

SHEPD NETWORK DEVELOPMENT REPORT



1st May 2024





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INTRODUCTION

This is Scottish and Southern Electricity Networks Distribution's (SSEN-D) 2024 Network Development Report (NDR) for the SHEPD licence area. The NDR is part of a suite of new information that sets out our longer-term Network Development Plans for our Distribution networks. It gives users access to information pertaining to our network plans for the next ten years in relation to our 11kV networks and above, allowing all interested parties to better assess and identify the future opportunities to use and engage with us and the network. Specifically, it includes:

- a) A description of those parts of the Distribution Network Operator's (DNO's) network that are most suited to new connections and distribution of further quantities of electricity;
- b) A description of those parts of the DNO's network where reinforcement may be required to connect new capacity and new loads;
- c) Information that supports the secure and efficient operation, coordination, development and interoperability of the interconnected system; and
- d) Flexibility or Energy Efficiency Services that the DNO reasonably expects to need as an alternative to reinforcement.

This Report and our wider Network Development Plan (NDP) build on existing publications¹, including our Long-Term Development Statements and Flexibility Services publications, which provide information on our nearer-term opportunities and our key focus areas as we continue to develop and improve our network to meet the changing needs and requirements of all stakeholders. These supporting documents can be found in the following links.

- a) [Long term development statements \(LTDS\) - SSEN](#)
- b) [Flexibility - SSEN](#)

To aid users of this Report, we have worked with all DNOs across Great Britain to ensure consistency in reporting. SSEN-D, along with other DNOs and TOs across Great Britain, is a member of the Energy Networks Association (ENA). Through the ENA's Open Networks project, we have worked collaboratively to develop a Form of Statement of Network Development Plans² project. As a result of this work, the NDP is split into three distinct reports, as illustrated in Figure 1; the red box highlights the part that this document – the Network Development Report – represents.

¹ See Figure 2 in NDP – Methodology and Assumptions for existing publications and corresponding time horizons.

² [ENA NDP Form of Statement Template and Process \(22 Dec 2021\)](#)

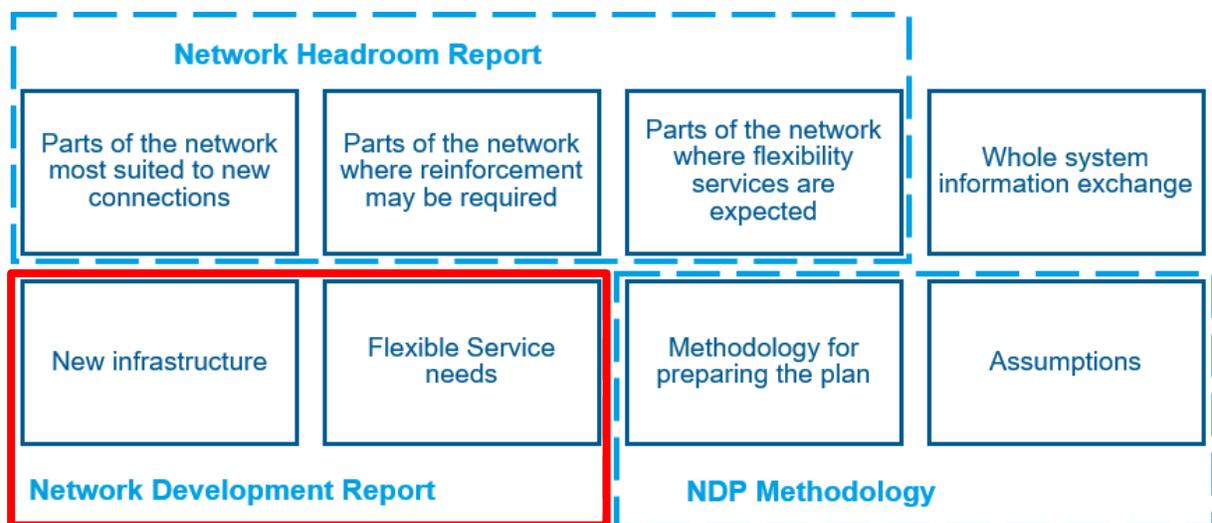


Figure 1: NDP Reporting Structure

Network Development Report (NDR) overview

The NDR provides a comprehensive view of our network, bringing together our plans for the current price control period (RIIO-ED2, which runs until March 2028) and initial programmes for subsequent years, up to 2034. It also references other key publications that set out the likely use and development of our network and the opportunities that this may present.

Using latest available Distribution Future Energy Scenarios (DFES) at the time of publication, the NDR sets out our proposed investments and likely areas for service requirements going forward. Together with the NDP Methodology, it also sets out the wider information used to inform this report, which users of our network can call upon to inform their own plans and activities. Further, the information contained within this report informs our Network Scenario Headroom Report (NSHR), which indicates potential investment opportunities for flexible services and new connections at a granular level across our network and allows interested parties to clearly correlate proposed areas of investment with changes in network headroom capacity.

The NDR provides a list of high-level plans for network interventions and flexible service requirements:

- For the next five to ten years;
- Location of the intervention;
- Requirements for flexibility services or increasing existing asset capacity; and
- When the works are forecast for delivery.



How to read this report

The NDR describes our forward programme of interventions required on our networks over the next five to ten years. This includes details of our proposed flexibility needs as well as network interventions. These decisions are derived from our network development process which is described in the accompanying NDP Methodology and Assumptions report as well as our latest Distribution Network Options Assessment (DNOA) methodology.

This section provides both guidance on the information pertaining to potential Flexibility Services and network interventions listed in the report. It also provides further context on our current suite of Flexibility Services.

We provide summary tables of forward-looking flexibility needs and network interventions in three sections within the body of this report. These are:

- **Part 1: Flexibility Service Solutions** – Known flexibility opportunities as reported in our latest SLC 31E procurement statement.
- **Part 2: SHEPD Interventions** – Interventions needed in SHEPD for projects in initial development and detailed development and delivery (see below).

The project statuses mentioned above refer to the following:

- **Projects in initial development** – these are projects which are still at an early phase of development and have yet to arrive at a DNOA outcome. As such there is still a possibility that the intervention may not be needed in its current form or at all. The use of flexibility may be a feasible outcome. These tend to be longer term projects. Further updates on these projects and other developments at an even earlier stage will be updated through our periodic DNOA outcome releases.
- **Projects in detailed development and delivery** – these are projects that have progressed into more detailed development and delivery. They include projects required for both primary reinforcement and asset replacement purposes. Going forward, an increasing proportion of primary reinforcement projects will be those that have been through the DNOA process and have been assessed as needing network intervention. Projects that have been through the first DNOA outcomes have been identified in this report. Some primary reinforcement projects on the list pre-date the DNOA process but will have been similarly assessed for flexibility needs.



Current Flexibility Services products

SSEN-D align with the definition of Flexibility Service products as agreed within the ENA’s Open Network Programme³. The four key services utilised across all distribution networks are: Scheduled Utilisation, Operational Utilisation, Scheduled Availability + Operational Utilisation, and Variable Availability + Operational Utilisation. Currently, SSEN-D primarily procures Variable Availability + Operational Utilisation – week ahead response for supporting the deferral of reinforcement. The payment terms for and definitions of these services are summarised in Figure 2.

