivered in ramping towards and ramping from the instructed MW level.

For BM providers, energy delivered will be settled by Elexon as part of the Balancing Mechanism. Non-BM providers will be settled by the NESO.

Availability payments and non-BM utilisation payments will be settled by NESO monthly, subject to deductions for service delivery failures following performance monitoring.

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ABSVD

ABSVD will be applied in accordance with the published [ABSVD Methodology](#).

Transfer of Quick Reserve Contracts

The QR Service Terms allow a Service Provider (Primary Service Provider) to transfer their QR contract to another unit prequalified for QR (either their own or another Service Provider (Secondary Service Provider)). This is in line with other Balancing Service contracts, however we are making some changes for QR that allow for all applicable payments to be made direct to the Secondary Service Provider, where previously NESO made such payments direct to the Primary Service Provider. When the Primary Service Provider assigns a Quick Reserve Contract to the Secondary Service Provider this effectively now means that a transfer is a full assignment, transferring all rights and obligations under the Service Terms for the Contracted Window.

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Appendix 1 – Dynamic Parameters as per Balancing Code BC1

Please refer to the [Balancing Code BC1](#) for full details.

The Dynamic Parameters comprise:

- Up to three Run-Up Rate(s) and up to three Run-Down Rate(s), expressed in MW/minute and associated Run-Up Elbow(s) and Run-Down Elbow(s), expressed in MW for output and the same for input. It should be noted that Run-Up Rate(s) are applicable to a MW figure becoming more positive;
- Notice to Deviate from Zero (NDZ) output or input, being the notification time required for a BM Unit to start importing or exporting energy, from a zero Physical Notification level as a result of a Bid-Offer Acceptance, expressed in minutes;
- Notice to Deliver Offers (NTO) and Notice to Deliver Bids (NTB), expressed in minutes, indicating the notification time required for a BM Unit to start delivering Offers and Bids respectively from the time that the Bid-Offer Acceptance is issued. In the case of a BM Unit comprising a Genset, NTO and NTB will be set to a maximum period of two minutes;
- Minimum Zero Time (MZT), being either the minimum time that a BM Unit which has been exporting must operate at zero or be importing, before returning to exporting or the minimum time that a BM Unit which has been importing must operate at zero or be exporting before returning to importing, as a result of a Bid-Offer Acceptance, expressed in minutes;
- Minimum Non-Zero Time (MNZT), expressed in minutes, being the minimum time that a BM Unit can operate at a non-zero level as a result of a Bid-Offer Acceptance;
- Stable Export Limit (SEL) expressed in MW at the Grid Entry Point or Grid Supply Point, as appropriate, being the minimum value at which the BM Unit can, under stable conditions, export to the National Electricity Transmission System;
- Stable Import Limit (SIL) expressed in MW at the Grid Entry Point or Grid Supply Point, as appropriate, being the minimum value at which the BM Unit can, under stable conditions, import from the National Electricity Transmission System;
- Maximum Export Limit (MEL) expressed in a series of MW figures and associated times, making up a profile of the maximum level at which the BM Unit may be

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exporting (in MW) to the National Electricity Transmission System at the Grid Entry Point or Grid Supply Point or GSP Group, as appropriate.

- Maximum Import Limit (MIL) expressed in a series of MW figures and associated times, making up a profile of the maximum level at which the BM Unit may be importing (in MW) from the National Electricity Transmission System at the Grid Entry Point or Grid Supply Point or GSP Group, as appropriate.

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Appendix 2 – Quick Reserve Transition Plan

We expect Quick Reserve to be fully implemented across both BM and non-BM participants by summer 2025.

We intend to leave the existing Optional Fast Reserve (OFR) market open until such time as either all providers have moved to alternative markets or until December 2025 when the Ancillary Services Dispatch Platform (ASDP), which supports the dispatch of non-BM units, will be decommissioned.

