

Distribution Long Term Development Statement

November 2021

SP Distribution for the years 2021/2022 to 2025/26



Long Term Development Statement

The information used to compile this Statement is derived from SP Distribution plc's own data. Whilst all reasonable care has been taken in the preparation of this data, SP Distribution plc is not responsible for any loss that may be attributed to the use of this information.

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Long Term Development Statement

Part 1: Introduction

1.1 Purpose of Statement

The Long Term Development Statement (hereby referred to as such or as the Statement) is prepared on an annual basis by SP Energy Networks on behalf of SP Distribution plc and provides information on the operation and development of the licensee's distribution system.

The purpose of the Long Term Development Statement is to provide information on the distribution system that may be of use to developers wishing to connect to, or make use of, the distribution system. The data is provided to enable developers to identify opportunities and carry out high level assessment of the capability of the network to support their development. Future network development plans are included to advise existing and potential users of significant changes to the system, which may have an impact on their development plans.

1.2 SP Energy Networks

SP Energy Networks (SPEN) is part of the ScottishPower Group of companies. We provide power on behalf of supply companies through a network of cables and power lines that we own and maintain. We own and operate the following licence areas:

- **SP Transmission** plc (SPT) is responsible for the Transmission network in Central and Southern Scotland
- **SP Distribution** plc (SPD) is responsible for the Distribution network in Central and Southern Scotland
- **SP Manweb** plc (SPM) is responsible for the Distribution network in Merseyside, Cheshire, North Wales and North Shropshire

1.3 An introduction to the SP Distribution Network

The SP Distribution network supplies greater than 2 million customers in Central and Southern Scotland. The geographical area extends from Stirling in the North, Glasgow and Ayr in the West, Edinburgh in the East and Dumfries & Galloway in the South, covering an area of over 21,905 km². Electricity is taken from SP Transmission's 400 kV, 275 kV and 132 kV networks and distributed to our customers through a succession of networks operating at 33 kV, 22kV, 11 kV, 6.6kV and 400/230 V. There are also connections to Scottish & Southern Electricity Networks in the North and to an area around Berwick-upon-Tweed to the South of the Border.



SP Distribution Network Overview Distribution voltages

33 kV, 22 kV, 11 kV, 6.6 kV, 400/230 V

Assets (HV and above)

Overhead lines:	16,143 km
Underground cables	16,112 km
Transformers	42,621

Customers

2.01 million customers	
System Max Demand:	3.13 GW
Connected Generation (>1MW):	2.35 GW
Contracted Generation (>1MW):	3.00 GW

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Both the demand on the distribution system and the operation of generators are dynamic in nature and are dependent on many factors. The weather, dawn/dusk times, social or sports events and relative fuel cost all play a part in shaping the load profile and generation patterns.

The demand on the SP Distribution system varies throughout the day, and also over the seasons. Peak demand on the system generally occurs on a weekday in mid-winter and the minimum demand at the weekend during summer. The maximum system demand for the SP Distribution area for 2020/21 was 3,132 MW on Wednesday 13th January 2021 within the half hour ending 17:30 hours and was a milder winter than previous years.

We anticipate demand to return to pre-covid levels with relatively static demand in the short-term, as outlined in 'Section 2.3.10 Distribution System Demand', followed by a considerable increase in the medium to longer term driven by the electrification of heat and transport, and increases in industrial and commercial load. Our forecast is based on National Grid Future Energy Scenarios, local intelligence and regional decarbonisation ambitions. These forecasts are disaggregated to a local substation level in tables 'Appendix 3 System Loads'.

Flexibility and smart solutions will be key enablers to reducing the impact on system peak demand. We are progressing extensive work in this area and in 2021 issued tenders for 1.4GW of Flexibility Services at 1554 locations covering all voltages, for the period 2023-28. In addition, we are the only DNO to tender for Reactive Power services and in September 2021 completed an initial trial to dispatch Reactive Power services. We are progressing with deployment of wide scale Active Network Management and are pioneering the development of Active Fault Level Management to facilitate the management of system demand and generation.