	Product	Description	Decision timescales	Payment
Flexibility service products	Peak Reduction	This product seeks a reduction in peak power utilised over time. This response can manage peaks in demand.	■ Utilisation Instruction: At Trade	Utilisation
	Scheduled Utilisation	In this product, the time that flexibility is delivered has been pre-agreed in advance with the provider.	■ Utilisation Instruction: At Trade	Utilisation
	Operational Utilisation	This product allows for the use case where the amount of flexibility delivered is agreed nearer to real time.	■ Utilisation Instruction: Real Time or Week Ahead	Utilisation
	Operational Utilisation + Scheduled Availability	This product procures, ahead of time, the ability of an FSP to deliver an agreed change following a network abnormality.	■ Availability Refinement: Not allowed ■ Utilisation Instruction: Real Time or Day Ahead	Availability + Utilisation
	Operational Utilisation + Variable Availability	This product allows for DNOs and the ESO to procure a level of contracted capacity, but then refine the requirements in terms of availability closer to the event.	■ Availability Refinement: Week Ahead or Month Ahead ■ Utilisation Instruction: Real Time or Day Ahead or Week Ahead	Availability + Utilisation

Figure 2: New Standard Flexibility Service Products⁴

We will continue to dispatch services procured under previous names and Table 1 shows how the previous services match to the new names. It should be noted the mapping is not exact. Some variables, such as when availability instructions are given, have been adjusted to align with the new definitions.

Previous Product Name	New Product Name	Variation
Sustain	Scheduled Utilisation	
Secure	Variable Availability + Operational Dispatch	Month Ahead
Dynamic	Variable Availability + Operational Dispatch	Week Ahead

Table 1: Alimenter Flexible Services Products to ENA

Part 1 highlights where we are proposing to procure flexible services and the type of services required.

³ [https://www.energynetworks.org/assets/images/2023/Aug/on-flexibility-products-alignment-\(feb-2024\).pdf?1711357255](https://www.energynetworks.org/assets/images/2023/Aug/on-flexibility-products-alignment-(feb-2024).pdf?1711357255)

⁴ SLC 31E Flexibility Services Procurement Statement, available in our [Flexible Services Document Library](#)



GETTING IN TOUCH

Although the NDP provides a view of the future in terms of our investments and potential network constraints, we would encourage any party using this information in their decision-making process to engage with us ahead of making an application to connect or offer flexible services.

Table 2 sets out the key e-mail addresses, phone numbers and websites that can support you with your decision making:

Type of Enquiry	DNO	Email	Telephone	Website
Flexible Services	SHEPD SEPD	FlexibleServices@sse.com Flexibilityprocurement@sse.com	N/A	Flexible Solutions Flexibility Services - SSEN
Load Connections	SHEPD SEPD	connections@sse.com	0800 0483516	New Supplies Existing Supplies
Generation Connections (>50kW)	SHEPD SEPD	mcc@sse.com	0345 0724319	Generation Connections
Generation Connections (<50kW)	SHEPD	North.Microgen@sse.com	0345 0724319	Generation Connections Microgeneration connections - SSEN

Table 2: Contact details for different types of enquiries

Further, if you have any feedback on this NDR, or any aspect of the NDP, which we can use to improve future publications, we would like to hear from you. Please get in touch through the following address whole.system.distribution@sse.com. Please state “Network Development Plan Feedback” in the subject title.



PART 1: FLEXIBILITY SERVICE SOLUTIONS

This section provides information on the substations that have been identified as potential opportunities for flexible services due to their loading. The information includes the service requirement, the anticipated year that we would go to market and the years of forecast need. Further information is provided through our SLC 31E Flexibility Services Statement, which is an annual statement published on our website every April that sets out our Flexibility Service requirements for the forthcoming year. Further information on our flexibility requirements can be found in our Flexibility Services Document Library⁵.

To participate in the Bidding rounds listed in this section, flexibility services providers must first sign an Overarching Agreement. For more information on this, please refer to the website or email Flexibility Services team (see Table 2)⁶.

2024 Long Term Bidding Rounds

Greatest certainty of our future flexibility needs can be found from our 2024 anticipated flexibility service requirements. These are taken from the latest SLC 31E Flexibility Services Statement.

Table P1.1: May Bidding Round Anticipated Flexibility Service Requirements

Zone Name	Licence Area	Peak Capacity Required (MW)	Forecast Utilisation (MWh)	Voltage Level Flexibility Procured at (kV)	Service Start Year	Service End Year	Service Window
Abernethy	SHEPD	0.28	0.27	11	24/25	24/25	Winter 17:30-18:00
Springhill	SHEPD	1.5	3.9	11	24/25	24/25	Winter 17:00-18:30

⁵ <https://www.ssen.co.uk/our-services/flexible-solutions/flexibility-services/flexibility-services-document-library/>

⁶ <https://www.ssen.co.uk/our-services/flexible-solutions/flexibility-services/>



Table P1.2: August Bidding Round Anticipated Flexibility Service Requirements

Zone Name	Licence Area	Peak Capacity Required (MW)	Voltage Level Flexibility Procured at (kV)	First Year of Service	Last Year Service Required	Service Windows
Culloden	SHEPD	0.71	11	25/26	26/27	Winter 17:30–18:00
Burghmuir ⁷	SHEPD	1.08	33	25/26	25/26	Winter 15:00–16:00
Abernethy	SHEPD	0.99	11	25/26	25/26	Winter 17:30-18:30
Stoneywood	SHEPD	0.09	11	25/26	26/27	Winter 17:30-19:00

January 2025 Bidding Round

The review of the network using the DNOA network is ongoing and will be reviewed yearly. The areas where a review is expected to occur ahead of the January 2025 bidding round are listed in Table P1.3. Not all these areas will result in Flexibility Services being the optimal solution. If information is available sooner, some of these services may be procured in August 2024 bidding round.

Table P1.3: January 2025 Bidding Round Anticipated Flexibility Service Requirements

CMZ Name	Licence Area
Ashludie	SHEPD
Dufftown	SHEPD
Fort Widley	SHEPD

⁷ Listed as Inveralmond and Redgorton in the DNOA Outcomes report



PART 2: SHEPD INTERVENTIONS

This section provides information on planned interventions in the SHEPD licence area. It is organised based on stages of project development and delivery:

- **Projects in initial development** – these are projects which are still at an early phase of development and may yet to arrive at a DNOA outcome. As such there is still a possibility that the intervention may not be needed in its current form or at all. The use of flexibility may be a feasible outcome. These tend to be longer term projects. Further updates on these projects and other developments at an even earlier stage will be updated through our periodic DNOA outcome releases.
- **Projects in detailed development and delivery** – these are projects that have progressed into more detailed development and delivery. They include projects required for both primary reinforcement and asset replacement purposes. Going forward an increasing proportion of primary reinforcement projects will be those that have been through the DNOA process and have been assessed as needing network intervention. Projects that have been through the first DNOA outcomes have been identified in this report. Some primary reinforcement projects on the list pre-date the DNOA process but will have been similarly assessed for flexibility needs.

Interventions that apply to several substations are also separated into group reinforcement tables.

The information in the tables includes existing and updated capacity, or the capacity to be released, as well as the forecasted reinforcement completion date, which is reflected in the NSHR.

Figures P2.1 to P2.3 below show the supply areas of each Grid Supply Point (GSP) in the SHEPD licence area. In the GSP-specific sections that follow, only GSPs with network interventions in development / delivery are shown. Supply areas for Primary Substations are available on our [Open Data Portal](#).

