

Guidance for Electricity Distribution Flexibility Service Providers

Version 1.2

August 2024

DSO

nationalgrid
electricity distribution

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Introduction

This guide for Flexibility Service Providers (FSPs) has been created to provide a clear view of how we procure Flexibility Services at National Grid Electricity Distribution.

The guide is split into chapters, each focussing on different key areas of the procurement and operational process, but highlights and informs where processes are inter-related. The high level process is summarised below.

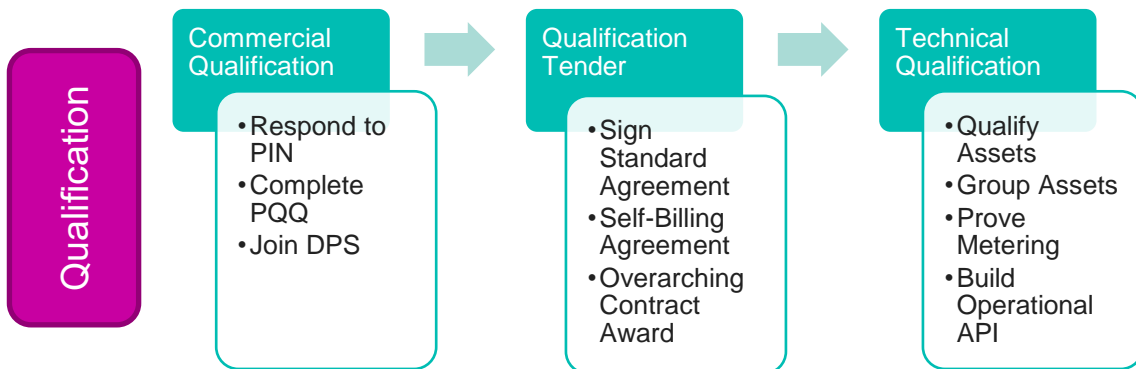


Figure 1: Overview of our qualification processes

Qualification enables the eligibility of FSPs and verifies their Assets as ready to Trade. This involves the commercial aspects; agreeing to the Flexibility Service Agreement and receiving an Overarching Contract and the technical aspects; building logical asset groupings, proving metering capability and where the flexibility product requires close to real time instruction, building API links to the operational portal (the [Flexible Power Operational Portal](#)).



Figure 2: Overview of our trading processes

Trading is how we share our flexibility needs and how FSPs respond to those needs. We accept or reject those responses, utilise the service and then settle any payments.

The focus of this document is on how we procure Flexibility Services. For more details on where we procure, please see the publications detailed in the diagram below.

Flexibility Service Requirements

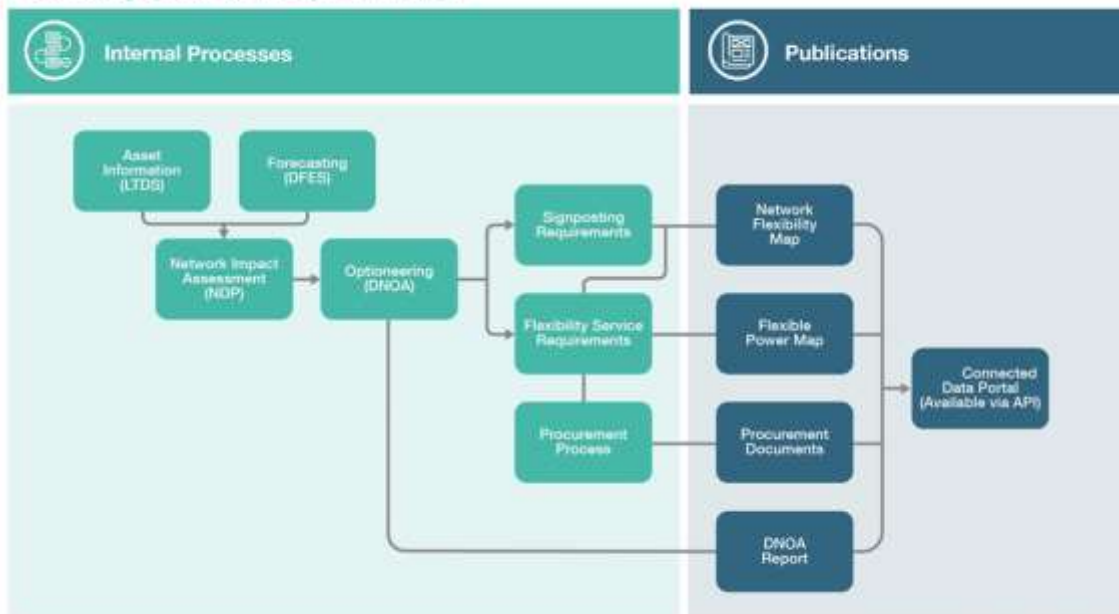


Figure 3: Network Requirement publication and signposting

A full catalogue of the data and documentation relating to flexibility we publish is available here; <https://flexiblepower.wpdserv.net/downloads/1120>

Most of this data is available on the Flexible Power Website: www.flexiblepower.co.uk/national-grid-electricity-distribution with raw data published on our Connected Data Portal <http://connecteddata.nationalgrid.co.uk/>

Our flexibility team can be contacted at: NGED.Flexiblepower@nationalgrid.co.uk

Changes to this document

National Grid may update this guidance from time to time. Should you have any suggestions on changes, please contact: NGED.Flexiblepower@nationalgrid.co.uk.

Commercial Qualification

The Commercial Qualification processes adopted by National Grid for the procurement of its distribution flexibility needs have been designed to ensure adherence to UK procurement regulations (as defined in the Utilities Contract Regulations). The processes are facilitated through the [Market Gateway](#), which offers a simple and low barrier route for FSPs to qualify for an Overarching Contract.

All FSPs awarded an Overarching Contract are then eligible to complete the Technical Qualification processes and ultimately enter into Trades where they will bid to deliver flexibility services in response to the publication of our flexibility requirements.

