

# Short Term Mersey Voltage Procurement April 2021 Request for Expressions of Interest (EOI)

## Executive summary

On 17 January 2020, National Grid Electricity System Operator (ESO) published the results of the static reactive power tender in the Mersey area for the period April 2020 to March 2021. Following confirmation that a requirement still exists in the area the ESO is seeking feedback from any interested party in the area to inform our tender approach for a further service from 1 April 2021. This is reflective of any potential restrictions that may exist for embedded participants. We are therefore publishing this Expressions of Interest (EOI) letter that details specific feedback about our requirements to understand levels of interest. Response to this EOI is not a prerequisite for participation in a tender, however the EOI responses will inform our decision to run a tender.

## Key Dates

08 September 2020  
ESO requests EOI

22 September 2020  
Deadline for submitting EOI

## Background

We have an obligation to maintain the National Electricity Transmission System (NETS) voltages within limits. These are defined within the NETS Security and Quality of Supply Standards (SQSS). System voltage varies across the system and can only be managed locally on a regional basis. We use many ways to manage system voltage – network owned reactive compensation, high voltage control circuits and transmission connected generation.

In the Mersey region, we have contracts in place until March 2021 and from April 2022. There is however a need for additional reactive power services from 1 April 2021 – 31 March 2022.

The previous Mersey tender received 6 solutions from 4 participants. Distribution network topology meant many participants were only able to operate to 0.95 power factor, reducing the available reactive volume for the service. The details of the previous tender event can be found on our website<sup>1</sup> (under Reactive Power – Mersey 2020/21).

## Requirement and contract length

The required reactive power absorption volume will be in the region of 70-140 MVar, dependent on system conditions. Our requirement could also be met through reduced injection of reactive power.

Contract length will be a minimum of 12 months with up to a further 12 months' extension at the discretion of the ESO, on a rolling monthly basis.

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<sup>1</sup> <https://www.nationalgrideso.com/transmission-constraint-management?market-information> under Reactive Power – Mersey 2020/21

## Contract terms

The contract terms will be the same as the current service used for the 2020/21 event<sup>2</sup> save the following: -

- 1 - We will require all participants to be able to ensure the following protection requirements are supported:-
  - Solutions must be able to remain connected and stable for faults where the voltage at the Grid Entry Point or User System Entry point could fall to 0 per unit for up to 140ms.
  - Solutions implementing loss of mains protection based on rate of change of frequency (RoCoF) should have a setting of  $\geq 1\text{Hz/s}$  with a time delay of 500ms.
  - Solutions should not be implementing loss of mains protection based on Vector shift.
- 2 - We are also seeking to introduce the following changes to the standard contract terms
  - Extending the service period to end at 8am on weekends and bank holidays (rather than 7am).
  - Understanding whether participants can offer a shorter notice period between instruction and delivery (currently 13 hours or 10:00) - which could result in increased levels of utilisation.

## Update to location information

Whilst the target location is largely rolled over from the 2020/21 tender event we are clarifying that even though some units may be outside of the stated geographical target area (see maps in appendix), they are still eligible to participate in this expression of interest provided that they have a reasonable electrical closeness to the region of interest.

## Power Factor restrictions on embedded providers

From the analysis undertaken by SP Manweb in both the Mersey 2020/21 short-term tender and the Mersey 2022-2031 long-term tender, it was observed that for the majority of embedded providers, an operating power factor lower than 0.95 lead (reactive power absorption) is unlikely to be possible unless network reinforcements are delivered. Given that a reactive power service is being sought from April 2021, network reinforcements will not be possible to enable lower power factors and as a result, power factor restrictions on embedded providers will remain applicable.

For returning participants, we will therefore be using the power factor restrictions identified as part of the long-term tender assessments carried out by SP Manweb. For any new participants, the power factor will likely be limited to 0.95 lead, however where possible we will engage with SP Manweb on a case-by-case basis to understand whether lower power factors can be facilitated.

## How to respond

We would appreciate a response by 22 September 2020 to the following two questions.

1. On the basis that a 0.95 power factor restriction will apply in most cases, can you confirm whether you expect to participate in this tender event? If yes, please also fill out table 1 in the Appendix.
2. Do you have any feedback on your ability to support the changes proposed to the contract terms?

Responses to this EOI, these specific questions and other queries shall be directed to [commercial.operation@nationalgrideso.com](mailto:commercial.operation@nationalgrideso.com)

## Decision to tender

A decision whether or not to tender will be made based on the EOI responses. We will apply some generic assumptions to calculate effectiveness for each response/solution. If the total effective volume from non-BM

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<sup>2</sup> <https://www.nationalgrideso.com/transmission-constraint-management?market-information> under Reactive Power – Mersey 2020/21

units is between 70-140MVA<sub>r</sub> we will consider whether there is economic benefit in running a tender. If it is greater than 140MVA<sub>r</sub> we will run a tender.

## Appendix

Table 1

Company name	
Technology	e.g. CHP, battery
Available reactive power absorption at 0.95pf	e.g. 30MVA <sub>r</sub>
Connection location and voltage level	e.g. Kirkby 132kV
Can you meet a start date of 1 April 2021 with a minimum 12-month service?	Y/N
Could you provide a 24-month service?	Y/N
Can you meet the minimum requirements set out in the previous Mersey tender and the protection requirements contained within this EOI?	Y/N

### Minimum requirements

These are from the previous tender (non-exhaustive list – full details available in previous tender pack<sup>3</sup>):

- Minimum reactive power absorption is 5MVA<sub>r</sub> (for embedded providers must be connected at 33kV or above and will be subject to power factor restrictions). This can be from a single unit or aggregated from several smaller units at a single connection site.
- Distribution connected and non-synchronous providers must be in power factor control mode.
- There must be a single point of dispatch.
- The notice period required to deliver reactive power must not exceed 13 hours.
- Reactive power must be available to dispatch as defined by the relevant contract.
- Providers must have capability of receiving, and responding to instructions 24/7 for the duration of the contract period.
- Contract types A, B and C must be able to deliver reactive power for the entire service period (23:00-07:00) [07:00 is now 08:00].
- Providers to inform NGESO of planned outages / periods of unavailability.
- Provider should host an IEC104 server so that NGESO can connect over a VPN such that NGESO have visibility of metering data and availability/status signals.
- If contract type D providers wish to be electronically dispatched, they will also need to be able to accept IEC104 single point command and respond appropriately. Providers will otherwise need to be able to accept instructions manually.

<sup>3</sup> <https://www.nationalgrideso.com/transmission-constraint-management?market-information> under Reactive Power – Mersey 2020/21

Maps

