



# **SSEN DISTRIBUTION FLEXIBILITY SERVICES**

C31E Procurement Statement

31/03/2023



# CONTENTS

<b>Executive Summary.....</b>	<b>3</b>
<b>1.Introduction.....</b>	<b>4</b>
<b>2.Flexibility Requirements .....</b>	<b>4</b>
2.1 Summary.....	4
2.2 Standard Services Overview.....	4
2.3 Why do we procure Flexibility Services? .....	5
2.4 Flexibility Services Procurement Strategy .....	7
2.5 Forecast Utilisation.....	11
2.6 Scheduling and Dispatch Mechanism.....	13
<b>3.Tendering Process .....</b>	<b>14</b>
3.1 Summary.....	14
3.2 Process Standardisation .....	15
3.3 Pricing .....	16
<b>4.Stakeholder Engagement .....</b>	<b>17</b>
<b>5. Detailed Quantitative Assessment.....</b>	<b>19</b>
5.1 Requirements and Benefits Analysis .....	19
5.2 Response Evaluation Criteria .....	20
5.3 Pricing Strategies .....	21
<b>Appendix 1: SSEN Distribution Grid Supply Points .....</b>	<b>22</b>
<b>Appendix 2: Useful links to additional information .....</b>	<b>25</b>



# EXECUTIVE SUMMARY

Scottish and Southern Electricity Networks (SSEN) Distribution follows a policy of 'Flexibility First' under which all potential reinforcement schemes are assessed for their flexibility services potential before investing in network reinforcement in both license areas. The use of flexibility enables us to improve efficiency through greater utilisation of existing and new network assets. By taking this approach, we are better able to accommodate the rapid growth in low carbon technologies such as electric vehicles and support the changing way our customers use and connect to our network. Our flexibility procurement plans and strategic direction aligns with and promotes this approach, and ensures that all stakeholders can engage with us and participate in opportunities that are right for them.

In this document, we outline the current flexibility services expected to be procured during the 12-month period commencing on 1 April 2023 and the timeline for these and further flexibility services. These services are needed for areas of our network which have current or forecast load constraints under certain conditions, known as 'Constraint Managed Zones' (CMZs) or zones. We also provide details on further opportunities for flexibility where we will this year make an assessment to the technical need and economic benefit for flexibility services.

At SSEN Distribution we have committed to a plan to expand our procurement of flexibility services, with a target of 5 GW cumulative capacity over the five years RIIO-ED2 price control, beginning with 800 MW in year one and reaching over 1 GW by year five. In our first tender round for this year we aim to procure at least 287 MWs of new services across 15 zones as shown in the maps in Figure 1, which will add to the 460 MW of services currently contracted across both licence areas. In addition to this we will introduce a provision of a global flexibility service across all GSPs in both our licence areas. This will allow us to provide a swift response to sudden and significant increase of load on our network and allow for us to facilitate faster connection times to our network which are reaching their capacity limits.

In 2023/24 we will continue to use Dynamic Purchasing System (DPS) for pre-qualification and we will carry out a minimum of two tender rounds that will be published though the DPS. We have provided timelines for our expectations of when the tenders will open, close and when we will inform bidders of our decisions. This will allow greater clarity to flexibility providers participating in our license areas. We will continue to work with other Distribution Network Operators (DNOs) and the Electricity System Operator (ESO) through innovation projects and the Energy Network Association Open Networks on market developments and common flexibility service contract to facilitate the procurement of more flexibility.

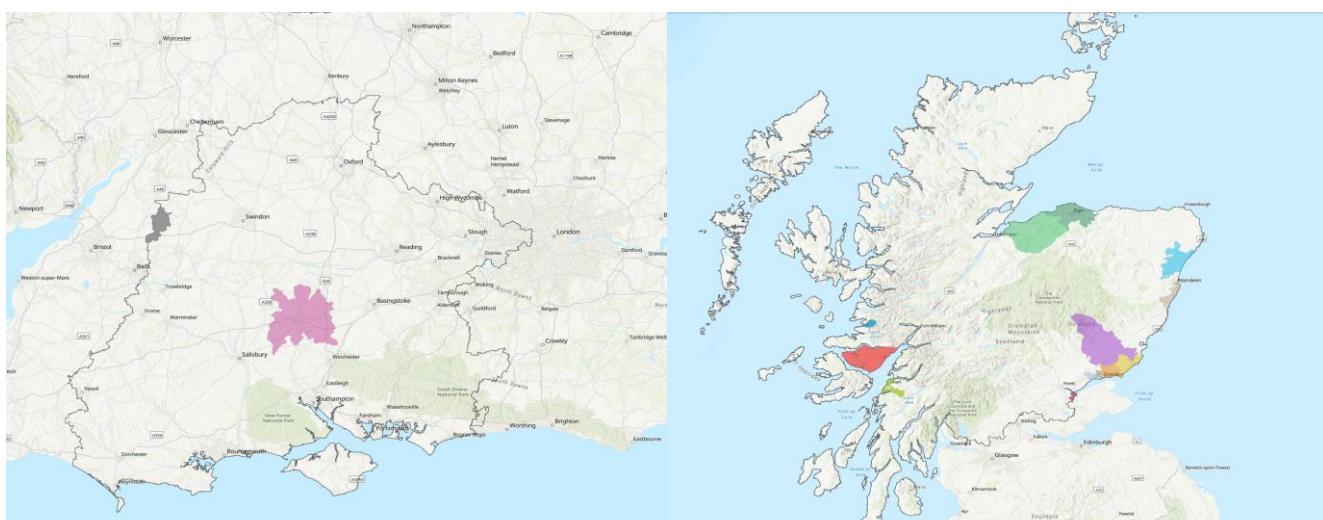


Figure 1 Maps of SSEN Distribution license areas Scottish Hydro Electric Power Distribution and Southern Electric Power Distribution with CMZ zones for Spring 2023 procurement



# 1. INTRODUCTION

SSEN Distribution is responsible for ensuring a safe and reliable supply of electricity to 3.9 million customers in communities across two Distribution licence areas: Scottish Hydro Electric Power Distribution (SHEPD) in the North of Scotland and Southern Electric Power Distribution (SEPD) in central Southern England. At SSEN Distribution we have set a cumulative five-year target of 5 GW for procuring flexibility services, which will be stepped up over the course of the price control, starting with 800 MW in the first year and ramping up to over 1 GW by the end of year five. This target reflects our commitment to meet the evolving needs of the electricity grid and ensuring a secure and reliable energy supply. The procurement of these flexibility services also facilitates connection of Low Carbon Technologies (LCTs) and renewable generation and allows us to manage our Access Significant Code Review (SCR) obligations.<sup>1</sup>

This statement sets out the processes we will use in 2023/2024 for procuring flexibility services to meet our licence obligations, for the efficient and economic management of the flow of electricity on our networks, in an objective and transparent manner. In this statement we give details of how flexibility providers and Distributed Energy Resources (DERs) can find information on how to participate in our flexibility service tenders, including key dates.

