

Appendix 2 Technical Specification

Flexible Service requirements

Autumn 2024

CONTENTS

1	Definitions	3
2	Conditions Precedent.....	6
2.1	Minimum requirements.....	6
3	Technical And Operating Conditions.....	7
3.1	For Dispatchable Services	7
3.2	For Energy Efficiency Services (Peak Reduction)	8
3.3	For Pre-Scheduled Services	8
3.4	For all Service Providers.....	9
3.5	Availability Declarations.....	10
3.5.1	For Dispatchable Services	10
3.5.2	For Pre-scheduled Services.....	10
3.6	Method of dispatch.....	10
3.7	Fail safe actions	11
3.8	Baseline for Measuring Actual Delivery	11
3.9	Testing and monitoring.....	12
3.10	How to respond to technical specification	13
4	Product Parameters	14

1 Definitions

Accepted Availability Window where services have been contracted to include variable availability, the Accepted Availability Window is the period required for Service provision to be made available following the agreement between the Company and Provider during the Availability Refinement Period. If a Service does not have an Availability Refinement Period, then this Accepted Availability Window is defined within the Contract Award and is equal to the Service Window.

Agreed Availability Capacity means the volume of capacity required (measured in MW) to be made available for Service provision following the agreement between the Company and the Provider during the Availability Refinement Period, where applicable.

Applications Programming Interface (API) is a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.

“Availability” or **“Available”** means that the Flexibility Services are available to be delivered to the Company for the duration of the Service Window.

Availability Refinement Period is a period defined within product parameters where a refinement of the Availability Window and Agreed Availability Capacity is determined. For Pre-Scheduled Services, the Availability Refinement Period is not applicable.

Bidder is the owner and/or operator of assets or has entered into arrangements for rights in respect of third party owned assets that have the capability to provide Flexibility Services, and is participating in the Company’s Flexibility Services Invitation to Tender offering to make available each Accessible Site for the provision of such Flexibility Services.

Charge(s) means the Availability Payments and the Utilisation Payments, as applicable.

Company means Electricity North West Limited.

Contracted Capacity means the committed target net MW to be delivered by a Flexible Resource at 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.

Demand means the demand (in MW) of Active Power consumed by Plant and/or Apparatus.

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.

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

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

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

Grace Factor is a tolerance (expressed in %) which is applied to the MW of Flexible Services delivered by the Provider compared to the MW of Flexible Services requested by the Company; if the delivered % of MW is within this tolerance then full payment is made for each minute of delivery.

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 Provider Site(s) / Group which may be operated to prevent the dispatch of Flexible Services by the Company.

Minimum Utilisation Time means the pre-defined minimum time that a Flexible Resource can be instructed for to deliver Flexible Services.

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

Performance Multiplier means the factor by which any percentage of under delivery below the grace factor will be multiplied by in order to calculate payable delivery.

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.

Provider is the owner and/or operator of assets, or has entered into arrangements for rights in respect of third party owned assets that have the capability to provide Flexibility Services and has signed an agreement to make available each Accessible Site for the provision of such Flexibility Services, for example through aggregated or individual assets.

Recovery Period means the minimum time (in minutes) required between the end of a Flexible Service delivery window and the commencement of the next Flexible Service delivery window for a Flexible Service to recover from provision of Flexible Services. This would include the necessary period for re-fuelling of generators or re-charging of batteries.

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

Requested End Time means the date and time (to the nearest minute) at which the requested MW is no longer required to be delivered.

Requested MW means the volume of capacity (in MW) that the Company requested the Provider to deliver for Utilisation Service provision. For Pre-scheduled Services which do not have an Availability

Refinement Period or Services where availability is non-applicable, the terms “Contracted Capacity”, “Agreed Availability Capacity” and “Requested MW” shall have the same meaning. The Requested MW cannot be higher than the Agreed Availability Capacity determined in the Availability Refinement Period (as relevant).

Requested End Time means the date and time (to the nearest minute) at which the Requested MW shall be delivered.

Service Window means the time periods during the Service Period during which the Provider agrees to make available, and provide in accordance with the Agreement, the Flexibility Services to the Company, as defined in the Service Terms (if applicable).

