SP ENERGY NETWORKS

Distribution Flexibility Services

Procurement Report for SP Distribution PLC and SP Manweb PLC

1st May 2023

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Executive Summary

We are SP Energy Networks, we own and operate distribution networks in Southern and Central Scotland, Merseyside, Cheshire, Shropshire and North Wales. We are the only network operator to serve communities across all three governments: UK, Scottish, and Welsh. Each have bold ambitions to deliver their own sustainability and Net Zero targets. In our unique position to support these objectives, we recognise that each region has distinct opportunities and challenges. We will enable the communities we serve to meet their targets through our industry leading planning tools, processes and policies to embrace flexibility solutions, enable flexibility markets, and encourage greater flexibility market participation to unlock the network capacity to meet these ambitions.

Our strategic vision is to "maintain a safe, secure and reliable network by efficiently delivering the capacity our customers need to decarbonise, in the timescales they need it – so that they can use Low Carbon Technologies (LCTs) immediately and at full capacity". Our RIIO-ED2 plan, beginning on 1st April 2023, will deliver this through a combination of flexible, smart, innovative, and conventional reinforcement interventions. We will depend on new tools and capabilities developed as part of our RIIO-ED2 DSO Strategy, including greater flexibility utilisation from evolving flexibility markets and growing market participation.

Prior to the start of ED2 we began testing the market for flexibility services and are committed to fair and transparent procurement of flexibility services. During 2020 and 2021 we tendered flexibility services for all locations identified as requiring an intervention due to load growth during the RIIO-ED2 period (2023 to 2028). Amounting to a total of 1.5GW at 1,557 locations. To date, we have accepted bids for over 700MW.

Tenders	Spring 2019	Autumn 2019	Autumn 2020	Spring 2021	Autumn 2021
No of Sites	3	10	1138	1554	97
Price control period	ED1	ED1	ED2	ED2	ED1/ED2
MWs Tendered	116	250	960	1420	110.9
MWs Awarded	0	53.3	139.6	555	0

Responses to our tenders were initially encouraging from 2019 until a significant downturn in our most recent Autumn 2021 tender, in which we received bids totalling 0.2MW in response to a requirement of 98.8MW. By way of contrast, for our Spring 2021 tender, we accepted bids for 555MW in response to a requirement of 1,420MW.

It was important for us understand why this was the case, we therefore partnered with Oxera to undertake independent research on our behalf to understand any barriers currently faced by flexibility providers. We notified Ofgem on 31st March 2022 that our next tender for flexibility services would be issued in April 2023. We believed it to be necessary to pause our scheduled flexibility tenders temporarily for 12 months to understand the challenges faced by potential market participants and to ensure our procurement and use of flexibility remains economic and efficient. As outlined in our letter to Ofgem, we committed to building the fundamental structures, processes and procedures that will allow flexibility services to succeed at the scale required to facilitate our RIIO ED2 forecasts.

This research was recently completed and will shortly be published.

Stakeholder engagement continues to be key to ensure the market develops and allows potential participants to understand what they can offer and are well informed of our newly developed processes and procedures. We listened to our Stakeholders and have contracted with Piclo for a further 2 years to facilitate our tenders to include long and near real time competitions. In addition, we will trial the dispatch and settlement modules, this will provide our stakeholders with a single platform to manage all flexibility processes from procurement through to settlement.

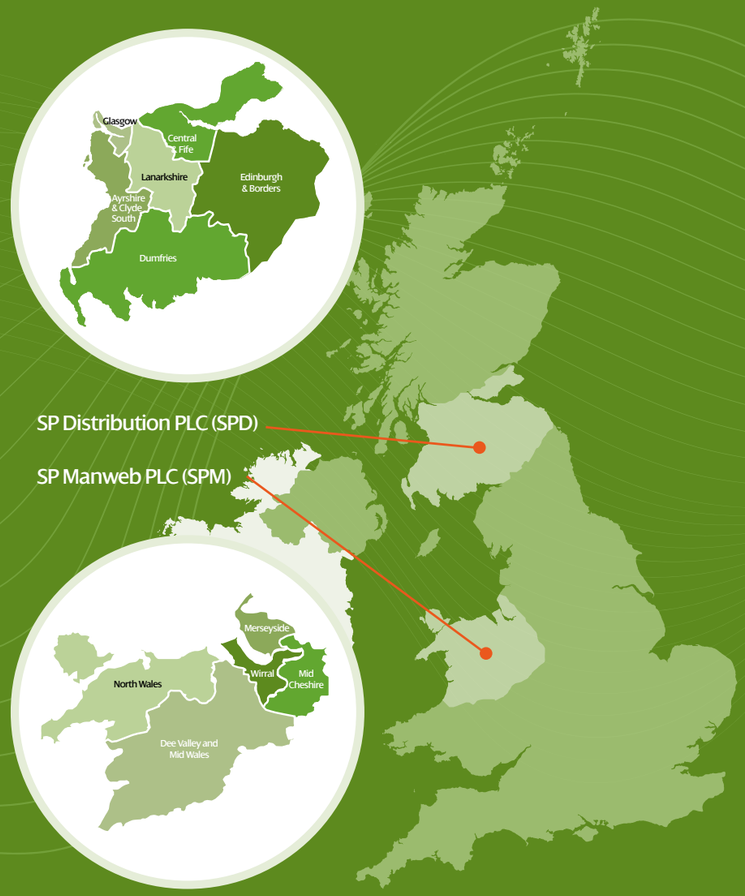
Although we paused our tenders, we continued to work with the industry to further develop new markets and products undertaking a number of trials. Our successful Demand Shift trial in Dumfries and Galloway proved that domestic customers would respond to market signals to help manage the network during times of excess renewable generation. We are now scoping phase 2 of this trial that is due to start in Q4 of 2023. There has been international interest in this trial, our synopsis paper we submitted to CIRED has also been accepted and we have been invited to present the paper at the conference in June.