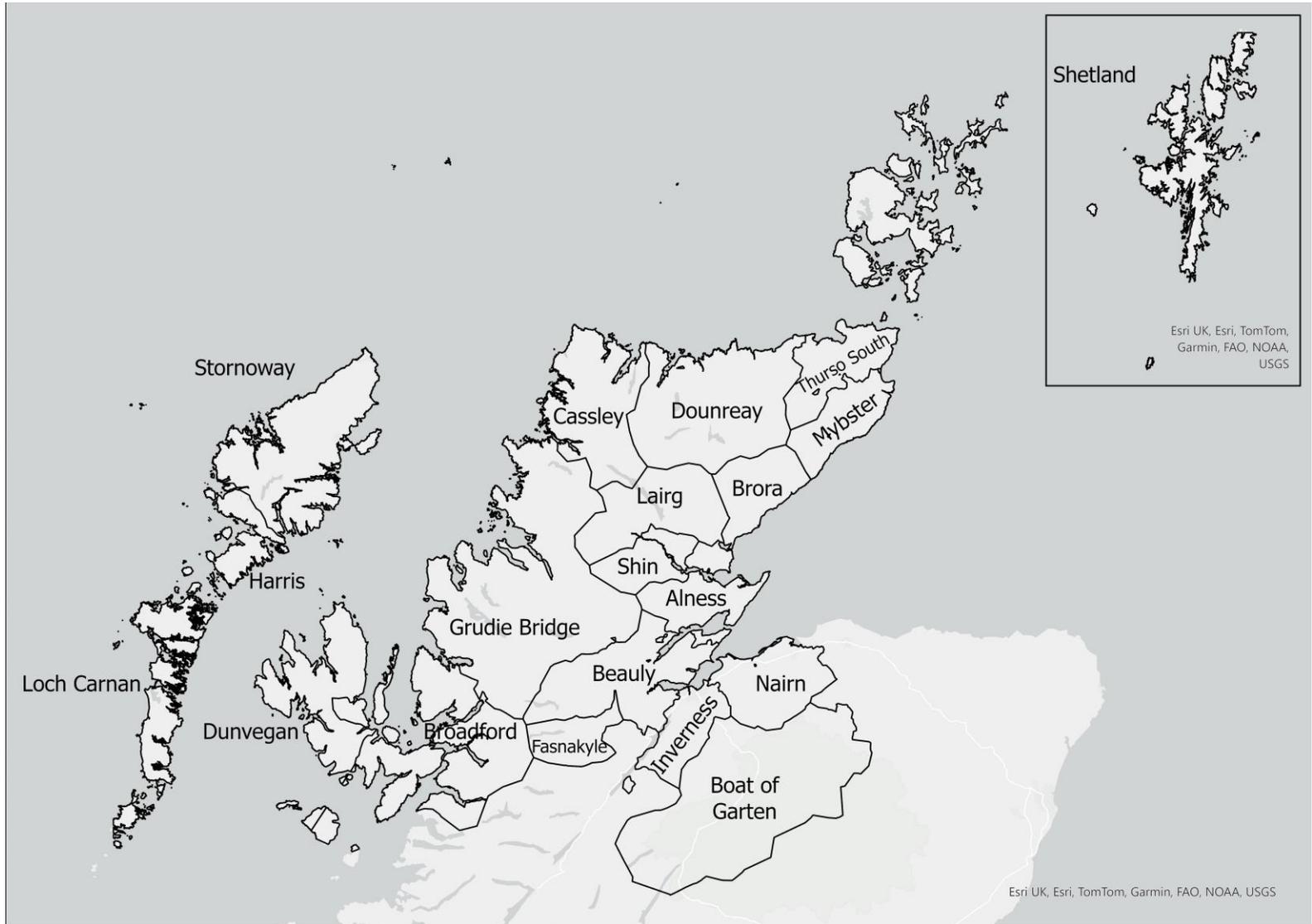


Figure P2.1: GSP Supply Areas in the northwestern portion of the SHEPD licence area.

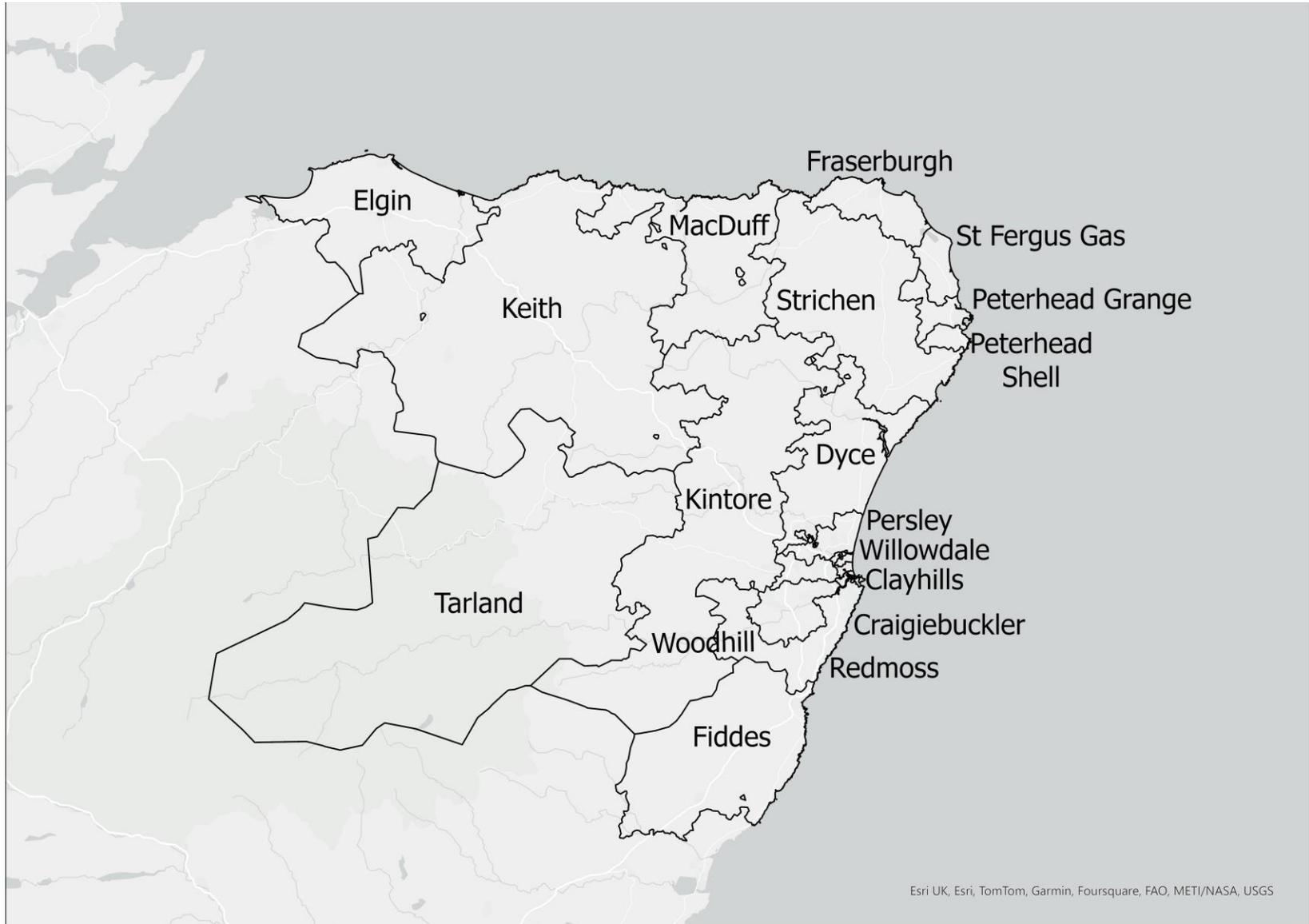


Figure P2.2: GSP Supply Areas in the eastern portion of the SHEPD licence area.

