



Appendix 2 – Technical Specification

Flexible Service requirement Spring 2020



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1 Definitions

Availability window defines the likely time periods when we expect to seek flexible services support from the provider.

Contracted Performance Window means a Committed Performance Window in respect of a Site(s) / Group which is allocated by the Company for Flexible Services which is to be agreed and documented within the Flexible Services contract.

Contracted Capacity means the target net MW to be delivered by a Flexible Resource at a Site(s) / Group.

Demand the demand of MW and MVAR of electricity.

Distributed Energy Resource (DER) means resources like generators, consumers, and electricity storage connected to the distribution network .

Distributed Generation (DG) means a generator connected to the distribution network.

Distribution Network Operator (DNO) means the owner and operator of a distribution network licensed by the Gas and Electricity Markets Authority.

Electricity Storage in the electricity system is the conversion of electrical energy in a form of energy which can be stored, the storing of that energy, and the subsequent reconversion of that energy back into electrical energy.

Feeding area means the geographic area that is supplied electricity by the cables and/or overhead lines connected to the local substation.

Flexible Resource means resources like generators, consumers, and Electricity Storage connected to the distribution network.

Flexible Services means the provision of a change in import and/or export when instructed. This is also sometimes referred to as demand side response.

Generation means the electrical output (in MW) of any apparatus which produces electricity.

Group means a group of sites being aggregated to offer Flexible Services.

High voltage (HV) means the voltages of 6.6kV or 11kV in Electricity North West's distribution network.

Low voltage (LV) means the voltages of 400V / 230V in Electricity North West's distribution network.

Manual Override means the inhibit switch installed at each Supplier Site(s) / Group which may be operated to prevent the despatch of Flexible Services by The Company.

Minimum Utilisation Period means the pre defined operating window which the Company have contracted for Flexible Services Delivery.

Network Management Hub means the Company control facility from where the network is monitored and managed.

Policies means any instructions, rules or policies issued by the Company from time to time.

Post-fault condition means the situation where the distribution network is operating abnormally, generally following the disconnection and isolation of a section of the network due to an electrical fault on that section of network.

Recovery Period means the period taken for a Service to recover from provision of Flexible Services. This would include the necessary period for re-fuelling of generators.

Response Time means the maximum period of time (in minutes) which is permitted to elapse from despatch of Flexible Services by the Company or issue of an Instruction by the Company (as relevant) to achieving the Contracted Capacity at the relevant Site(s) / Group in connection with the service.

Site means each of the locations offering Flexible Services. For aggregated Flexible Resources the site is classified as the group of aggregated supplies.

Term means the duration of this Agreement.

Utilisation means, in respect of a Site(s) / Group, any despatch of a Flexible Service which is provided continuously until the Event End Time and "**Utilised**" shall be construed accordingly.

Utilisation rate defines the maximum number of hours that we expect flexible services will be required from the provider.

2 CONDITIONS PRECEDENT

The Bidder will need to meet the following high level conditions in order to provide a Flexible Service to the Company:

- a. The Flexible Resource must:

either be already connected to the network location being supported; providers should use the highlighted area on the maps provided in each appendix as an indication of whether the resource is in the right geographic location¹,

or

be able to locate (i.e. install, commission, and deliver) the Flexible Resource in the locality of the network asset being supported two months prior to the delivery start date².
- b. The minimum size for directly contracted resources should be at least 50kW. There are no restrictions on the size of sub-sites of aggregated portfolios, but the total portfolio size needs to be at least 100kW (flexibility capability and not capacity).
- c. The Supplier should be able to deliver and manage, upon the Company's request, a net reduction in the demand or an increase in the export, as seen by the distribution network.
- d. The Flexible Resource should have the ability to act (provide a response) reliably and consistently, in both magnitude and duration, throughout the contracted windows.
- e. Generators and electrical Storage, greater than 16A per phase, looking to export to the network will need to have a long-term parallel connection and be compliant with the requirements of EREC G59 or EREC G99.
- f. Flexible service suppliers should be able to deliver the service by the specified delivery start date (specific start dates are stated for each site in figure 2.3).

