WESTERN POWER DISTRIBUTION

*Serving the Midlands, South West and Wales*

# Distribution Flexibility Services Procurement Report

April 2022

# Contents

# Executive Summary

In this, our first Distribution Flexibility Services Procurement Report, we provide an overview of the services we have procured in the last regulatory year covering April 2021 to March 22.

WPD has been procuring Flexibility Services since 2018 and now operate a “flexibility first” approach.
The provision of clear and timely market information is key for the creation of a mature, liquid and competitive market for Distribution Flexibility Services.

This Report, alongside the forward looking Statement published in April, provide an annual summary of our progress to date.

These help summarise a process that covers how we identify the need for flexibility services, how we seek to procure them and then how we operate them.

These are designed to provide market efficiency whilst balancing the needs for simplicity and accuracy, and have evolved as we have gained experience, and engaged with our key stakeholders.

This report provides an annual summary of what we have procured & operated as well as how we have engaged with stakeholders, how we ensure our process remain economic and efficient as well as a view on the carbon intensity of the services. Throughout, and summarised in Appendix 2, we point to the further data sources so you can track our progress in a more granular manner.

In the last year we have rolled out our WPD Connected Data portal. We see this as a key tool for the digitisation of the industry. We have committed to the publishing of all Flexibility to this portal to ensure the data is all machine readable and API accessible. This is supplemented by a range of alternate presentations of the data to ensure it is usable by the widest range of providers possible.

If there is any further data/summaries you would like to see in further iterations of this report then please do let us know at: WPDFlexiblePower@westernpower.co.uk.

# 1. Introduction

Western Power Distribution (WPD) is a Distribution Network Operator (DNO), responsible for distributing electricity to 8 million customers. We look after a network of wires, poles, pylons, cables and substations; distributing electricity to homes and businesses across the West Midlands, East Midlands, the South West and South Wales.

Within WPD we have been procuring Flexibility Services since 2018 and now operate a “flexibility first” approach. By managing temporal peaks on the network, we can avoid overloading assets and hence push back the need to invest in more assets.

This Distribution Flexibility Services Procurement Report (and the accompanying data template) summarises the services we have procured and used in the last regulatory year. It forms part of a yearly regulatory process involving the publishing of forward looking Procurement Statement, looking at how we will procure in the coming regulatory year, and the backwards looking Procurement Report, looking at what we have procured. These publications are mandated as part of our Distribution Licence (Condition 31E), and aim to build a minimum level of information required to promote a competitive market for Flexibility Services.

Within WPD, we have established a robust process for the assessment, procurement and then operation of Flexibility Services. This has been formed by our experience of building the services out from innovation projects in a full business as usual process and featured regular feedback and improvement from our stakeholders. This report aims to highlight these processes and point towards existing data sources where possible, providing an overview of our activity to date whilst allowing detailed investigation where desired.

The report covers:

- Summaries of where we have procured and operated services,
- A review of the stakeholder engagement carried out in the last year,
- The processes used to assess the economic viability of Flexibility Services, and individual bids,
- A view on the carbon intensity of our services,
- Further details to help understand the supplementary data, &
- A summary of the related publications and data sources.

Should you have any queries about the contents of this report please contact: WPDFlexiblePower@westernpower.co.uk.

# 2. Flexibility Procurement and Use Summary

## 2.1 The services we have procured and operated

As detailed in section 2 of our Procurement Statement for 21/22 we have a robust process for the identification, communication, procurement and then operation of Flexibility Services. The tables below provide a brief summary of the service procured over the last year as per the Supporting Data. It should be noted that as per the regulatory guidance, these are based on the zones where we have procured additional services in the past year. As such this does not include zones where active procurement of new capability has ceased or did not result in a response.

*Table 1: Summary of Flexibility Service Procurement by Product*

| Product | Forecast Requirement in the Procurement Statement (MW)* | Contracted in prior years (MW) (in relevant zones) | Contracted in reporting year (MW) | Remaining requirement (MW)** |
|---|---|---|---|---|
| **Sustain** | 0.0 | 0.0 | 0.0 | 0.0 |
| **Secure** | 41.2 | 4.1 | 90.2 | -54.2 |
| **Dynamic** | 259.7 | 34.2 | 180.2 | 65.4 |
| **Restore** | 300.9 | 38.3 | 270.4 | 11.2 |

* It should be noted that we provided a very limited summary of our forward looking needs in our previous procurement statement. For our 22/23 statement we have based the forecasts based on our requirements provided in our first procurement round of the year. As such we completed this table using the data from the first procurement round of 21/22.

** It should be noted that the remaining volume is calculated as a simple subtraction of the contracted volume from the required volume. Due to our clearing strategy for competitive markets, which requires N-2 redundancy for competitive markets, it is possible to get very significant negative numbers, whilst still not hitting our threshold for a competitive market.

Full details of the services procured and operated can be found in the accompanying Supporting Data. It should also be noted that we publish extensive data on our Connected Data Portal. For full details on the data we publish see Appendix 2.

