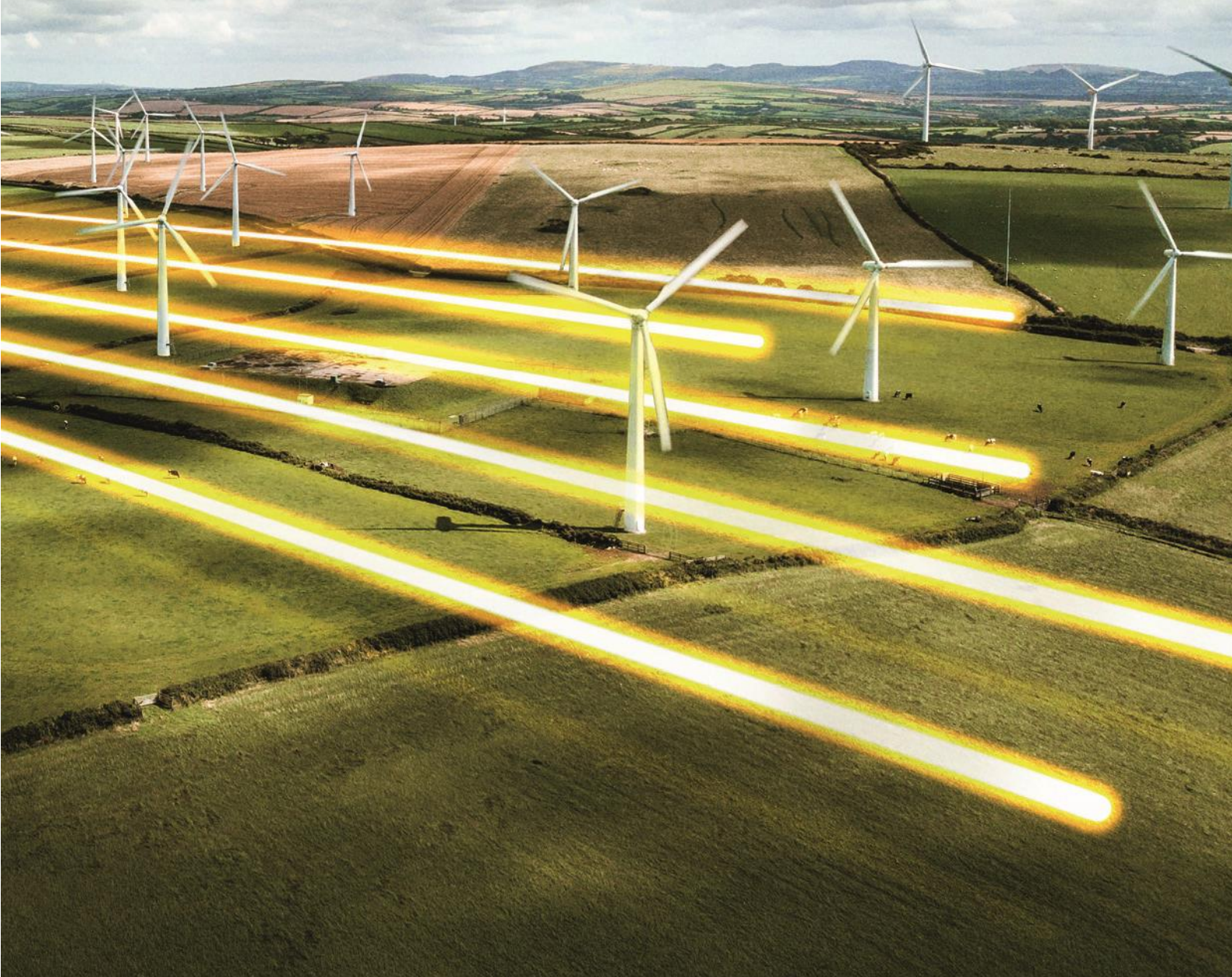


Request for Information

16 May 2022

Accessing Reactive Power Capability in England and Wales 2023-2026



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1. Executive Summary

We are at a very exciting time in the electricity industry as we move to a decarbonised electricity system and as we transition, we need to think differently about how the network is operated. One of the key technical challenges is in the area of voltage management. This paper is setting out the challenge that we see in the short to medium term and is asking for existing and new providers that are capable of providing additional voltage services to come forward and express an interest in participating in a potential voltage contract.