We publish our Distribution Future Energy Scenarios for the SP Manweb licence area annually. This provides a range of credible pathways out to 2050, incorporating local intelligence and regional ambitions, enabling us to prepare for the challenges ahead and to support our communities' in their journeys towards Net Zero. We have engaged with a wide range of our stakeholders and received feedback, which is vital to making sure that our forecasts reflect the plans and ambitions of the local communities we serve. Our DFES documents provided in the weblink below describe how electricity generation and demand may evolve in our SP Distribution region over the next 30 years.

[Distribution Future Energy Scenarios - SP Energy Networks](#)

In line with the UK Government's plan to reduce carbon dioxide emissions, low-carbon generation technologies are increasingly being connected to the distribution network. This integration of Distributed Generation (DG) increases network fault levels and can consequently trigger significant network interventions.

SPEN's policy to manage the prospective fault level when it approaches or exceeds the rating of equipment is provided in Section 2.4.3 Substation Fault Levels.



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1.4 Content of the Long Term Development Statement

The Long Term Development Statement consists of the following content:

Part 1: Introduction

Part 2: Summary Information

- Network long term vision
- Design and operation philosophies of the network
- Network characteristics
- Indication of geographical arrangement of the network
- Statutory obligations and industry standards
- References to engineering recommendations and SPEN documentation
- Contact information

Part 3: Detailed Information

- Schematic diagrams detailing the normal operation of the distribution network
- Table 1: Circuit Data
- Table 2: Transformer Data
- Table 3: System Loads
- Table 4: Fault Levels
- Table 5: Embedded Generation

Part 4: Network development proposals and opportunities

- Network development proposals
- Connection request statistics

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1.5 Annual Publication and Obtaining the LTDS

The network changes over time and the data contained within the Long Term Development Statement include the known and anticipated developments at the data freeze date, usually the end of August each year. The analytical models, which form the basis of the Statement data, are finalised by the end of October. System maximum demand data and Grid Supply Point loads are for the period April to March. The detailed data tables section (Part 3: Detailed Information) is fully reassessed on an annual basis for publication in November each year. A brief mid-year update summary is published in May.

Access to the Long Term Development Statement requires registration only. After registration the statement document and associated data tables are available for download free of charge.

1.6 Further Information for Distributed Generation Connections

Information on how to connect a generation scheme onto our network can be found on the following webpage:

www.spenergynetworks.co.uk/pages/getting_connected.asp

Information on the location of network assets and capacity available can be found using our interactive mapping tool:

www.spenergynetworks.co.uk/pages/connection_opportunities.asp



SUPPORTING INFORMATION

Loss of Mains Change Programme
 Allocations other Distribution Network Operators (DNOs) and Independent Distribution Network Operators (IDNOs), we are part of the National Grid ESO 'Loss of Mains (LoM) Change Programme'.
 Read more...

Connecting Generation
 If you're thinking of installing a new generator (such as solar panels or wind turbines) it will need to be connected to the electricity network through your existing supply or through a new electricity connection.
 Read more...







Other Connection Providers: You have a Choice
 Competition in the connections market means you have a choice when selecting who provides some elements of your connection process.
 Read more...

Land Rights for Connections Customers
 We may need to run cable under or over land that isn't yours. Before doing so we will need to get consent to do so.
 Read more...

GETTING CONNECTED

Find out more about our connection services by selecting from the options below.

visit our **Customer Connections Portal**

<p>New Connection</p>  <p>FIND OUT MORE / APPLY NOW</p>	<p>Moving a Meter Point</p>  <p>FIND OUT MORE / APPLY NOW</p>	<p>Disconnection</p>  <p>FIND OUT MORE / APPLY NOW</p>
<p>Additional Load</p> <p>Increase capacity at meter point, electric vehicles and heat pumps.</p>  <p>FIND OUT MORE / APPLY NOW</p>	<p>Diversion</p> <p>Do you require us to move electricity cables or overhead power lines?</p>  <p>FIND OUT MORE / APPLY NOW</p>	<p>Unmetered Connection</p> <p>Do you require an unmetered connection to our network e.g. street lighting.</p>  <p>FIND OUT MORE / APPLY NOW</p>

We are here to support you. Find out how to contact us.