2.1 Minimum requirements

The Flexible Services procured are for a decrease in import or an increase in export.

The following requirements are required for participation:

- a. Each Site / Group must be in one of the zones detailed within the Network Requirements section of this Appendix.
- b. Each Site / Group must be half hourly (HH) metered (or an agreed equivalent).
- c. Each Site / Group must be able to respond within 3 minutes of receipt of a dispatch signal for dynamic services, and within 15 minutes for secure services.

¹ If you would like the Electricity North West to verify that the electrical connection is suitable prior to submission of your proposal, please email flexible.contracts@enwl.co.uk with your meter point administration numbers (MPANs).

² Further information on connection to Electricity North West's distribution network is available at [Get connected](#). All connection charges will be payable by the connectee in accordance with our [common connection charging methodology](#).

- d. Each Site / Group must be able to provide a minimum 30 mins response.
- e. Each Site must be built (ie commissioned) and have a connection agreement with final milestone two months prior to the start of the performance window.
- f. Provision of the service must not put the Supplier in breach of other agreements (e.g. connection agreements).

Each Site / Group will be required to have a minimum of one Company owned Remote Terminal Unit (RTU) installed onsite (see section 3.2 for further details).

3 Technical and operating conditions

In the absence of any notification to the contrary in respect of a particular Site(s) / Group, the Company shall be entitled to assume that that the Flexible Resource is available to be despatched at all times during the contracted Performance Window and for the contracted capacity.

If, at any time, the Supplier becomes aware that

- a. The Flexible Resource will not be available for despatch from a Site(s) / Group for any time during the contracted Performance Window,
- b. The Flexible Resource will be available for despatch from a Site(s) / Group for any time during any Performance Window that was notified as unavailable,

then it shall update the Network Management Hub of such change as soon as reasonably practicable, including details of the Site(s) / Group, the service, the relevant period of time that will be available or unavailable and (where declaring availability), the contracted capacity it is declaring. The method of communicating unavailability will be agreed within the Flexible Services contract.

Taking into account any asset or Site(s) / Group operational capabilities agreed between the Company and the Supplier, and based on any asset status monitoring data and information available to it (including where no data or information is available as a result of a failure of the control or communication systems), the Company may determine that a Flexible Resource is unavailable for despatch.

Examples of when a Flexible Resource may be determined as unavailable are listed – but not limited to the – below:

- a. In the event that the Manual Override is operated by the Supplier during a Contracted Performance Window and/or other period of time
- a. If no Flexible Service is provided for a period of time during a Contracted Performance Window and/or other period of time following an instruction,
- b. During the declared recovery period, or
- c. If the utilisations would exceed the relevant annual limit.

Where:

- a. The Company has determined, in accordance with the paragraph above, that the Flexible Resource is not available for despatch from a Site(s) / Group (s), then it shall notify the

Supplier of this as soon as reasonably practicable thereafter. Upon such notification, the Supplier shall investigate and shall provide a report to the Company setting out the reasons why the Flexible Service was unavailable for despatch;

- b. The Supplier operates the Manual Override during a Contracted Performance Window or other period of time or if no Flexible Service is provided for a period of time following an Instruction from the Company, then the Supplier shall, as soon as practicable thereafter, provide a report to the Company setting out the reasons why such Manual Override was operated or the Flexible Service was not provided following an Instruction.

The Company may, in any Contracted Performance Window or other period of time in respect of a Site(s) / Group which has not been declared or deemed to be unavailable at that time, issue a notice (an "Instruction") requiring the Supplier to provide a Flexible Service, or may itself remotely despatch the Flexible Resource from that Site(s) / Group.

Where the Company remotely despatches the Flexible Resource this shall be notified by the Network Management Hub to the Supplier and shall continue uninterrupted for at least the Minimum Utilisation Period until the earlier of:

- a. Notification of reduced requirement by the Company, and
- b. The end of the relevant Contracted Performance Window (as relevant).