Commercial Qualification can be completed at any time, it is always open.

The Market Gateway has been developed to support the contracting, and technical on-boarding processes FSPs are required to complete to enable their eligibility to provide distribution flexibility services to National Grid. FSPs wishing to enter the process should visit <https://marketgateway.nationalgrid.co.uk/> to request and account for their organisation.

Below is a summary of the process steps within Commercial Qualification;

Periodic Indicative Notice (PIN) response

The PIN response is simply an expression of interest to provide services.

To join the DPS, interested parties must first register their interest in response to our [Annual PIN](#) (published on the UK governments My Tenders site) on our [Market Gateway](#). This involves simple confirmation of company details and registering formal interest in the PIN. This starts registration to the DPS.

This PIN response only needs to be completed once.

Registration to the PIN does not commit either party to flexibility service provision.

Pre-Qualification Questionnaire (PQQ)

Following the PIN response the FSP must complete the PQQ on the [Market Gateway](#).

This requires confirmation that the FSP meets the minimum requirements for participation in flexibility services. These are:

1. Acknowledgment that building an Application Programme Interface (API) to the Flexible Power Portal to enable the communication of dispatch signals is a requirement of entering into Trades for services that are instructed in near-real time.
2. Ability to provide relevant metering data to the Flexible Power Portal over API or via upload functionality provided.
3. Ability to respond to a dispatch signal within 15mins and hold a response for minimum of 30mins.

There are also a number of mandatory due diligence questions that FSPs must answer that cover mandatory ineligibility, discretionary grounds for rejection, and confidentiality requirements. The FSP must confirm their acceptance and adherence to these.

Once the PQQ is complete, the FSP can then continue to the Qualification Tender.

Qualification Tender

In order to receive an Overarching Contract, FSPs will be invited to respond to the Qualification Tender. The Qualification Tender requires the FSP to agree to the Flexibility Service Agreement within the Market Gateway, the Service Agreement is broken down into six sections which are;

1. The Glossary to the General Terms and Conditions
2. The General Terms and Conditions
3. The Service Terms
4. Annex 1 - Flexibility Management System
5. Annex 2 – Trade Rules
6. Annex 3 – Special Requirements

Each section must be agreed.

The full Service Agreement can be found on the [Flexible Power Website](#), for review ahead of completing the agreement within the Market Gateway.

Once the Flexibility Service Agreement is accepted, the FSP must then confirm acceptance of a Self-Billing agreement. This allows us to raise invoices on the FSP's behalf. See the **Billing Process** section for more details.

Finally, the FSP will be directed to download a Supplier Details form. This form is used to gather the FSPs billing information, it must be completed and returned to NGED.Flexiblepower@nationalgrid.co.uk.

Following download of the Supplier Details Form, Market Gateway will issue a formal Overarching Contract Award. Issue of the Contract Award will also trigger Portal Account set-up, providing FSPs with access to the API set-up and testing environments. See the Technical Qualification Chapter for more details.

Upon issue of the Contract Award, a 10 day standstill period will commence. During this time Users are unable to access Trades. The standstill period does not affect a User's access to Technical Qualification.

Technical Qualification

Technical Qualification ensures FSPs are ready to conduct Trades.

It includes the registration and validation of assets, the creation of logical grouping of these assets, proving metering submission capability and where the flexibility product requires close to real time instruction, building out the API to our operational portal so that start stop signals can be received.

Asset Registration & Management

The first step is for the FSP to register assets on the [Market Gateway](#).

An Asset is the smallest entity that we consider on the [Market Gateway](#). It is used to represent the lowest level at which the FSP can meter. This could either be an individual or combination of machines/Low Carbon Technologies (LCTs) depending on the metering location.

A few examples of an asset include:

- A grid scale battery with metering at either the asset level or the Point of Connection.
- A single generator if using DER Level metering, or all generators on site if using Point of Connection metering
- Individual EV charge points or Heat Pumps with DER Level metering, or a property with its associated Low Carbon Technologies, with Point of Connection metering.

Collecting information at this level of granularity helps us to better understand, and validate where the flexibility we are procuring is coming from. It feeds into the baselines we use and into elements of reporting, such as on the carbon intensity of our service.

The information required to register an Asset includes:

- The location of the asset
- The MPAN(s)/MSIDs associated with the asset
- The technology type
- The peak capacity (in MW)

These assets are then validated by National Grid. Once validated we assign the links to Constraint Management zones (CMZs) as well as ensure that there are no duplicate assets. Where there is duplication, we will work with both FSPs to agree ownership. We will build out a more extensive process in due course.

It should be noted that **we will not allow multiple assets on a single site (behind a single MPAN) if any of them have point of connection metering**. In this case, they should be combined into a single asset to avoid any risk of double counting performance.

Assets can be edited on the Market Gateway subject to revalidation. **It should be noted that changes to Assets that form part of an existing Trade will not take effect until the Trade commitment period is complete..**

More details on this process can be found on the [Market Gateway](#).

Creating Meterable Units

Once Assets have been approved they need to be assigned into logical groups.

These logical groups, called Meterable Units, are used to group assets into a joint metering feed. Baselineing is also applied at the Meterable Unit level.

Once Meterable Unit are created, These are then transposed to the Flexible Power Operational Portal by the DNO and assigned a unique referenced called an MUID.

The FSP will need to provide metering for each Meterable Unit, either via the available Flexible Power Portal API or through CSV upload. Meterable Units must prove their metering capability ahead of becoming eligible to enter Trades. Successfully proving metering data requires us to see at least 12 meter readings within the last 7 days submitted via the Flexible Power Portal via the CSV data upload functionality or using the available metering [APIs](#)

FSPs can create and edit MUs on the [Market Gateway](#). **It should be noted that changing MUs can have an impact on existing Trades, if the changes impact the baseline to be used. As such care should be taken when making changes.**

Due to the interaction with Baselineing and Metering requirements, there are a number of restrictions on the technologies that are able to be mixed within a single MU. These are detailed in the table below.