Getting Connected

Understanding the Connection Process

DISTRIBUTED GENERATION HEAT MAPS

Generation Connections

Are you thinking about installing a new generator? If so, it will need to be connected to our network either through your existing supply or through a new electricity connection.

Before we can connect you we have to make sure that our existing network is capable of providing the power you need to operate your equipment.

For smaller projects (smaller than or equal to 50kW), there is normally no need to worry about the capacity of our network but for larger projects we may need to carry out some work to connect your generator. We recommend that you engage with us at an early stage as it's important that you are aware of the timescales and costs involved before you begin your project. In advance of this we have a series of heatmaps that will give you an indication of the network's capability and a better understanding of potential opportunities to connect your generator to the electricity network.

SP Marweb
 Distributed Generation Heat Map

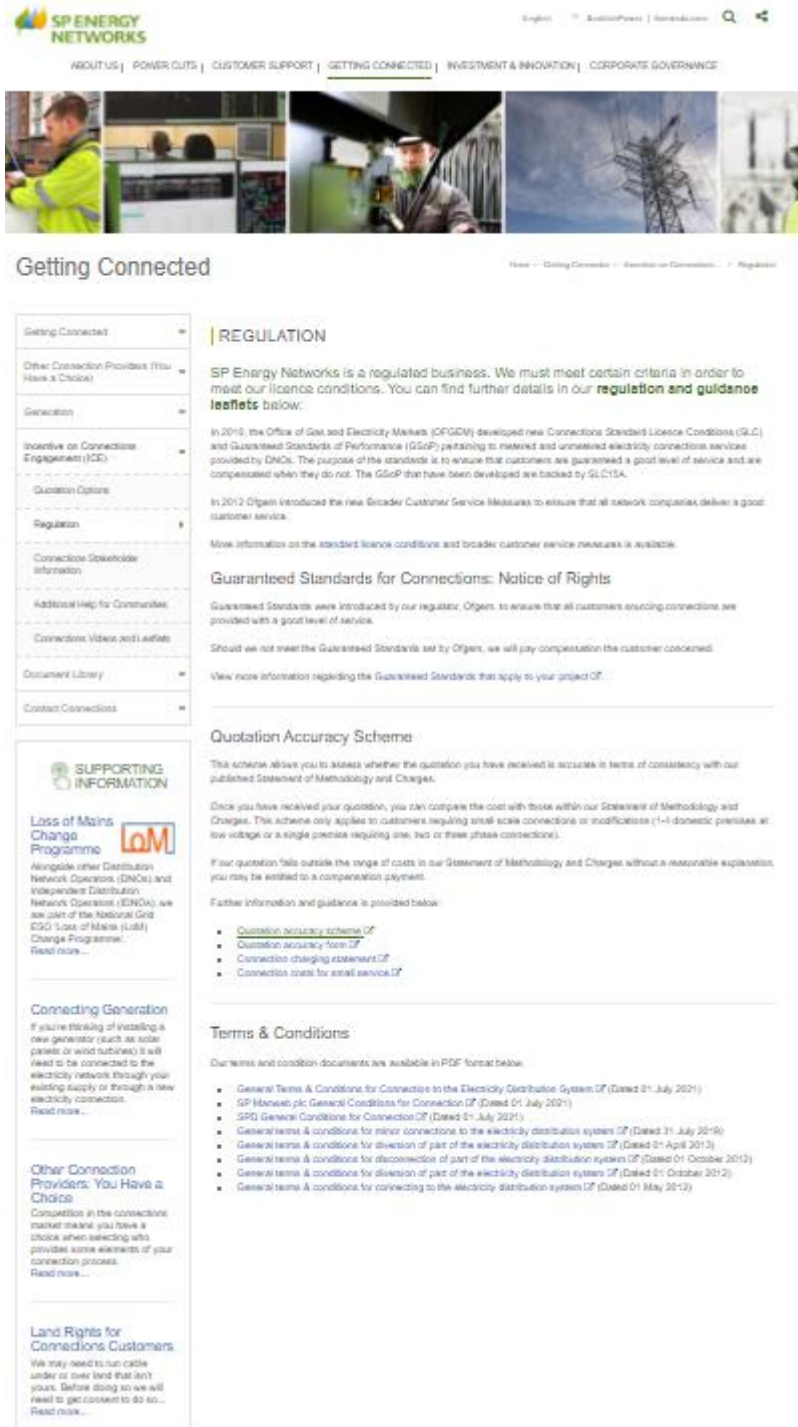
SP Distribution
 Distributed Generation Heat Map