Where the Company issues an instruction requiring the Supplier to provide Flexible Service the Supplier shall, within the Response Time, provide the service from the Site(s) / Group continuously for the Minimum Utilisation Period until the earlier of:

- a. Notification of reduced requirement by the Company; and
- b. The end of the relevant Contracted Performance Window (as relevant).

In the event that, in respect of the despatch of a Flexible Resource in any Contracted Performance Window or other period of time previously notified, or deemed to be notified, as being available at any Site(s) / Group:

- a. the Flexible Service is not provided at a level of at least the required level of Contracted Capacity less any applicable grace factor,
- b. the volume in MWh of the Flexible Service provided following despatch is less than the required level of Contracted Capacity less any applicable grace factor, or
- c. the Flexible Service is not provided continuously at a level of at least the required level of Contracted Capacity less any applicable grace factor,

then the Company Service Charges otherwise payable by the Company to the Supplier shall be reduced.

Any applicable grace factors will be agreed as part of the contract award process.

Where sites are contracted to deliver a Flexible Service under this request for proposal there is an understanding that there may be a requirement for recovery following service delivery. In the event that a response is triggered but a site's maximum response duration is less than the total event period for the required response; the site should not excessively increase demand following the depletion of

available Flexible Resources. An example of this would be that an Electricity Storage system once depleted should not instantly recharge if the trigger signal is still active, as this may compound existing network issues. The Company reserve the right to terminate Flexible Service contracts if Suppliers are seen to demonstrate activities such as that detailed above where they are seen to compound an existing network issue.

Suppliers should not demonstrate any practices which could be deemed as gaming the system. Examples of gaming the system would include (not an exhaustive list):

- a. Where a site has multiple supplies and they are viewed to reduce demand on one to provide a contracted Flexible Service but then move the demand to an alternative supply fed from the Company's network,
- b. Artificially increasing Demand or encouraging others to artificially increase Demand to stimulate the Company to trigger a Flexible Service,
- c. Any acts of vandalism or sabotage which may stimulate the Company to trigger a Flexible Service.

3.1 Baseline for Measuring Actual Delivery

For Contracted Sites, the delivery of Flexible Services will be measured at the point of supply.

The level of response will be calculated using half hourly settlement readings for the duration of the contracted performance window once the activation or deactivation signal, or planned schedule is triggered. Responses will be calculated on the number of full minutes of response.

3.2 Method of provision of activation and de-activation signals

For non-aggregated Flexible Resources two 24V outputs will be supplied via a Company owned Remote Terminal Unit (RTU) located within the Company substation supplying the site. The supplied signals will be for activation and deactivation of Flexible Service.

Where there is no RTU currently installed within the feeder substation or the existing RTU is not capable of providing the required input and output signals an RTU will be supplied. The cost of installation of the RTU will be borne by the Company. In some circumstances due to space and technical requirements it may not be possible to locate the RTU within the substation enclosure. In this scenario the Supplier should provide a suitable site for the RTU to be located free of charge to the Company.

The Supplier will be required to provide a suitable multi-cored pilot cable from their control system to the location of the Company RTU.

The Supplier will be required to provide a 24V supply to the RTU via the multi-cored pilot cable.

Additional signalling may be required to allow for availability signalling in real time. These requirements will be discussed as part of contract negotiations

For sites requiring a new RTU, the Supplier is responsible for providing a single phase low voltage supply to the RTU.

For aggregated portfolios of Flexible Resources a suitable communications solution should be agreed with the Company as part of the contract negotiation process.

The Company reserve the right to modify the method of communications protocol stated in section 3.2; Site specific agreements shall be agreed prior to the awarding of a contract.

On receipt of a dispatch signal the Supplier shall begin provision of the Contracted Capacity as detailed within the service agreement. Each Site / Group must respond within 3 minutes of receipt of a dispatch signal.