*Table 2: Summary of Flexibility Service Procurement by Zone*

| | Products | Postcodes*** | Forecast Requirement in the Procurement Statement (MW)* | Contracted in prior years (MW) | Contracted in reporting year (MW) | Remaining requirement (MW)** | Reasons not met | Dispatched (MWh) |
|---|---|---|---|---|---|---|---|---|
| **Bridgwater/Street** | Dynamic & Restore | BA4 BA5 BA6 BS2 TA1 TA2 TA3 TA7 TA5 TA6 BA2 BA7 BA1 TA4 | 20.88 | 3.3 | 81.7 | -64.3 | | 149.4 |
| **Hayle - Camborne** | Dynamic & Restore | TR1 TR2 TR4 TR19 TR18 TR20 TR26 TR14 TR13 TR27 TR21 TR17 TR15 TR16 | 32.14 | 1.0 | 9.81 | 20.1 | insufficient market volume | 0.0 |
| **Isles of Scilly** | Secure & Restore | TR2 TR23 TR22 TR24 TR21 TR25 | 0.6 | 1.0 | 0.4 | 0.1 | insufficient market volume | 0.0 |
| **Apollo - Tamworth** | Secure & Restore | B78 B79 WS1 WS14 | 2.26 | 0.9 | 1.23 | 0.7 | insufficient market volume | 0.0 |
| **Chesterfield Main** | Secure & Restore | DE5 S45 S42 DE55 | 1.82 | 0.2 | 1.96 | -0.8 | | 0.0 |
| **Clowne** | Dynamic & Restore | S21 S43 S44 S80 | 1.6 | 0.2 | 2.3 | -0.9 | | 0.0 |
| **Coalville** | Dynamic & Restore | LE6 LE1 LE3 LE9 CV1 CV9 DE1 LE67 CV13 DE12 LE12 LE19 | 33.87 | 4.3 | 7.81 | 24.1 | insufficient market volume | 0.0 |
| **Grassmoor** | Secure & Restore | DE5 S41 S42 S44 S45 DE55 | 5.8 | 0.4 | 2.87 | 2.3 | insufficient market volume | 0.0 |
| **Alfreton** | Dynamic & Restore | DE5 DE55 | 3.39 | 0.8 | 1.4 | 1.6 | insufficient market volume | 0.0 |
| **Nailstone** | Dynamic & Restore | LE67 CV13 | 3.62 | 0.9 | 1.27 | 2.2 | insufficient market volume | 0.0 |
| **Tamworth Main** | Secure & Restore | B78 B77 | 2.41 | 1.1 | 2.98 | -1.1 | | 0.0 |
| **Union Street - Rugby** | Secure & Restore | CV23 CV22 CV21 | 0.91 | 0.2 | 1.44 | -0.8 | | 0.0 |
| **Woodbeck** | Dynamic & Restore | DN2 NG2 DN22 NG22 | 1.44 | 0.3 | 0.8 | 1.4 | insufficient market volume | 0.0 |
| **Llandrindod - Rhayader** | Dynamic & Restore | LD1 LD2 LD6 LD7 LD8 SY1 SY18 | 1.21 | 0.2 | 1.33 | -0.1 | | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Pembroke** | Dynamic & Restore | SA3 SA6 SA7 SA68 SA67 SA70 SA69 SA34 SA33 | 1.63 | 0.7 | 0.93 | 0.7 | insufficient market volume | 0.0 |
| **Pembroke** | Dynamic & Restore | SA6 SA7 SA70 SA69 | 6.66 | 0.7 | 0.93 | 5.7 | insufficient market volume | 0.0 |
| **Pembroke** | Dynamic & Restore | SA6 SA7 SA68 SA67 SA70 SA71 SA69 | 0.73 | 0.7 | 0.93 | -0.2 | | 0.0 |
| **Trevaughan** | Dynamic & Restore | SA3 SA33 SA31 SA32 | 2.37 | 0.2 | 0.94 | 0.9 | insufficient market volume | 0.0 |
| **Moretonhampstead** | Dynamic & Restore | EX6 TQ1 TQ13 | 1.76 | 0.4 | 0.92 | 0.8 | insufficient market volume | 0.0 |
| **Tiverton** | Dynamic & Restore | EX1 EX4 EX5 TA2 TA4 EX15 EX14 TA21 EX16 EX17 | 6.69 | 9.5 | 6.02 | -0.1 | | 0.0 |
| **Weston Super Mare** | Dynamic & Restore | BS2 TA8 TA9 BS23 BS24 BS26 BS28 BS22 BS29 | 11.09 | 9.4 | 7.26 | 0.8 | insufficient market volume | 0.0 |
| **Witheridge** | Secure & Restore | EX1 EX3 EX17 EX16 EX18 EX36 | 1 | 0.3 | 0.814 | 0.1 | insufficient market volume | 0.0 |
| **Brimscombe** | Dynamic & Restore | GL6 GL5 GL7 GL4 GL53 GL3 GL8 GL12 GL11 | 5.38 | 1.7 | 5.38 | -0.1 | | 0.0 |
| **Lincoln-Anderson Lane** | Secure & Restore | LN1 LN2 LN6 LN8 NG2 NG23 | 4.71 | 0.0 | 4.71 | -0.6 | | 0.0 |
| **Hereford - Ledbury Ring** | Secure & Restore | HR2 HR9 NP2 GL1 HR1 HR8 WR1 GL2 GL18 GL19 | 5.92 | 0.0 | 6.594 | -0.9 | | 0.0 |
| **Crowland** | Secure & Restore | PE11 PE6 PE4 PE12 | 0.42 | 0.0 | 0.72 | -0.4 | | 0.0 |
| **Berkswell SGT** | Dynamic & Restore | B92 CV4 CV5 CV7 CV8 CV6 CV1 CV2 CV3 B94 | 21.07 | 0.0 | 0.207 | 5.8 | insufficient market volume | 0.0 |
| **Loughborough** | Dynamic & Restore | LE1 LE6 LE7 LE12 LE67 LE11 | 26.37 | 0.0 | 8.41 | 15.0 | insufficient market volume | 0.0 |
| **Mackworth** | Secure & Restore | DE1 DE2 DE3 DE6 DE65 DE22 DE23 | 0.82 | 0.0 | 1.23 | -0.8 | | 0.0 |
| **Manton** | Dynamic & Restore | NG2 S80 S81 NG20 | 3.08 | 0.0 | 1.19 | 1.6 | insufficient market volume | 0.0 |
| **New Dove Valley** | Secure & Restore | DE1 DE6 DE13 DE65 | 5.03 | 0.0 | 2.41 | 2.0 | insufficient market volume | 0.0 |
| **Cardiff North** | Dynamic & Restore | CF14 CF10 CF24 CF23 CF15 CF83 CF3 | 36.84 | 0.0 | 10.15 | 26.0 | insufficient market volume | 0.0 |
| **East Aberthaw** | Dynamic & Restore | CF6 CF7 CF3 CF5 CF1 CF62 CF63 CF11 CF71 CF61 | 12.66 | 0.0 | 0.2 | 9.8 | insufficient market volume | 0.0 |
| **Mountain Ash** | Secure & Restore | CF3 CF4 CF37 CF39 CF46 CF45 CF48 CF43 CF44 | 2.68 | 0.0 | 18.68 | -16.2 | | 0.0 |
| **Roundswell** | Dynamic & Restore | EX3 EX31 EX37 EX32 | 3.22 | 0.0 | 0.96 | 2.1 | insufficient market volume | 0.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Truro - Truro Treyew** | Dynamic & Restore | TR3 TR4 TR1 TR2 TR5 TR16 | 8.08 | 0.0 | 2.59 | 3.6 | insufficient market volume | 0.0 |
| **Feckenham South** | Dynamic & Restore | OX1 OX7 CV3 CV4 GL5 B50 WR1 B49 B96 WR7 | 13.92 | 0.0 | 13.92 | -0.5 | | 0.0 |
| **Hereford BSP** | Secure & Restore | HR1 HR4 HR8 HR2 HR3 HR7 | 6.85 | 0.0 | 44.15 | -38.0 | | 0.0 |
| **Ilkeston** | Dynamic & Restore | DE7 NG1 | #N/A**** | 0.0 | 2.94 | 5.7 | insufficient market volume | 0.0 |
| **Aberaeron** | Dynamic & Restore | SA4 SY2 | #N/A | 0.0 | 0.35 | 0.4 | insufficient market volume | 0.0 |
| **Llanfyrnach** | Dynamic & Restore | SA3 SA4 | #N/A | 0.0 | 0.36 | 2.9 | insufficient market volume | 0.0 |
| **East Yelland** | Dynamic & Restore | EX3 | #N/A | 0.0 | 7.7 | -0.5 | | 0.0 |

*** This is a high level view of the post codes, condensed to allow for visibility on this table. The list of full postcodes is available in our requirements publications on the connected data portal

**** These zones were launched in our second procurement round of the year, and hence had no forecast in the first round of the year.

We provided limited forecasts on our requirements in our Procurement Statement for 21/22. More detail is provided in the statement for 22/23. It should be noted that due to our process for the identification of network needs, and assessing the value of flexibility services, we expect deviations from these forecasts. This could be due to a number of reasons including:

- The identification of new network requirements,
- Customer driven works,
- Under subscription of the services,
- Over subscription of the services (especially where volume is only available in large increments),
- Over/under delivery by participants,
- Pricing changes due to competition, &
- Inherent forecasting inaccuracies.

We currently operate an “informed procurement” process with the ESO for certain services (ODFM and BM wider access). This allows us to highlight where potential conflicts might occur (such as the presence of an ANM scheme).
We are also working to roll out further coordination through our Regional Development Programmes with the ESO as well our work co-leading the Open Networks Primacy product.

## 2.2 When we procured services

As detailed in section 3 of our Procurement Statement, we operated 2 procurement rounds in the calendar year (3 in the regulatory year due to the cut offs). The key dates are highlighted in the figure below.