In 2023/24 we are encouraging DERs within our two licence areas to register interest in offering us flexibility services through our “Global Call for Flexibility”. This will allow us as a DNO to better understand the capability of flexibility in areas where constraints have been identified and to determine whether flexibility services are an economic and efficient alternative to more network investment. It will also allow us to utilise flexibility efficiently and quickly to address spontaneous constraints driven by unpredictable localised LCT clustering.

## 2. FLEXIBILITY REQUIREMENTS

### 2.1 Summary

CMZs are areas of the distribution network that have constraints which could potentially be managed using flexibility services instead of network reinforcement or other methods. The constrained parts of the network are identified by:

- Network planning forecasts that indicate risks of thermal, voltage or frequency limits being reached, either in normal operation or under outage conditions.
- Planning of work and outages on the network.
- General fault mitigation plans for parts of the network that cannot be easily reconfigured and therefore are subject to higher supply restoration times.

### 2.2 Standard Services Overview

SSEN Distribution procure active power services named Sustain, Secure, Dynamic and Restore. The definitions of these services are aligned with the [Open Networks](#) standards. The payment terms for and definitions of these services are summarised in Table 1.

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<sup>1</sup> [Access and Forward-Looking Charges Significant Code Review: Decision and Direction | Ofgem](#)



Table 1 Flexibility Services Payment Terms

	Pre-Fault	Post fault
Utilisation Payments	<b>Sustain</b> Defer/avoid reinforcement by peak lopping at times of high forecast load under normal running conditions.	<b>Restore</b> Required to support restoration activities following an unplanned power outage.
Availability and Utilisation Payments	<b>Secure</b> Defer/avoid reinforcement by peak lopping at times of high forecast load under First Circuit Outage conditions.  <b>OR</b> Alternative to network reconfiguration/generators for planned works.	<b>Dynamic</b> Support for network restoration in cases of secondary faults occurring during planned works.

## 2.3 Why do we procure Flexibility Services?

As more assets such as electric vehicles, heat pumps, distributed generation and storage assets connect to distribution networks, the traditional approach of only building more network capacity is becoming unsustainable and risks becoming a barrier to net-zero ambitions. The use of flexibility is intended to allow more efficient use of existing network capacity, reducing the need for reinforcement of the network and allowing for the integration of new technologies and renewable energy sources.

Each year, SSEN Distribution commissions out detailed projections on how generation, demand and storage connected to the distribution network could change in the next decade. These are the Distribution Future Energy Scenarios (DFES), and the data is used to analyse how network load may evolve and to make strategic investment decisions. The elements included in the DFES models are:

- Sources of demand – electric vehicles, heat pumps and air conditioning, and strategic new housing and commercial developments;
- Distributed generation – both renewable and fossil fuel; and
- Battery storage.

The results from the DFES analysis feed directly into our [Network Development Plan \(NDP\)](#),<sup>2</sup> which will also reflect flexibility services procured into the long-term horizon. This NDP is published every two years, in addition to our [Long Term Development Statement \(LTDS\)](#).<sup>3</sup>

At SSEN Distribution we will continue to contract flexibility services to capture significant option value if a low demand growth scenario outturns, rather than our best view of the Future Energy Scenarios which is the Consumer Transformation (CT) scenario. This strategy will allow for the rapid deployment of flexibility services, irrespective of which scenario outturns in future years. We will continue to assess conventional reinforcement with the [Common Evaluation Methodology](#),<sup>4</sup> developed through the ENA's Open Networks Project, to determine the viability of flexibility service options.

2 [Network Capacity Information - SSEN](#)

3 [Long term development statements \(LTDS\) - SSEN](#)

4 [ENA Common Evaluation Methodology v2.0 \(energynetworks.org\)](#)



Under the Access SCR, we will be required to make significant changes to our connection and use of system arrangements including providing curtailable connections intended to promote greater flexibility. We will monitor the growth and use of curtailable connections on our network to understand where flexibility services can be used to manage our contractual obligations for these connections.

At SSE Distribution we currently procure four active power services: Sustain, Secure, Dynamic and Restore. Details and uses cases of these are provided in Table 2.

Table 2 Standard Services Overview

Service	Description	Use Cases	Payments
Sustain	The provider agrees, ahead of time, to either deliver a change in export or import (or apply a limit), at specific times.	Network forecasts indicate risk of the network going beyond capacity in normal conditions.	Utilisation or Fixed Income <sup>5</sup>
Secure	<p>The provider agrees, ahead of time, their availability to deliver a change in export or import at certain times known as service windows.</p> <p>Based on refined forecasts closer to the event, SSE Distribution may or may not instruct the use of the service.</p>	<p>Planned works which would normally involve either a power outage or the use of mobile diesel generation.</p> <p>OR</p> <p>Network forecasts indicate risk of the network going beyond capacity in N-1 fault conditions (i.e. where resilience is compromised)</p>	Availability and Utilisation
Dynamic	<p>The provider agrees, ahead of time, their availability to deliver a change in export or import at certain times known as service windows.</p> <p>Depending on network conditions close to or during the service window, SSE Distribution may or may not instruct the use of the service.</p>	<p>Planned works where there is a risk of a power outage that needs to be mitigated.</p> <p>OR</p> <p>Network forecasts indicate risk of the network going beyond capacity in N-2 fault conditions. (i.e. situations where power outages are likely).</p>	Availability and Utilisation
Restore	SSE Distribution instructs a provider in real-time to either remain off supply, reconnect with lower demand, or to reconnect generation to support faster restoration.	Restoration following unplanned power outages.	Utilisation

<sup>5</sup> Fixed Income is currently only used where a guaranteed power limit/level is required over a period of months.



## 2.4 Flexibility Services Procurement Strategy

### Long Term Plans

Load Managed Areas (LMAs) are a legacy arrangement for providing flexibility in SHEPD, originating in the 1980s as an alternative to traditional reinforcement. They cover approximately 87,000 customers, spread across the geographic licence area, including the islands and many towns and cities.

LMAs reduce the maximum demand on circuits at all voltage levels and at substations by effectively smoothing demand over the 24-hour period. However, with the Radio Teleswitching service coming to end of life and with smart meters being used to replace the legacy metering systems, it has become clear that there is a requirement to replicate the Load Switching Regimes in the LMAs. In addition, LMAs do not follow a market approach, instead socialising the benefits of flexibility and returning it to all customer through reduced network investment. In our RIIO-ED2 plan we proposed investigating if we can replace the effect of load switching in these areas through procurement of flexibility services. We will update stakeholders by October 2023, later this year, on our progress in developing a flexibility service that mimics the benefits seen through the Load Switching Regimes with aim to start procurement this financial year.

