

# Mid-term Reactive Power Market Request for Information (RFI)

## Version control

Version	Date Published	Comment
2.0	20 November 2024	Updated to reflect the extended response deadline

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## Executive Summary

In 2021 National Energy System Operator (NESO) (National Grid Electricity System Operator (ESO) at the time) launched the Future of Reactive Power Market Design innovation project to explore the design for the enduring reactive power market with a focus on value for consumers and to help address the challenges in controlling system voltage. As a result of this work, in the April 2023 Markets Roadmap we explained that the result of this innovation project was a proposal that NESO should procure reactive power services across several timescales:

- Long-term Y-4
- Mid-term Y-1
- Short-term D-1

The next steps were for NESO to take this proposal, and based on the applicable business-case, identify when and how this reactive power market should be implemented. Subsequently in April 2024 through our website we advised industry of two key updates:

1. That NESO were continuing to assess the benefit that a mid-term reactive market would provide, with some outstanding design questions that were being analysed.
2. That further work was required based on the output of the ORPS review to determine the value of the short-term day-ahead service.

This work continues, and as part of it, prior to the launch of any **mid-term reactive power market**, NESO are seeking industry perspectives on a variety of topics that will help NESO design the mid-term market and decide how to progress with its implementation. As part of this NESO will develop views on how any future mid-term market could replace the Enhanced Reactive Power Service (ERPS) through the associated CUSC code modifications.

NESO are particularly interested to hear from parties that can provide reactive power services and are interested in participating in a mid-term reactive power market. Please respond to this Request for Information (RFI) by **5pm Friday 13 December 2024**.

## Purpose of RFI

This is a Request for Information (RFI) only and not part of a formal tender process. NESO will use the received information to refine NESO’s understanding of the available supply market for reactive power services and to support the design of the mid-term reactive power market.

All information provided in this document is indicative and subject to change prior to the launch of any mid-term market any formal tender process. No guarantee is made that the information set out here will be applied in any subsequent tender process or contract agreements.

A contract will **not** be awarded as a result of a response to this RFI. However, parties are strongly encouraged to respond to this RFI if they are interested in taking part in a future mid-term reactive power market.

## Indicative mid-term market design – emergent thinking

### Context

The [Operability Strategy Report](#) details the need for Voltage Management services and highlights how the drive towards a Net Zero Future means that voltage needs are constantly evolving. The Security and Quality of Supply Standard (SQSS) defines the safe limits of operation to which NESO needs to maintain voltage levels within. .

As voltage management is a highly locational issue, the need for reactive power support from new providers continues to increase. This increase is driven by many factors at both transmission and distribution level but managed primarily on the transmission network.

To date, we have concluded three network service procurement events (formerly known as Pathfinders) for reactive power management services. The assets from two of these are currently operational in delivering voltage services and are secured out to 2034. Additionally, we have rolled out temporary Commercial Service Agreements which allow us to unlock additional reactive power capabilities from assets beyond what is required in the Grid Code (though it is expected this will be an interim solution until the availability of a reactive power market).

The launch of this RFI represents a further step in our evolution from ad-hoc procurement events to a more structured Voltage Market. In continuing our work to manage reactive power, our future needs are being looked at over varying procurement timescales, to understand how mid-term (Y-1) procurement could efficiently manage these services and enhance consumer savings.

### System needs

- At this time, we are developing this market on the basis it will be focused on the procurement of reactive power.
- Our requirement could be for either static or dynamic reactive power depending on system studies.
  - This could be for either absorption or injection requirements, or both.
- NESO do not intend to procure to cover for any N-1 largest loss scenarios specifically<sup>1</sup>.
- The intention is that any technical specification would be on a technology agnostic basis.
- At this time, we do not have a pipeline of requirements to share for what could be procured through the mid-term market. This will be developed as we continue to build out the design of the market.
- When designing this market, we are conscious of related similar services. As such, we are considering the possibility of bundling procurement with other services such as stability services. If market participants have any views on this concept, please provide them through the RFI proforma (see below for more details).