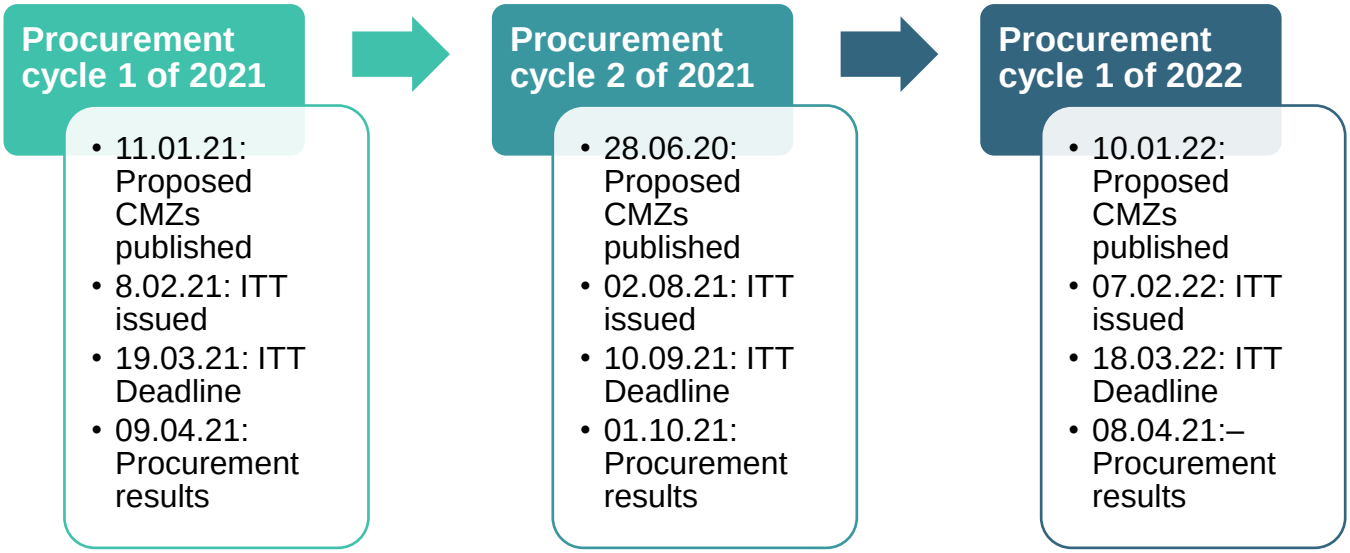


*Figure 1: Procurement Timeline (as per Procurement Statement)*

Procurement Cycle 1 was extended so that the latest version of the ENA Standard Flexibility Agreement could be used to contract with successful bidders. The Procurement Results we published on 17/05/21.
As detailed in section 4 of our Procurement Statement, we opened a window for the collection of feedback on the procurement via an online survey. We received no feedback as part of this process.

# 3. Stakeholder Engagement

## 3.1 Engagement around Flexibility requirements

As detailed in section 2.2, we procured services from the market in line with the timelines set out in our Procurement Statement.

Our tendering process have been developed to be objective, transparent and market based. They are designed to be as simple as possible whilst maintaining compliance with the Utilities Contract Regulations. These regulations impose strict requirements on how utilities procure services. Since 2019 we have used a Dynamic Purchasing System (DPS) to manage pre-qualified parties enabling their eligibility to tender into all our published procurement cycles. Our experience of using the DPS has fed into the procurement processes developed within the Open Networks project (WS1A P2).

The DPS splits the procurement activities into two key stages.

- Initially FSPs pre-qualify, joining the DPS. The DPS holds a record of all parties who have completed a pre-qualification process to be eligible to tender for demand response services in any of our current or future zones. Eligibility to join the DPS is not assessed on technical ability or on geographical location of assets, only company/individual address and contact details must be provided. To join the DPS, FSPs respond to our annual PIN. They are then sent our simple Pre-Qualification Questionnaire, which once completed and assessed completes their registration to the DPS.
- Once parties have successfully been added to the DPS will be invited to all future tenders. In line with our Procurement Timeline we launch two Invitation to Tenders (ITTs) a year. These focus on the geographic locations of assets, as well as the technical ability of the participant. They also invite FSPs to enter a best and final price that will be used should stage 2 pricing be achieved.

Our Procurement was surrounded by a mix of promotional activities to maximise participation, as well as feedback processes to allow us to continually improve our processes. Information on our pre-qualification requirements as well as all other relevant information were available on the Flexible Power Website. We have summarised the full list of relevant documents in Appendix 2.The publication of our requirements, were accompanied by promotion to increase market awareness and drive participation. This included promotion to our update service, social media posts, webinars, surgeries, one to one engagement and the attendance of relevant events. This targets a wide range of stakeholders to ensure all relevant parties are aware of the opportunity and the response required.

Our Requirements are published to a number of places as shown in the figure below.

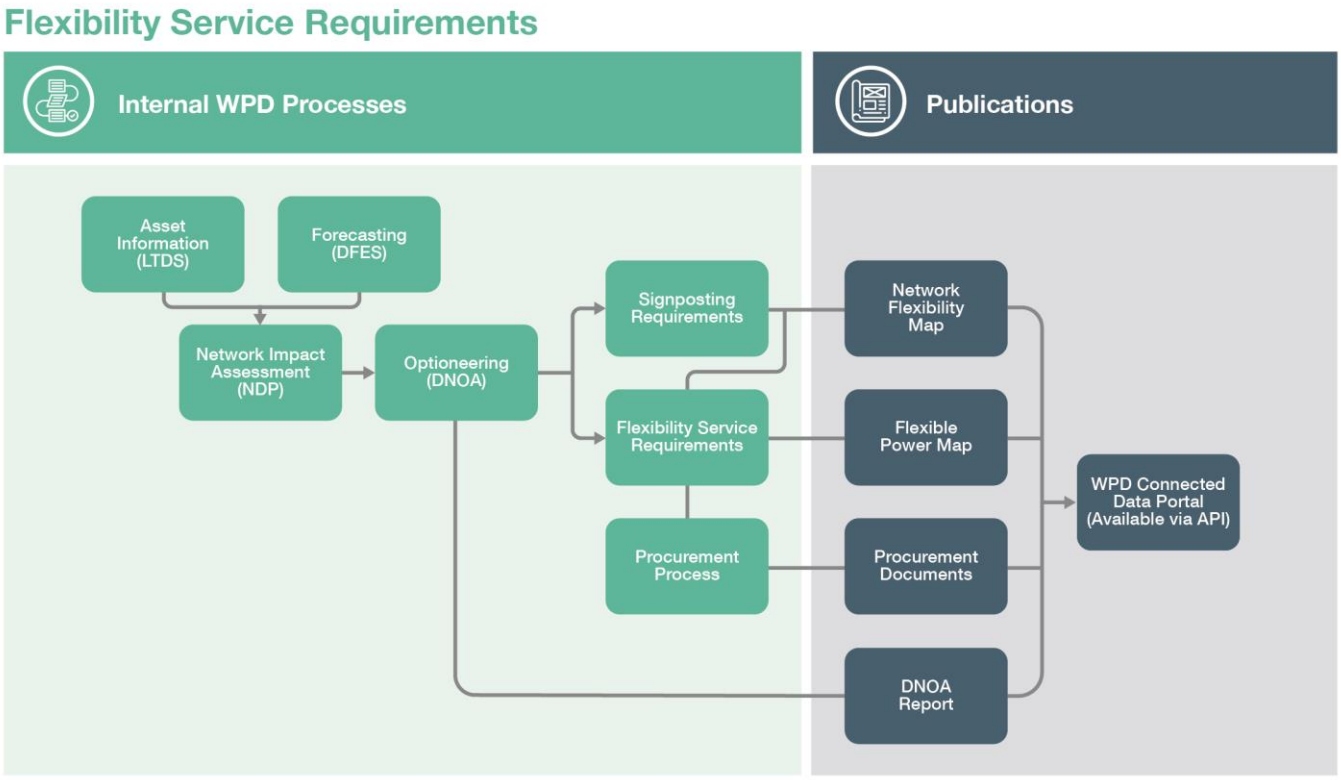


*Figure 2: Network Requirement publications*

Once each procurement round has been completed, we then focus on collecting feedback on how we could improve how we publish requirements and the DNOA process. The associated timings are covered below.