In the West London Area, there has recently been a rapid increase of requests for new electricity connections which has triggered constraints on the Distribution and Transmission network. Due to the longer lead time for Transmission reinforcement, there is a risk that SSEN Distributions ability to continue to facilitate new demand connections in a reasonable timeframe will be severely restricted. As part of efforts to address this challenge, SSEN Distribution is exploring potential interim solutions, including flexibility measures with NGET and NGESO to help accommodate incoming connection requests, whilst also ensuring network capacity remains within limits set by NGESO while awaiting planned Transmission reinforcement. In our second tender round this year, we will tender for a Sustain service across all six West London GSPs: Amersham, Ealing, Iver, Laleham, North Hyde and Willesden. This service would seek to leverage the flexibility of existing assets connected in these GSPs, reducing the peak demand and allowing for more headroom to facilitate connection on our network. We are therefore encouraging potential flexibility providers connected to these GSPs to register on our DPS (<https://ssen.deltasourcing.com/>) to be notified of further information on this tender.

In SSEN Distribution we continually assess areas in which the need for network reinforcement or planned and unplanned outages can cost effectively be deferred or managed, through flexibility services. For our tender round in October 2023 we will assess the need for flexibility from potential CMZs given in Table 3 and Table 4 that were identified as load related schemes in our business plan for RIIO-ED2.6 These will be considered with a “flexibility first” approach; the constraint will be assessed in detail to determine if flexibility services could be used to manage it, and then service windows, capacity and utilisation are forecast. An initial cost benefit analysis and market evaluation is carried out to determine which schemes should progress to tender and the prices at which they represent value for money.



Table 3 SEPD CMZ considered for Flexibility Services

CMZ Name	Services to be considered
East Bedford	Secure, Sustain, Dynamic and Restore
Upton	Secure, Sustain, Dynamic and Restore
Bemerton	Secure, Sustain, Dynamic and Restore
Wimborne	Secure, Sustain, Dynamic and Restore
Wareham Town	Secure, Sustain, Dynamic and Restore
Calne	Secure, Sustain, Dynamic and Restore
Bruton	Secure, Sustain, Dynamic and Restore
Yattendon	Secure, Sustain, Dynamic and Restore

Table 4 SHEPD CMZ considered for Flexibility Services

CMZ Name	Services to be considered
Gisla	Secure, Sustain, Dynamic and Restore
Insch	Secure, Sustain, Dynamic and Restore
Keith	Secure, Sustain, Dynamic and Restore
Port Ann	Secure, Sustain, Dynamic and Restore
Abernethy	Secure, Sustain, Dynamic and Restore
Scorradale	Secure, Sustain, Dynamic and Restore
Halkirk	Secure, Sustain, Dynamic and Restore
Tressady	Secure, Sustain, Dynamic and Restore
Inverbroom	Secure, Sustain, Dynamic and Restore



## Short Term Plans

We have identified CMZs in which we have not secured sufficient flexibility capacity or zones in which we will no longer have active contracts. We have also included new zones, where flexibility is required in this area for planned network outages or faults. Table 5 provides a summary of the capacity we procured for each service type in May 2023.

Table 5 Per Service Capacity in May 2023 Tender

Service	Indicative Total Capacity to be tendered in 2023/24 (MW)	Description
Sustain	0 MW	The provider agrees, ahead of time, to either deliver a change in export or import (or apply a limit), at specific times.
Secure	0.2 MW	For planned works or if network forecasts indicate risk of N-1 fault conditions. The provider agrees, ahead of time, their availability to deliver a change in export or import at certain times known as service windows.
Dynamic	143.5 MW	For planned works with the risk of a power outage or if network forecasts indicate risk of N-2 fault conditions. The provider agrees, ahead of time, their availability to deliver a change in export or import at certain times known as service windows.
Restore	143.5 MW	The provider is instructed in real-time to either remain off supply, reconnect with lower demand, or to reconnect generation to support faster restoration.

Our first tender in May 2023 will procure for these identified CMZs listed in Table 6 and Table 7.

Table 6 SEPD May 2023 Procurement of CMZ and Flexible Services

Zone Name	Services	Minimum Provider Capacity (MW)	Max Connection Voltage (kV)	Type of Response (GTU/DTD or GTD/DTU)	Capacity Required (MW)	Start Year	End Year <sup>7</sup>
Alderton	Secure	0.05	11	GTU/DTD	0.2	Apr-24	Mar-25
Andover	Dynamic and Restore	0.05	33	GTU/DTD	15	Jun-23	May-24

<sup>7</sup> Minimum 1-year contracts with the potential to extend to 5-years



Table 7 SHEPD May 2023 Procurement of CMZ and Flexible Services

Zone Name	Services	Minimum Provider Capacity (MW)	Max Connection Voltage (kV)	Type of Response (GTU/DTD or GTD/DTU)	Capacity Required (MW)	Start Year	End Year <sup>8</sup>
Abernethy	Dynamic and Restore	0.05	33	GTU/DTD	7	Sep-23	Aug-24
Dyce	Dynamic and Restore	0.05	33	GTU/DTD	6.5	Sep-23	Aug-24
Elgin	Dynamic and Restore	0.05	33	GTU/DTD	27	Sep-23	Aug-24
Lunanhead	Dynamic and Restore	0.05	33	GTU/DTD	25	Sep-23	Aug-24
Lyndhurst	Dynamic and Restore	0.05	33	GTU/DTD	7	Sep-23	Aug-24
Milton of Craigie	Dynamic and Restore	0.05	33	GTU/DTD	17	Sep-23	Aug-24
Nairn	Dynamic and Restore	0.05	33	GTU/DTD	10	Sep-23	Aug-24
Oban	Dynamic and Restore	0.05	11	GTU/DTD	>1	Sep-23	Aug-24
Ardtornish	Dynamic and Restore	0.05	33	GTU/DTD	>1	Sep-23	Aug-24
Lochailort	Dynamic and Restore	0.05	33	GTU/DTD	>1	Sep-23	Aug-24
Redmoss	Dynamic and Restore	0.05	33	GTU/DTD	>1	Sep-23	Aug-24
Arbroath	Dynamic and Restore	0.05	33	GTU/DTD	24	Sep-23	Aug-24
Charleston	Dynamic and Restore	0.05	33	GTU/DTD	>1	Sep-23	Aug-24

<sup>8</sup> Minimum 1-year contracts with the potential to extend to 5-years



## Global Call for Flexibility

We are seeking to further understand the potential of flexibility within both our licence areas. We are therefore looking to engage flexibility providers in understanding more information on their capability and services prices. We are therefore calling for potential providers of Flexibility within the Grid Supply Points (GSP) provided in Appendix 1 to register on our DPS.<sup>9</sup> We are looking to procure flexibility over a number of greater areas to resolve, but not limited to, the following scenarios:

- Unexpected uptake of LCTs (either in speed or extent), where notifications are not provided to DNOs as they should be and therefore additional LCT assets are discovered only when there is an outage.
- To manage a more connections on to our networks and reduce the connections queues which we envisage will become more significant following the introduction of Access SCR this April 2023.

In order to procure these services based on a global (across GSPs) need we will carry out sustain flexibility service tenders this financial year. We will publish further information on our website and communicate tenders to all providers registered on our DPS. We will review the potential DERs for each GSPs to determine whether we have the liquidity to carry out a tender this year and therefore encourage any business who might be interested in providing flexibility service to register and complete initial pre-qualification on our DPS (<https://ssen.delta-esourcing.com/>).