ASSET TYPES	IS GROUPING ALLOWED?
Industrial or Commercial Demand	No
All other categories	Yes

Operational Periods

As detailed in the section below, we use the Flexible Power Portal as our operational tool.

This currently considers Trade parameters on a weekly (Monday-Sunday) Operational Period basis.

Short Term Trades are in respect of one weekly Operational Period.

A Long term Trade is effectively made up of a number weekly Operational Periods..

Any changes to MUs only come into effect for the following Operational Period. This should be factored in when making changes to Assets and MUs.

Flexible Power Operational Portal Set Up and Integration

The Flexible Power Operational Portal is the operational platform through which we collect metering data, send Utilisation Instructions and calculate settlement. It is a key part of the operational side of a Trade.

Portal Access

Once the Qualification Tender is complete, we will request a list of users for the Flexible Power Operational Portal and grant access.

The user should then visit; <https://flexiblepowerportal.co.uk/> to access the portal.

APIs

An Application Programming Interface (API) is a software intermediary that allows two applications to talk to each other.

The API removes the requirement for dedicated DSO hardware to be connected at an FSP site in order to collect the metering data and receive instructions from a DSOs control systems.

There are a large variety of DER control arrangements, ranging from a single asset such as a standalone generator through to a complex estate with multiple assets or even part of a portfolio under management by a commercial aggregator. Therefore, FSPs are required to implement their own interface for the API to their DER control.

The Flexible Power APIs covers 3 key areas:

1. The collection of metering from the FSP to the DSO via the readings API. This is built of 2 sub APIs to collect either minute by minute or half hourly metering data. This needs to be built out **per MU**.
2. The sending of Utilisation Instructions from the DSO to the FSP via the Dispatch API. This needs to be built out **per Trade Dispatch Group**. Within the signal it will detail the component MU IDs.
3. The sending of an Emergency Stop from the FSP to the DSO via the Stop API. This is implemented at **MU level**.
4. In addition to the API process we also accept metering data in the form of a CVS upload. Details for this process can be found in the FAQ section of the Documentation page of the Flexible Power Portal; [Flexible Power - Frequently Asked Questions \(flexiblepowerportal.co.uk\)](http://flexiblepowerportal.co.uk)

The latest definitions of each API, including the surrounding authentication are available on the [Flexible Power Portal](#).

The APIs to be implemented vary depending on the Product and Asset types being utilised. These are summarised in the table below.

	Scheduled Utilisation, Utilisation Only - Specific Periods (SU_SPP)	Scheduled Utilisation, Utilisation Only - Settlement Periods (SU_SEP)	Scheduled Availability, Operational Utilisation – Day Ahead (SAOU_DA)	Operational Utilisation, Utilisation Only - 15min Response (OU_15)
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Readings (used for HH or minute by minute metering)	Required (unless not providing via CSV upload)		Required (unless not providing via CSV upload)	Required (unless not providing via CSV upload)
Dispatch (both Start and Stop)	Optional	Optional	Required	Required
Stop (for emergency stop)	Optional	Optional	Optional	Optional

It should be noted that for the Readings API, whilst we would prefer to collect data in a near real time stream, however we will accept the provision of batched data. This can be limited to the duration of events. All batched data must be received within 7 working days of operational month end.

API Testing

Initially the FSP will be set up with just access to the Sandbox zone. This will allow them understand how the portal works and to test the APIs without any impact on the live zones.

A number of tools are provided within the portal to enable self-testing of the API. This include the ability to send simulated Dispatches and see the latest metering signals being received by the portal.

Once a Meterable Unit has been created, an associated Meterable Unit will be created on the Flexible Power Portal. MUIDs will be visible for the FSP to set up their APIs. A Trade Dispatch Group will only be created in the Flexible Power Portal post Tender Award.

Viewing Availability Acceptances

The declaration and acceptance of availability for FSPs is carried out in the Trade. Acceptances will then be loaded into the Flexible Power Portal by the DSO. Once loaded the, FSP can view these on the Flexible Power Portal if desired. There may be a lag between the conclusion of the trade and the transfer onto the Flexible Power Portal. The concluded Trades will be loaded into the Flexible Power Portal no later than the start of the first awarded Operational Period.

Products

Our Products

To date we have procured across four Active Power services: Secure, Dynamic and Restore. These products have recently been reclassified by the ENA and from September 2024 we will be procuring the following products;

Retired Product	Attributes	New Product	Attributes	Dispatch Instruction
DYNAMIC	Scheduled Availability, Utilisation instructed in realtime	SAOU_DA Scheduled Availability, Operational Utilisation – Day Ahead	Scheduled Availability, Utilisation instructed day ahead	Day ahead at 13:30, same time every day
SECURE	Scheduled Availability, Utilisation instructed in realtime	SU_SEP Scheduled Utilisation - Settlement Periods	Utilisation Only, API instruction optional	Every Thurs 17:00 ahead of delivery week
SUSTAIN	Scheduled Utilisation Only, API instruction optional	SU_SPP Scheduled Utilisation - Specific Periods	Scheduled Utilisation Only, API instruction optional	Every Thurs 17:00 ahead of delivery week
RESTORE	Utilisation Only, Utilisation instructed in realtime	OU_15 Operational Utilisation – 15min	Utilisation Only, Utilisation instructed in realtime	15mins ahead of delivery start

Figure 4: Overview of our Flexibility Services

We currently only procure products for Active Power (in MW).

We will procure or suite of products across two different timescales; Long Term (annually) and Short Term (weekly). This is summarised in the table below.