Understanding the carbon impact of using flexibility is an important consideration and we have started to develop processes to enable carbon reporting to be considered within our Cost Benefit Analysis. We are working with the industry, via the Open Networks Project, to develop consistent evaluation and reporting methods.

Section 1: Introduction

1.1 Who we are

We are SP Energy Networks (SPEN). We own and operate the electricity distribution network in Central and Southern Scotland (our SP Distribution network, SPD), and in North Wales, Merseyside, Cheshire and North Shropshire (our SP Manweb network, SPM). It is through these two networks of underground cables, overhead lines and substations that we provide 3.5 million homes, businesses and public services with a safe, economical and reliable supply of electricity.



This document has been prepared by us in accordance with the requirements of our Licence issued under the Electricity Act 1989 (as amended) ('the Act'), specifically Condition 31E. It sets out the Distribution Flexibility Services which SPEN has tendered for, contracted and dispatched in the period of 12 months preceding the Annual Submission Date (1st April 2023), and is structured as per the guidance provided by Ofgem on 14th February 2022.

1.2 Our Flexibility Approach

Our strategic vision is to "maintain a safe, secure and reliable network by efficiently delivering the capacity our customers need to decarbonise, in the timescales they need it – so that they can use LCTs immediately and at full capacity".

We will deliver this vision through flexible, smart, innovative, and conventional reinforcement interventions. We will depend on the new tools and capabilities that our DSO Strategy will give us, not least higher flexibility utilisation from more efficient, co-ordinated, and competitive flexibility markets.

We began tendering for flexibility services in 2019, but the level of services required increased significantly in 2020, when we tendered for all locations with manageable constraints arising from forecast load growth during the RIIO-ED2 period (2023 to 2028). We sought a total of 1.5GW of flexibility services at 1,557 locations across our two licence areas and covering all voltage levels.

Our first flexibility tender in March 2019 sought 116MVA across just three sites. Since then, we have continued to engage with providers, worked with industry, developed internal modelling capabilities and flexibility market knowledge, and rolled out a flexibility portal. This allowed us to forecast every likely network capacity constraint that would result across all voltage levels of our network in ED2 and tender for flexibility services for these in Spring 2021.

Responses to our tenders have been encouraging from 2019 until a significant downturn in our most recent Autumn 2021 tender, in which we received bids totalling 0.2MW in response to a requirement of 98.8MW. By way of contrast, for our Spring 2021 tender, we accepted bids for 555MW in response to a requirement of 1,420MW.

Following our disappointing Autumn 2021 tender results, Flexibility Service Providers (FSPs) informed us that the reason they did not bid was a result of not yet being able to offer any additional capacity within the shorter timeframe, with the time between procurement and first service window not sufficient to allow for recruitment of the required assets / capacity. We believe this has demonstrated the need for us to gather more information and implement measures to reduce barriers to entry for FSPs.

We therefore partnered with Oxera to undertake independent research on our behalf to understand the barriers currently faced by flexibility providers. This research is now complete, and the report will be published in due course. Further details on the scope of the research can be found in section 4.9

SPEN notified Ofgem on 31st March 2022 that our next tender for flexibility services would be issued in April 2023. We believed it to be necessary to pause our scheduled flexibility tenders temporarily for 12 months to understand inconsistent market interest and to ensure our procurement and use of flexibility remains economic and efficient.

As outlined in our letter to Ofgem, we committed to building the fundamental structures that will allow flexibility services to succeed. We have now completed our programme of work where we sort input from stakeholders on barriers to participation; implementation of and extensive internal transformation; incorporated key learnings from trials; and consulted on improvements to our framework for the procurement of flexibility services. We have also put in place the structure, polices and procedures required to maximise the benefits of flexibility and enable close to real time procurement and operation.

1 SLC31E Procurement and use of Distribution Flexibility Services reporting requirements guidance (ofgem.gov.uk)

1.3 Flexibility Activities in the Reporting Year

The table key provides the key activates that we undertook last year:

Activity	Details
FSP notification of pause to tendering	Following our notification to Ofgem we arranged one to one meetings with FSPs to provide them with an update on our decision to pause tendering and to provide the rationale behind our decision. We reassured them that we would resume tendering in April 2023 and reaffirmed our commitment to continue engaging with them during this period to gain feedback on our developing processes. **FSP Feedback:** **FSPs were supportive of our decision and understood our reasoning behind this. FSPs told us that they were happy to work with us and provide feedback on newly developed processes.**
FSP Contract Review Meetings	We remained committed to maintaining our regular contract review meetings with our FSPs. The purpose of these review meetings is to review FSP delivery milestone plans, to track planned assets transitioning to operational assets. Discuss system onboarding ahead of service windows going live and to provide an update on our progress with new ideas and newly developed processes. **FSP Feedback:** **Several FSPs informed us during these meetings that they have not been able to recruit enough assets to meet their contracted capacity meaning there would be a shortfall in declared capacity available to us. Whilst in the long term, this could be problematic we reassured our FSPs that we would work with them and utilise the available capacity they had, subject to network need.**
Trials	**The Demand Shift Trial in Partnership with Octopus Energy:** Even though we paused tendering we were committed to developing new markets. We partnered with Octopus Energy to trial and test the potential of domestic demand shifting to a time where there is excess renewable generation. This took place in Dumfries & Galloway within the SP Distribution network – an area that has amongst the highest proportion of renewable generation connected within the UK relative to its own local energy demand. The paper on the trial can be found **here.** **Feedback:** **This was a positive trial and enshrined our commitment to developing new markets. The trial generated a lot of positive interest from our stakeholders and was a key feature topic at several conferences last year. Following the trial, we submitted a synopsis to CIRED with the paper been fully accepted to present at the conference in June 2023.** **Primacy Rules Trial in coordination with ESO:** Between Nov 2022 and Jan 2023, SP Energy Networks (Project FUSION) and National Grid ESO (NGESO) collaborated on a trial to implement primacy rule 'BM1a' (developed under Product 5 of the Open Networks Project WS1A Flexibility Services) to address the 'Balancing Mechanism (BM) vs DNO Flexibility' use case. The processes have been tested and the findings of that trial are reported on the **Project FUSION** website. **Local Constraint Market (LCM) facilitated by Piclo** We are collaborating with Piclo to support the ESO in the trial of their Local Constraint Market. The ESO are trialling a new LCM to access new sources of flexibility to help manage one of the ESOs most constrained network boundaries. The B6 boundary separates the transmission network at the SP Transmission and National Grid Transmission interface running roughly along the border between Scotland and England. This boundary regularly experiences constraints due to the volume of renewable generation in Scotland that is seeking to export from the local network. This trial will seek to reduce the level of constraint through the co-ordination of local demand, it is essential that in doing so the ESO co-ordinates with the DNO to ensure that this does not result in any adverse outcomes for Distribution connected customers.