To address the challenges of heightened demand on the Transmission network and lengthy connection times, our initial GSP-wide tenders will concentrate on West London and the following six GSPs: Amersham, Ealing, Iver, Laleham, North Hyde, and Willesden.

## 2.5 Forecast Utilisation

The forecast utilisation for 2023/2024, for the current contracted sustain service is 300MWh. Note that this includes turn-down of wind power from a maximum output baseline. The forecast utilisation for 2023/2024 for the current contracted Dynamic service is 0.04 GWh. This is based on historic scheduling of CMZs.

Figure 2Figure 1, Figure 3 and Figure 4, show utilisation data for financial years 2021/2022 Restore service, 2022/2023 Dynamic service and 2022/23 Sustain service respectively. The Restore utilisation in 2021/2022 is due to a sub-marine cable fault.

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<sup>9</sup> Register at [ssen.delta-esourcing.com](https://ssen.delta-esourcing.com) and complete the pre-qualification questionnaire for North (SHEPD) or South (SEPD) network areas.

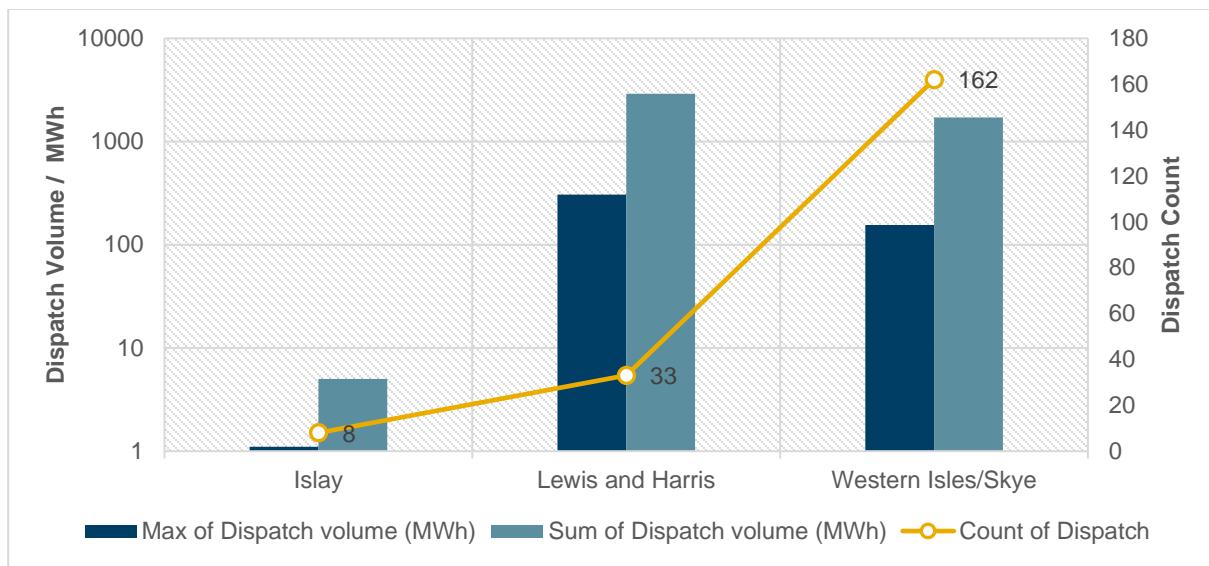


Figure 2 2021/22 SSEN Distribution CMZ Restore Service Dispatch Data

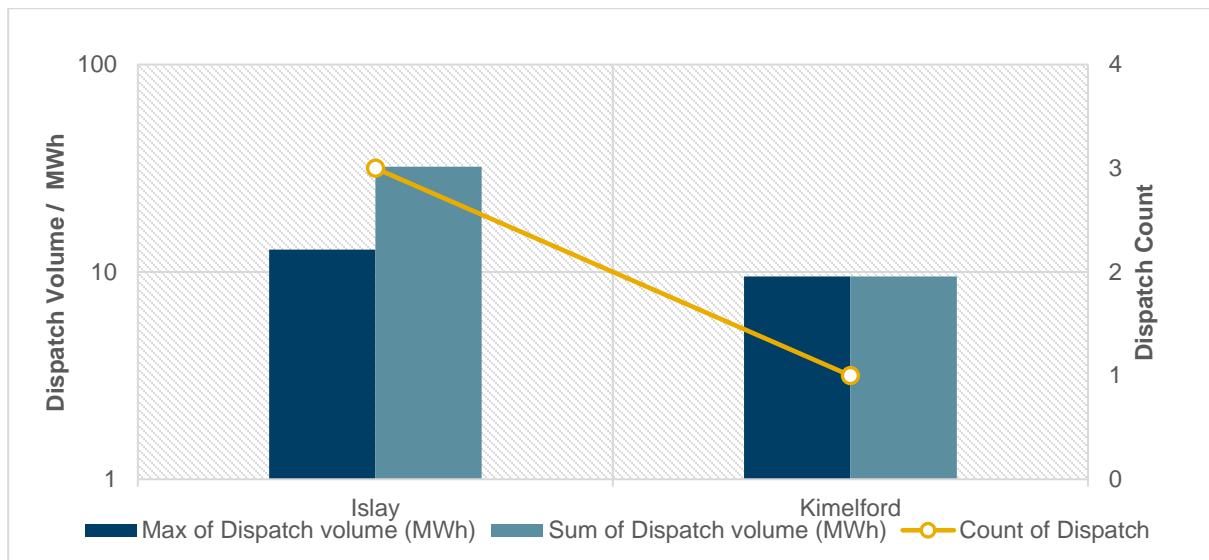


Figure 3 2022/23 SSEN Distribution CMZ Dynamic Service Dispatch Data

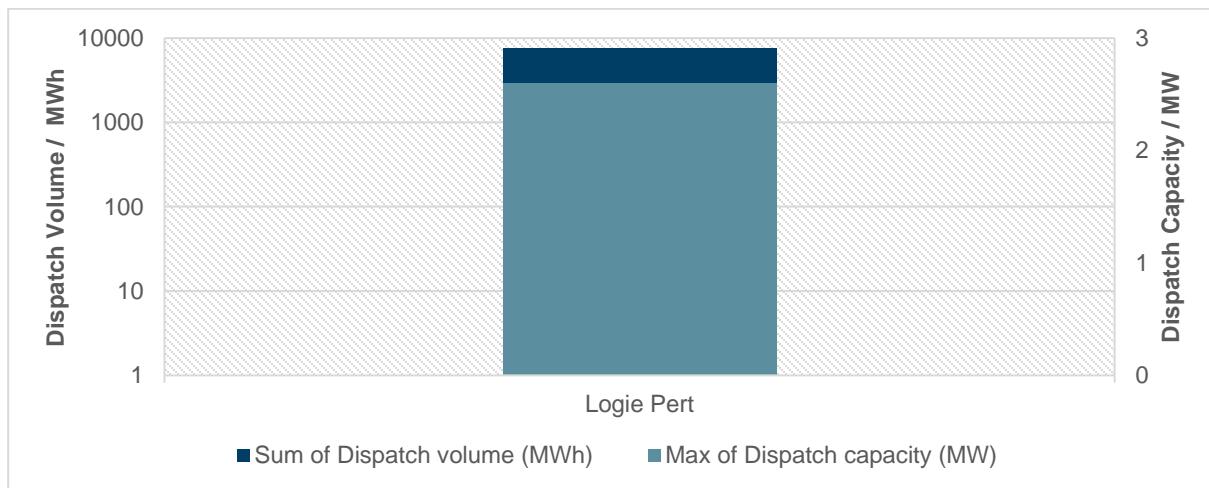


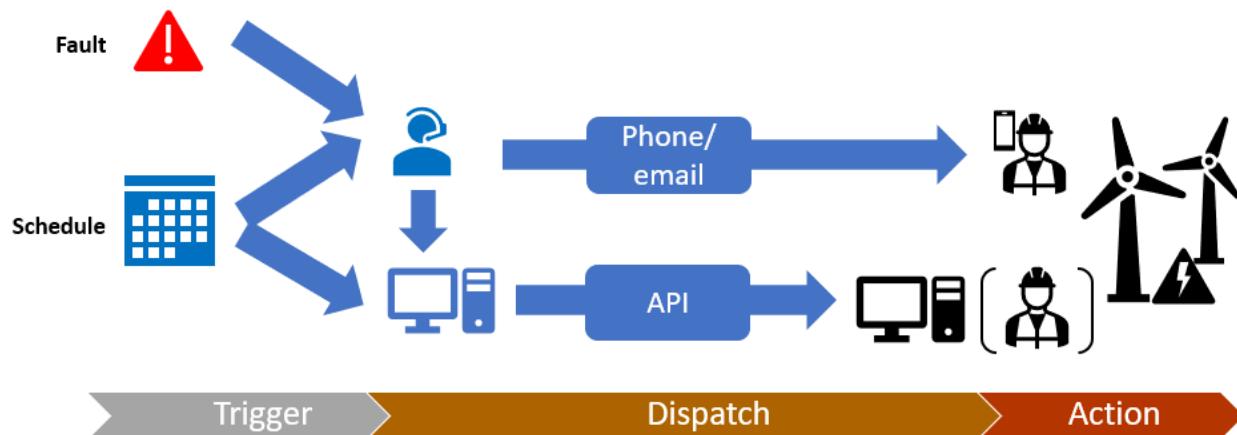
Figure 4 2022/23 SSEN Distribution CMZ Sustain Service Dispatch Data



## 2.6 Scheduling and Dispatch Mechanism

SSEN Distribution will have the functionality to schedule and dispatch services either by phone, email and Application Programming Interface (API) to allow for instant communication from SSEN Distribution to the DER or DER Provider Company. Figure 2Figure 5 shows the process and options for scheduling flexibility that SSEN Distribution will make available in 2023/24.

Figure 5 Scheduling and Dispatch Mechanism used by SSEN Distribution



We will schedule flexibility services at varying timescales depending on the service and need as described in Table 8

Table 8 Scheduling times by Flexibility Service type

Service	Availability Request Lead Time / Period Covered	Utilisation Request Lead time / Period Covered
Sustain	Not Applicable	1 month / 1 season
Secure (forecast based)	5 weeks / 1 month	3 days / 1 week
Secure (planned works)	At least 5 days / variable	At least 15 mins / 1 day
Dynamic	At least 5 days / variable	At least 15 mins / 1 day
Restore	Not Applicable	At least 15 mins / 1 day

Where there is a choice of providers (i.e. where the bid capacity is greater than the flex requirement), the calculation of how much capacity to request from each provider is based on the following dispatch framework.

1. Each zone-provider-service is scored on the following criteria:
  - a. Price compared to other services
  - b. CO<sub>2</sub> emissions
  - c. Prior Delivery Performance (on first use this is set to 100%)
2. A starting assumption of availability is made based on the contracted capacity:



- a. Where a provider's contracted capacity exceeds the monthly requirement, the starting assumption is set to the required capacity.
3. Each provider's assumed capacity is then adjusted based on the relative scores of providers in the zone.
4. The required capacity is divided pro-rata, based on the adjusted capacities.