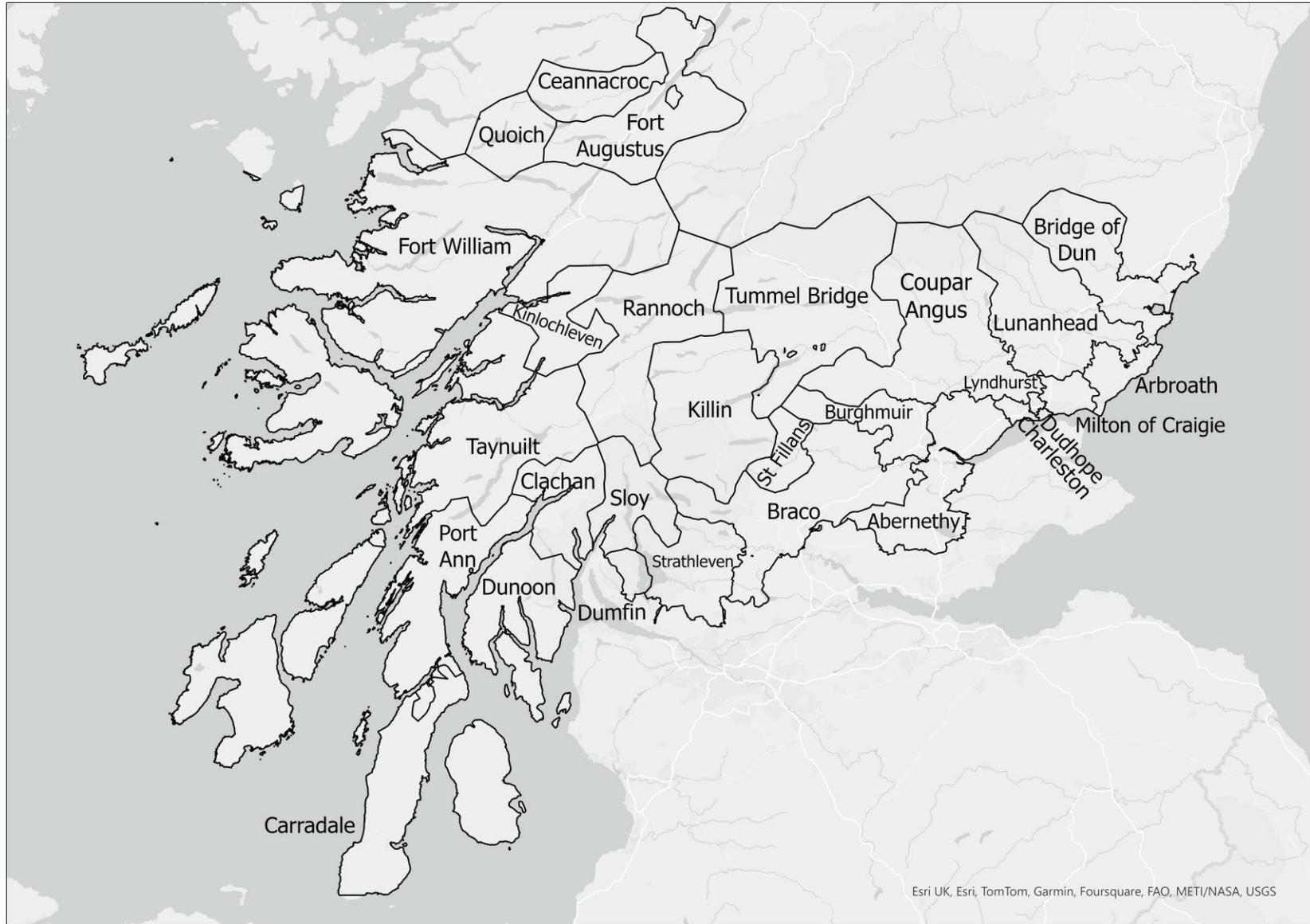
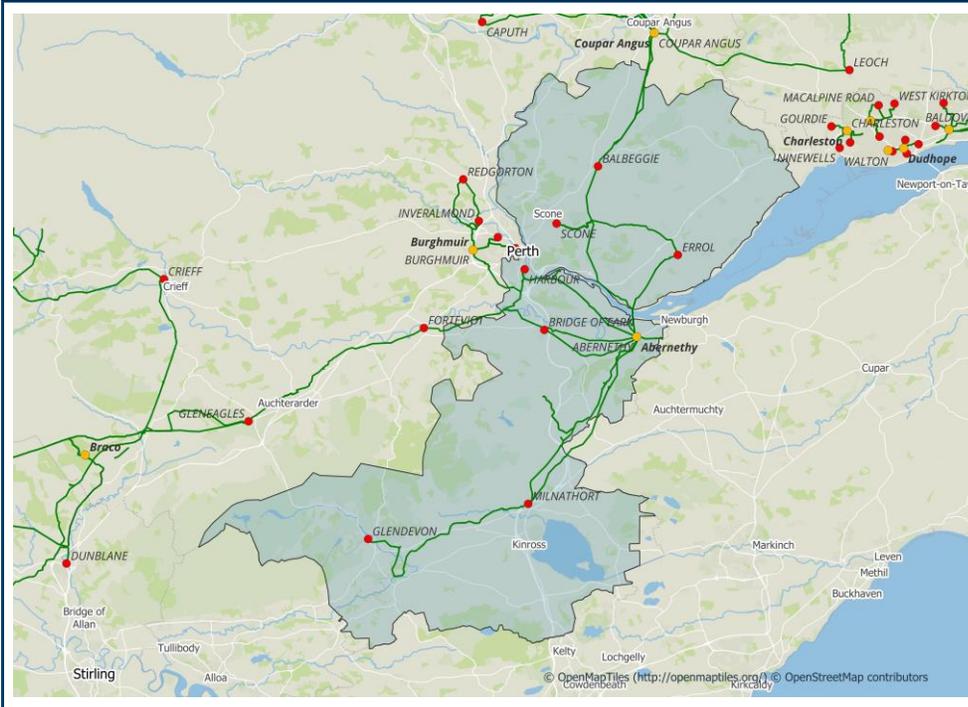


Figure P2.3: GSP Supply Areas in the southwestern portion of the SHEPD licence area.



Abernethy



Abernethy GSP Information

This GSP supplies the following primary substations:

- Abernethy
- Balbeggie
- Bridge of Earn
- Errol
- Glendevon
- Harbour
- Milnathort
- Scone

Abernethy GSP is located within the Tayside region of the SHEPD licence area and currently supplies approximately 22,935 customers.

Table P2.1 Abernethy GSP group reinforcement projects in initial development

Network Area	Primary/Secondary Voltage (kV)	Released Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Abernethy, Glendevon & Milnathort	33	57.3	-	Y	Reconfigure the Abernethy/Milnathort 33kV network via the addition of 2 new 33kV circuits	CV1 - Primary Reinforcement