Activity	Details
Structure	**Growing the Team:** One of the key activities during the reporting year was to develop our structure for the flexibility services team that will be able to manage the high volumes of procurement, dispatch and settlement through ED2. We identified clear roles that will be accountable for the procurement and performance monitoring of flexibility services. The dedicated flexibility team will be led by Head of Flexibility who will be supported by a, • Flexibility Procurement team who will be responsible for the objective, transparent and market-based procurement of flexibility services to meet our business's needs. • Flexibility Performance team, who are responsible for the over-arching operation of our flexibility services, including forecasting, contract management, budgeting dispatch and settlement. **Feedback:** **FSPs provided positive feedback on our structure, they said it gave them a clear point of contact and escalation point for procurement and performance.**
Investigating Barriers	**Independent Research carried out by Oxera:** Following the reduced response to our Autumn 2021 tender, we funded Oxera to undertake independent research on our behalf to understand the barriers currently faced by FSPs. The purpose of the review was to understand: • why there has been an inconsistent uptake of flexibility services • what barriers are faced by various provider types in each licence area; • what changes or enablers can SPEN consider to procure flexibility services at scale and in the most economic and efficient manner possible. This research has concluded with the report being published in due course. We will now digest the full report and determine any further actions required to maximise our procurement and operation of flexibility services.
Industry	**Open Networks:** SPEN are represented on all workstreams within Open Networks, contributing to the development and alignment of procurement and use of Flexibility Services alongside other DNOs and the ESO to improve whole system coordination. From the start of 2023, our Flexibility Procurement Manager is co-lead with the ESO of the Standard Contract Technical Working Group, and our Flexibility Performance Manager is co-lead of the Products Technical Working Group. We ensure our processes are aligned with the good practices already identified and the new processes implemented.
Platforms	**End to End - Piclo:** We have a high volume of requirements and require a suitable platform to be able to manage the scale of constraint locations we tender and also develop our closer to real time procurement and operation. We have extended our procurement contract with Piclo, which now also includes an enhanced marketplace team who will be dedicated to growing our market, tapping into new providers. We also took the opportunity to include Piclo's dispatch and settlement modules in the contract allowing us to use the one platform to procure, schedule, dispatch and settle. This also opens the door for procuring flexibility services in near real time. We have listened to our FSPs and feel this is a positive step forward in providing FSPs a single use platform. **Flexible Power:** We remain committed to the Flexible Power collaboration with NGED, NPG and SSEN. This will allow us to manage our contracted services in the medium term and provides a least regret and high consistency solution, that maintains SPENs flex capability at this crucial time, and gives optionality to investigate/test alternative solutions in parallel. **FSP Feedback:** **FSPs have told us that this is a positive step forward and are looking forward to working with us and Piclo during the trial that is due to start later this summer (2023). They are pleased to see the steps we are doing to move to closer to real time procurement.**

1.3 Contact Details

If you have any questions about this Report or Flexibility Services in general, please contact us at:

SP Energy Networks
Network Planning & Regulation
320 St Vincent Street
Glasgow
G2 5AD

Email: flexibility@spenergynetworks.co.uk

Section 2: Flexibility Procurement and Use Summary

2.1 Flexibility Services Procurement

To date we have looked to procure Flexibility Services via long term contracts, namely:

Tenders	Price Control Period	Period Cover
Spring 2019	ED1	2019/20
Autumn 2019	ED1	2020/21, 2021/22 and 2022/23
Autumn 2020	ED2	2023/24, to 2027/28 inclusive
Spring 2021	ED2	2023/24, to 2027/28 inclusive
Autumn 2021	ED1 & ED2	2022/23 and 2023/24

Therefore, our Autumn 2019 tender procured the services for use within the reporting year this Procurement Report covers (April 2022 to March 2023). No tenders were issued in the reporting year.

2.2 Flexibility Contracted For Use In The Reporting Year

Tender	Licence	Constraint Loctaion	Product	Voltage	Service Period	Capacity Required (MW)	Contracted Bid (MW)	Contracted Capacity (MW)	Capacity Dispatched (MW)	Comments
Autumn 2019	SPM	Carrington-Fiddlers Ferry	Dynamic	132	Mar-Nov 22	11.44	11.44	11.44	-	Full capacity met
Autumn 2019	SPM	Flint (Other)	Restore	33	Mar-Nov 22	20.90	7.50	7.50	-	Part capacity met
Autumn 2019	SPM	Flint (Post Fault)	Dynamic	33	Nov 22-Feb 23	5.23	5.23	5.23	4.30	Full capacity met
Autumn 2019	SPM	Crewe	Restore	33	Mar-Nov22	33.00	33.00	-	-	Capacity withdrawn by FSP

(Full details are included with the template appended to this Report).

Whilst bids were not received for the full capacity in the Flint Constraint Management Zone (CMZ), we contracted for the offered capacity of 7.5MW as in the event of a restoration event on the network, this capacity would offer some support to the network whilst supplies were restored. Further support would be provided by network reconfiguration and balancing.

In March of this year, we utilised Conrad Energy to provide 4.3MW over a 3-hour period for 3 days between 16:00 and 19:00 to provide support to the network during an outage on Flint 33kV circuit for post fault maintenance.