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<sup>1</sup> This is where any volume procured through a tender would mitigate the risk of losing the largest solution that contributes to the region's requirements by procuring contingency such that the reactive power requirement could still be met in a region through remaining solutions in the event of the largest loss

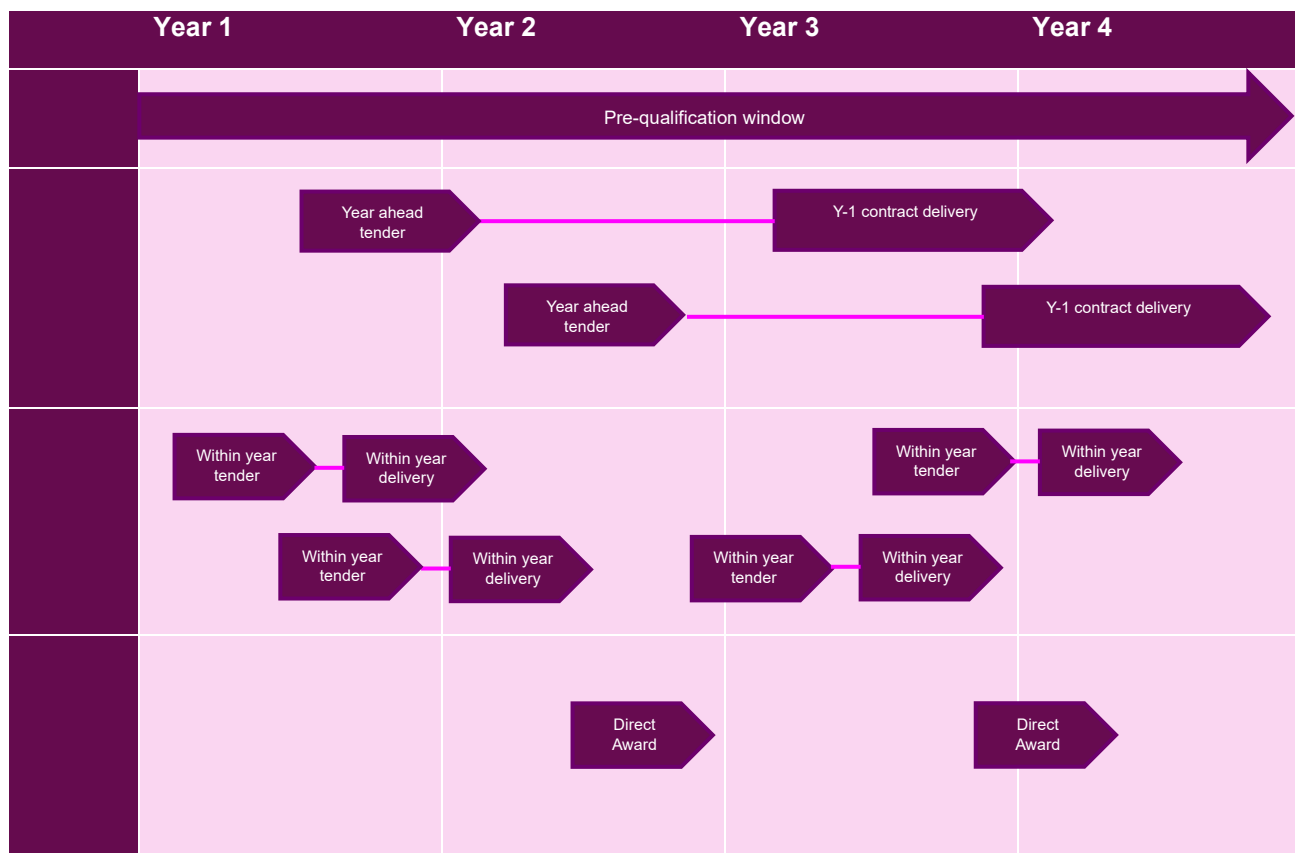
## Process logistics

- The proposal made by the Future of Reactive Power innovation project was that the mid-term market should operate annually based on a regular year-ahead procurement process.
  - This is where a tender process would be conducted with contracts awarded a year prior to service delivery year, and the contract term for service delivery could be 12 months.
- NESO have considered this further based on how reactive power requirements materialise closer to real-time. As a result, we have further developed the basis on which a mid-term reactive power market could operate. Please see details below:

Process	Option	Explanation
<b>Tender Process</b>	Year-ahead (Y-1) process	<ul style="list-style-type: none"> <li>• Competitive tender process with contracts awarded a year prior to service delivery (Y-1).</li> <li>• The contract term for service delivery would be at least 12-months.</li> <li>• NESO are considering allowing ourselves the flexibility to set longer contract durations subject to NESO system requirements.</li> <li>• This process would be run subject to there being a relevant requirement and this being the most appropriate route to market.</li> </ul>
	Within-year process	<ul style="list-style-type: none"> <li>• Competitive tender process conducted within 12 months of the service requirement, closer to real-time than a year-ahead process.</li> <li>• This process would allow NESO to compete for temporary medium term voltage requirements within a year.</li> <li>• It is expected that the contract duration for service delivery could be any duration up to 12 months (&lt;12 months).</li> <li>• This process would be run as often as required, subject to there being a relevant requirement and this being the most appropriate route to market.</li> </ul>
<b>Direct Award</b>	Direct award	<ul style="list-style-type: none"> <li>• The contractual terms that underpin the mid-term market could also allow NESO the ability to “directly award” to a qualified market provider, subject to some defined criteria (please note at the time of this RFI, these are yet to be defined).</li> <li>• As an indicative example, the criteria to permit this direct award route could be based on the following: there is minimal time to complete either of the above two process, the requirement is very short in duration, the requirement is very locational and there are very few qualified providers who can meet the need.</li> </ul>

## Tender Procedure

- NESO are considering a dynamic market style design for this mid-term reactive power market, to establish a pool of pre-qualified providers (CMIS and Frequency Response use similar market concepts)
- A dynamic market style design would mean that:
  - To take part in tender events in this market, market participants would first have to pre-qualify to become a qualified market provider.
  - The pre-qualification window to join the market would always be open for market participants to apply to for the duration of the dynamic market, up to any end date should NESO stipulate a duration for the dynamic market.
  - After receipt of an application, NESO would assess the participant’s application against a set of qualification criteria (these are yet to be determined).
  - If the application is successful, the market participant is deemed to be a qualified market participant.
  - Achieving qualified provider status allows the market participant to then take part in and be considered for tender processes for reactive power requirements under the mid-term market. This could be through the year-ahead process, the within-year process, or for a direct award. An indicative and hypothetical visual is provided below.



- Currently there is no expected quantum per year of each process.
- The expectation is that any tenders will be focused on a specific requirement with a specified delivery period. To be contracted for a specific requirement and delivery period, qualified market participants would need to take part in the tender process for that requirement and delivery period.
- The intention is that bidders will only need to pre-qualify once, and then simply compete based on the relevant tender criteria for each process (e.g., price, Mvar capacity)
- Success in one tender process would not guarantee success in a subsequent tender process.
- It is expected that the mid-term market would classify as 'non-regulated' with regards to procurement regulation such as Utility Contracts Regulations (UCR) and Public Contracts Regulations (PCR).

### Contract Format

- We are considering that providers would enter an overarching mid-term market agreement with NESO, which would be similar to a framework-style agreement. This means that:
  - Upon successful pre-qualification, the qualified provider would enter the overarching agreement with NESO, which would agree standard terms and conditions. All providers who qualify would agree to the same standard terms and conditions.
  - If a provider is successful in a subsequent tender process or direct award for a requirement, NESO would "call-off"<sup>2</sup> the overarching market agreement and document any specific contractual details for the delivery year in a "call-off" style contract form.
  - A "call off" contract form would be used each time a provider is successful in a subsequent tender process or direct award.

<sup>2</sup> A call-off is another way of referring to a contract between a buyer and a qualified framework supplier that has been placed through a framework or similar contracting arrangement. You may also hear the phrase 'call-off contract', which means the same thing. It is normal to see multiple call-off contracts under one framework.

- This approach provides process efficiency benefits, as the overarching terms and conditions would only need to be agreed once.
- NESO are still exploring whether the overarching agreement would be timebound or if the agreements would be evergreen with the ability to terminate should market structures change in the future.
- It is expected that the overarching mid-term market agreements would be entered into on a per-solution basis rather than a per-company basis.