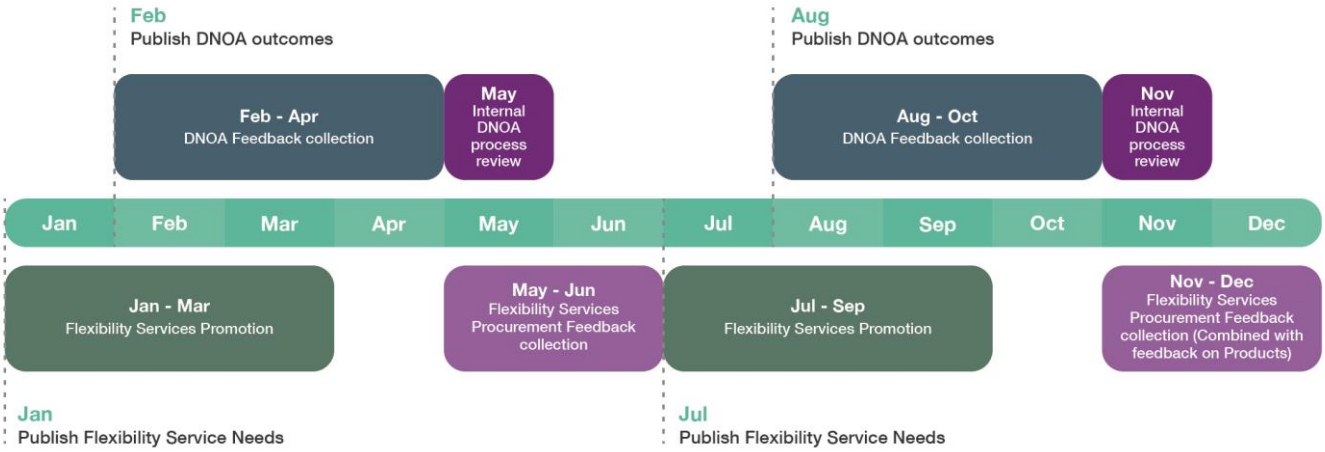


*Figure 3: Timeline for our engagement around flexibility requirements*

As highlighted in section 2.2 we receive no feedback from the engagement for either procurement. Section 3.3 details the engagement we conducted on the services we procure.

We are always looking at how to improve this process and ensure we are engaging in accessible and meaningful ways. If there are any options we should be considering, do let us know.

## 3.2 Engagement with ESO and DNOs

We recognise that WPD is one actor amongst many in an ever more complex energy market place. As such, in addition to our wider engagement, we endeavour to engage heavily with the other network licensees.

A key part of this is through our active involvement at the Energy Network Association, especially the Open Networks project, where we have worked with the other licensees to develop and adopt common approaches across a range of DSO related activities. Work stream 1A is focussed on the development of Flexibility Services. Its key objectives include:

- Bringing more transparency in how DNOs facilitate local markets for flexibility and make decisions to provide more confidence in independent decision making.
- Simplifying participation in local flexibility markets through standardisation of approaches across DNOs and between DNOs and the ESO.
  Addressing barriers to participation in flexibility markets and facilitate stacking of revenues across multiple markets.

The Open Networks project has built stakeholder engagement into its processes. This covers regular engagement via the Challenge and Dissemination Groups as well as consultations on the Program of Works as well as the content of the work streams.

In the last year we have:

- Adopted the latest ENA Standard Flexibility Services Agreement (version 1.2) developed as part of WS1A P4.
- In line with the work from WS1A P2, we have adopted the common DNO procurement timelines. The ensures that we adhere to a common view of minimum time periods for signposting, and responses to ITTs

In addition we have engaged actively with other licensees directly when needed. Examples of this include:

- Our collaboration with the ESO and other relevant DNOs on the Regional Development Programmes (RDPs). The RDPs look across the whole-system landscape to identify key areas of development to unlock additional network capacity, reduce constraints and open up new revenue streams for market FSPs. Building on the work of Open Networks we are developing flexibility markets to manage distribution and transmission system needs. Engagement in the last year has focussed on the development of the MW dispatch in the South West.
- Tied to the above, we have engaged in the monthly Whole Electricity Join Forum with the ESO, DNOs and TOs.
- By opening up our Flexible Power brand and processes to other DNOs we have looked to increase alignment and collaboration within the industry. The collaboration has helped to streamline the process for flexibility providers and make interfacing with DNOs simpler and easier by avoiding the complexities and resource intensity associated with liaising with numerous network operators. We have worked in partnership to further develop the Flexible Power brand and develop the portal functionality to enable interface capability with other flexibility platforms so wider market participation options can increasingly be made available to providers. Key developments include the addition of capabilities to manage Sustain and Demand Turn Up products.

## 3.3 Engagement about products and process

In addition to what we procure, we also sought stakeholder feedback on how we procure services. We targeted key stakeholders including those who have been involved in various elements of the process as well as wider industry stakeholders, including the ESO and other DNOs. This was conducted in two key stages:

- In September and October we developed a number of proposed changes for our services into our Evolution of Flexibility Services document . We then carried out informal engagement over November and December with a webinar and workshops.
- The outcomes from the above fed into a formal consultation process. The feedback from this was collated, and has fed into many of the changes proposed in our latest procurement statement. We have also fed the findings into the Open Networks Project.

As detailed in section 4.2 we also incorporated the outcomes of the Open Networks project into our processes to increase alignment.

The process is highlighted in the figure below.

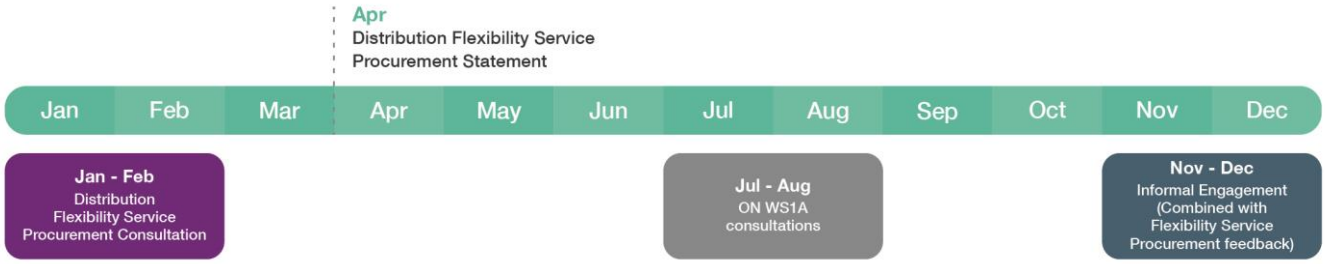


*Figure 4: Timeline for engagement around products and processes*

## 3.4 Contact details

We have a wide range of options for engaging with stakeholders as highlighted above.

To join our Update Service please use our contact form: https://www.flexiblepower.co.uk/locations/western-power-distribution/contact-us .

You can also contact us directly at WPDFlexiblePower@westernpower.co.uk.