This will enable NESO to:

- Avoid eliminating routes to market until the new Quick Reserve service has been fully implemented.
- Ensure ENCC access to additional reserve capacity within day, from day 1, to cover requirement outside of normal conditions.
- Ensure the OFR market remains operational should Quick Reserve registration and participation prove slower than expected from day 1.

Participation – Registration for both services

Quick Reserve and OFR will be operational together from November 2024 (when the QR auction is expected to open) to December 2025. Providers will be able to offer both Quick Reserve (where eligible) and OFR service simultaneously, should they wish. This means that providers may continue to declare themselves optionally available for any OFR period where a day-ahead Quick Reserve contract has not already been awarded.

Procurement and Volume Management

It is anticipated that we will see sufficient volume for the Quick Reserve service in Phase 1 to meet our estimated total typical requirement of firm contracted fast acting reserve (500MW positive, 300MW negative) via the day ahead auction. We are seeing the majority of battery assets in the BM already submitting and being dispatched with dynamic parameters similar to the new Quick Reserve service. As a result, we intend to procure 100% of this requirement through the Quick Reserve day-ahead auction, if economic to do so.

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Control-room Management

In real-time, the control-room will manage Quick Reserve through existing legacy BM systems and the new OBP dispatch platform, with OFR dispatched on the existing ASDP platform (to be decommissioned in December 2025). As is the case today, ENCC will manage the two systems simultaneously assessing actions in merit/economic order.

As the firm procurement for Quick Reserve will effectively be a sunk cost for availability, it is likely to be more economic to use these units as opposed to accepting additional OFR and Spin Gen arming fees within day. However, if in real time the ENCC identify that additional fast-acting reserve is required, then additional optional services (OFR / Spin Gen) would be used to create that reserve at the lowest overall cost. [OFR units also have the same opportunities to bid in their capacity competitively within day against the QR Contracted units, and would be utilised in merit order based on the combined arming and utilisation fee. As long as OFR units are priced competitively then there is no reason why they would not be instructed.](#)

If the requirement for additional Reserve occurs frequently, then this would form part of the information NESO use to assess whether the requirement for Quick Reserve needs increasing.

Competition across markets

In normal system conditions, it will be unlikely that extra reserve capacity will be required within day. OFR will need to price competitively to compete with the Quick Reserve market.

We will include the prices of OFR units with similar parameters to Quick Reserve to guide the price of alternative action (what the NESO need to pay if Quick Reserve was not procured) to derive the buy-order for Quick Reserve. If there is reliable volume in the OFR market routinely pricing for availability at a lower price than Quick Reserve, then the NESO may reduce the Quick Reserve buy-order and turn to cheaper OFR. In this way the NESO can generate competition between the markets.

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Transition Plan Summary

Our outline plan is highlighted in the table below, with justification and reasoning in the following sections.

Stage Gate	Item	Date	Summary
Service Delivery / Retirement	Delivery of BM Quick Reserve	Nov-24	Alignment with the development and implementation of new IT infrastructure (Open Balancing Platform)
	Delivery of non-BM Quick Reserve	Summer-25	
	Retirement of Fast Reserve	Dec-25	To be replaced by the introduction of Quick Reserve in time for the retirement of the existing dispatch system, ASDP.
Transition Period	Onboarding / Transitioning Providers	Oct-24 - Dec-25	Onboarding to the Quick Reserve service is due to commence in late Oct 2024 upon acceptance of the EBR A18 consultation.
	Participation		Providers will be eligible for registration and participation in both Quick Reserve and OFR during the Transition Period.
	New OFR Registrations		Providers will be able to register for the OFR service for as long as suitably appropriate up until service retirement in Dec-25
	Control Room Management		OFR will remain operational until Dec-25 and considered in merit/economic order against all other suitable actions.
	Competition Across Markets		Opportunity for OFR to price themselves competitively against Quick Reserve actions.
	Procurement & Volume Management		ESO intend to procure 100% of its fast-acting reserve requirement through the Quick Reserve day-ahead auction.
	Provider Impact		Routes to market remain open to all existing providers. Providers that remain in OFR are likely to see a less financial attractive market than previously experienced.