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

Stop Instruction means an instruction from the Company to the Provider, instructing the Provider to cease delivery of the Flexibility Services.

Term means the duration of this Agreement.

Utilisation means, in respect of a Site(s) / Group, any dispatch of a Flexible Service which is provided continuously until the Requested End Time. The term "Utilised" shall be construed accordingly.

Utilisation Instruction means an instruction (notice) issued by the Company to the Provider to deliver Flexibility Services.

Utilisation rate defines the maximum number of hours that we expect Flexible Services will be required from the Provider.

Utilisation Period means, in respect of a Site(s) / Group, the duration of time that a Flexible Service will be provided continuously by the Provider following a dispatch from the Company; from the Requested Start Time until the Requested End Time. For Pre-scheduled Services which do not have an Availability Refinement Period, the terms “Utilisation Period”, “Service Window” and “Accepted Availability Window” shall have the same meaning.

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 at least 1 month prior to the delivery start date².
- b. The minimum size for directly contracted resources should be at least 10kW. There are no restrictions on the size of sub-sites of aggregated portfolios, but the total portfolio size also needs to be at least 10kW. It is noted that the minimum (aggregate) size refers to the volume of flexibility capacity (measured in kW of Active Power) that the Provider can offer, not to the unit's (aggregate) installed capacity.
- c. The Provider should be able to deliver and manage, upon the Company's request, a net reduction in demand (import) or an increase in generation (export), as seen by the distribution network.
- d. The Flexible Resource should have the ability to act (provide a response) reliably and consistently, in magnitude, speed (i.e. response time) and duration, throughout the contracted windows.
- e. Generators and Electricity 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. Generators and Electricity Storage, less 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 G83 or EREC G98.
- g. Flexible Service Providers should be able to deliver the Service by the specified delivery start date (specific start dates are stated for each site in [Appendix 3: Site Requirements](#)).

2.1 Minimum requirements

The Flexible Services procured are for a decrease in demand (import) or an increase in generation (export).

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](#).

The following requirements are required for participation:

- a. Each Site / Group must be located in one of the zones detailed within the Appendix 3: Site Requirements.

Each Site / Group must be minute-by-minute metered, or an agreed equivalent e.g. Half Hourly. Certain products rely on minute-by-minute metering granularity for accurate performance monitoring and settlement. Where an alternative to minute-by-minute granularity is provided, the data may be disaggregated. As such, this could result in performance monitoring and calculation inaccuracies.

For dispatchable resources, each Site / Group must be able to respond within 15 minutes (Maximum Response Time) of receipt of a dispatch signal from the Company. Providers who can achieve faster response times than the required Maximum Response Time should indicate this within their Asset Qualification response. Faster response times will score higher on bid review.

Pre-scheduled services (i.e. Scheduled Utilisation and Peak Reduction (excluding Energy Efficiency Measures) will be dispatched as part of a pre-defined schedule and as such the Provider should self-dispatch the Contracted Capacity at the agreed time.

Where Energy Efficiency measures are utilised, there will be no dispatch command issued; Providers are expected to provide an enduring reduction in demand.

Each Site / Group must be able to provide a minimum 30 minutes response (Minimum Utilisation Time).

Certain Site(s)/ Group(s) may require some time to recover between the end of a Utilisation event and be ready to respond to another Utilisation Instruction (Recovery Period). Recovery Period must be less than or equal to the period between one Service Window ending and the next Service Window commencing. There is not a minimum requirement in relation to the duration of the Recovery Period and the duration be will be agreed at the Contract award stage of the tender, where applicable.

Each Site must be built (i.e. commissioned) and have a connection agreement with final milestone at least one month prior to the start of the contracted Service Window.

Provision of the Service must not put the Provider in breach of other agreements (e.g. connection agreements).

3 Technical And Operating Conditions

3.1 For Dispatchable Services

This section is only applicable to Services provided utilising dispatchable resources. These include the following products:

- Operational Utilisation & Variable Availability
- Operational Utilisation

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 dispatched at all times during the contracted Service Window and for the Contracted Capacity.

The Company may, in any contracted Service Window, issue a notice (a "Utilisation Instruction") requiring the Provider to provide a Flexible Service, or may itself remotely dispatch the Flexible Resource from that Site(s) / Group.