A full list of documents is covered in Appendix 2.

# 4. Economic Viability

## 4.1 Flexibility Service Requirements

As highlighted in section 5.1 of our Procurement Statement, we have a robust process for the assessment of Flexibility Needs.
Our Long Term Development Statement (LTDS) highlights the assets that make up our network. Feeding in the forecasting of Load Growth from our Distribution Future Energy Scenarios (DFES) allow us to understand how the loadings on the network will change. This feeds into an evaluation of the limitations on then network (this will feed into the upcoming Network Development Plan due by the end of April). The Distribution Network Options Assessment (DNOA) process then compares the options for managing any potential constraint. Built around the ENA's Common Evaluation Methodology, this assesses the most effective routes forwards. The optimum solutions from the DNOA then feeds into our Procurement of Flexibility Services.

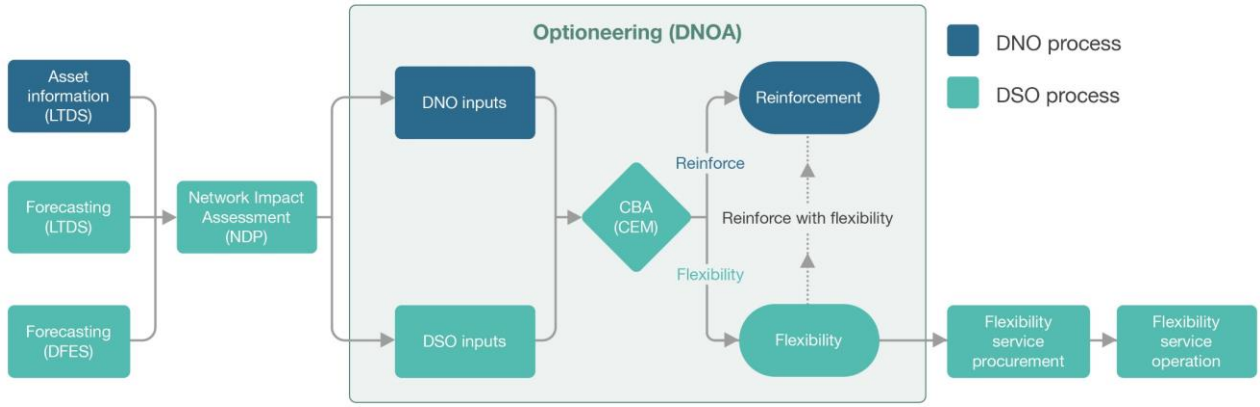


*Figure 5: Determining Flexibility Requirements*

The summary below highlights the breakdown of the investment decisions for all the schemes across WPD from our latest DNOA document (February 22).

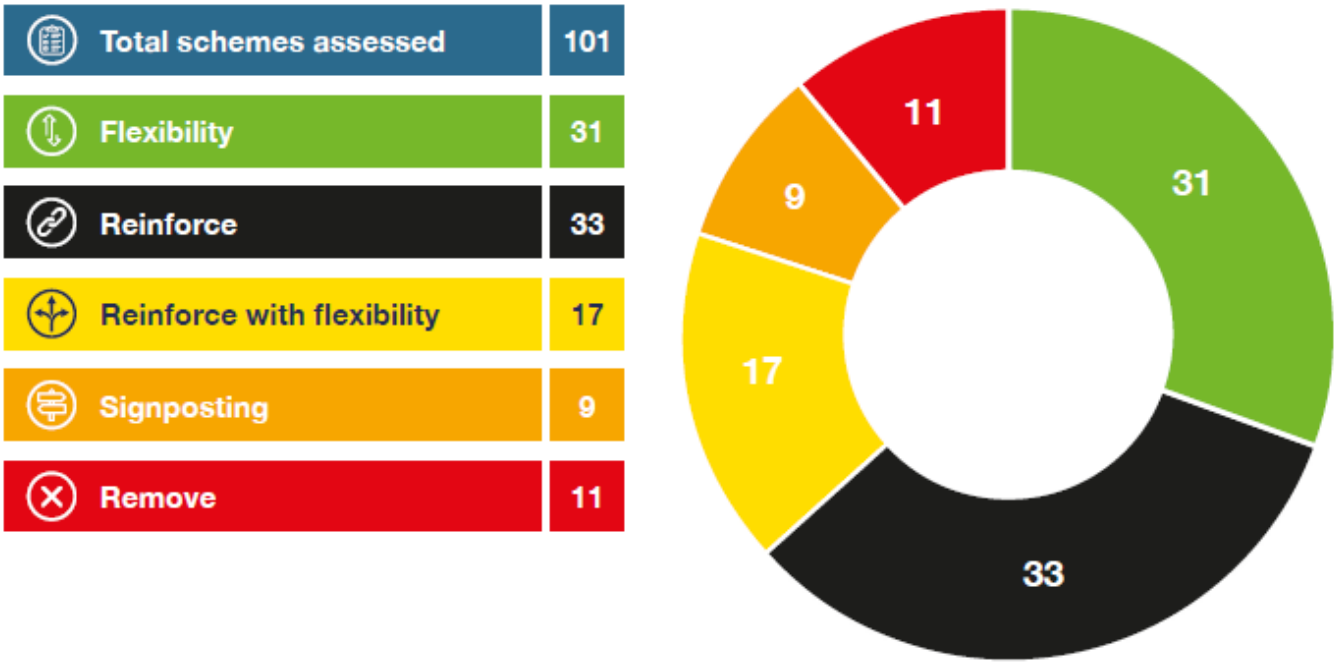


*Figure 6: DNOA summary from February 22*

Further details are available in the latest DNOA document (https://www.westernpower.co.uk/DNOA), including the areas selected for procurement.

As detailed in our latest Procurement Statement, we are working towards delivering Energy Efficiency products in ED2.

## 4.2 Flexibility Service Selection

As highlighted in section 5.2 of our Procurement Statement, we have a detailed process for procurement of Flexibility Services, including a clear methodology for how we select which services to procure and then instruct services.

Since 2019, we have been operating a pricing structure that is dependent on the level of competition revealed through the procurement process. Each CMZ is assessed independently because of variations in the number of FSPs and scale of flexibility provision. We have established a multi layered strategy, with each phase reflecting the maturity of the market. The prices paid are based on the availability of flexibility in each CMZ. This starts with fixed pricing for non-competitive markets and builds towards more market base mechanisms with maturity and liquidity.