2.3 Flexibility Not Contracted

In addition, we tendered for the following sites for services for use during the Reporting Year but were unable to place contracts for the reasons given below:

Tender	Licence	Constraint Loctaion	Product	Voltage	Service Period	Capacity Required (MW)	Contracted Bid (MW)	Comments
Autumn 2019	SPD	BErwick (Ring)	Dynamic	33	Oct 22-Feb 23	4.04	3.89	Bid uneconomic
Autumn 2019	SPD	Broxburn	Dynamic	33	Nov 22- Jan 23	1.54	1.40	Interim services no longer required
Autumn 2019	SPD	Durie House	Dynamic	11	Nov 22- Jan 23	0.74	0.67	Interim services no longer required
Autumn 2019	SPD	Paulville	Dynamic	11	Nov 22- Feb 23	1.98	1.98	Interim services no longer required
Autumn 2019	SPM	North Shropshire	Dynamic	33	Nov 22- Feb 23	7.15	0.12	Insufficient Capacity offered
Autumn 2019	SPM	North Shropshire	Dynamic	33	Nov 22- Feb 23	9.46	0.12	Insufficient Capacity offered

For the locations where post-fault services were required, support was provided by network reconfiguration and balancing.

In 2019 we had also tendered for Reactive Power Services in three locations in SP Manweb (Flint and North Shropshire and Ringway), however no bids were received.

We have tendered for Reactive Power services since 2019 and have yet to receive a bid for this service. We wanted to understand what the key barriers were to FSPs in bidding into the reactive power competitions and the changes that need to be made to encourage providers to participate in this market. In August 2021, we partnered with Conrad Energy to run a 5-day trial to investigate the feasibility of offering reactive power as a flexibility service using gas reciprocating technology. Working with Conrad we learnt the level of investment required to modify the generators, control panels and metering to provide this service. the trial proved to be successful with Conrad providing 2.24MVAr of capacity. We intend to take these learnings into phase 2 of the trial later this year to understand the impact and value to the network and the commercial value to the reactive power service.

2.4 Flexibility Tenders Issued

In accordance with our notification to Ofgem in March 2022 we paused tendering for flexibility services for 12 months. Our next tender will be issue on 24th April 2023. Further information is available on www.picloflex.com

2.5 Flexibility Tender Results

Tenders	Spring 2019	Autumn 2019	Autumn 2020	Spring 2021	Autumn 2021
No of Sites	3	10	1138	1554	97
Price control period	ED1	ED1	ED2	ED2	ED1/ED2
MWs Tendered	116	250	960	1420	110.9
MWs Awarded	0	53.3	139.6	555	0

As previously stated, we did not tender last year however, we have been actively tendering since 2019. In Autumn 2020 we started tendering for requirements in ED2 and were the first UK DNO to do this.

We also experienced a large FSP significantly reducing their capacity offered to us post bid acceptance in our Spring 2021 tender. After re-evaluation, the FSP reduced their offered capacity:

Capacity	2023/24	2024/25	2025/26	2026/27	2027/28
Accepted Bids (MW)	49	85	140	199	221
Contracted (MW)	22	52	92	160	172

2.6 Conflict management with the ESO

There have been no requirements for conflict mitigation with the ESO in 2022/23 however, we ran a trial with the ESO to help define the Primacy Rules currently being defined by the Open Networks project.

Section 3: Stakeholder Engagement

We developed our stakeholder engagement strategy with the aim to reach as many potential and interested parties as possible, facilitating easy access to information on our developing policies and procedures for identification, procurement and operation of the services.

We attended various conferences last year promoting the work we have undertaken to develop our processes and procedures and to share the learnings from our trials. We held multiple one to one surgeries with providers to provide regular progress updates and to request feedback.

We began engaging with key stakeholders (e.g. Scottish Enterprise), developing partnerships to help grow the flexibility services market.

The below table details the engagement we undertook.

Engagement	Dates	Details
Preparing for Net Zero Conference	09/03/2022	As part of our ED1 incentive on connections engagement (ICE) plan we committed to provide regular updates on our flexibility services processes, tenders and trials
Preparing for Net Zero Conference	15/06/2022	
Growing DSO Flexibility Markets	14/06/2022	In June last year, Piclo hosted our first in-person event since the pandemic. 'Growing DSO flexibility markets to reach net zero', in collaboration with Electricity North West, SP Energy Networks and UK Power Networks, was held at Manchester's Science and Industry Museum. Here, Flexibility Service Providers (FSPs) got the chance to meet and collaborate with us through a series of panel discussions and collaborative roundtable sessions.
Energy X Conference	21/09/2022	The Energy X Conference North is run to promote and further the interest of everyone working in and supplying our industry. During this conference we presented on our flexibility services processes, tender volumes, and the trials we have undertaken.
Energy Innovation Summit	28/09/2022	During this conference we co presented with Octopus Energy on our Demand Shift trial in Dumfries and Galloway.
Lessin: Flexibility in transport	27/10/2022	Presentation was given to LESSIN member on exploring energy flexibility through an integrated approach for transport. Since its launch in February 2021, LESSIN has sought to bring organisations together, building on collective experiences to date to catalyse the growth of the emerging LES sector in Scotland.
Preparing for Net Zero Conference	7/12/2022	As part of our ED1 incentive on connections engagement (ICE) plan we committed to provide regular updates on our flexibility services processes, tenders and trials

Section 3: Stakeholder Engagement/cont...

Engagement	Dates	Details
Lessin: Flexibility Services	13/12/2022	Overview given on SPENs approach to flexibility services and the ways to get involved with us
Preparing for Net Zero Conference	01/02/2023	As part of our ED1 incentive on connections engagement (ICE) plan we committed to provide regular updates on our flexibility services processes, tenders and trials
Scottish Enterprise	various	Regular collaboration meetings held with Scottish Enterprise to develop a partnership to support local business in entering the flexibility market
one- one surgeries	various	Regular one to one surgeries with FSPs to gain feedback on newly developed processes to ensure they don't negatively impact them
CIRED	27/10/2022	We submitted a synopsis on our Demand shift trial in partnership with Octopus Energy to CIRED. The paper has been accepted for presentation on the main stage in June 2023

3.1 Tender Publication

No tenders were published during the reporting year.