Table 1: Product Summary

Products	Voltage of Constraint		Trading Timescale	
	EHV & EHV/HV boundary	HV & HV/LV boundary	Longer term (currently 6 months ahead)	Shorter term (currently weekly)
SU_SPP	✓	✓		
SU_SEP	✓			✓
SAOU_DA	✓		✓	
OU_15	✓		✓	

There are many similarities between our SU_SEP & SU_SPP services. The key difference between the services is the level of targeting seen in the availability/utilisation windows. For SU_SPP will have common delivery windows that are common across all zones. For SU_SEP, these will be zone specific windows. Where assets can be controlled in a more targeted way, we would expect them to opt in to SU_SEP as it would require fewer hours of operation to deliver a similar revenue, however we see the value in simplified interactions possible through SU_SPP. LV zones will only operate the SU_SPP service.

By default the commercial structure of our products are as below.

Table 2: Commercial structure for each product

Products	Availability Payment	Utilisation Payment
SU_SPP	No	Yes
SU_SEP	No	Yes
SAOU_DA	Yes	Yes
OU_15	No	Yes

Trading

Once the commercial and Technical Qualification aspects are complete (including the 10 day standstill post Contract Award), Trades can be entered into.

What is a Trade?

Trades are the vehicle for the award of service windows. They form the detailed requirements for availability (and for some products utilisation). Once awarded, as well as service windows, a Trade will specify the parameters for delivery; the expected volume of response, the assets being utilised and the associated price.

Ahead of Trade functionality being available to within the Market Gateway, we administer Long Term Trades through a spreadsheet process and Short Term Trades are administered on eth Flexible Power Portal. Our Trades currently operate across two timeframes, short term (weekly) and long term (annually).

A Trade has 3 sets of data:

- The Trade Opportunity, setting out the DSO’s requirements
- The Trade Response, setting out the FSPs availability to deliver response to the requirements
- The Trade Award, the acceptance or rejection of the FSPs availability by the DSO and the specification of awarded parameters.

Trade Opportunity

A trade opportunity sets out the DSO’s needs. This includes the following key data points:

Attribute	Description
Trade Opportunity Reference	The Unique ID for the Trade Opportunity
Trade Signposting Opening Date	When the trade is published
Trade Opening Date	When the trade opens
Trade Closing Date	When the trade closes
Trade Acceptance Date	When the trade will clear and results will be published

Operational Period	The timeframe in which operational changes can be made (see later section for more detail). By default this will be weekly.
Start Date	When the MW requirement of the trade starts
End Date	When the MW requirement of the trade ends
Ceiling Prices	The maximum price we are willing to pay
Pricing Mechanic	How pricing set. Will it use Pay As Clear or Fixed Pricing?
Location	The geographic bounds of the CMZ
Product Type	The product being purchased (Sustain, Secure, Dynamic, Restore)
Service Direction	The direction of the response required. Demand Turn Down (DTD)/Generation Turn Up (GTU) or Demand Turn Up (DTU)/Generation Turn Down (DTD).
Maximum MWh Requirement	The maximum volume to be procured in the Trade.
A number of Capacity Requirement Windows (See detail below)	The requirements for capacity over time. These will include a time series of maximum and minimum requirements. These will be grouped into windows.
Applicable Baseline	Which baseline option is applicable for the Trade.

DSO requirements for flexibility are generally for a time series of data over time.

To allow FSPs to respond we will group the requirements into Capacity Requirement Windows. Each Window is comprised of a daily profile of Delivery Periods accompanied by the dates and days the window applies to. The repetition of these windows will change depending on the specific needs of the trade, including for example the product and the timescales being procured in.

See below a few examples:

1. For our SU_SPP product, the requirements are consistent over the duration of the trade. As such the requirement would be for the one season long Capacity Requirement Window made up of 2 Delivery Periods (08:00-12:00 & 16:00-20:00). The Delivery Periods would be repeated for each weekday of the entirety of the SU_SPP Season. The Delivery Period is set at 4 hrs as the requirement is consistent across it and responses must cover the entirety of the requirement.

Table 3: Example SU_SPP Delivery Periods Requirement within Capacity Requirement Window 1

Delivery Period Start Time >=	06:00	16:00
Delivery Period End Time <	10:00	20:00
Minimum Requirement	0.5	0.5
Target Requirement	1	1
Maximum Requirement	1.5	1.5

Table 4: Example Capacity Requirement Windows repetition for a Winter SU_SPP trade

	MON, TUE, WED, THU & FRI
Oct, Nov, Dec, Jan, Feb, Mar	Window 1

2. For our SU_SEP product, the requirements currently vary by weekday and month. As such we might have a separate window for each weekday in a month. In addition the Delivery Periods have been shortened to half hours to give more flexibility in response. This is highlighted in the diagram below.

Table 5: Example longer term SU_SEP Delivery Periods Requirement within Capacity Requirement Window 1

Delivery Period Start Time >=	07:0 0	07:3 0	08:0 0	08:3 0	09:0 0	09:3 0	16:0 0	16:3 0	17:0 0	17:3 0	18:0 0	18:3 0	19:0 0
Delivery period End Time <	07:3 0	08:0 0	08:3 0	09:0 0	09:3 0	16:0 0	16:3 0	17:0 0	17:3 0	18:0 0	18:3 0	19:0 0	19:3 0
Minimum Requirement	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Target Requirement	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum Requirement	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Table 6: Example Windows repetition for a longer term SU_SEP trade

	MON	TUE	WED	THU	FRI	SAT	SUN
April	Window 1	Window 2	Window 3	Window 4	Window 5	Window 6	Window 7
May	Window 8	Window 9	Window 10	Window 11	Window 12	Window 13	Window 14
June	Window 15	Window 16	Window 17	Window 18	Window 19	Window 20	Window 21
July	Window 22	Window 23	Window 24	Window 25	Window 26	Window 27	Window 28
August	Window 28	Window 29	Window 30	Window 31	Window 32	Window 33	Window 34
September	Window 36	Window 37	Window 38	Window 39	Window 40	Window 41	Window 42

Some Windows may have repeating requirements, however specifying them individually allows for more tailored responses as set out in the next section.