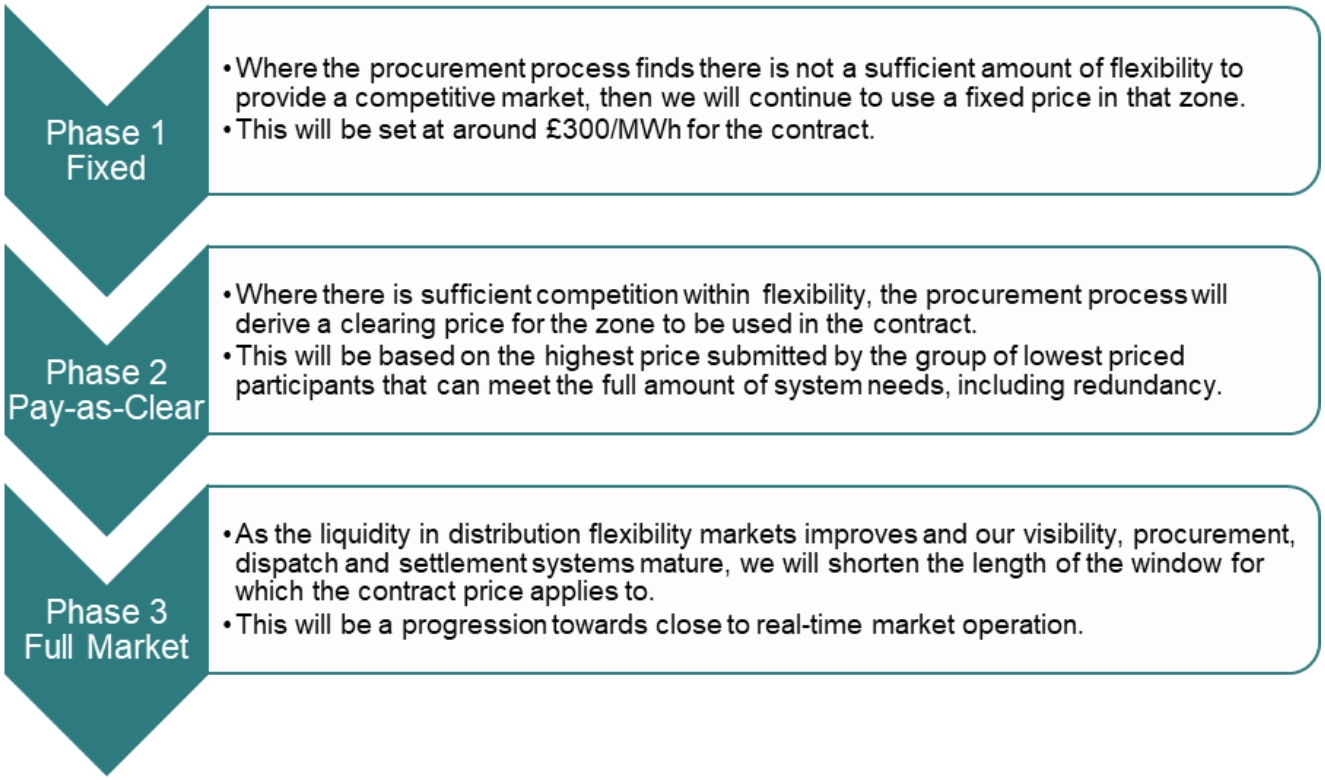


*Figure 7: Pricing Strategy*

Given the early stages of the market development, most zones are currently in Phase 1. However as volumes and competition grow we expect more zones to move into the phase 2 and 3 stages. To facilitate this, since 2020 we have been carrying out competition test to see if market pricing can be established through the pay as clear process.

The fixed pricing utilised in our services in Phase 1 is highlighted below. These feed into the performance related payment mechanics. More details can be found in our Payment Mechanics document (https://www.flexiblepower.co.uk/downloads/603 )

*Table 3: Fixed Prices*

| | Arming | Availability | Utilisation |
|---|---|---|---|
| **Secure** | £125/MWh | N/A | £175/MWh |
| **Dynamic** | N/A | £5/MWh | £300/MWh |
| **Restore** | N/A | N/A | £600/MWh |

In Phase 1, as the volume offered is less than our requirements, we accept all bids at the fixed price.

In Phase 2:

- Tenderers will also be asked to provide their 'best and final offer' per MWh of combined availability/arming & utilisation.
- The combined price is split as per the fixed price product ratios;
- We will carry out an N-2 test to determine which zones have enough participation to be applicable for clearing.
- Where we have CMZs with multiple FSPs with a total capacity that exceeds the CMZs needs the 'best and final offer' price will be used to determine a zonal clearing price.
- The zonal clearing price will be deemed to be the CMZs best market price, and this price will then be offered to all tenderers.
- Tenderers whose best and final offer is above the clearing price will be awarded a contract at the zonal clearing price. Tenderers are under no obligation to provide services under the contract.

More details can be found in our competition testing and pay-as-clear process in our Clearing Process document (https://www.flexiblepower.co.uk/downloads/178).

Our Dispatch principles are set out in section 2.2.3 of our Procurement Statement. As we currently operate a fixed price or pay-as-clear pricing structure, there is no differentiation in price between FSPs. However we do optimise our instructions, instructing in an order which most closely aligns to the required flexibility. We will consider the following factors to optimise our decisions.

*Table 4: Dispatch Principles*

| Principle | Description | In Practice |
|---|---|---|
| **Security** | The needs of the system will be met using flexibility in such a way that security of supply is maintained. | DSO/DNO requirements: Conform with applicable standards with an appropriate management of risk. |
| **Cost** | Flexibility will be operated to meet system need at the minimum level of cost. | Lowest prices per MWh and minimum levels of over procurement.<br>Flexibility will be procured in cost order and will not unduly discriminate against any provider. |
| **Operability** | DSOs will seek to instruct services that offer compatible levels of operability. | Provider characteristics: availability, reliability, run times, response times etc…<br>Accepted offers need to match/partially match requirements. |

As our operational experience increases, we will use this information to provide feedback to FSPs in areas and support them to maximise their value to the system.

More details about this process can be found in our Acceptance and Dispatch Document: https://www.flexiblepower.co.uk/downloads/681.

As detailed in section 3.1 we received no feedback on this process.

## 4.3 Market Assessment

As detailed in section 3, we have conducted extensive stakeholder engagement to ensure our products remain relevant and valuable for different service providers.
This involved:

- Options for feedback following the publication of the DNOA document,
- Options for feedback following a procurement round,
- Our informal engagement through our Evolution of Flexibility Services document,
- Our Distribution Flexibility Service Procurement Consultation,
- Engagement in the Open Networks Project and it's associated stakeholder engagement and governance, &
- Feedback via innovation projects such as Future Flex and IntraFlex.

Off the back of this engagement we have implemented/planned a number of changes including:

- The delivery of an online, digitized procurement hub,
- An amended procurement process to allow for the development of flexibility products across different timelines, &
- The design of new services (such as Sustain), as highlighted in our Distribution Flexibility Service Procurement Consultation.

We also identified the limited impact of DNO Flexibility Services on the Wholesale market via our IntraFlex Project.

This builds on our existing work made to make our services as stackable as possible. This includes:

- No exclusivity clauses,
- No obligation to provide availability, &
- Timing of availability ahead of wider markets.

We have also considered the impact on the Total System by:

- The operation of the informed procurement process for ODFM and BM Wider Access,
- The development of a coordinated service via the RDPs,
- Co-leading the Open Networks Primacy Product.

# 5. Carbon Reporting

To improve transparency on the services we are procuring we have implemented a basic methodology for carbon reporting. This involves:

- Breaking down the utilisation of all our Flexibility Services by technology type (as per the standard types provided in the data template).
- The use of UK Government GHG Conversion Factors for Company Reporting (2021 numbers) and Asset Efficiency Factors (from our Pro Low Carbon work) to convert this utilisation into kg C02e values.

The summary of the methodology per technology type is highlighted below.

*Table 5: Carbon Impact Assessment Summary*

| Asset Type | Assessment method |
|---|---|
| **Fossil - Gas** | Dispatched kWh / Efficiency * Input Fuel Conversion Factor |
| **Fossil - Oil** | Dispatched kWh / Efficiency * Input Fuel Conversion Factor |
| **Stored Energy (all stored energy irrespective of the original energy source)** | Dispatched kWh * Losses * Average UK Electricity Conversion Factor |
| **Demand** | Dispatched kWh * Losses * Average UK Electricity Conversion Factor |
| **Biofuel - Landfill gas** | Dispatched kWh / Efficiency * Input Fuel Conversion Factor |
| **Data not available** | Average of Other Factors |

For demand shifting and storage sites, we have taken a view on the losses of the storage/demand shifting and multiplied it by the average UK electricity carbon factors to account for the energy lost in the process.