3.2 PREQUALIFICATION

No tenders were published during the reporting year.

3.3 STAKEHOLDER FEEDBACK

The key areas we sort feedback from stakeholders last year were on our developing processes and procedures. We used this feedback to influence our processes. The below details some of the areas we gained feedback from FSPs,

Feedback	Response
Tender Timescales	Feedback from stakeholders following our earlier tenders identified that FSPs like a longer period to consider the requirements, we will therefore re-scheduled our tender steps to give sufficient time for FSPs to assess the requirements and for them to seek clarification if required.
Robust Pricing	Some FSPs have advised that bidding in constraint locations across the full ED2 period is difficult. Prices they bid in today for 2028 may no longer be financially viable due to outside factors. Following this feedback we will now publish our full ED2 constraint requirements to give providers full visibility however, we will only run tenders for 18months at a time.
Data Format	Stakeholders also informed us that excel spreadsheets make assessing the information easier. Maps are useful, however as the volumes increase, they become less clear. This has influenced the format of our data, especially given the volume of constrained locations and varying capacity requirements over time.
Monthly Forecasting	Our volumes with each of our providers is increasing and FSPs have told us that they need certainty of revenue and the estimated hours we intend to utilise them for each month. Further to this feedback we are developing a monthly forecast that will provide FSPs the number of estimated hours we plan to utilise them for each month. We are also developing our internal systems to provide longer term forecasts.
Contracting	Providers told us the framework contract should be prioritised, enabling FSPs to add assets and data as and when available, when already in a contract with us. Acting on this feedback we are working to implement the new framework agreement at the first opportunity
Standardisation	Stakeholders raised the concerns regarding product differences in the Open Networks Product working technical group, plus highlight standardisation concerns in the Settlement workstream. We fully support further standardisation with the areas identified and these had been fed back to the Open Networks technical working groups. We are also Co-Chairing the Open Networks product standardisation group
Short Term Markets	Stakeholders have asked us to publish information on short term markets including future plans. We are developing our processes and systems to be able to deliver short term markets within the next 18 months

You can see more on our plans for 2023 by viewing our **procurement statement.**

3.4 Engagement Channels

We ensured several channels were available to facilitate continuous engagement, including:

Channel	Response	Where
Website	The SPEN website hosts dedicated flexibility pages providing information and links to our Flexibility tenders, our policies and processes, and how to contact our Flexibility Team.	www.spenergynetworks.co.uk
Procurement Platform	Even though we paused tendering we continued to work with the Picloflex platform and provided ongoing engagement, this allowed potential FSPs and stakeholders to access our procurement policies and processes and step by step instruction on what is required at each tender stage, whether registering for the DPS, uploading assets or submitting bids. Our dedicated page on Picloflex requests feedback and provides details on how stakeholders can request a one-to-one meeting with us.	www.picloflex.com
Dedicated Mailbox	We have a dedicated flexibility mailbox for stakeholders to contact us with any query they have relating to Flexibility Services. This is widely published on Picloflex, Flexible Power and the SPEN website, and included on all our external communications relating to Flexibility.	flexibility@spenergynetworks.co.uk
Downloadable Documentation	To ensure potential FSPs and stakeholders were informed on how we identify, procure, dispatch, and settle Flexibility Services, we provide several downloadable documents.	Various
Social Media	We used social media platforms such as LinkedIn and twitter to promote our trials and conferences	Various
Blogs	Piclo developed and published blogs to provide information on how to get involved in our tenders.	www.picloflex.com
Conferences	We attended relevant conferences and arranged specific events such as the "Growing DSO Flexibility Markets to reach Net Zero" event we ran in conjunction with ENWL, UKPN and Piclo in 2022.	www.picloflex.com
Industry Papers	We provided updates on our trials, for example we submitted a synopsis of our Demand Shift Trial to CIRED and were invited to submit a full paper.	www.spenergynetworks.co.uk

3.5 Industry Engagement

SPEN are represented on all workstreams within Open Networks, contributing to the development and alignment of procurement and use of Flexibility Services alongside other DNOs and the ESO to improve whole system coordination. From the start of 2023, our Flexibility Procurement Manager is co-lead with the ESO of the Standard Contract Technical Working Group, and our Flexibility Performance Manager is co-lead of the Products Technical Working Group. We ensure our processes are aligned with the good practices already identified and the new processes implemented.

In addition, we are part of the Flexible Power collaboration with three other DNOs, providing standardised dispatch and settlement processes for Flexibility Services. A single point of contact helps to provide consistency for FSPs. Finally, we had quarterly collaboration meetings with UKPN and ENWL who also use Piclo to tender for flexibility services to share lessons learned and best practice.

Section 4: Economic Viability

4.1 Our Decision Making Framework

During the reporting year we developed our 'Decision Making Framework' for use in the next reporting year. We recognise the importance of transparently explaining how we decide whether we contract and dispatch flexibility services instead of other interventions. This transparency helps give customers and stakeholders confidence that we are implementing the most appropriate interventions, give flexibility service providers confidence that we are a neutral market facilitator, and address any residual perceived conflict of interest concerns. Given the system-wide benefit of flexibility services, it's important we co-ordinate their use with other industry parties. The Decision-Making Framework is one measure to provide that **transparency** and **co-ordination**.

In summary, the overarching process we will follow to establish where, when, and how we should intervene to provide capacity for a constraint is:

- **Step 1, identifying the constraint and minimum requirements of any solution:** We develop our network to accommodate our customers' demand and generation requirements. Therefore, the first step of network planning is to understand what these are and how they are changing. We do this using forecasts. We then enter these forecasts into an industry-leading model of our network and run analysis. This analysis shows us where constraints will occur (and so where additional network capacity is required). For each constraint, it shows us the location, scenario (i.e. why does it occur/what triggers it; this in turn defines what flexibility service product would be required), timing (which defines flexibility service windows), type (e.g. thermal, voltage, fault current), and magnitude of the forecast constraint (and how this changes over time) – this information forms the minimum requirement that any solution (or combination or solutions) must meet. We run this process using our latest DFES forecast information annually.