The paper sets out the technical need across multiple zones across England and Wales and explains what information we need in order to make an assessment and determine the next stage which if appropriate would be to run a commercial tender process.

If you are a new or existing provider of voltage services where you believe you can offer a new or enhanced service, then please respond by 5pm on 13 June 2022.

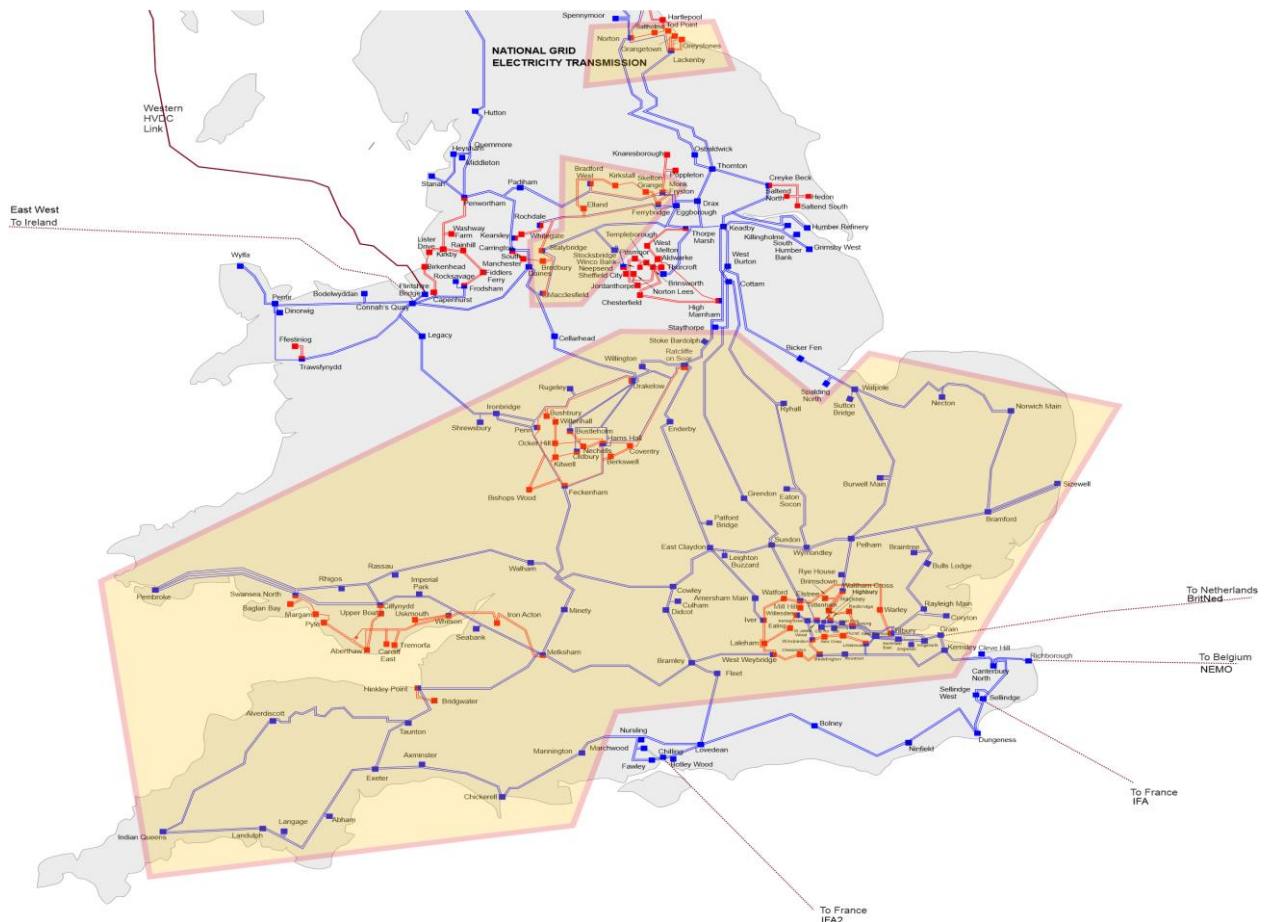
2. Introduction

Voltage levels are managed through the injection and absorption of reactive power. Maintaining voltage levels across the transmission network has become increasingly challenging as decreasing reactive power demand on distribution networks and reducing power flows across the transmission network are driving an increasing need to absorb reactive power on the transmission system. The closure of coal and gas fired power stations is reducing the available reactive power capacity. In addition, the reduced running hours of these power stations means that we must synchronise them to access their reactive power capacity, which increases balancing costs.

Our [Voltage Screening Report](#) has highlighted numerous areas where there is reducing reactive capacity, or a need to reduce voltage management costs. Across seven regions we will lose access to 3,600MVAR of reactive capacity by 2025, and an additional 1,000MVAR by 2030 through plant closures. This means we need additional reactive power absorption to manage high voltage levels.

The [Reactive Reform Market Design](#) project has highlighted likely additional reactive capability that the ESO does not have access to. Implementing the recommendations from the project is being scoped over the next year, as covered in the recent [project conclusions webinar](#). Ahead of any market implementation, there is the potential to reduce voltage management costs by accessing this untapped capability. This Request for Information (RFI) seeks to identify additional reactive power capability that could be accessible to NGENSO and support our operational needs between 2023 and 2026. The map below shows the areas where we are looking for additional capability.

NGESO will use the information collected through this RFI to shape the next stage in our thinking which, depending on the results, could be a form of tender or commercial arrangement. **It should be noted that parties are strongly encouraged to respond to this RFI if they would like to be part of any potential tender/commercial arrangements that result from this RFI.** Failing to respond may present delays/challenges in being able to progress at pace for any developments.



Our technical requirement can be summarised as:

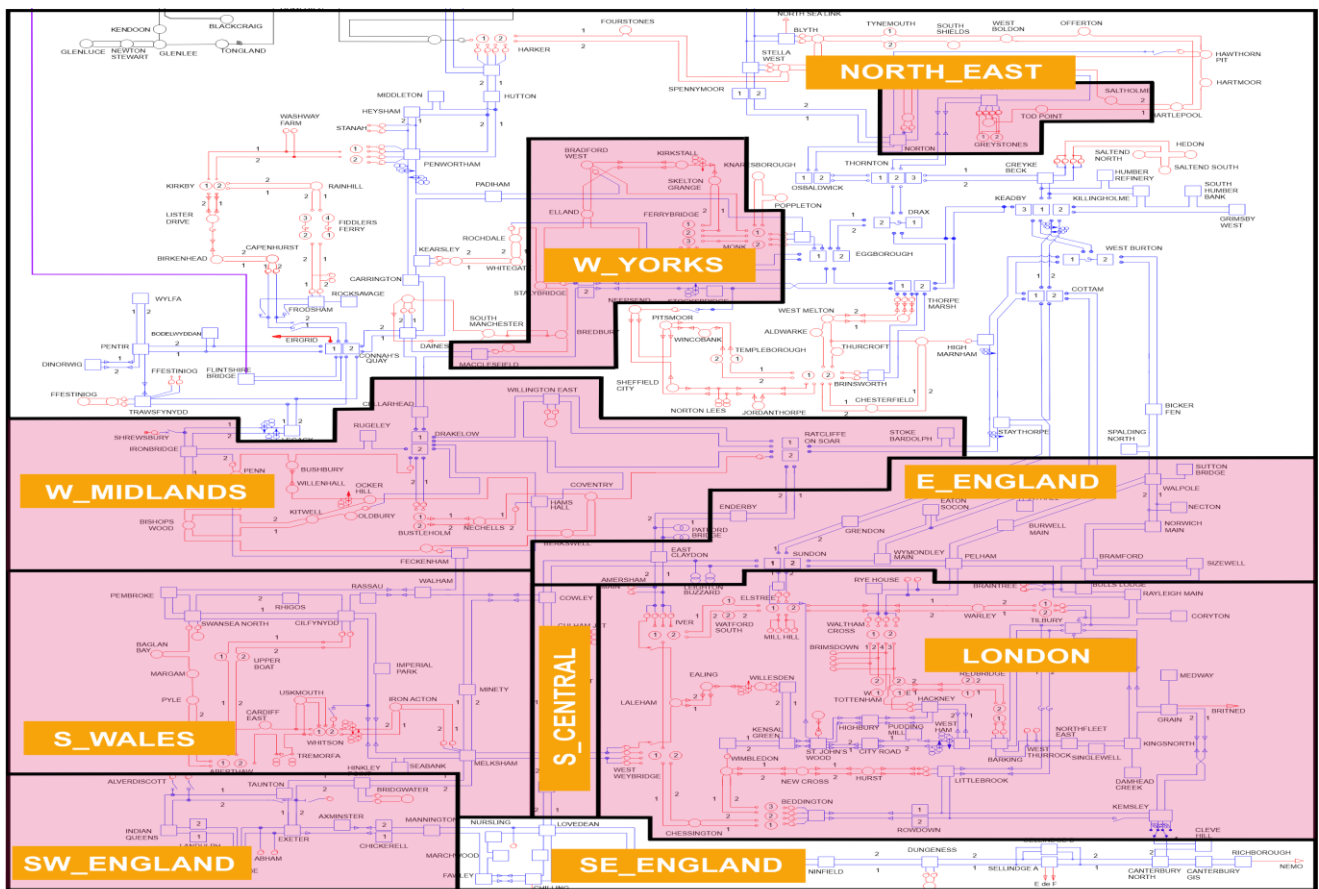
- Additional reactive capability i.e., capability that we currently cannot access through existing mandatory reactive services / commercial contracts.
- The capability must have a point of connection which is 132kV and above (transmission or distribution). Note the HV side of the customer point of connection must be 132kV or greater.
- Existing assets or new assets connecting/available between 2023 and 2026.
- The maximum size of any solution may be limited by the voltage step change it imposes on the network following switching. This will depend on the voltage level and system strength where the solution is connected. The maximum sizes will typically be: 200MVAR at 400kV, 100MVAR at 275kV and 60MVAR at 132kV, although other factors may need to be taken into consideration to ensure network (DNO and TO as appropriate) security, which could further restrict the maximum acceptable size.
- Early market intelligence suggests assets such as onshore and offshore wind farms, batteries, solar, OCGTs and industrial processes may hold additional capability. This list is not exhaustive, and we welcome feedback from any technologies that meet our technical requirements.

3. Regional Requirements

Our reactive requirements are regional as reactive power mainly impacts the local area where it is injected or absorbed. The table and map following show our requirements by electrical connection area. It is important to note that these volumes are indicative and may vary depending on where solutions are located. For example, if there is additional capacity very close to the system need, the MVar requirement maybe be a close match to the figures below. However, if the reactive capability is located electrically further afield, the MVar requirement may increase. In addition, the volumes may increase further depending on RFI feedback/interest.

Region	MVar requirement
London	300
West Midlands	300
South Wales and South Central	600
South West England	200
East England	200
North East	200
West Yorks	500

These regions are mapped to the electricity regions following:



4. RFI Submission

The submission deadline for responses to this RFI is **5pm on 13/06/22**. Please ensure responses and supporting documents relating to this RFI are provided in English.

Please provide answers to all the questions in Annex 1 – Proforma, and/or via separate documents if appropriate. If answering in separate documents, please clearly state the question reference number in the file name using the following naming convention:

Q(number)-(document name)-(supplier name)-(version)-(date)

Submissions must be received by the submission deadline and should be sent to the below address:

box.futureofbalancingservices@nationalgrideso.com

All communications and queries arising from this RFI should be conducted on email through the contact detailed above. Please ensure all emails on this RFI include the following in the subject box:

Voltage 2023-2026 RFI – [provider name]

Any queries **must** be submitted no later than five days prior to the submission deadline for this RFI.

5. RFI Expenses

NGESO 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.

6. 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 law or court order.

Following the conclusion of the RFI, we will publish an anonymised summary of responses. At this stage, no commercially sensitive information will be published.