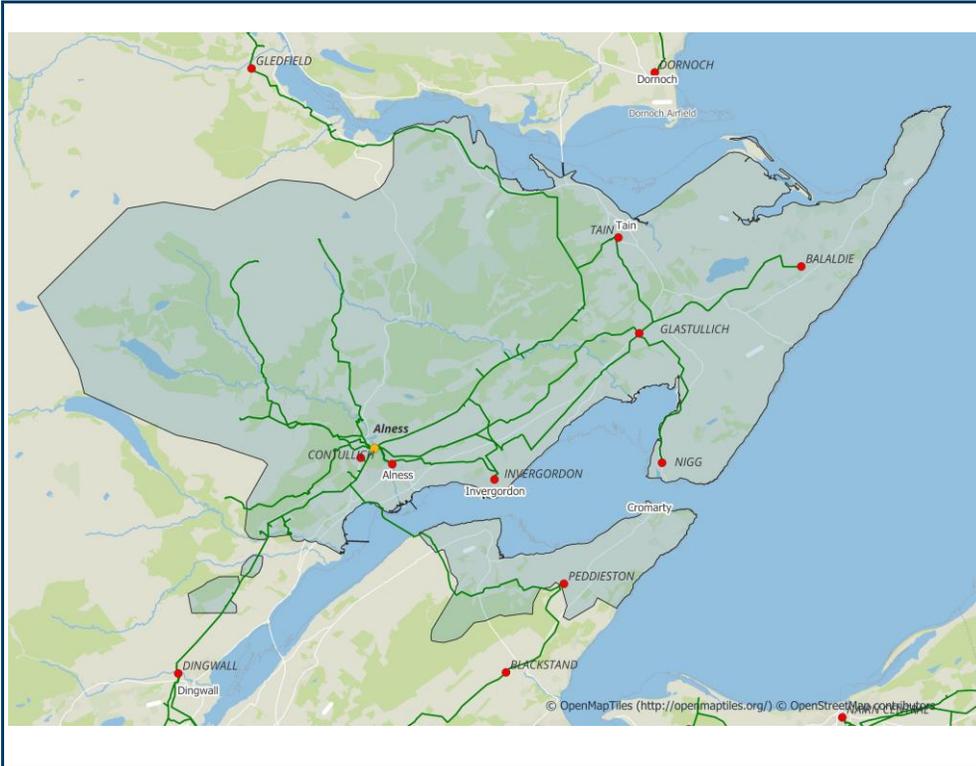


Table P2.2 Abernethy GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Balbeggie	33/11	5.45	8.85	2025/2026	N	Replace the single 5MVA transformer with a 7.5/15MVA unit	CV7 - Asset Replacement



Alness



Alness GSP Information

This GSP supplies the following primary substations:

- Balaldie
- Contullich
- Crosshills
- Glastullich
- Invergordon
- Nigg
- Peddieston
- Tain

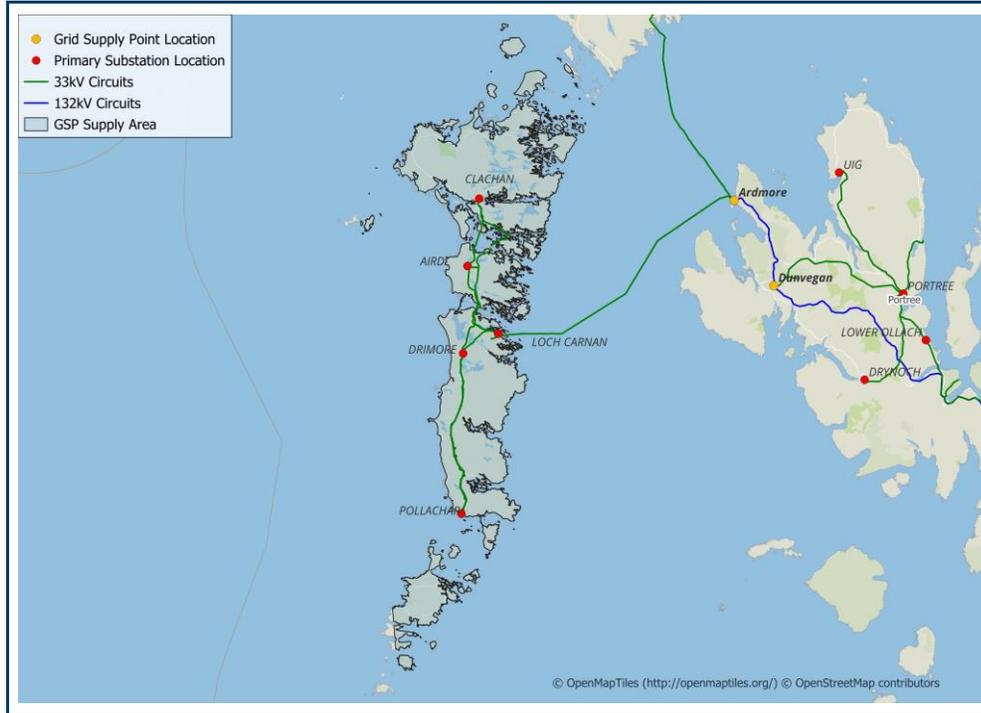
Alness GSP is located within the Highland region of the SHEPD licence area and currently supplies approximately 12,404 customers.

Table P2.3 Alness GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Glastullich	33/11	1.55	-	-	N	Scope unknown at this stage TBC	CV7 - Asset Replacement



Ardmore



Ardmore GSP Information

This GSP supplies the following primary substations:

- Aird
- Clachan
- Drimore
- Loch Carnan
- Pollachar

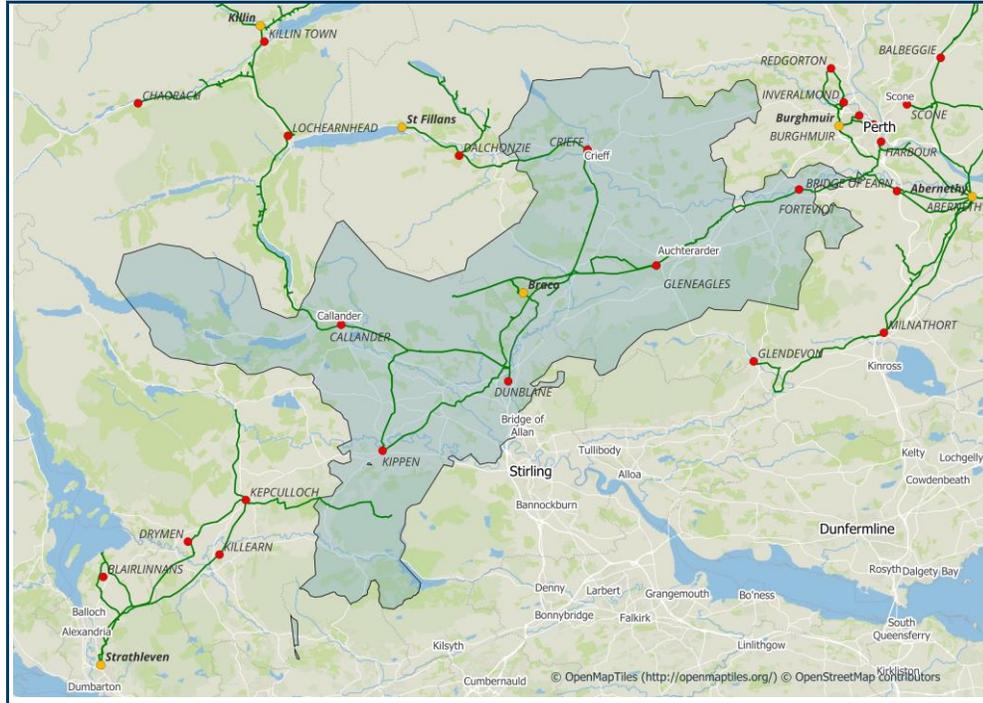
Ardmore GSP is located within the Inner Hebrides region of the SHEPD licence area and currently supplies approximately 4,601 customers.

Table P2.4 Ardmore GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Clachan	33/11	2.73	8.19	2024/2025	N	Replace T1 with a 6.3MVA unit and add a 2nd matching transformer	CV1 - Primary Reinforcement



Braco



Braco GSP Information

This GSP supplies the following primary substations:

- Callander
- Crieff
- Dunblane
- Forteviot
- Gleneagles
- Kippen

Braco GSP is located within the Perthshire and Stirlingshire region of the SHEPD licence area and currently supplies approximately 20,575 customers.

Table P2.5 Braco GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Crieff	33/11	15	-	2026/2027	N	Replace both 7.5/15MVA transformers; size of new transformers TBC	CV7 - Asset Replacement



Broadford



Broadford GSP Information

This GSP supplies the following primary substations:

- Broadford
- Kalnakil
- Kishornhill
- Kyle
- Lower Ollach
- Lusa*
- Nostie Bridge
- Shieldaig
- Skulamus

Broadford GSP is located on Skye within the SHEPD licence area and currently supplies approximately 6,079 customers.