If the adjustment of capacity results in a lower total capacity than the requirement, the adjustment is ignored and the requirement is pro-rated based on the starting assumption capacity.

If the starting assumption total capacity is lower than the requirement, the full amount is requested. In this scenario, it is also possible to request 10% additional capacity from providers under the variation clause in the contract. If the capacity required from any provider is less than 10kW, the amount requested will be 10kW.

In line with Ofgem's baseline expectations, SSEN Distribution will continue to review, consult and develop the dispatch framework, in accordance with the guiding principles of network security, cost effectiveness and market support.

## 3.TENDERING PROCESS

### 3.1 Summary

SSEN Distribution considers the procurement of flexibility services to be a regulated contract under the Utilities Contract Regulations 2016 / Utilities Contract (Scotland) Regulations 2016 and, as such, procurement is directly managed by SSE's Procurement team to ensure non-discrimination, fairness and transparency.

Prospective providers must be pre-qualified on the DPS<sup>10</sup> to participate in any tender. Businesses can simply register at [ssen.delta-esourcing.com](http://ssen.delta-esourcing.com) and complete the pre-qualification questionnaire for North (SHEPD) or South (SEPD) network areas. Note that providers with assets in both North and South will need to complete questionnaires for both areas.

Introduction of the DPS allows for ongoing registration and pre-qualification of potential providers, independently of specific tenders. The DPS is open for registrations at any time, but providers must submit the completed pre-qualification questionnaire 10 working days before a tender opens to allow time for the initial technical and commercial assessment.



Figure 6 High level procurement process

<sup>10</sup> Scottish and Southern Electricity Networks – Dynamic Purchasing System for Constraint Managed Zones ([delta-esourcing.com](http://delta-esourcing.com))



We have an ambition to establish a regular calendar for long-term procurement as shown in the timeline below in Figure 7, and are working to establish the internal processes and deadlines required to achieve this. These regular tenders are typically based on a long planning horizon and are for multi-year, bilateral contracts based on the industry standard Flexibility Services Agreement.

In the coming years, we plan to evolve towards framework type agreements with auction like call-offs at various planning horizons. It is anticipated that campaigns to sign up new providers to framework agreements will occur on a regular, biennial basis.



Figure 7 SSEN procurement timings for 2023/24

Tenders will be advertised online on the following two websites:

- <https://www.ssen.co.uk/our-services/flexible-solutions/flexibility-services/flexibility-services-procurement/>
- <https://www.flexiblepower.co.uk/>

Contracts for flexibility services that are required for use at shorter time horizons will be accommodated through mini-tenders, which can be run at short notice and therefore do not follow a fixed schedule. This is typically for renewal of existing zones or to contract based on specific planned works. The same standard contracts are used but may be for shorter terms.