Where the Company remotely dispatches the Flexible Resource, this shall be notified by the Network Management Hub to the Provider and delivery of Flexible Services from the Site(s) / Group shall continue uninterrupted for at least the Minimum Utilisation Time until the earlier of:

- a. Notification of reduced or increased Service requirement by the Company, and
The end of the contracted Service Window (as relevant).

Where the Company issues a Utilisation Instruction requiring the Provider to provide Flexible Service, the Provider shall, within the response time, provide the Flexible Service from the Site(s) / Group continuously for the Minimum Utilisation Time until the earlier of:

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

3.2 For Energy Efficiency Services (Peak Reduction)

This section is only applicable to services provided utilising long-term energy efficiency activities that would reduce the Site's overall Demand across the year but specifically during high peak periods. This section is not applicable to Peak Reduction Services provided as Pre-scheduled Services which are described in Section 3.3 below.

The Company will not provide a dispatch command. It is expected that the utilisation of energy efficiency measures will provide an enduring reduction in the Site(s) / Group Demand.

With energy efficiency measures it is recognised that it may not be possible to deliver a consistent volume of Demand reduction, as the Demand reduction will be proportional to the original Demand profile prior to implementing energy efficiency measures. Providers should indicate against the requirements the level of Demand reduction they will be able to provide. This can be provided in the form of a forecasted operating profile.

Where the Provider enters into a contract for the provision of Flexible Services by the method of energy efficiency, prior to the installation of any new equipment to the Site which is going to increase the site Demand in a significant manner, the Company would expect that they would be notified of the Site's intention to install new equipment or to use site Demand in a different way, at which point the Company can review the changes and determine if it will have a material impact upon the contract. In most cases, as long as the changes in Site Demand do not counteract the energy efficiency measures that the Site is being paid for, then there is unlikely to be a contractual issue. Failure to speak to the Company prior to a significant change in Demand patterns may result in the termination of the contract.

3.3 For Pre-Scheduled Services

This section is only applicable to Services provided utilising Pre-Scheduled Services. These include the following products:

- Peak Reduction (excluding Peak Reduction Services provided utilising long-term energy efficiency activities which are described in Section 3.2)
- Scheduled Utilisation

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 at all times during the contracted Service Window and for the Contracted Capacity.

Where a Pre-Scheduled Service has been contracted, the Provider shall provide the Flexible Service from the Site(s) / Group continuously for the Utilisation Period (which for Pre-scheduled Services is equal to the contracted Service Window) until the earlier of:

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

3.4 For all Service Providers

In respect of the dispatch of a Flexible Resource in any contracted Service Window or other period of time previously notified, or deemed to be notified as being available at any Site(s) / Group, in any of the following events the Company Charges otherwise payable by the Company to the Provider shall be reduced accordingly, as agreed and documented within the Flexible Services contract:

- a. Reduced Capacity: the capacity (MW) of Flexible Service is not provided at a level of at least the required level of Contracted Capacity in all or any part of the Service Window, less any applicable Grace Factor.
- b. Intermittent response: the capacity (MW) of Flexible Service is not provided continuously in all or any part of the Service Window, less any applicable Grace Factor.
- c. Unavailability level: the capacity of Flexible Service is not available at a level of at least the required level of Contracted Capacity in all or any part of the Service Window, less any applicable Grace Factor.
- d. Unavailability Notification: the Provider declares Unavailability or was not Available at the time of delivery.

Where Sites are contracted to deliver a Flexible Service following an Invitation to Tender, 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 whilst the total event period for the required response is still active. 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 reserves the right to terminate Flexible Service contracts if Providers are seen to demonstrate activities such as that detailed above, where they are seen to compound an existing network issue.

Providers 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.

3.5 Availability Declarations

Availability declarations will be scheduled via the Company's nominated Flexible Services platform.

3.5.1 For Dispatchable Services

For **Operational Utilisation Services**, it will be assumed that, unless otherwise notified, the Service will always be available for the full Contracted Capacity during the full contracted Service Window.

