

Procurement Methodology

Pertaining to the Accelerated Loss of Mains Change Programme (“ALoMCP” or “Programme”

INTRODUCTION

The purpose of this document is to set out the generic rules that National Grid ESO (NGESO) will apply to assess the offers made by owners of distributed generation sites (providers) via their network operators (participating distributors) to determine which of these offers will be accepted for the provision of the accelerated loss of mains (LoM) change service through the ALoMCP.

This document is referred to in the contract that governs the provision of the accelerated loss of mains (LOM) change service (“ALoMCP Distributor Agreement”) between NGESO and Participating Distributors. The terms of each ALoMCP Distributor Agreement require that NGESO assess the offers solicited by the participating distributor in accordance with this procurement methodology.

GOVERNANCE

This methodology has been produced by NGESO in accordance with license condition C16 of NGESO transmission license. It will be made available online, accessible from both the NGESO and ENA websites, for as long as NGESO intends to apply it for the procurement of the accelerated LoM change service.

NGESO will update this document as the need arises. Any updates will be made available online.

Version control

Version	Date	Status	Notes
1.0	26.09.2019	Final	

BACKGROUND

The delivery of accelerated changes to protection settings procured through the accelerated LoM change programme is a constraint management service for stability provided by distributed generation via network operators.

This service will be procured in line with the over-arching procurement guidelines as prescribed in standard licence condition C16 of NGENO's transmission licence. The detailed arrangements for the procurement of this service are set out here.

The procurement methodology is made up of the following parts:

1. Procurement principles,
2. Procurement process,
3. Procurement assessment, and
4. Market information

This procurement methodology will remain under review throughout the procurement period and will be updated where improvements to the approach are identified.

TECHNICAL REQUIREMENT

To ensure that

1. the security of supply is not reduced due to inadvertent tripping of LoM protection;
2. the costs incurred to facilitate the provision of such level of security of supply are reasonable; and
3. the system remains operable with the connection of greater volumes of asynchronous generation and large demand or generation connections;

it is necessary to change the LoM protection at a significant number of existing distributed generation sites to bring them in-line with the new requirements of the Distribution Code. This requires

1. Ensuring that where the LoM protection responds to RoCoF (Rate of Change of Frequency), the applied setting should be 1Hz s^{-1} with a definite time delay of 500ms;
2. Ensuring that VS (Vector Shift) protection technique is removed where it is in use as LoM protection; and
3. Remove/disable LoM protection from distributed generation sites, other than synchronous units and DFIG units, where a suitable RoCoF setting cannot be made without additional investment eg where a new protection device would be required.

This obligation will come into force on 01 September 2022. However, to maximise the value delivered, it is necessary to accelerate the implementation of these changes. To achieve this, NGENO will procure, through participating distributors, that generation owners adopt the new settings at their distributed generation sites ahead of the deadline in exchange for a payment sum. Generation owners, hereafter referred to as providers, will have the opportunity to make an offer for the provision of this service and apply for this

payment. These offers will be assessed and prioritised based on the assessment factors included in this document using the information provided in the associated application.

Should you require any further information on this technical requirement please refer to the DC0079 workgroup “Report to The Authority” available online on the [Distribution Code Review Panel webpage](#) – February 2019 Distribution Code Review Panel meeting.

PRE-QUALIFICATION CRITERIA

Providers must meet the pre-qualification criteria specified in the Payment Process Specification document, available online on the [programme webpage](#), in order to be eligible to apply for this payment

PROCUREMENT PRINCIPLES

When procuring this service, the Procurement Methodology will align to the following principles:

- A clear and transparent requirement
- Enabling competition where appropriate
- Not to unduly discriminate against technology type

Clear and Transparent requirement

The technical requirement, as described earlier in this document, has been developed and reviewed by the Distribution Code workgroup DC0079 and consulted on with the wider industry.

The total number of sites and the sum of the MW capacity which need to be accelerated will depend on which providers apply and are accepted during the procurement process. To ensure this is transparent, progress will be published regularly.

The initial estimate is that over the next 12 months we will allocate £50 million to procure this service. This allocation will be kept under review by the project steering group.

Enabling competition where appropriate

The structure of the payment scheme is simple and clear to any potential applicant. This simplifies the process.

Offers will be evaluated and applications for payment accepted through a competitive prioritisation process where each application will be considered based on its own merit as defined by a set of technical parameters and the delivery timescales according to the methodology described in the assessment section.

Payment will only be made available until it is no longer economic to pay for any further change. Remaining sites will have to comply with the new requirement at their own cost.