## 3.2 Process Standardisation

From April 2023, we will:

- Undertake a review of regulatory procurement requirements with respect to Framework agreements and develop the principles for trialing a call-off mechanism. This will include determining the system requirements for a framework and asset registration/management platform.



- Move to v2.1 of the Standard Service Agreement for new contracts starting in 2023 and any further updates to the Standard Service Agreement will be used in 2024.
- Improvement Standard agreement for procuring Flexibility services across DSO and ESO by including clauses that allow implementation of primacy rules.
- Alignment of sign-up and pre-qualification processes for flexibility service procurement with other DNOs.
- Review the timescales for possible replacements for existing DPS following the end of the DPS contract in 2024.

### 3.3 Pricing

The prices of existing contracts are published on our website<sup>11</sup> as a guide for bidders. Ceiling Prices are used to ensure there is a financial benefit for Flexibility over alternative approaches where there is not enough market liquidity for price competition.

The following table gives the current ceiling prices and the zones in which they have been applied. Ceiling prices can change per tender and may not be applied at all where there is sufficient liquidity for price competition. Should ceiling prices change between tenders for the same zone, existing providers are invited to re-bid if they wish.

Table 6 SSEN Indicative Ceiling Prices for Reinforcement Deferral schemes (Last updated Sept 2022)

Service	Availability Fee (£/MW/hr)	Utilisation Fee (£/MWh)	Zones
Sustain	N/A	No ceiling to date	N/A
Secure	£150	£200	Alderton Alresford Amesbury Ashling Road Ashton Park Denham Egham Faringdon Fulscot Goring Harvard Lane Oxford Stokenchurch Upton Yeovil Yetminster
Dynamic	£25	£325	N/A
Restore	N/A	£400	N/A

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<sup>11</sup> [Flexibility Services Document Library - SSEN](#)



# 4. STAKEHOLDER ENGAGEMENT

## 4.1 Summary

In 2023/2024 our engagement will focus on continuing to encourage potential providers to register and pre-qualify on the DPS. This is an important stepping-stone towards framework agreements and a single asset registration platform, which are on the roadmap for future years.



Figure 8 Schematic on three main procurement steps

For long-term procurement, SSEN Distribution publish requirements and tender announcements online at least 30 days ahead of the tender start. These times can be reduced to 10 days for short term procurement if there are enough providers pre-qualified for the tender to be effective. A public webinar is held during this period to encourage new providers to sign up, post this webinar we seek feedback on the information we have provided. For requirements in remote locations where only certain DERs could possibly provide services competition, the owners/operators may be contacted directly and encouraged to register on the DPS.

During the tender period we will offer bilateral engagement with all potential providers to answer any questions and will continue to offer further bilateral engagement during the onboarding stage for both successful and unsuccessful providers.

Requirements and tender dates are published in multiple ways:

- Zone map and tender dates:
  - <https://www.ssen.co.uk/our-services/flexible-solutions/flexibility-services/flexibility-services-procurement/>
  - <https://www.flexiblepower.co.uk/scottish-and-southern-electricity-networks>
- Service Tender dates



- [https://www.preceden.com/timelines/523803-flexibility-in-gb-timeline:](https://www.preceden.com/timelines/523803-flexibility-in-gb-timeline)

The webinars held ahead of each tender are advertised via Social Media channels (LinkedIn, Facebook, Twitter, Instagram). Further to this we will seek out other opportunities to engage stakeholders, including but not limited to:

- Annual online stakeholder consultation on Flexibility planned for 2023.
- Speaking at conferences such as Utility Week.
- Introduction calls with potential providers.

Upcoming events regarding our Flexibility Procurement will be advertised through the following website:

- <https://ssen.engage-360.co.uk>

This website also allows you to secure a booking for an event and sign up for further event notifications.

You can contact us for further information on our flexibility procurement process through the following email address:

- [Flexibilityprocurement@sse.com](mailto:Flexibilityprocurement@sse.com)

The ENA's Open Networks Project is the main forum for engagement with the ESO and other DNOs on flexibility services, with specific focus on the alignment of service types, contracts and processes. SSEN Distribution actively contribute to the industry Standard Agreement, baselining methodology, procurement parameters and processes.

SSEN Distribution is committed to continued and active involvement in the ENA Open Networks Project in 2023, with focus on market developments and the following key outputs for flexibility services:

- The Standard Flexibility Services Agreement version 2.1
- Initial alignment on technical and commercial pre-qualification criteria.

SSEN Distribution is also a member of the Flexible Power collaboration, which has developed and launched a platform used by providers and DNOs to automate service dispatch and performance management. In 2023, SSEN Distribution plans to begin using the platform to operate Secure services in the south of England.



# 5. DETAILED QUANTITATIVE ASSESSMENT

## 5.1 Requirements and Benefits Analysis

The constrained parts of the network are identified by:

- Long range network planning forecasts that indicate risks of thermal, voltage or frequency limits being reached, either in normal operation or under outage conditions.
- General fault mitigation plans for parts of the network that cannot be easily reconfigured and therefore are subject to higher supply restoration times.
- The requirement to carry our work on the network as identified by our outage planning teams.

Table 7 Sources of identification of CMZs

Source	How Requirements are Identified	Business Case
System Planning	Annual long range load forecasting by Systems Planning.	<ul style="list-style-type: none"><li>• Positive Net Present Value (NPV) for deferral.</li><li>• “Hedging” – Optionality value of deferral.</li><li>• Risk reduction (reinforcement delay risks).</li></ul>
Outage Planning	Annual assessment by Outage Planning of planned works, parts of the network with single circuit risk, or poorly served areas which could be supported by Flexibility Services.	Flexibility used as an alternative to mobile diesel generation or use of SSEN owned generators (on Scottish Islands). A cost comparison is carried out based on a range of potential availability/utilisation scenarios

Opportunities to procure flexibility services to defer or avoid reinforcement (mainly Sustain or Secure services) are identified by reviewing all reinforcement proposals to establish if Flexibility would be a technically viable alternative. The DFES scenarios are the load forecasts used to identify the service windows and capacity required, and the conditions under which the exceedance could occur are used to estimate the utilisation and determine the best fit service.

We use the Common Evaluation Methodology (CEM) developed by Open Networks to carry out a cost benefit analysis (CBA) by comparing the Net Present Value (NPV) of discounted cashflows of each solution to determine if there is an economic benefit of reinforcement deferral, and thereby establish a budget for flexibility. The difference between the NPV of the network reinforcement versus the NPV of the deferred reinforcement represents the amount that could be spent on flexibility services to achieve the deferral. If the estimated costs of flexibility fall within the budget, then it is likely to be economic.

Figure 9 below is a simplified schematic demonstrating this calculation where reinforcement has been deferred into year three.