Table P2.6 Broadford GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Lower Ollach	33/11	1	-	-	N	Scope unknown at this stage TBC	CV7 - Asset Replacement
Lusa*	33/11	0	-	-	N	Scope unknown at this stage TBC	CV1 – Primary Reinforcement

*New substation proposed; names have been assumed based on approximate proposed location for the NDP so may change



Table P2.7 Broadford GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Kyle	33/11	6.5	8.19	2025/2026	N	Replace both 5MVA transformers with 6.3MVA units	CV7 - Asset Replacement



Brora



Brora GSP Information

This GSP supplies the following primary substations:

- Brora
- Dornoch
- Golspie
- Helmsdale

Brora GSP is located within the Highland region of the SHEPD licence area and currently supplies approximately 4,669 customers.

Table P2.8 Brora GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Helmsdale	33/11	1.35	-	-	NN	Scope unknown at this stage TBC	CV7 - Asset Replacement



Burghmuir



Burghmuir GSP Information

This GSP supplies the following primary substations:

- Burghmuir
- Goodlyburn
- Inveralmond
- Redgorton
- Thimblerow

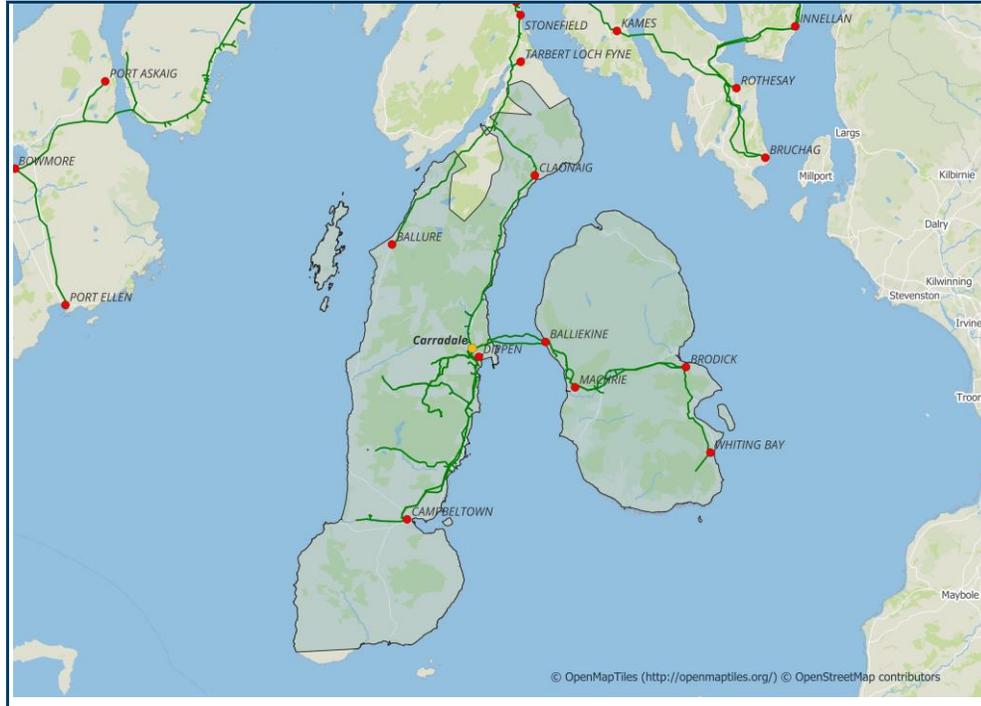
Burghmuir GSP is located within the Perth region of the SHEPD licence area and currently supplies approximately 24,177 customers.

Table P2.9 Burghmuir GSP group reinforcement projects in detailed development and delivery

Network Area	Primary/Secondary Voltage (kV)	Released Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Burghmuir – Inveralmond - Redgorton	33	23.6	2026/2027	Y	Installation and reinforcement of Burghmuir 33kV feeders to Inveralmond and Redgorton	CV1 - Primary Reinforcement



Carradale



Carradale GSP Information

This GSP supplies the following primary substations:

- Balliekin
- Ballure
- Brodick
- Campbeltown
- Claonaig
- Dippen
- Machrie
- Whiting Bay

Carradale GSP is located on the Mull of Kintyre in the SHEPD licence area and currently supplies approximately 9,743 customers.

Table P2.10 Carradale GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Dippen	33/11	1	1	2026/2027	N	Replace the existing single 1MVA transformer like-for-like - No change in capacity to report	CV7 - Asset Replacement



Table P2.11 Carradale GSP group reinforcement projects in initial development

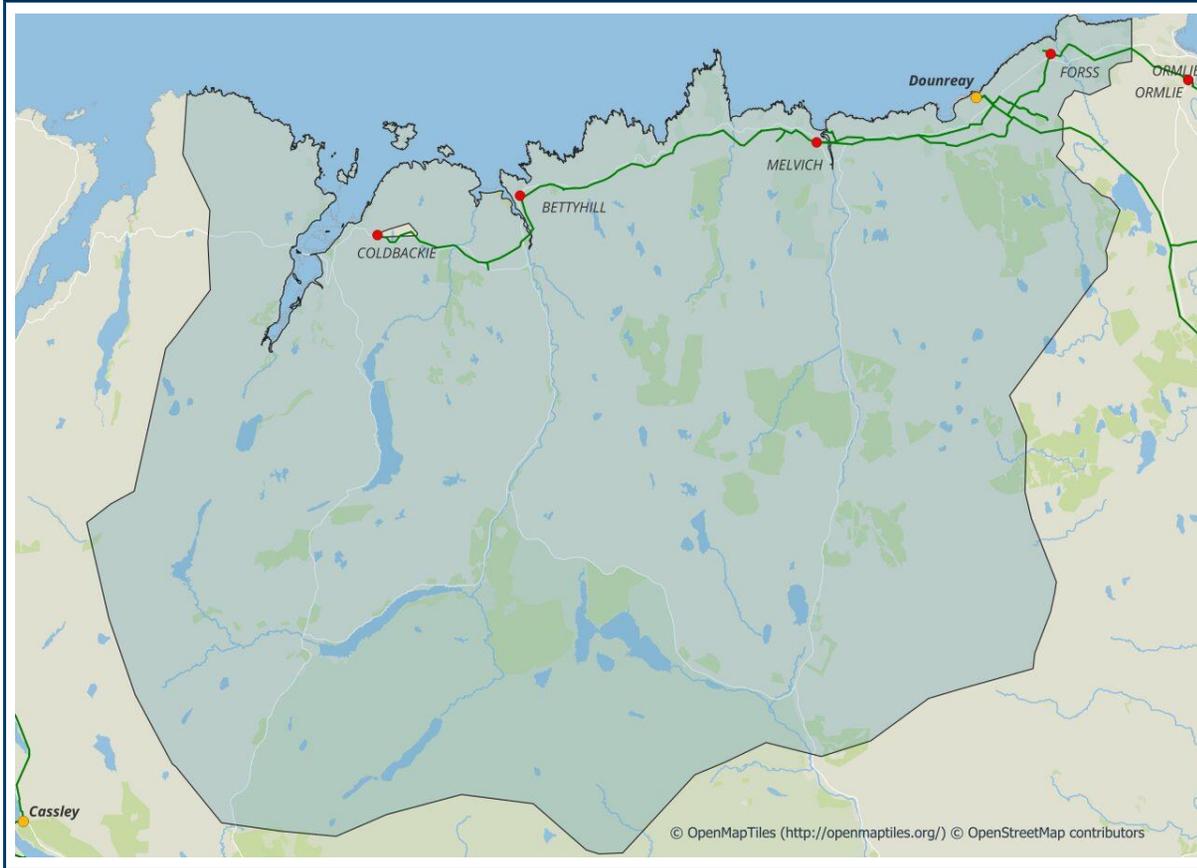
Network Area	Primary/Secondary Voltage (kV)	Released Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Machrie & Whiting Bay	11	1.09	-	Y	11kV reinforcement to improve voltage during N-1 conditions between Machrie and Whiting Bay.	CV2 - Secondary Reinforcement