For Landfill sites, as per the UK Government GHG guidance for Company reporting, the impact has been split out between elements that are in and outside of scope. These account for the direct CO2 impact of burning the biofuels. The standard in Scope impacts are treated as net “0” as the fuel source itself absorbs an equivalent amount of CO2.

It should also be noted (as highlighted in Appendix 1), that the technology type data we collect is limited. We have back filled this data where pragmatic with other data sources. This creates an element of uncertainty in the estimates.
Where data was unavailable, we have used an average of the other technology types.

The key outcomes of the analysis are presented below:

*Table 6: Total Carbon Impact of WPD Flexibility Services (21/22)*

| Total Carbon Emissions | |
|---|---|
| **Total Energy Volume (MWh)** | 1337.1 |
| **Total Carbon Impact (t CO2e)** | 247.6 |
| **Avg Impact (t CO2e/MWh)** | 0.19 |
| **Out of Scope Carbon Impact (t CO2)** | 630.7 |

*Table 7: Table 4: Carbon Impact of WPD Flexibility Services by technology type (21/22)*

| Technology Type | Conversion Factor (kg CO2e/kWh) | Efficiency | Losses | Overall Conversion Factor | Total Energy Volume (MWh) | Total Carbon Impact (t CO2e) | Outside of Scope Carbon Impact (t CO2) |
|---|---|---|---|---|---|---|---|
| **Fossil - Gas** | 0.18316 | 28% | | 0.6541 | 303.5 | 198.5 | 0.0 |
| **Fossil - Oil** | 0.23686 | 30% | | 0.7895 | 51.0 | 40.3 | 0.0 |
| **Stored Energy (all stored energy** | 0.21233 | | 16% | 0.0340 | 63.0 | 2.1 | 0.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **irrespective of the original energy source)** | | | | | | | |
| **Demand** | 0.21233 | | 10% | 0.0212 | 13.3 | 0.3 | 0.0 |
| **Biofuel - Landfill gas** | 0.00020 | 28% | | 0.0007 | 887.3 | 0.6 | 630.7 |
| **Data not available** | | | | 0.2999 | 19 | 5.7 | 0.0 |

*Table 8: Carbon Impact of WPD Flexibility Services by Product Type (21/22)*

| Product Type | Total Energy Volume (MWh) | Total Carbon Impact (t CO2e) | Outside of Scope Carbon Impact (t CO2) |
|---|---|---|---|
| **Secure** | 429.7 | 178.8 | 59.7 |
| **Dynamic** | 907.4 | 68.8 | 571.0 |
| **Restore** | 0 | 0 | 0 |

Due to the high volume of landfill gas being utilised within our services, the treatment of the out of scope emissions have a significant impact on the view of carbon intensity.
Using convention boundaries, our services have a lower carbon impact that figure for average UK electricity. However this changes significantly if the outside of scope carbon is considered. This is not surprising give the technology mix of assets providing services to us.

The methodology used is relatively simple and does not consider elements such as non-operational or embodied carbon. It also does not consider any consequential impacts from our services (such as the resultant energy balancing actions).

We are contributing actively to the Open Networks WS1A P7 Carbon Reporting product looking at developing a consistent methodology across DNOs. We will use this in subsequent reporting periods.

# Appendix 1: Supporting data

Please see the associated supporting data for further details on the services we have procured and dispatched in the last regulatory year.

This is a common data template mandated by Ofgem and implemented across all DNOs. As such it cannot capture all the details of our service requirements. See Appendix 2 for more details about the other data we publish.

To further aid interpretation of the data see the list of clarifications below.

## Procurement and Use Summary

As required within the guidance document, we have provided one worksheet per licence area. We have also pulled provided a worksheet for the whole of WPD.

We have not procured any Sustain or Reactive Power services in the last year.

It should be noted that the Dispatch figures relate to the zones where procurement was ongoing in the year. This aligns with the data in the Procurement-Locational worksheet. This will not align fully with the data in the Dispatch Worksheet as this includes data from zones that are no longer open for procurement.

As the data is based on the other data sheets the “contracted in prior years” value only covers zones where procurement was sought in the regulatory year. As such it does not include the zones no longer open for new providers.

## Tender Rounds Summary

This data summarises the data in the Procurement Worksheet, with locational tenders grouped (by CMZ and procurement round). As such it only covers tenders where bids were received in the regulatory year.

It should be noted that the Contracted value, covers the volume contracted for 2021/22 only. This differs from the Procurement worksheet where 4 year contracts are shown on 4 separate lines.

## Procurement

This provides individual tender outcomes by bidding party within the year. As such it does not cover tenders where no response was provided.

Many of the value categories are shown as NULL for the Restore product as it is not subject to competitive bidding. The requirements are also not defined in specific windows.

**Tender Reference:** This ID combines the Zone and the procurement round to create a unique ID that can be referenced across to the Tender Rounds Summary, and Dispatch worksheet.

**Service Location (Grid Supply Point)**. Due to the locational nature of our services we have grouped the services by CMZ. This provides more details that GSPs which may require the aggregation of zones.

**Flexible Unit Reference.** This uniquely identifies a contract rather than a specific Asset.

**Main Technology Type:** This field is self-entered by FSPs. Given the high proportion of “other” entries this will be reviewed going forwards.

**Committed Contracts/Non Committed Contracts**: All our services focus on a weekly operational process, and are therefore classified as non-firm.

**Connection Voltage**: We do not currently collect this information from our providers.
Service days/ Service Window FROM/TO: Our CMZ requirements vary on a monthly basis, with different Service days and windows required. For this table we have used the outermost requirements. Full details can be found in our service requirements documents (as highlighted in Appendix 2).

It should also be noted that our forecast of requirements look out 3 years. As such there aren't fixed service windows for the fourth year of contracts, these are shown as NULL.

**Service Fee**: We do not utilise a service fee.

**Delivery Year**: As each delivery year is treated separately, 4 year contracts appear in the list 4 times. As such care should be taken when interpreting the data.

## Procurement – Locational

This worksheet provides a summary of the tender outcomes by CMZ.

Due to the lag between procurement and dispatch, most zones do not have dispatch volumes associated with them.

**Contracted In the Reporting Year.** This is calculated as the total volume in contract for the year minus the existing contracts. Due to the ability to supersede contracts within the year, this may undervalue the volume of contracts awarded in the reporting year.

**Remaining Requirement**: This number is a simple subtraction of the Tendered volume minus the response. As we look to generate competition within local markets, this number can be negative. As per our clearing strategy we consider markets as competitive once we have N-2 redundancy across providers. As such if we have one or two large providers, the negative values can be large, without crossing the competitive threshold.

## Dispatch

**Tender Reference:** This ID combines the Zone and the procurement round to create a unique ID that can be referenced across to the Tender Rounds Summary, and Procurement worksheet.

**Incident Location (Grid Supply Point)**. Due to the locational nature of our services we have grouped the services by CMZ. This provides more details that GSPs which may require the aggregation of zones.

**Flexible Unit Reference.** This uniquely identifies a contract rather than a specific Asset.

**Main Technology Type:** In our older tenders limited information was collected on this data item. As such we have supplemented it with additional data we have on the generation technology collected through our connections process where appropriate.

**Service Price**: We do not utilise a Service Price.

**Pricing Strategy**: As covered in our procurement statement we have a tiered pricing strategy. As no locations passed the competition threshold, they were all operated on a fixed price basis in the last year.