	<b>NPV</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
Baseline	NPV (Baseline)	Reinforcement cost		
Deferral	NPV (Deferral)			Reinforcement cost
Flexibility Budget	= NPV (Deferral) – NPV (Baseline)	Flex cost	Flex cost	

Figure 9 Schematic to show how the flexibility service budget can be determined based on reinforcement deferral

Other business drivers and economic benefits for the use of flexibility are also considered at this stage:

- Optionality value, where load forecasts are very uncertain and more time is needed to establish if reinforcement is justified.
- Where reinforcement cannot be delivered in time to ensure security of supply compliance.
- Where we identify the need to further support and facilitating connections on to our networks.

Flexibility services requirements based on network studies can be determined for general fault contingency planning, or as part of specific planned works where the alternative would have been diesel generation to support unplanned or planned outages comes. The economic benefits in these cases are based on customer interruption costs and potential CO<sub>2</sub> savings that are calculated by comparing the emissions of diesel generation would have been against the bidder's assets. For completeness, the diesel conversion factor used (gross calorific value, 100% mineral diesel) is 0.25338 tCO<sub>2</sub>/MWh.<sup>12</sup>

## 5.2 Response Evaluation Criteria

As part of the tender evaluation process, we will score providers per zone and service based on quality and price criteria. Details of the scoring mechanism are included with each invitation to tender.

The quality score will include the following criteria:

- Service requirement
- Service management
- Health, Safety & Environment
- Technical operation
- Information Security
- Commercial viability

Prices are scored relative to other bidders for the same zone and service, following a “pay as bid” principle. When there is only one bidder, relative scoring is not possible, and this could result in contracts being awarded that are not cost effective and are unlikely to be used. To ensure that procured services are cost-effective, we apply ceiling

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<sup>12</sup> All DERs used in 2021/22 were hydro or wind, which for simplicity are treated as having zero carbon emissions.



prices in areas where there may be insufficient competition. Where services needed to defer or avoid reinforcement, ceiling prices are first validated using the CEM tool.

The price score is determined by comparing the best, lowest price of all bids in this tender for the zone and service (e.g., the lowest price will achieve a maximum score of 100). Any prices above the relevant ceiling price will be awarded a score of 0 and will be ineligible for award. Prices above the lowest price and below the ceiling price will achieve a proportioned reduced score from 100. Where prices are bid in for both availability and utilisation a blended rate will be used by combining both prices based on an expected and forecasted utilisation volume.

The Quality Score and Price Score are used in the formula below to determine the Total Score for a zone and service.

$$\text{Total Score by Item} = (\text{Price Score} \times \text{Price Weighting}) + (\text{Quality Score} \times \text{Quality Weighting})$$

The Price and Quality Weight for this our previous tender were as follows:

- The price weighting applied to the last tender is: 70%
- The quality weighting applied to the last tender is: 30%

These will be subject to change in the 2023/2024 tenders, but the price score will retain the higher weighting proportion.

Whilst the scoring of bids and consequent contract award in regulated tenders is technology agnostic, the carbon intensity of DERs is one of our dispatch criteria, as detailed in section 2.6, and the use of low carbon services will be prioritised, all other factors being equal.

## 5.3 Pricing Strategies

In 2023/2024 we will use price ceiling for most tenders unless we have utilisation only payment terms or we have identified significant competition in the CMZ, for which pay-as-bid pricing strategy may be deployed.



# APPENDIX 1: SSEN DISTRIBUTION GRID SUPPLY POINTS

Table 8 List of GSPs in SHEPD

SHEPD Grid Supply Point		
Abernethy	Dunoon	Nairn
Alness	Dunvegan	Persley
Arbroath	Dyce	Peterhead Grange
Ardmore	Elgin	Peterhead Shell
Beauly	Fiddes	Port Ann
Boat Of Garten	Fort Augustus	Quoich
Braco	Fort William	Rannoch
Bridge Of Dun	Fraserburgh	Redmoss
Broadford	Glenagnes	Shetland
Brora	Grudie Bridge	Shin
Burghmuir	Inverness	St Fergus Gas
Carradale	Keith	St Fillans
Cassley	Killin	Stornoway
Ceannacroc	Kinlochleven	Strathleven
Charleston	Kintore	Strichen
Clachan	Lairg	Tarland
Clayhills	Lunanhead	Taynuilt
Coupar Angus	Lyndhurst	Thurso
Craigiebuckler	Macduff	Tummel Bridge
Dounreay	Milton Of Craigie	Willowdale
Dudhope	Mybster	Woodhill