Table P2.12 Carradale GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Machrie	33/11	2.73	5.2	2026/2027	N	Add a 2nd 4MVA transformer	CV1 - Primary Reinforcement



Dounreay



Dounreay GSP Information

This GSP supplies the following primary substations:

- Bettyhill
- Coldbackie
- Melvich
- Forss

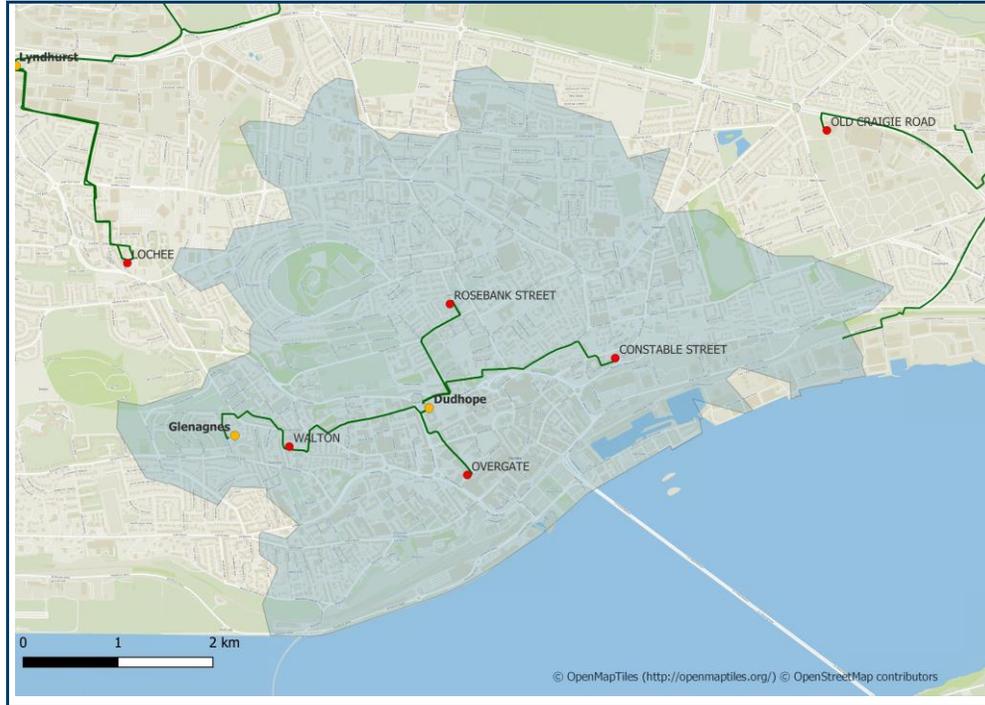
Dounreay GSP is located within the Caithness region of the SHEPD licence area and currently supplies approximately 1,823 customers.

Table P2.13 Dounreay GSP reinforcement projects in detailed development and delivery

Circuits	Primary/Secondary Voltage (kV)	Existing Rating (MVA)	Updated Rating (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Dounreay 7L5 and 8L5	33	N/A	N/A	2024/2025	N	Reinforcement of sections on Dounreay 7L5 and 8L5 to increase fault level capability.	CV3 – Fault Level Reinforcement



Dudhope



Dudhope GSP Information

This GSP supplies the following primary substations:

- Constable Street
- Overgate
- Rosebank Street
- Walton

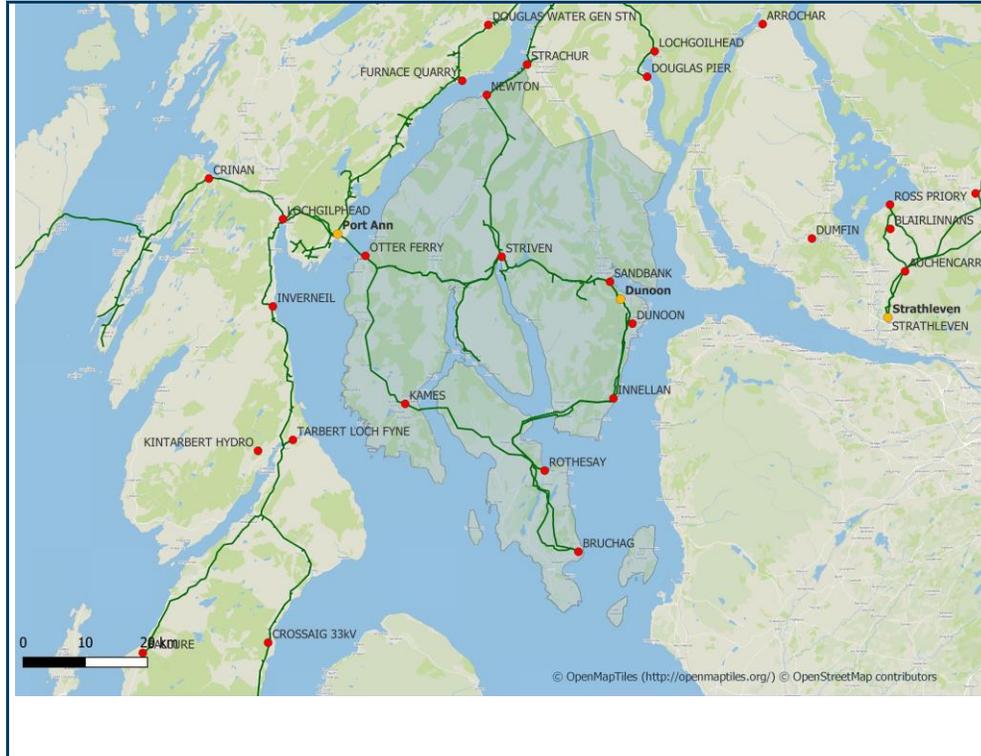
Dudhope GSP is located within the Dundee region of the SHEPD licence area and currently supplies approximately 26,955 customers.

Table P2.14 Dudhope GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Constable Street	33/11	15	29.1	2024/2025	N	Replace both 15MVA transformers with 15/30MVA units	CV1 - Primary Reinforcement



Dunoon



Dunoon GSP Information

This GSP supplies the following primary substations:

- Bruchag
- Colintrave
- Dunoon
- Glendaruel
- Innellan
- Kames
- Newton
- Otter Ferry
- Rothesay
- Sandbank

Dunoon GSP is located within the Argyll & West region of the SHEPD licence area and currently supplies approximately 15,867 customers.