For **Operational Utilisation & Variable Availability Services**, availability declarations and agreements will be made a minimum of a week ahead of the subsequent week's contracted Service Window; this is referred to as the Availability Refinement Period. At this stage, the Company may refine the availability requirements in terms of maximum capacity (MW) ("Agreed Availability Capacity"), and periods (days & hours). Providers will be paid availability payments based upon the Agreed Availability Capacity following any such alterations to capacity and periods.

Appendix 4: Half-hourly-data provides forecasts of the required capacities and periods for the duration of the tender.

Any alterations to the agreed requirements will not exceed the Contracted Capacity or contracted Service Window levels, unless a subsequent written agreement has been made between the Company and the Provider.

3.5.2 For Pre-scheduled Services

For Pre-Scheduled Services, Utilisation will be agreed at the Contract award stage of the tender.

For **Scheduled Utilisation Services**, it will be assumed that, unless otherwise notified, the Service will always be available and utilised for the full Contracted Capacity during the full contracted Service Window.

For **Peak Reduction Services**, it will be assumed that, unless otherwise notified, the Service will always be available and utilised for the full Contracted Capacity (i.e., the Provider's electricity Demand will stay below the contracted Baseline (threshold) in MW) during the full contracted Service Window.

3.6 Method of dispatch

This section is only applicable to Services provided utilising dispatchable resources.

Utilisation Instructions for Services as standard will be issued via an API or Email, at the discretion of the Company. For any Providers who cannot interface with an API/email, an option for Utilisation Instructions for Operational Utilisation products may be offered via a Company-owned Remote Terminal Unit (RTU) located within the Company substation supplying the Site.

For Sites requiring a new RTU, the Provider is responsible for providing a single-phase Low Voltage supply to the RTU. Additional signalling may be required to allow for availability signalling in real time. These requirements will be discussed as part of the contract negotiations.

The Company reserves the right to modify the method of communications protocol. Site specific agreements shall be agreed prior to the awarding of a contract.

On receipt of a dispatch signal, the Provider shall begin provision of the Requested MW for Operational Utilisation and Operational Utilisation & Variable Availability products.:

The dispatch command will incorporate a Requested MW to be delivered and a Requested Start Time. The Provider's response should be at least equal to the dispatch command Requested MW and should remain continuous until either:

- a) The dispatch command Requested MW changes; or
- b) The dispatch command signal indicates a Stop Instruction; or
- c) The Service is no longer within the contracted Service Window; or
- d) A verbal Utilisation Instruction is received from the Network Management Hub.

3.7 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.

3.8 Baseline for Measuring Actual Delivery

For contracted Sites, the delivery of Flexible Services will be measured either at an asset level or at the point of supply, depending upon the location of the metering.

The level of response will be calculated using the minute-by-minute (or an agreed equivalent e.g. Half Hourly) metering readings submitted by the Provider; verified against half hourly settlement readings for the duration of the contracted Service Window. Certain products rely on minute-by-minute metering granularity for accurate performance monitoring and settlement. Where an alternative to minute-by-minute granularity is provided, the data may be disaggregated. As such, this could result in performance monitoring and calculation inaccuracies. Responses will be calculated on the number of full minutes of response.

In association with the ENA Open Network Project, we have developed a range of common baselining standards which can be used across the industry when measuring and settling Flexible Services dispatch contracts. We encourage participants within our tenders to engage with us regarding the baselining methodology which represents the best solution for their Site's asset type and the level of data they are able to provide of historical and future usage patterns. The supported baselines are:

- Mid 8-in-10: A rolling historical baseline which uses data from the “middle” of the last 8 of 10 days.
- Mid 8-in-10 with Same Day Adjustment: A rolling historical baseline which uses data from the “middle” of the last 8 of 10 days, but also applies a “same day adjustment”.
- Mid X-in-Y: A custom rolling historical baseline, where the user can choose how many days to consider and what length of same day adjustment to use.
- Nominated: A nominated baseline, which allows the user to input the self-declared baseline of the asset in advance of the flexibility dispatch event.
- Zero: A baseline which assumes that the asset is not operating except for when providing a Flexible Service.

An industry standard [baselining tool](#) and [user guide](#) has also been produced to allow participants to verify their baselines, delivering transparency into how baselines are calculated by DNOs.

The methodology for baselining will be agreed between the Company and the Provider post contract award and ahead of any Service provision. This shall occur at least 2 months prior to the first Utilisation period.