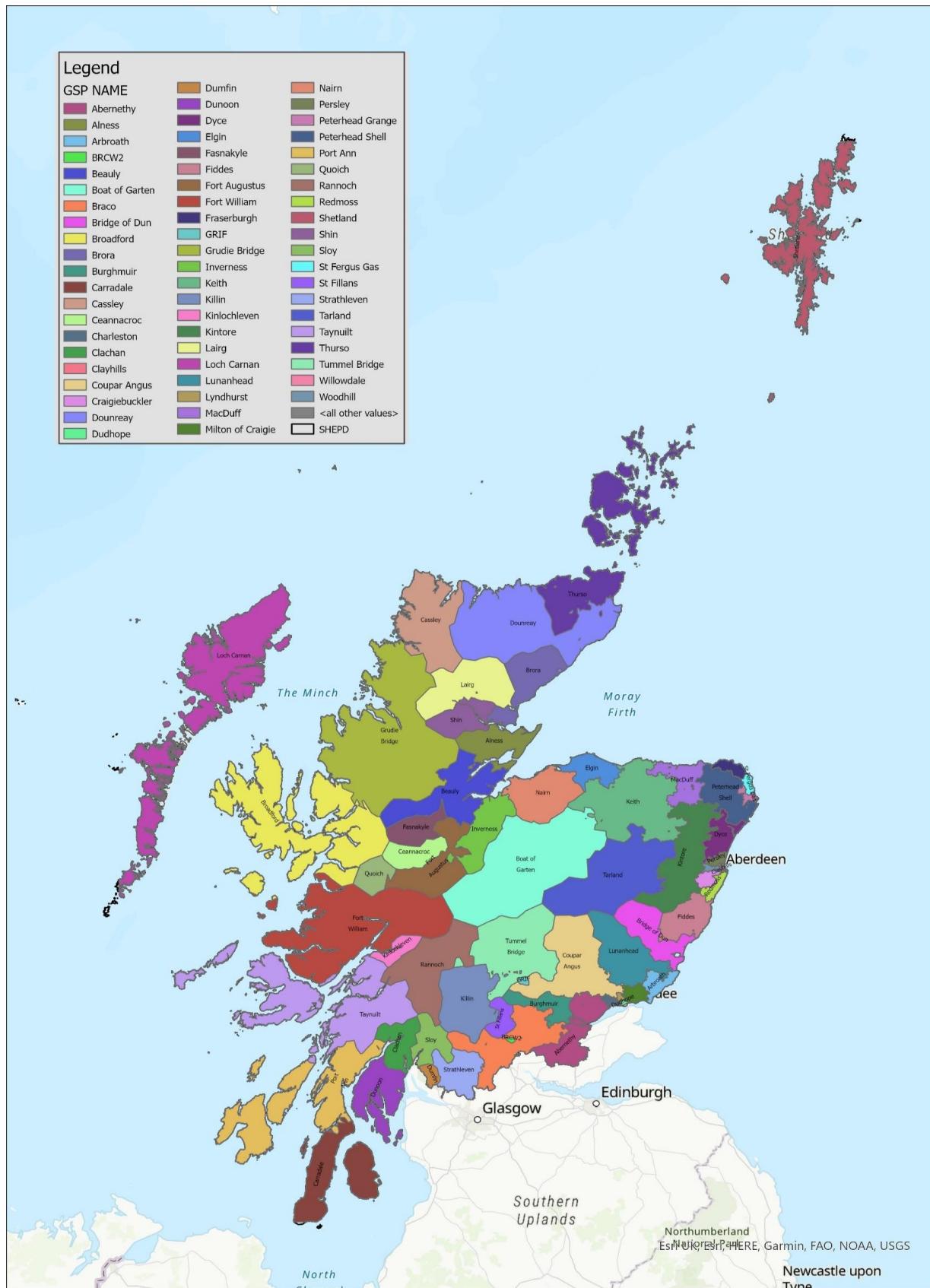


Figure 10 Map of GSPs in SHEPD



Table 9 List of GSPs in SEPD

SEPD Grid Supply Points			
Amersham	Mannington	Laleham	North Hyde
Iver	Axminster	Minety	East Claydon
Bramley (Flee)	Chickerell	Melksham	Botley Wood
Cowley	Bramley (Ando-That)	Willesden	Nursling
Lovedean	Bramley (Basi)	Ealing	Fawley

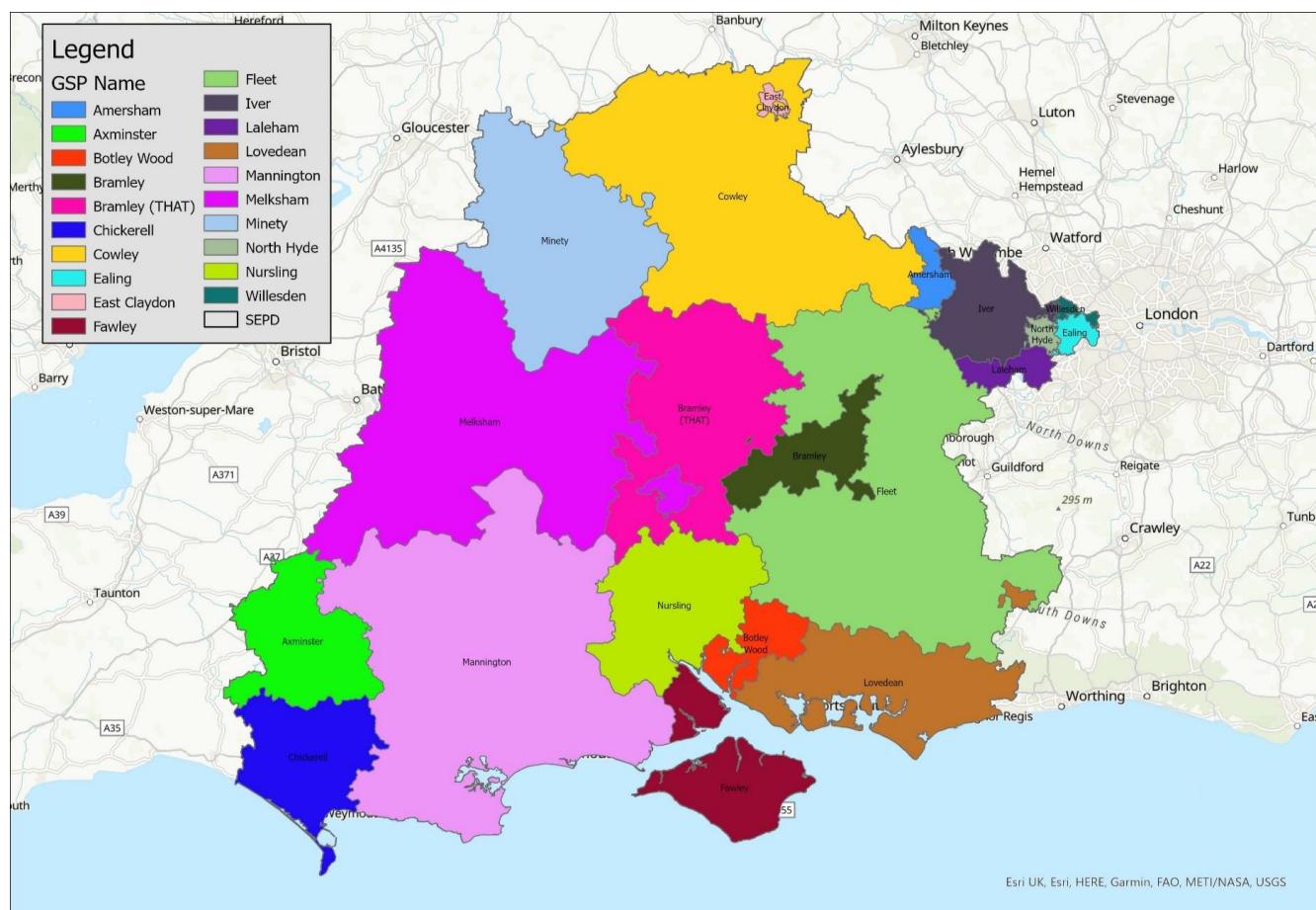


Figure 11 Map of GSPs in SEPD



## APPENDIX 2: USEFUL LINKS TO ADDITIONAL INFORMATION

Table 10 Table of links to useful information

System	Description	Link
DPS (Delta-esourcing)	Dynamic Purchasing System, used for pre-qualification and tendering.	<a href="https://ssen.delta-esourcing.com/">https://ssen.delta-esourcing.com/</a>
Flexible Power Website	Service documentation, Interactive map of zones being tendered, requirements, and tender open/close status.	<a href="https://www.flexiblepower.co.uk/locations/scottish-and-southern-electricity-networks">https://www.flexiblepower.co.uk/locations/scottish-and-southern-electricity-networks</a>
SSEN Website	Information on flexibility services and links to documentation including procurement statement, service documentation, zone map and tender results.	<a href="https://www.ssen.co.uk/our-services/flexible-solutions/flexibility-services/">https://www.ssen.co.uk/our-services/flexible-solutions/flexibility-services/</a>
ENA Open Networks Workstream 1A website	Information on the Open Networks Flexibility Services workstream.	<a href="https://www.energynetworks.org/creating-tomorrows-networks/open-networks/flexibility-services">https://www.energynetworks.org/creating-tomorrows-networks/open-networks/flexibility-services</a>
National Grid ESO Website	National Grid ESO and distributed network operators (DNOs) are working with stakeholders across Great Britain through Regional Development Programmes (RDPs).	<a href="https://www.nationalgrideso.com/research-publications/regional-development-programmes">https://www.nationalgrideso.com/research-publications/regional-development-programmes</a>



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