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SP Energy Networks is a regulated business. We must meet certain criteria in order to meet our licence conditions. You can find further details on the following webpage:

https://www.spenergynetworks.co.uk/pages/regulation_guidance_leaflets.aspx



The screenshot shows the 'Getting Connected' page on the SP Energy Networks website. The page is divided into several sections:

- REGULATION**: A section explaining that SP Energy Networks is a regulated business and must meet certain criteria. It mentions the Office of Gas and Electricity Markets (Ofgem) and the Guaranteed Standards of Performance (GSoP). It also notes that in 2017, Ofgem introduced the new Broader Customer Service Measures to ensure that all network companies deliver a good customer service.
- Guaranteed Standards for Connections: Notice of Rights**: A section explaining that Guaranteed Standards were introduced by the regulator, Ofgem, to ensure that all customers availing connections are provided with a good level of service. It also states that if the company does not meet the Guaranteed Standards set by Ofgem, it will pay compensation to the customer concerned.
- Quotation Accuracy Scheme**: A section explaining that this scheme allows you to assess whether the quotation you have received is accurate in terms of consistency with our published Statement of Methodology and Charges. It also states that this scheme only applies to customers requiring small scale connections or modifications (1-4 domestic premises at low voltage or a single premises requiring one, two or three phase connections).
- Terms & Conditions**: A section listing various terms and conditions documents available in PDF format, such as 'General Terms & Conditions for Connection to the Electricity Distribution System' and 'SP Networks plc General Conditions for Connection'.

On the left side of the page, there is a navigation menu with the following items:

- Getting Connected
- Other Connection Providers (You Have a Choice)
- Generation
- Incentive on Connections Engagement (ICE)
- Question Options
- Regulation
- Connections Stakeholder Information
- Additional Help for Communities
- Connections Videos and Leaflets
- Document Library
- Contact Connections

Below the navigation menu, there are several informational sections:

- SUPPORTING INFORMATION**: A section with a 'Loss of Mains Change Programme' logo and text explaining that alongside other Distribution Network Operators (DNOs) and Independent Distribution Network Operators (IDNOs), it is part of the National Grid (NG) Loss of Mains (LoM) Change Programme.
- Connecting Generation**: A section explaining that if you're thinking of installing a new generator (such as solar panels or wind turbines), it will need to be connected to the electricity network through your existing supply or through a new electricity connection.
- Other Connection Providers: You Have a Choice**: A section explaining that competition in the connections market means you have a choice when selecting who provides some elements of your connection process.
- Land Rights for Connections Customers**: A section explaining that they may need to run cable under or over land that isn't yours, and before doing so, they will need to get consent to do so.

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1.7 Contact Information

Should you wish clarification on any aspect of this document, please contact:



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System Design and Asset Management,
Network Planning and Regulation,
SP Energy Networks,
ScottishPower House,
320 St. Vincent Street,
Glasgow. G2 5AD.
Telephone: +44 (0)141 614 1793

Opportunities exist for the connection of new load or generation throughout the SP Distribution system. System conditions and connection parameters are site specific and therefore the economics of a development may vary across the system. Developers are encouraged to discuss their development opportunities and SP Distribution will be pleased to advise on connection issues.

To discuss a specific enquiry about a new connection to the distribution network, or an enhancement to an existing connection, please contact:

Address: SP Energy Networks,
Network Connections,
55 Fullarton Drive,
Cambuslang,
Glasgow. G32 8FA.
Telephone: 0845 270 0785
Email: gettingconnected@scottishpower.com