- **Step 2, gathering information on the cost, availability, and viability of interventions –** flexibility tenders: we tender for flexibility services for all viable4 constraints. The information from Step 1 forms the specification for each tender. From the bids received we understand the availability and cost of using flexibility to solve the constraint. We don't issue Contract Awards at this stage – we only do that where the Step 3 options assessments establish flexibility is the best solution. In parallel to the flexibility tender we work up other solutions. The output from Step 2 is the range of viable interventions, and their cost and availability – this is the information we need to make a decision in Step 3.

- **Step 3, deciding how to intervene –** options assessment: to provide the capacity in the optimal way, we fairly, impartially and economically assess different types and combinations of interventions (flexibility, energy efficiency, smart, innovation, and reinforcement), and how they could be coordinated with other interventions to reduce customer cost and disruption. Step 3 shows us which intervention we should choose. The above influences our tender timeline and the process steps within it. Sections 2.5 and 2.6 set out our key flexibility procurement decisions, and key dispatch decisions respectively. Procurement Statement for SP Distribution PLC and SP Manweb PLC

4.2 Evaluation Approach

Though we didn't tender last year we reviewed and developed our process for considering network inventions, we assess all solutions, including flexibility services, on an equal and impartial basis ensuing the most economically viable solution is progressed.

All load related intervention schemes are subject to technical scrutiny via our internal System Review Group, which is a forum for peer to peer review of proposed changes to the distribution network. It is an integral part of our authorisation process ensuring that projects submitted for financial authorisation have received the appropriate level of technical scrutiny.

All schemes are underpinned by robust Engineering Justification Papers (EJPs) and Cost Benefit Analysis (CBAs). Each EJP presents the needs case for the investment with relevant supporting evidence. A structured optioneering process is followed, outlining the list of possible solutions that were considered to manage the forecast constraint; which options were taken forward into detailed analysis; and why any solutions were discounted. The scope, cost, risks, benefits and other relevant factors are considered and summarised in the EJP.

The CBAs used the RIIO-ED2 Ofgem template to consider the Net Present Value associated with both capital and operational expenditure over 45 years. Each CBA has been carried out to deliver consistent and transparent modelling that is objective, accurate and of high quality. We will also be using the Common Evaluation Methodology to support our decision-making.

4.3 Economic Assessment

Though we didn't tender last year we reviewed and enhanced our process to assess investment solutions and Flexibility Services on a like for like basis by employing a comparative assessment approach which means that the value of flexibility (i.e. the amount of money we have to spend on flexibility services) in any given scenario is determined by the cost and value of the counterfactual solution (e.g. a reinforcement), and not by the required volume of flexibility services.

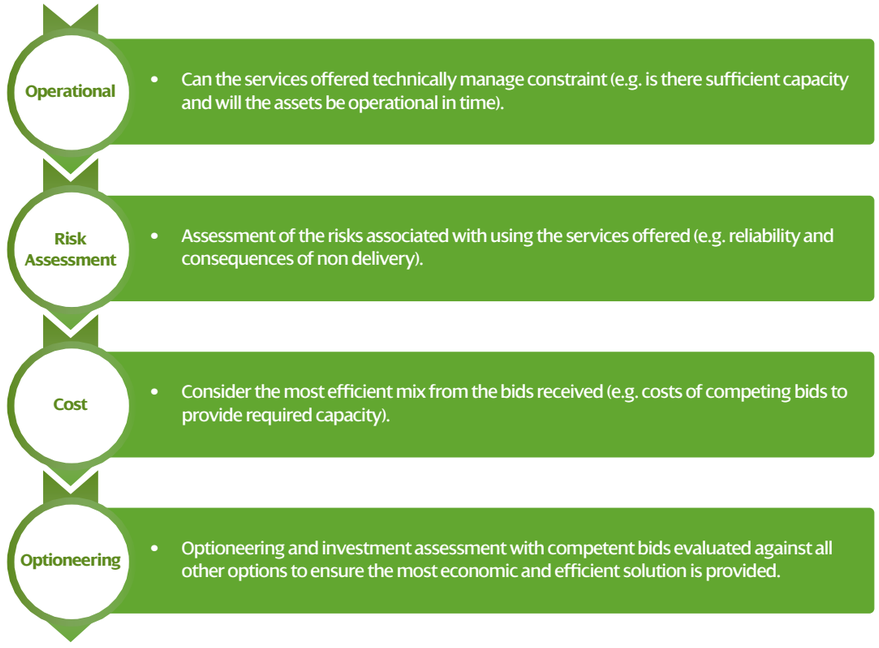
Our flexibility financial model converts the counterfactual solution(s) to a £/year basis, allowing us to consider solutions on the same financial basis. This is necessary, for example, to get an equitable comparison of a 45-year reinforcement scheme with a three-year flexibility contract.

Once we receive tender responses, the bids are assessed in detail to confirm that it could technically manage the constraint. We assess the risk associated with using the flexibility and consider the most cost-efficient mix of tender responses (if responses are greater than the requested capacity). Competent bids are then fed into our optioneering and investment assessments and assessed alongside all other options, as detailed above.

4.4 Bid Assessment

As we didn't tender last year, no bid assessments were undertaken however, we developed the process to assess: the technical parameters; the overall value of the service offered; and competing bids. Once we know the cost and availability of flexibility services, we will compare it to other potential solutions and impartially identify the optimal intervention, or combination and sequence of interventions, for each individual constraint.

Guidance is published as part of any tender issued to ensure that potential bidders are aware of the evaluation criteria we will apply. Further information is available here: **www.piclo.energy**.



In accordance with Condition 31E, we publish the details all Flexibility Contracts entered into and have committed to updating the Condition 31E template after each tender round where appropriate.