**Date/Time of Instruction:** This is set to 15 minutes ahead of the Start time as our Formal Utilisation Instruction via the Flexible Power API is sent 15 minutes ahead of delivery. It should be noted that for our Secure Service acceptance of availability provides another view of when we will be dispatching, as our default for Secure is once accepted, it will be utilised. This confirmation is provided at 12:00 on the Thursday of the preceding week. The formal Instruction is the sent 15 minutes ahead of real time to confirm the requirement.

# Appendix 2: Data and Publications

We acknowledge there is a significant amount of data and information involved in the procurement of our services, as well as wider DSO processes.

As such we have summarised the key references in this section.
To provide a live view of this we will shortly publish a Flexibility document and data catalogue.

## 2.1 Distribution Flexibility Services Regulatory Reporting

| Publication | Description | Location |
|---|---|---|
| Distribution Flexibility Services Procurement Statement | A forward looking report on how we will procure services in the coming regulatory year. | WPD Website & Flexible Power Website |
| Distribution Flexibility Services Procurement Report | A report, and supporting data table, detailing how and where we have procured flexibility services in the past regulatory year. | WPD Website |
| Ongoing Reporting | We publish the outcomes of our Flexibility Service procurement. This is covered by our Procurement Results document. | Flexible Power Website |
| Evolution of Distribution Flexibility Service Procurement Document and Webinar | Our initial, informal engagement on the changes we would like to make to how we procure flexibility services. | WPD Website |
| Distribution Flexibility Services Procurement Consultation Document, Webinar and Outcomes | Our formal consultation on changes we have proposed on how we procure flexibility services. | WPD Website |
| Ofgem Guidance | The Ofgem guidance determining what should be covered in the regulatory reporting. | Ofgem Website |

## 2.2 DSO process

| Publication | Description | Location |
|---|---|---|
| Long Term Development Statement (LTDS) | The Long Term Development Statement provides an overview of the design and operation of the distribution network, together with data on the 132kV, 66kV and 33kV systems and the transformation levels down to 11kV. | WPD Website (registration needed) |
| Distribution Future Energy Scenarios (DFES) | The Distribution Future Energy Scenarios outline the range of credible futures for the growth of the distribution network out to 2050. | WPD Website & Connected Data Portal |
| Network Development Plan (NDP) | The Network Development Plan provide stakeholders with transparency on network constraints and needs for flexibility. The NDP has been created to present the 'best view' of planned asset based and flexible network developments over the five to ten-year period | Not Yet Published |
| Distribution Network Options Assessment (DNOA) | The Distribution Network Options Assessment (DNOA) is a publication which outlines reasons behind investment decisions made by WPD in order to deal with constraints on our network. | WPD Website & Connected Data Portal |

## 2.3 Flexibility Requirements

| Publication | Description | Location |
|---|---|---|
| Network Flexibility Map | The Network Flexibility Map includes the availability windows and expected market volumes required for all our | WPD Website & |

| | | |
|---|---|---|
| | DFES scenarios for a five year period under the Signposting process. Visualisations of the data are available online through the mapping tool and datasets are downloadable. The Network Flexibility Map also presents our firm flexibility requirements which feed into our procurement process. This shorter term view, gives clarity on our needs and is refreshed every six months in line with our procurement timeline. | Connected Data Portal |
| Flexible Power Map | The Flexible Power Map replicates much of the functionality of the Network Flexibility Map but focusses on the requirements against which we will procure. It highlights the required volumes and forecast availability windows. This map is held on the Flexible Power website and hosts data from the other DNOs who are also involved in the Flexible Power Collaboration. | Flexible Power Website & Connected Data Portal |
| Procurement documents | For every six monthly cycle of procurement, we publish market information detailing the requirements for procurement at each of the CMZs. This includes information such as the MW required, expected MWh availability windows and MWh estimated utilisation volumes. | Flexible Power Website & Connected Data Portal |
| Procurement results | The results documents provides detailed information on the volumes procured through each cycle.. | Flexible Power Website & Connected Data Portal |
| Post Code Checker | A simple look up tool to assess the allocation of postcodes to CMZs. The background data is available as and excel sheet and on the connected data portal. | Flexible Power Website & Connected Data Portal |
| Service Value Calculator | A tool to provide a view on the maximum potential revenue available to a provider. | Flexible Power Website & Connected Data Portal |
| WPD Month Ahead Availability Forecasts | Updated ahead of each new month with a forecast of WPDs availability requirements for each operational zone. Active participants can use this to inform their week ahead declarations. | Flexible Power Website & Connected Data Portal |
| WPD Flexibility Zone Activity Timetable | A spreadsheet detailing which months of the year each zone has a requirement for provider availabilty | Flexible Power Website & Connected Data Portal |

## 2.4 Flexibility Process

| Publication | Description | Location |
|---|---|---|
| WPD Procurement Timetable | WPD conducts 2 procurement cycles per year. This document provides the proposed procurement window dates for the next 2 years. | Flexible Power Website |
| WPD_ENA Standard Flexibility Services Agreement | The latest version of the T&Cs applicable to WPDs Procurement of Flexibility Services | Flexible Power Website |
| Flexible Power Billing Guide | An overview of the monthly billing cycle and the form to send us your payment details. | Flexible Power Website |
| WPD Operational Process Guide | A guide to the weekly process applicable to WPDs operation of flexibility through Flexible Power. | Flexible Power Website |
| WPD Procurement Process Guide | Details of the full process all interested parties are required to follow in order to be eligible to tender for participation in Flexible Power. | Flexible Power Website |
| WPD Clearing Process Guide | Details of the process we will apply when assessing zonal pricing during the procurement stage. | Flexible Power Website |
| WPD Pricing Strategy | Details of both our fixed price and ‘best offer’ pricing. | Flexible Power Website |
| WPD Acceptance and Dispatch Principles | An explanation of how we select services to accept for availability and utilisation. | Flexible Power Website |
| Flexible Power API Set-up and User Guide | A guide on how to build and test the Application Programme Interface (API) and how to carry out necessary | Flexible Power Website |

| | | |
|---|---|---|
| | testing within the User Acceptance Testing (UAT) environment. | |
| WPD Routes To Participation - Webinar | Slides and Recording on our Webinars on how to participate in our services. | Flexible Power Website |
| Flexible Power Payment Mechanics | An overview of the Flexible Power Payment Mechanics | Flexible Power Website |
| Flexible Power Example Event Performance Report | An example of the performance report created post a response event. | Flexible Power Website |
| Flexible Power Example Monthly Invoice | An example of the monthly invoice created at the end of each month. | Flexible Power Website |
| Flexible Power Example Event Earnings Report | An example of the payment breakdown of utilisation earnings created post a response event. | Flexible Power Website |
| Flexible Power Historic Baselining Methodology | An overview of the Flexible Power Baselining Methodology | Flexible Power Website |

## 2.5 Flexibility Updates

| Publication | Description | Location |
|---|---|---|
| WPD Flexibility Update Service | A mailing list to receive Updates from WPD on our Flexibility Services | Email. Sign up at: https://www.flexiblepower.co.uk/locations/western-power-distribution/contact-us |
| WPD Flexibility Year in Numbers | An infographic summary of how WPD has been actively using Flexible Power across its network. | Flexible Power Website |

## 2.6 Other relevant information

| Topic | Description | Location |
|---|---|---|
| Open Networks | An overview of the Open Networks Project and all the relevant documentation. | ENA Website |
| RDPs | Overviews of the Regional Development Programmes | National Grid ESO website & WPD website |
| WPD Innovation | An overview of the WPD innovation portfolio | WPD Website |

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