Not to unduly discriminate against technology type

The completion of the protection modification works at any specific distributed generation site will contribute towards the reduction of the risk resulting from inadvertent tripping of LoM protection. This contribution is largely dependent on the output of that specific site at periods of high risk with plant which output is highly correlated with the risk being most effective.

For this programme, the correlation of the output of any specific distributed generation site and the risk of inadvertent tripping of LoM protection will be based on generation technology. Should any provider believe that this assumption will unduly discriminate against them they should highlight this in their application and explain any alternative factors which should be considered to determine this correlation.

PROCUREMENT PROCESS

The procurement process is described in the Payment Process Specification. It will commence on the date specified in that document and continue until payment for acceleration of settings changes becomes uneconomic compared with the alternative operational tools.

Applications received will be assessed using the methodology in this document. If an application is successful and subject to the completion of the works required and demonstration of compliance by the deadline specified, participating distributors will pay providers for the delivery of the service.

Each participating distributor will report to NGENSO on the delivery of the service and on the costs incurred to achieve that in line with the Payment Process Specification. NGENSO will then

- reimburse the participating distributors, and
- use the data provided to review its operational policy in order to take into account the reduction of the volume of generation at risk.

As the volume at risk decreases the number of periods where action is required to curtail the largest loss or increase inertia in operational timescales will decrease. Reducing these actions will offer long term savings to BSUoS costs.

Throughout the process, an audit will perform checks at a range of sites to provide assurance that those sites are compliant with the new settings changes.

PROCUREMENT ASSESSMENT

The main objective is to maintain the balance of the electricity system in an efficient, economic and co-ordinated manner. Therefore, in deciding whether to accept an application, NGENSO will assess whether the cost of accepting that application is likely to be less or greater than the cost of the alternative.

For example, the cost of an application will be influenced by:

- **Number of protection devices per site:** the more protection devices (relays, inverter controllers or otherwise) per site, the greater the cost of the tender
- **Scope of works required:** changing settings of an existing device, or disabling the LoM protection function of such device, has a lower cost than replacing an old protection device with a new one.
- **The requirement of witnessing the change:** The costs required to cover a participating distributor's representative attending to site to witness the change will increase the overall cost of the change.

While the cost of alternatives may be made up of one or more of the following:

- **Accepting another application:** The cost of accepting an alternative application of the exactly the same merit.
- **Frequency response:** the cost of purchasing additional frequency response services to balance the additional loss caused by the inadvertent tripping of this specific distributed generation site.
- **Increasing inertia:** the cost of accepting offers in the Balancing Mechanism to allow synchronising additional synchronous plants such that the total system inertia is increased to a level that ensures that following any secured event, the rate of change of frequency remains within limits.
- **Curtailing the largest loss:** the cost of accepting bids in the Balancing Mechanism to reduce the size of the largest secured generation or demand loss such, if this loss is to occur, that the rate of change of frequency remains within limits.
- **Additional bids/offers:** the cost of accepting any additional bids/offers in the Balancing Mechanism that are required to facilitate any of the above actions while maintaining generation and demand balance.
- Any other feasible alternative.

In addition, the following factors will be taken in to account during the assessment. The order in which the factors are listed is not an indication of the relative importance of each to the others:

- **Protection type:** RoCoF and VS protection will be assessed independently due to the different nature of their operation. Subject to receiving sufficient applications related to each type, a minimum number of each type will be guaranteed to be accepted in each round to ensure both risks are mitigated simultaneously.

- **Protection setting:** For RoCoF protection only, the more sensitive the protection is, the higher its susceptibility to inadvertent operation, and the higher the value that would be delivered by changing it early in the programme.
- **Timescale to implement change:** the sooner the change, the greater the potential benefit of the application.
- **Capacity:** the higher the capacity of a power station is, the greater the reduction in risk would be.
- **Location:** for VS protection only, the closer the electrical proximity of a power station to a large potential generation loss on the network, the worse the implications of an inadvertent tripping would be.
- **Load factor during risk periods:** the higher the output of a power station at the risk period, the greater the reduction in risk. This will be assigned based on the fuel type of the unit
- **Resource constraints agreed with participating distributors**

And any other factors that, in NGENSO's reasonable opinion, are relevant in appraising the viability of any individual application or collection of applications submitted

MARKET INFORMATION

To provide transparency of the progress of this Programme we will publish market information on a regular basis via the NGENSO website:

- At the end of each round of applications, window, we will publish
 - the total number of providers and capacity (MW) which applied,
 - the total number of providers and capacity accepted by each participating distributor, and
 - the cost of the programme.
- An audit will take place to determine the extent to which loss of mains protection changes have been implemented. A summary of this audit will be published on an annual basis