## Payment Mechanism

### Structure

- NESO intend to follow a pay-as-bid approach.
- Bidders would be requested to submit prices based on the following payment structure:
  - An availability fee e.g., £/Mvar/Settlement Period.
- Following a tender process or direct award, successful bidders will receive their availability fee for each settlement period in which they are available and deliver the service.
- Payment will be prorated based on available Mvar capacity. If market participants have any views on this concept, please provide them through the RFI proforma (see below for more details).
- NESO would require ORPS payments to be forgone for any capability contracted through this market.

### Indexation

- With regards to indexation, NESO are exploring the following:
  - Whether contract prices would be fixed rates (with no indexation) for the duration of any call-offs
  - Whether to index to CPI
  - Whether to partially index to energy indices
  - Whether to determine if indexation is applicable on a tender-by-tender basis depending on the duration of the requirement
- Given the possibility of varying durations of requirements in the mid-term market, the latter may be the most appropriate approach. If market participants have any views on this concept, please provide them through the RFI proforma (see below for more details).

## Eligibility Criteria

NESO are considering setting the following eligibility criteria as baseline requirements

- Solutions must be capable of providing the service independently from MW import and export where the asset is a non-0MW asset, or otherwise at 0MW (import and export).
  - This means that the declared reactive power capability must be provided independently of MW import and export where the solution is capable of injecting or absorbing active power (beyond intrinsic operational losses)
  - For example, for a battery, or a synchronous generator, who are non-0MW assets, they must provide the reactive service such that a change in MW export or import is not required to enable the declared capability.
  - For absolute clarity, this does not mean these assets need to fix their MW export or import. Just that ability to provide a reactive power service needs to be independent from the MW export and import capability, or otherwise at 0MW (import and export)
- Solutions must have an existing connection agreement (whether already connected or due to connect in time for contract start) that facilitates the proposed bid in full.
- Solutions must be directly connected to the transmission system (e.g. 275kV and above for England and Wales, 132kV and above for Scotland).
  - NESO are motivated to understand the feasibility of how distribution-connected solutions can take part in this market. Before this can be facilitated, more work is required with DNOs/DSOs to further develop this understanding, building on the learnings from the 'Accessing Additional

Voltage' RFI run in 2022 and the subsequent DNO study work to analyse the RFI output. Once this work is completed, NESO will be able to build the output into the reactive power market.

### Interaction with other reactive power contracts such as Enhanced Reactive Power Service (ERPS), Commercial Services Agreements (CSAs)

The intention is that once launched, the mid-term reactive power market would act as a new consolidated route to market for reactive power services, allowing NESO to replace ERPS and any temporary CSAs that have been put in place following the 2022 RFI.

## RFI Questions

Please refer to the **ReactivePower Mid-Term RFI\_Pro-Forma** to view and respond to the questions NESO are asking through this RFI.

## RFI Submission Information

The submission deadline for responses to this RFI is **5pm Friday 13 December 2024**. Please ensure your response, supporting documents and communications relating to this RFI are provided in English.

Please provide answers to all the questions using the **ReactivePower Mid-Term RFI\_Pro-Forma**. If additional space is required or you wish to provide further information in separate documents, please clearly state the question number in the file name of these additional documents, using the following naming convention: **Q(number)-(document name)-(company name)**.

Submissions must be received by the submission deadline. Submissions should be sent to the following address: [box.voltage@nationalenergyso.com](mailto:box.voltage@nationalenergyso.com)

All communications and queries arising from this RFI should be conducted by email using the email address detailed above.

Please ensure all emails in relation to this RFI include the following in the subject box: **Reactive mid-term RFI 2024**.

Any queries **must** be submitted no later than three days prior to the submission deadline for this RFI (10 December 2024). Following receipt of RFI responses NESO may organise follow up meetings with market participants to discuss the information received in more detail.

## RFI Expenses

NESO shall not be responsible for or pay for any costs or expenses that may be incurred by the supplier in the preparation and submission of a response to this RFI.

## Confidentiality

All details of this RFI and associated documents must be treated as private and confidential and shall not be disclosed to any other party, except where this is necessary for you to prepare and submit a response. You must ensure that you have an adequate confidentiality agreement in place with any subcontractors, consultants or agents before issuing them with any information concerning the requirements of this RFI.

Details of your response to this RFI shall not be disclosed to any third party unless such disclosure is required by OFGEM, DESNZ, and/or law or court order.

Following the conclusion of the RFI, NESO reserve the right to publish an anonymised summary of responses.