Section 4: Economic Viability/cont...

4.5 Evaluation Results

There was no evaluation of results due to no tenders been run.

4.6 Dispatch Methodology

We will operate the dispatch of Flexibility Services in a fair and transparent manner, all the time ensuring that we meet our obligation to maintain a secure and efficient network. As the Flexibility Services market develops, and services are available from multiple FSPs to meet the requirements in individual constraint locations, we will follow the dispatch decision guiding principles published by the ENA Open Networks project, namely:

Principle	Description	Implementation
Security	The needs of the system will be met using flexibility in such a way that security is maintained	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	The use of flexibility services should be cost effective and expenditure proportional to the benefits it brings to the network
Operability	DSOs will seek to dispatch services that offer compatible levels of operability	Operability is a measure of how well an offer of a flexibility service meets actual or potential system needs. We will seek to develop an objective and transparent method for assessing operability of offers of flexibility services
Competitions	DSOs will provide transparency of their dispatch decisions and activities	We will procure flexibility using simple, fair, and transparent rules and processes. Services should be developed such that flexibility service providers can participate easily in different markets
Fairness	DSOs will operate a fair dispatch methodology and provide equal opportunities to participate.	Flexibility Services shall be assessed and selected impartially purely on their technical and commercial merits. Where multiple technically sufficient Flexibility Services are available at a comparable cost, we will share the dispatch of services across these providers

We are part of the collaboration developing the Flexible Power portal, working with three other DNOs to provide consistency and standardisation for the operation of Flexibility Services. Once we award a contract, FSPs are onboarded to the system in advance of the first service window.

Details and guidance relating to Flexible Power, plus a copy of our Dispatch Principles, can be accessed at **Flexible Power.**

4.7 Supporting Methodology

Alongside our internal assessment processes, we will utilise the Common Evaluation Methodology as part of our decision-making process. To ensure potential FSPs are aware of the CEM tool, we provide access to the CEM methodology and tool as part of our downloadable documents (www.piclo.com).

4.8 Dispatch Of Services

The products we have procured for the Reporting Year are all post-fault services (Dynamic and Restore) and therefore dispatch is only required should a fault or event occur on the network. In March of this year, we utilised Conrad Energy to provide 4.3MW over a 3-hour period for 3 days between 16:00 and 19:00 to provide support to the network during an outage on Flint 33kV circuit for post fault maintenance.

4.9 Market Assessment

We engaged with Oxera to undertake an independent review of DSO flexibility markets and its procurement of flexibility services across both licence areas. The purpose of the of the review was to understand:

- why there has been an inconsistent uptake of flexibility services;
- what barriers are faced by various provider types in each licence area;
- what changes or enablers can SPEN consider to procure flexibility services at scale and in the most economic and efficient manner possible.

The research was split in to two phase, and covered the following areas,

1.Investigating the reasons why lower levels of flexibility services have been offered to SPEN than anticipated. This work was undertaken through desk research and targeted interviews with flexibility providers. Oxera incorporated an interview with Ofgem as part of this Phase. Oxera considered if there any regional differences in potential barriers as part of this work. While the precise reasons for low and inconsistent uptake of flexibility services were unclear at this stage, Oxera anticipated that the scope of research would include the following. • Asymmetric information: lack of understanding from the flexibility providers on the nature of the costs and benefits of participating in markets.

- **Model of remuneration:** flexibility providers may have concerns about existing remuneration models.
- Competition with alternative revenue sources: flexibility contracts typically contain requirements for provider availability, which can prevent those providers from also bidding for other flexibility services such as those offered at present by the Electricity System Operator (ESO) and in the future by the Future System Operator (FSO).
- **Insufficient amounts of flexible generation / demand:** if ESO / FSO flexibility services are prioritised over DSO flexibility services, the DSO market may be supply-constrained.
- **Process-related barriers to entry:** flexibility providers may be unwilling to bid for flexibility services due to real or perceived difficulties in putting together tenders.

2. Preparing questions for a survey of flexibility providers. Based on the hypotheses formulated through the research outlined above, Oxera prepared a list of questions for flexibility service providers. Members of SPENs control room were also interviewed to get an understanding of the internal challenges.

The outputs from Phase 1 will included a report that identifies possible reasons for limited and inconsistent uptake in the case of SPEN and a set of survey questions to investigate these further and a set of survey questions. This output would be discussed with SPEN.

3. Recommending ways forward. Based on the results of the survey Oxera prepared a series of recommendations for SPEN to engage with the barriers to uptake in its procurement of flexibility services. Oxera analysed the data to distil learnings for SPEN on what more needs to be done to incentivise further flexibility market participation.

Section 4:
Economic Viability/cont...

We have now received this report and reviewing the recommendations and will prepare a response and action plan to detailing how we move to reduce barriers in the market.
In summary, the findings include:

Reducing barriers to entry

- **Open data (from the DNO to the FSPs)**
  – **Examples:** publication of tender results, ceiling prices, and accurate dispatch forecasts/historical data (to the extent that all DNOs are not providing such data already).
  – **Reasons:** understanding of past and future activation rates will reduce utilisation risk, understanding past prices and future ceiling prices will give FSPs more understanding of pricing to encourage market entry.
  – **SPEN Response/Action: We fully support open data and publish full procurement data as part of our Condition 31E annual return. In addition, we will now look to update this template after each tender round so that stakeholders can access the data as soon as it becomes available.**
  Our commitment to providing easy access to information and data to allow potential FSPs and other stakeholders to make informed decisions, is further evidenced by our Open Data Portal (see section 2.4). Developments for this portal will focus on publishing additional datasets aligning with our Stakeholder priorities which have been identified as including data published on our flexibility market operation. This is in line with the proposed changes made under Ofgem's consultation on Data Best Practice Guidance.