3.9 Testing and monitoring

Testing will need to be conducted at least 1 month prior to the beginning of the Contracted Performance Window. The Company also reserves the right to request additional Proving Tests (test of ability to deliver a response) at its discretion.

Utilisation payments will apply for Proving Tests as requested by the Company.

Provider’s performance will be monitored, and payments will be made in accordance with the below set of performance delivery criteria.

Response provided as % of contracted Service	Payment	Actions
>100%	No additional payment made for Services greater than requested.	None
95% - 100%	Payment in full. This includes a 5% Grace Factor.	None
64% - 95%	A Performance Multiplier of 3 is applied to payments.	Service delivery under 90% will be monitored. Greater than three Utilisations delivered at <90% will be constituted as Service failure.
<64%	Service failure. No payment made.	Potential contract termination.

Performance Multiplier: If the portion (in %) of Service delivery compared to the requested Service falls below the Grace Factor tolerance, then for every 1% of Service under delivery between 64%-95%, the payment will be reduced by a Performance Multiplier of 3.

For example:

- If the Requested MW was 5MW and the Provider delivers 4.288MW, the delivery percentage is 85.76% (4.288MW/5MW). The Provider falls 9.24% (95%-85.76%) outside of the Grace Factor level, therefore a multiple of 3 is applied ($3 * 9.24\% = 27.72\%$) and a payment 67.28% (95% - 27.72%) of the max amount for that minute is paid.
- If the Provider delivers $\geq 95\%$ (taking the Grace Factor into account) then the full utilisation payment will be made.

3.10 How to respond to technical specification

Assets should be registered on the [ElectronConnect](#) or [PicloMax](#) platform, and Bidders should confirm which assets they intend to put forward for each competition zone. Bidders are required to complete all relevant technical information within [ElectronConnect's](#) or [PicloMax's](#) pre-qualification questionnaire. 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 with sufficient time before the end of the pre-qualification window.

Where it is relevant, additional technical information relating to development timescales and loading profiles should be uploaded within [ElectronConnect's](#) or [PicloMax's](#) pre-qualification questionnaire, 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 indicate where their assets can achieve faster response times than the required Maximum Response Time. Faster response times will score higher on the bid assessment.

4 Product Parameters

	Parameter Name	Operational Utilisation	Operational Utilisation & Variable Availability	Scheduled Utilisation	Peak Reduction
Structure	Payment Structure	Utilisation Only	Availability and Utilisation	Utilisation Only	Utilisation Only
	When prices are set (procurement timescales)	At trade	At trade	At trade	At trade
Availability	Availability Request Mechanism	N/A	Request initiated by DNO	N/A	N/A
	Availability Acceptance timing	N/A	At trade	N/A	N/A
	Availability Refinement timing	N/A	Week Ahead	N/A	N/A
	Availability Changes Allowed	N/A	No	N/A	N/A
	Minimum Aggregate Unit Size	10kW	10kW	10kW	10kW
	Partial Availability Acceptance Possible	N/A	Yes	N/A	N/A
	Time Variable Availability Volumes Allowed	N/A	Yes	N/A	N/A
	Availability Payment Unit	N/A	£/MW/h	N/A	N/A
	Availability Period	N/A	Settlement Periods	N/A	N/A
Utilisation	Utilisation Payment Unit	£/MWh	£/MWh	£/MWh	£/MWh
	Utilisation Period	Minutes	Minutes	Settlement Periods	Settlement Periods
	Delivery Expectation	Continuous	Continuous	Continuous	Peak Delivery
	Maximum Response Time	15 mins*	15 mins*	N/A	N/A
	Payments during response time?	No	No	No	No

	Minimum Utilisation Time	30 mins	30 mins	30 mins	30 mins
	Minimum Utilisation Volume	N/A	N/A	N/A	N/A
	Utilisation Instruction Timings	Real Time	Real Time	At trade	At trade
	Partial Utilisation Instruction possible	Yes	Yes	Yes	Yes
	Time Variable Utilisation Volumes Allowed	Yes	Yes	Yes	Yes

** Bidders should indicate where their assets can achieve faster response times than the required Maximum Response Time. Faster response times will score higher on the bid assessment.*