These are examples only. The specific windows and requirements will be defined in the Trade Opportunity.

Trade Response

The trade response is the FSPs response to the Trade Opportunity. It includes the following key data points:

Attribute	Description
Trade Response ID	The Unique ID for the Trade Response
Trade Opportunity ID	The ID of the associated Trade Opportunity
MU IDs	The Meterable Units Associated with the trade
Price	The price offered by the FSP
Capacity (MW)	The capacity being offered by the FSP. It should be noted this will be capped at the "Maximum Requirement"
Availability Declarations Windows (see the detail below)	This is the FSPs response to the windows or requirements in the Trade opportunity

The FSP has the ability to provide an Availability Declaration Windows in response to the DSO's Capacity Requirement Windows. This availability is copied across the window repetitions. The FSP can declare availability for any combination of the availability windows offered.

See the following example responses:

1. For the SU_SPP example the provider may only be available for the evening Delivery Period. This is the copied for the entire Capacity Requirement Window, which covers the whole season.

Table 7: Example SU_SPP Availability Declaration Window 1

Delivery period Start Time >=	06:00	16:00
Delivery period End Time <	10:00	20:00
Available?	No	Yes

2. For the SU_SEP example, in window 1 the provider may only be available for the early evening on Mondays in April, but all day on the Tuesdays.

Table 8: Example longer term SU_SEP Availability Declaration Window 1

Delivery period Start Time >=	07:0 0	07:3 0	08:0 0	08:3 0	09:0 0	09:3 0	16:0 0	16:3 0	17:0 0	17:3 0	18:0 0	18:3 0	19:0 0
Delivery period End Time <	07:3 0	08:0 0	08:3 0	09:0 0	09:3 0	16:0 0	16:3 0	17:0 0	17:3 0	18:0 0	18:3 0	19:0 0	19:3 0
Available?	No	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No

Table 9: Example longer term SU_SEP Availability Declaration Window 2

Delivery period Start Time >=	07:0 0	07:3 0	08:0 0	08:3 0	09:0 0	09:3 0	16:0 0	16:3 0	17:0 0	17:3 0	18:0 0	18:3 0	19:0 0
Delivery period End Time <	07:3 0	08:0 0	08:3 0	09:0 0	09:3 0	16:0 0	16:3 0	17:0 0	17:3 0	18:0 0	18:3 0	19:0 0	19:3 0
Available?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Trade Award

Following the collation of all Trade Responses by the DSO, and the selection of the services (see later section), the Trade Award is the confirmation of the window of availability accepted by the DSO. It includes the following key data points:

The Trade Award is formed of:

Attribute	Description
Trade Award ID	The Unique ID for the Trade Award
Trade Response ID	The ID of the linked Trade Response
Price	The trade clearing price.
Availability Acceptance window (see example below)	The portion of the availability window accepted by the DSO in response to the FSPs Availability Declaration Window.

The DSO has the right to accept any combination of the Delivery Periods offered in an Availability Declaration Window within the Trade Response.

See the example acceptances below:

1. For the SU_SPP example the DSO might accept the window made available.

Table 10: Example SU_SPP Availability Acceptance Window 1

Delivery period Start Time >=	06:00	16:00
Delivery period End Time <	10:00	20:00

Available?	No	Yes
Accepted?	N/A	Yes

2. For the SU_SEP example, the DSO may only accept the availability in the afternoons.

Table 11: Example longer term SU_SEP Availability Acceptance Window 1

DELIVERY PERIOD START TIME >=	07:00	07:30	08:00	08:30	09:00	09:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00
Delivery period End Time <	07:30	08:00	08:30	09:00	09:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30
Available?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No
Accepted?	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A

Table 12: Example longer term SU_SEP Availability Declarations for Window 2

Delivery period Start Time >=	07:00	07:30	08:00	08:30	09:00	09:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00
Delivery period End Time <	07:30	08:00	08:30	09:00	09:30	16:00	16:30	17:00	17:30	18:00	18:30	19:00	19:30
Available?	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Accepted?	No	No	No	No	No	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Managing Trades

A trade is used to lock in key requirements from FSPs and the DSO and clearly set out delivery expectations.

As such once a Trade Opportunity Closes, the Trade Responses are locked and assessed. The Trade Award is used to confirm the Availability Acceptance Windows, the Meterable Units covered and the technical parameters (as specified in the Trade Response). These cannot be edited post trade.

It should however be noted that whilst the Meterable Units tied to a trade are fixed, it is still possible to edit the Assets linked to the Meterable.

This would allow FSPs to manage which assets are being used. The same response, with the same availability window is expected, but the baseline values will alter to align with the latest Assets.

For example a Supplier may want to remove Assets that are no longer their customers, and add others in their place.

Long Term Trade timelines

Longer Term products will all Trade in much the same way, however they will happen over a longer timeframe. We currently operate one Long Term Trade cycle per year, procuring services for the following year, Apr-Mar. Each Long Term Trade Cycle will be published in August and the Trade Response Window will open in September for 6 weeks and we will publish Trade Award decisions 6 weeks later.