- **Standardisation across DNOs**
  – **Examples:** of contracts, pre-qualification, technology (e.g. APIs).
  – **Reasons:** up-front frictions were cited as a major barrier across all of the activities listed in 'Examples' above.
  – **SPEN Response/Action: We agree that standardization should be introduced where it is appropriate and have contributed to the Open Networks project, implementing the standard approaches developed to date (e.g. Common Contract, products). In 2023 we have stepped us as co-chair to support the implementation of further standardisation. In addition, we are part of the Flexible Power collaboration which has four DNOs utilizing a standard API, plus we use the Piclo platform, along with 2 other DNOs, which allows us to standardize some of the processes. However, we fully recognize that more work needs to be done in this area to lower barriers to entry, especially for those who work across multiple DNO license areas.**

Better integration between the DNO and ESO markets

- **More coordination on flex products between the ESO and DSOs (i.e. making it easier, where possible and efficient, for FSPs to stack revenues):**
  – **Examples:** clearer rules on primacy between ESO and DSO markets. However, on its own this may be insufficient to encourage DNOs and the ESO to allow assets to enter into (potentially) competing markets because they would face the risk of paying penalties under their regulatory regimes when an asset that they thought was recruited for their purposes is prioritized for the other's market. Therefore, this may require other changes, e.g. in the way that DNO and ESO Output Delivery Incentives (ODIs) are calculated.
  – **Reasons:** There are two primary reasons: (i) FSPs will be able to earn higher revenues, which will encourage participation in flex markets without necessarily increasing costs for the ESO or DNO; (ii) reducing the opportunity cost that FSPs face when they bid into a DNO or ESO market (i.e. currently when they choose one, they cannot bid into the other during the same time-frame) will also increase their willingness to participate and potentially reduce the offers (i.e. the required monetary compensation) that they offer to DNOs in flex tenders.

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  SPEN Response / Actions: Whilst we do not require exclusivity and, as long as providers are not offering services that conflict with the services we require, we encourage provides to stack revenues. However, we do recognize that this is not necessarily clear to FSPs and that increased forecasting and exchange of information with the ESO is required. These are both areas we are currently working on and will take learnings from LCM project and the Fusion Report on Primacy Rules.

Section 4: Economic Viability/cont...

- **Extension of standardisation (discussed above) to cover both DNO and ESO, albeit recognizing that there are limits to the extent of standardization e.g. where different markets have different needs**
  – **Examples:** same examples as given for standardization across DNOs.
  – **Reasons:** the extension of standardization to the ESO should: (i) move towards a system where it is easier to enter the DNO market if you have already entered the ESO market (and vice versa), driving up competition in these markets; (ii) reduce the extent to which FSPs perceive DNO markets as separate (and therefore often not worthwhile due to their smaller size) to ESO markets – automatic qualification into certain DNO markets based on ESO pre-qual questionnaires could help with this.
  – **SPEN Response / Actions: Via the ENA Open Networks project, we are working with the ESO to introduce further standardization where it is appropriate to do so. For example, we are co-lead with the ESO for the Standard Contract Technical Working Group. We will assess areas suggested such as automatic qualification which may align with the work on standardizing pre-qualification requirements currently underway as part of the Open Networks project.**

Adjustments to DNO flex market architecture

- **Developing a range of markets with different time horizons. For example, it could be practical to regard markets as having two different time horizons because there may be insufficient liquidity at present for more than two, and the market should be monitored in order to identify what sorts of time-frames facilitate effective participation.**
  – **Examples:** some tenders could be for multiple years, some for a few years, some for a couple of months, and in the long-run, with sufficient participation, it may be possible to develop day-ahead or spot markets as well.
  – **Reasons:** some FSPs want longer-term price certainty, others do not like expressing their availability a week ahead, and EV Aggregators with planned assets do not want to commit their fleet numbers years in advance. A range of markets with different time-horizons would allow different tenders to cater for different types of providers, although at the start you would have to be careful not to split up the markets too much because it could reduce the liquidity of the market.
  – **SPEN Response / Actions: We have received similar feedback from potential FSPs. We have therefore decided to publish our long-term requirements but tender for shorter term requirements on a rolling basis. This is to provide FSPs who want to see what markets they can bid in to a number of years in advance, but also allow FSPs to provide a more robust price in the shorter term. Some FSPs who bid to provide services 5 years in advance have advised that the price offered did not necessarily reflect the cost to them of providing the service. Some Aggregators offering planned assets also preferred to bid for short to medium term requirements for which they had more confidence in providing.**

- **Reduce the length of availability windows where possible**
  – **Reasons:** from the FSPs' perspective, long availability windows when you are not being dispatched increase the opportunity cost of participating in DNO flex. Note that this only applies if there are penalties for failing to deliver in an availability window, which we understand is not the case currently.
  – **SPEN Response / Actions: We are developing the forecasting information we will provide to FSPs to enable them to better understand when we will require them to be available. This should reduce the long availability windows included within a tendered service, assisting FSPs to manage their participation in other markets.**

Section 5: Carbon Reporting

5.1 Current Approach

SP Energy Networks has procured 38700KWh from Gas Reciprocating Engines. The calculated direct carbon impact associated with flexibility services in regulatory year 2022/23 is 22033kgCO2e – which includes direct impacts of fuel combustion to produce electricity. The calculated consequential carbon impact associated with this flexibility service is - (negative) -9345kgCO2e – which includes displacement of grid generation at export. Net Carbon impact is therefore 12687kgCO2e.

LC31 Technology Category	LC31 Technology Sub-Category	Requested Energy (MWh)	Delivered Energy (MWh)	Direct Carbon Impact (kgCO2e)	Consequential Carbon Impact (kgCO2e)
Fossil - Gas	Gas Reciprocation	38.7	38.7	22033	-9345

The carbon quantification calculation reported above has followed the collaborative methodology developed by UK DNOs as part of the Open Networks Project, Product 7, Workstream 1A. Details of the methodology can be accessed **here**.

5.2 Industrial Developments

SPEN are represented on the Carbon Reporting Methodology Technical Working Group. The TWG remit is to develop a methodology for DSOs to calculate and report the carbon impact of flexibility service actions.

Our Contact Details
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SP ENERGY NETWORKS