The response should be at least equal to the agreed Contracted Capacity as detailed within the service agreement and should remain continuous until the activation signal is withdrawn or unless a verbal instruction is received from the Network Management Hub.

Discretionary utilisation requests may be triggered outside of the contracted availability window if the provider submits a price for these services within their submission in the 'TT110913 - Flexible Service Requirement Spring 2020 response template'.

3.3 Site access

During the period of the contract the Supplier shall grant access to the Company staff and representatives to carry out inspections and maintenance of Company equipment. The Supplier should also grant access to check the suppliers equipment associated with the contracted flexible service is in place and available to be triggered.

3.4 Fail safe actions

During provision of the Contracted service if the communications to the site from the Company's equipment are lost the site should cease delivery of the service until informed otherwise by the Network Management Hub or communications are restored.

3.5 How to respond to technical specification

Bidders are required to complete all relevant technical information within the 'TT110913 - Flexible Service Requirement Spring 2020 response template'. Every field should be completed and should include brief and relevant information only for each Site / Group. If a Bidder is unsure how to complete any field they should contact the Company within the nominated questions period of the tender process. Brief guidance notes are provided below:

- a. If a Site can provide two or more forms of a Flexible response however there are restrictions on maximum response duration or any other technical or commercial limitations then these should be divided into separate columns.
- b. The network location should refer to the particular area that the Site / Group will be providing Flexible Services to.
- c. The site address should correspond to the site of the Flexible Resource. For aggregated portfolios please list all corresponding Sites addresses and MPANs within the response template, additional columns may be added as required and linked by stating it's an

aggregated portfolio. Each aggregated portfolio should be limited to a single column within the response template.

- d. The voltage of connection is the voltage which the site is connected to the Company network.
- e. The total proposed flexible capability will be the capacity which the tender will be evaluated against. Bidders should only specify the maximum level of response they can guarantee for the duration of the Contracted Performance Window. Following successful award of the contract the total proposed flexible capability will form the basis of the contracted flexible capability. Failure to deliver the total contracted flexible capability will be treated as a non-compliance and will incur liquidated damages.
- f. The lead time from instruction to full delivery should be less than 3 minutes. Where it is not possible to deliver the total contracted flexible capability within this timescale however a partial delivery may be possible. Bidders should provide details of available response split by different lead times into different columns.
- g. Bidders should provide details of any contracted services the site is involved in highlighting any potential service conflicts. Examples of other services include: enhanced frequency response, short term operating reserve, and fast frequency response.
- h. Bidders should clearly detail any requirements they may have for recovery following provision of a Flexible Service. An example of this may include: time to recharge batteries, refuelling, and increase in production following downtime. If no recovery timescale is specified it will be assumed that the response can be triggered at any time during the Contracted Performance Window.
- i. The maximum response duration is the length of time the Flexible Resource can continuously deliver the total proposed flexible capability before it needs to recover. Unless otherwise agreed the Company will assume that contracted services can always deliver their total proposed Flexible capability for the maximum response duration unless the service is triggered part way through a recovery cycle, following a previous Company trigger of Flexible Services. Submissions should consider technological, environmental, and legal restrictions upon duration of response.
- j. The Site Performance Window for providing response should include a summary of when the service will be available. Bidders should carefully consider if there are specific times or dates that they will not be able to deliver a full Flexible Service. Bidders should take into consideration periods where their onsite demand may already be reduced due to: holidays, maintenance periods, equipment failure, and reduced production periods. Bidders should also make consideration of any safety, technological, environmental, and legal restrictions which may prevent them from delivering a Flexible Service.

Where it is relevant; additional technical information can be provided within separate documentation and attached to the proposal response, however Bidders should avoid providing unnecessary additional data. The Company may choose not to review all additional information where it demands significant resource to do so. Bidders should clearly indicate within the 'TT110913 - Flexible Service Requirement Spring 2020 response template' where they have provided separate supporting documentation including the file name and location within the document.