Figure 5: Long Term Operational process

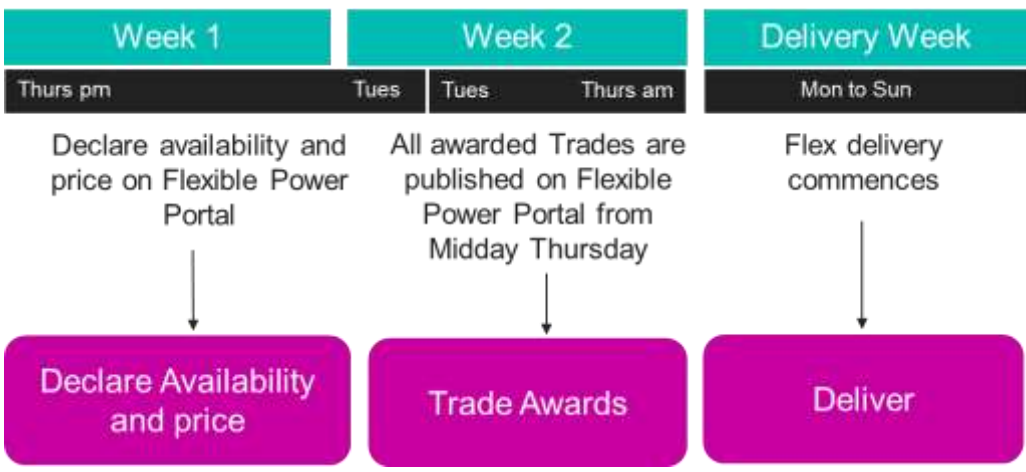
Availability Declarations: Following publishing requirements in August, FSPs will be able to submit their availability declarations in their Trade Response. This includes providing details such as the available capacity they can provide, the price and key operational parameters such as maximum and minimum run times.

Acceptance: We publish successful Trades 6 weeks after the close of the Trade Response Window.

Operation: The Trade then becomes operational in line with the awarded service windows. Full details of requirements will be specified in the Trade Opportunity itself.

Short Term Trade timelines

Short terms trade will continually be available, we will procure them on a week ahead basis;



Joint Utilisation Competition

Joint Utilisation Competition: In 2025, we would like to introduce a Joint Utilisation Competition (JUC). The JUC provides FSPs with a trade accepted for a longer term product an opportunity to submit a reduced utilisation price for an accepted availability declaration in order to make it more competitive in comparison to prices in the short term market. This process is not yet defined and we will publish more information as it becomes available.

Baselining

Baselines are used to establish a counterfactual to assess delivery and then payment from.

We have evolved our baselining methodologies to align as well as possible with our network planning assumptions. This ties in with the core value of flexibility services being the deferral of network reinforcement.

As such we have moved away from historic baselines to more static baselines based on the technology types and metering level of the Assets in the Meterable Unit.

Please see Appendix 1 for more information on how we calculated and apply baselines.

Service Selection

Where competitive markets have developed, resulting in over supply, we will need to select the priority order on which flexibility assets are accepted and dispatched. We have published information on how we currently make decisions around flexibility service selection and dispatch, including the principles we follow [here](#).

Settlement Guidance

Payment Mechanics

Through its Open Networks Project, the ENA has recently published Standardised Payment Mechanics for adoption by all UK DNOs. National Grid has implemented these Payment Mechanics for its procurement activities post Sept 2024. Detailed information published by the ENA can be found [here](#).

Each Product procured subject to specified payment mechanic. These are designed to encourage full delivery, whilst balancing the level of penalties to ensure the service provision remains attractive.

Payments are made up of a combination of an Availability payment and/or a Utilisation payment, each product has a mechanism for clawing back under delivery.

The Utilisation payments are assessed on a per metering period (generally 1 minute) basis.

There is a Grace Factor, in which delivery is assumed at 100%. If the output is below this value then a proportion of the payment is removed for every percent of under-delivery. This proportion is determined by the Performance Multiplier.

A summary of the values used is highlighted in the table below;

Attribute	Scheduled Availability, Operational Utilisation – Day Ahead (SAOU_DA)	Scheduled Utilisation, Utilisation Only - Settlement Periods (SU_SEP)	Scheduled Utilisation, Utilisation Only - Specific Periods (SU_SPP)	Operational Utilisation, Utilisation Only - 15min Response (OU_15)
Utilisation Grace Factor	5%	5%	5%	0%
Availability Grace Factor	5%	N/A	N/A	N/A
Penalisation Multiplier	3	3	3	2
Payable Over-delivery	0%	0%	0%	0%

Table 13: Key values for the Secure, Sustain and Dynamic Payment Mechanic

Billing Process

As detailed in the

Flexible Power Operational Portal Set Up and Integration section of this guidance, the Flexible Power Portal is used to collect metering data. This is used to monitor and pay for delivery.

After the end of each event a performance report and earning statement is created on the Flexible Power Operational Portal. This allows FSPs to review their results per event. Examples can be found on the [Flexible Power Website](#).

At the end of the month the performance reports are compiled along with the availability payments and reconciliations for any shortfall of delivery into an invoice.

A provisional invoice will be produced on the 1st of every month. The FSP then has 14 days to raise any queries.

If no query is raised within the 14 day window the portal will generate a final 'Self-Billing' invoice which can be downloaded for financial records. This is processed by the DSO for payment. The payment terms for the invoice is 60 days.

If a query is raised, then the invoice is placed on hold until any concerns have been resolved. We endeavour to complete this within a 14 day window so as to avoid deviating from the standard payment timeline. If however this can't be achieved we will defer the payment to the following months billing cycle.

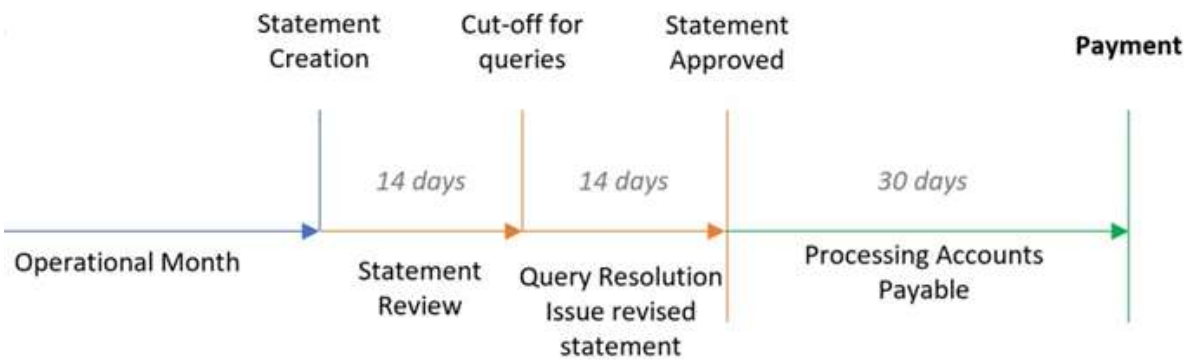


Figure 6: Invoicing & payment timeline

The service and payment cycles are based on a calendar month and therefore we operate a total of 12 billing cycles within a year.

Glossary

TERM	DEFINITION
Application Programme Interface (API)	The means through which National Grid instructs the delivery of services awarded through a Trade Award. The FSP must build an API for each MU it wishes to Trade with prior to entering a Trade Response.
Asset	The smallest entity that we consider on the Market Gateway. It is used to represent the lowest level at which the FSP can meter. This could either be an individual or combination of machines/Low Carbon Technologies depending on the metering location. This is equivalent to a DER in the Service Terms.
Availability Acceptance Window	The response of the DSO to the Availability Acceptance Window specifying when their availability has been accepted.
Availability Declaration Window	The response of an FSP the Capacity Requirement Window specifying when they are available to provide services.
Availability Payments	A payment made in return for being available to provide services.
Capacity Requirement Window	A defined period of time, where the DSO specifies its requirement for services. There may be multiple Capacity Requirement Windows in a Trade
Ceiling Price	The maximum price the DSO is willing to pay.
Commercial Qualification	Required ahead of eligibility to Technical Qualification being made available to FSPs. Encompasses the PIN, PQQ and Overarching Tender.
Contract Award	the letter issued by the Company to the Flexibility Provider to confirm the successful award of an Overarching Contract;
Contract Documents	All documentation completed via the Market Gateway to enable an Overarching Contract Award. Includes, but is not limited to; all sections of the Flexibility Services Standard Agreement, the PQQ, the self-billing agreement and the Contract Award.
Delivery Period	The increment of time within and Capacity Requirement Window.
Delivery Target Threshold	Delivery of the awarded capacity for a DG of equal to or greater than the Delivery Target Threshold (DTT), is awarded the Utilisation payment "at rate" (i.e. the payment % will equate to the delivery %).
DER Level Metering	Metering that covers just the individual DER. This does not include any underlying site load.
Dispatch Group (DG)	The higher level component, made up of one or more MUs and is used for Trade Responses, dispatch and settlement.
DSO	Distribution System Operator. The party procuring services, in the case, National Grid Electricity Distribution.
Dynamic Purchasing System (DPS)	Our record of all FSPs that have been awarded an Overarching Contract.

Flexibility Service Agreement	The documentation issued by National Grid containing the Terms and Conditions and other associated documentation that FSPs must agree to in order to be awarded an Overarching Contract.
Flexibility Service Provider (FSP)	The entity that will contract with National Grid to provide flexibility services. The FSP could be the owner, operator or appointed third party, responsible for the operation of assets capable of providing flexibility services. All settlement and communication regarding flexibility contract to National Grid, will be direct with the FSP.
Flexibility Services	means, and more particularly described in the Service Terms, the services to be provided by the Flexibility Provider to the Company under and in accordance with this Contract which give the Company the ability to manage the load at a specific point of the Network at certain points in time;
Flexible Power Portal	The operational portal National Grid employs to facilitate all API communication and to calculate settlement and performance.
Grace Factor	A margin of error allowed in respect of under-delivery of the Awarded Capacity of a Trade. Delivery of equal to or greater than the required level of awarded capacity less the applicable Grace Factor is awarded the full Utilisation payment. A deduction from the full payment will be made for delivery of less than the required level of awarded capacity less the applicable Grace Factor.
Market Gateway	The online tool that National Grid has developed to facilitate its procurement of electricity distribution flexibility services.
Meterable Unit (MU)	Made up of one or more flexibility assets behind a single metering feed. Baselineing is applied at the Meterable Unit level.
Metering data	The data FSPs are required to provide via API to the Flexible Power Operational Portal to enable calculation of settlement and performance. This must be provided either as minute by minute data, or half hourly data.
Monthly Delivery Proportion	The Availability payments for DG are subject to a monthly reconciliation based on the DGs individual Utilisation performance over the month.
Operational Period	The increment of time within the Operational Period.
Operational Update Cycle	The Cycle in which changes to Assets and MUs are made.
Overarching Contract	An enduring contract awarded to all FSPs who successfully complete the PIN, PQQ and accept all sections of the Flexibility Standard Agreement. The Overarching Contract does not include any delivery commitments, it merely provides eligibility to Trade.
Pay As Clear	A clearing mechanic where all successful bidder are paid the clearing price rather than the price they bid.
Penalisation Multiplier	The Trade Award sets out the expected delivery of a DG. For every % point under that level, a fixed proportion as set out in Chapter 4, called the Penalisation Multiplier of the full payment is deducted.
Periodic Indicative Notice (PIN)	The method through which National Grid publishes its procurement intentions on the government tendering platform. FSPs must respond to the Pin via the Market Gateway to ensure our procurement activity complies with all relevant procurement law.
Point of Connection Metering	Metering at the Point of Connection. This inherently incorporates any DER and any embedded site demand.

Pre-qualification Questionnaire (PQQ)	A part of the commercial pre-qualification process, all FSPs are required to complete the PQQ to allow the award of an Overarching Contract.
Product	National Grids Sustain, Secure, Dynamic and Restore Flexibility Products as described in Chapter 3.
Qualification Tender	The one-off tender through which an Overarching Contract is awarded.
Supplier Details Form	The document issued by National Grid in order to collect billing information from FSPs
Technical Qualification	Required ahead of eligibility to Trade being made available to FSPs who have been awarded an Overarching Contract. Encompasses the registration of Assets, the allocation of assets to MUs and DGs and the API build
Tender	Each Trade is effectively, a Tender. Tender outcomes are notified through the Trade Award.
Trade	FSPs who are successfully awarded an Overarching Tender, will be eligible to Trade. A Trade encompasses; Trade Opportunities, Trade Response and Trade Award
Trade Award	The accepted technical (capacity, service windows) and commercial (price) parameters National Grid accept from the FSPs Trade Response. A Trade award is the binding agreement which the FSP is required to deliver against.
Trade Dispatch Group (DG)	The higher level component, made up of one or more MUs and is used for Trade Responses, dispatch and settlement.
Trade Opportunities	National Grids flexibility requirements. Published on the Market Gateway, with functionality available for FSPs to provide a Trade Response.
Trade Response	The technical (assets, volume & time) and commercial (price) parameters an FSP can offer against a Trade Opportunity.
Utilities Contract Regulations (UCR)	The procurement regulations with which National Grids procurement processes must comply.

References

- [1] Energy Networks Association, "Open Networks Project - ON WS1A P3 Dispatch & Settlement Processes," Energy Networks Association, 2020.
- [2] National Grid, "POLICY DOCUMENT: SD2/8 - Relating to 132kV Network Design," 20 May 2020. [Online]. Available: <https://www.nationalgrid.co.uk/downloads-view-reciteme/606347>.
- [3] National Grid, "STANDARD TECHNIQUE: TP1B - STANDARD TECHNIQUE: TP1B," August 2022. [Online]. Available: <https://www.nationalgrid.co.uk/downloads-view-reciteme/607557>.

Appendix 1 – Baseline Methodology Guidance

Introduction

What is a baseline

A baseline is the established level of DER base load from which a delta is measured to determine the level of service delivered.

Baselines are fundamental to the delivery of flexibility services, they;

- set the level of delivery expectation
- set the level for delivery verification,
- allow delivery quantification enable settlement of services.

We recognises that a fair, justifiable and transparent approach to its adopted baseline methodologies is necessary to ensure the success of its flexibility programme.

Purpose of this document

As set-out in further in the

Baselining section of this guidance there are four type of baseline currently available;

1. Zero,
2. Asset capacity,
3. Self-nominated based on historic demand, and,
4. Based on planning profiles.

This document provides the latest methodology for their calculation.

The FSP must register its assets through the Market Gateway and receive confirmation of their validity before their applicable baseline option(s) is confirmed.

We reserve the right to update the baseline options and the methodology for the calculations.

Zero baselines

As the name suggest, for a Zero baseline, we assume an output of 0MW.

Asset Capacity baselines

For an Asset Capacity baseline we set the baseline to capacity of the asset/DER provided as part of the registration process.

Self-Nominated Baselines Based On Historic Demand

How the baseline is calculated

The self-nominated baseline is calculated by the provider using the following parameters in respect of their historic demand data.

Calculation Frequency	Monthly – for submission by the second last Tuesday of each month
Calculation applicability	From the First Monday of each month
Calculation type	Single value average
Metering data requirements	Minute by minute, or if allowable half hourly.
Data Window	3pm-8pm weekdays
Data History	The previous 4 weeks
Data exclusions	The FSP may remove data that relates to prior utilisation events

Baselines Based On Planning Profiles

How the baseline is calculated

Table of variables

Variable Name	Description	Symbol	Units	Source
Metering Location	The metering location of the individual asset, forming the Meterable Unit for operational and baseline calculation purposes. Point of Connection (PoC) or DER Level Metering (DLM).	M_L	-	<i>FSP Provided</i>
Baseline Season	The season for which the baseline is calculated and operationally applied. Summer or Winter as defined below.	T_{season}	-	<i>FSP Provided</i>
Number of Assets	The number of assets in the Meterable Unit (MU).	N	-	<i>FSP Provided</i>
Baseline Power	The assigned value of power for the respective baseline. The baseline power is a function of Metering Location and Baseline Season.	B_P	<i>kW</i>	<i>DSO Calculated</i>
Meterable Unit Baseline Power	The baseline power, calculated and operationally applied, to a Meterable Unit (MU).	B_{MU}	<i>kW</i>	<i>DSO Calculated</i>

We calculate the assigned Baseline Power Values for DER Level Metered and POC Metered DER types using profile data from the [Customer Behaviour Assumptions Report](#) which is published annually as part of the their annual [Distribution Future Energy Scenarios \(DFES\) Study](#).

The assigned Baseline Power Values are updated periodically to include the latest profile data from each DFES publication. We will publish the assigned Baseline Power Values here; <https://flexiblepower.wpdserv.net/downloads/1122> and will update them annually for the operational period Apr-Mar.

Table 2 provides values that are valid until March 2023.

Metering Location M_L	Season T_{season}	Baseline (kW) $B_P(M_L, T_{season})$
Point of Connection, PoC	Winter	2.223
Point of Connection, PoC	Summer	1.502
DER Level Metering, DLM	Winter	1.441
DER Level Metering, DLM	Summer	0.932

Table 2 - Assigned Baseline Power Values

The application of these figures will apply to services delivered within the following inclusive calendar weeks;

- Summer; week 13 (Apr) – week 38 (Sep)
- Winter; week 39 (Oct) – week 12 (Mar)

Calculating the baseline

To calculate the baseline for each MU, the following calculation is applied;

$$B_{MU} = \sum_{i=1}^N B_P(M_L, T_{season})_i$$

Equation 1 - Meterable Unit Baseline Equation

Example

In this example we'll calculate the summer baseline power for a MU consisting of two Point of Connection metered assets and one DER Level Metered asset.

$$B_{MU} = \sum_{i=1}^3 B_P(M_L, T_{season})_i = B_P(PoC, Summer)_1 + B_P(PoC, Summer)_2 + B_P(ALM, Summer)_3$$

$$B_{MU} = \sum_{i=1}^3 B_P(M_L, T_{season})_i = 1.502 + 1.502 + 0.932$$

$$B_{MU} = 3.936 \text{ kW}$$

Equation 2 – Example Meterable Unit Baseline Calculation

▷ Distribution **System** Operator

DSO

nationalgrid
electricity distribution

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