Table P2.15 Dunoon GSP reinforcement projects in detailed development and delivery

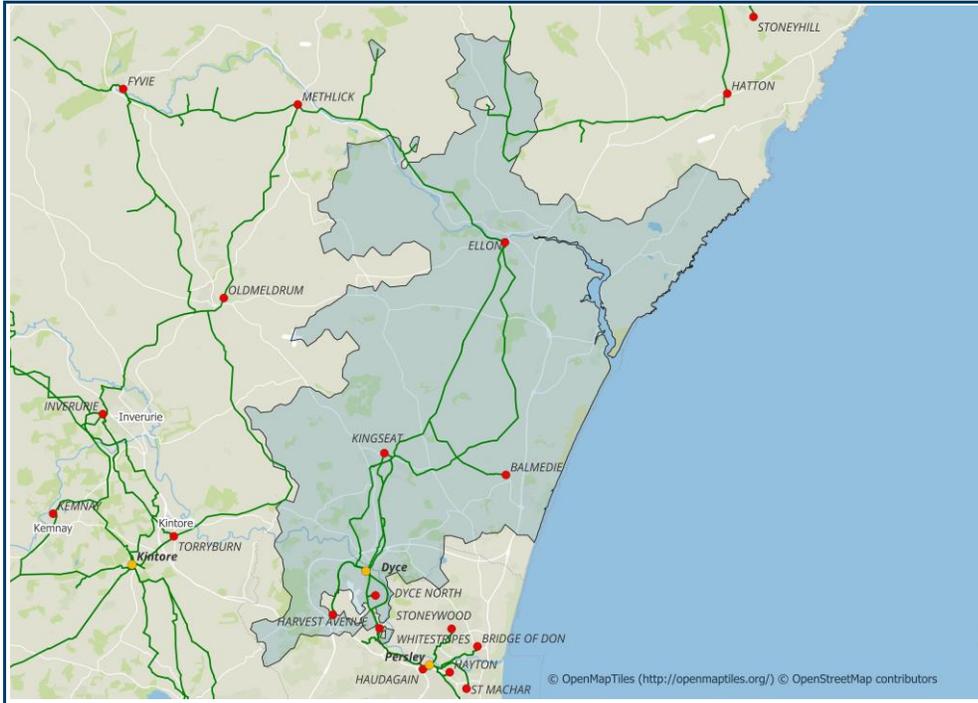
Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Glendaruel	33/11	0.3	0.41	2024/2025	N	Replace T1 with a 0.315MVA unit and add a 2nd matching transformer	CV1 - Primary Reinforcement
Rothesay	33/11	24	14.55	2025/2026	N	Replace both 12/24MVA transformers with 7.5/15MVA units	CV7 - Asset Replacement



Bruchag	33/11	10	14.55	2024/2025	N	Replace both 10MVA transformers with 7.5/15MVA units	CV7 - Asset Replacement
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Dyce



Dyce GSP Information

This GSP supplies the following primary substations:

- Balmedie
- Dyce North
- Ellon
- Harvest Avenue
- Kingseat
- Stoneywood T3

Dyce GSP is located within the Aberdeen region of the SHEPD licence area and currently supplies approximately 16,481 customers.

Table P2.16 Dyce GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Ellon	33/11	12.5	-	-	N	Transformers to be upgraded, sizes unknown at this stage TBC	CV1 - Primary Reinforcement



Table P2.17 Dyce GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Balmedie	33/11	4	7.5	2024/2025	N	Add a 2nd 4/8MVA transformer	CV1 - Primary Reinforcement
Kingseat	33/11	5	14.55	2026/2027	N	Replace both 5MVA transformers with 7.5/15MVA units	CV1 - Primary Reinforcement



Elgin



Elgin GSP Information

This GSP supplies the following primary substations:

- Ashgrove
- Bilbohall
- Burghead
- Cumming Street
- Elgin
- Fochabers
- Kinloss
- Lhanbryde
- Lossiemouth

Elgin GSP is located within the Elgin region of the SHEPD licence area and currently supplies approximately 26,364 customers.

Table P2.18 Elgin GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Ashgrove	33/11	10	23.28	2025/2026	N	Replace T1 with a 12/24MVA unit and add a 2nd matching transformer	CV1 - Primary Reinforcement
Bilbohall	33/11	12	23.28	2025/2026	N	Replace T1 with a 12/24MVA unit and add a 2nd matching transformer	CV1 - Primary Reinforcement



Fort William



Fort William GSP Information

This GSP supplies the following primary substations:

- Annat
- Arisaig
- Corran
- Fishnish
- Glenuig
- Inverlochry
- Kingairloch
- Kinlochmoidart
- Liddesdale
- Lochaline
- Mallaig
- Pinegrove
- Poor House
- Rahoy
- Salen 2
- Shona Beg
- Strontian

Fort William GSP is located within the Highland region of the SHEPD licence area and currently supplies approximately 11,308 customers.



Table P2.19 Fort William GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Glenug	33/11	0.1	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement
Corran	33/11	1	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement
Salen 2	33/11	2.5	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement



Table P2.20 Grudie Bridge GSP reinforcement projects in initial development

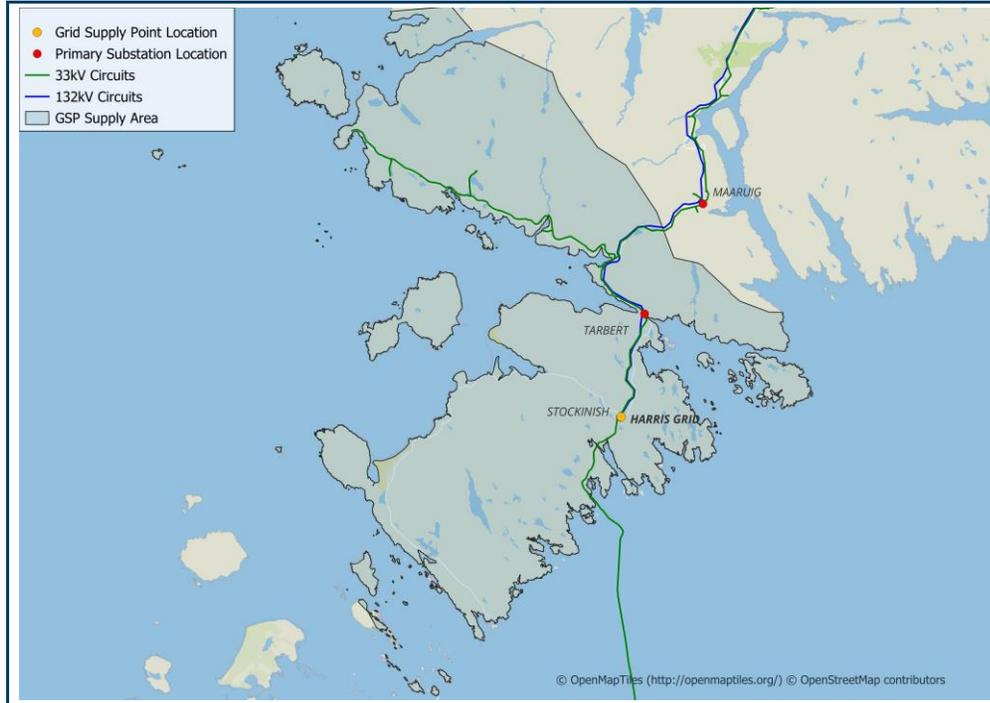
Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Kerry Falls	33/11	3.7	-	-	N	Scope unknown at this stage TBC	CV7 - Asset Replacement

Table P2.21 Grudie Bridge GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Ullapool	33/11	2.5	5.2	2027/2028	N	Replace T1 with a 4MVA transformer to match T2	CV1 - Primary Reinforcement



Harris



Harris GSP Information

This GSP supplies the following primary substations:

- Stochinish
- Tarbert

Harris GSP is located within on the Western Isles within the SHEPD licence area and currently supplies approximately 1,627 customers.

Table P2.22 Harris GSP reinforcement projects in detailed development and delivery.

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Harris	33	29.3	35.4	2026/2027	N	Upgrade 5.6km of 33kV circuit supplying Harris	CV1 – Primary Reinforcement



Inverness

Inverness GSP Information

This GSP supplies the following primary substations:

- Culloden
- Dalneigh
- Errogie
- Foyers
- Hilton
- Inverarnie
- Inverness
- Longman Drive
- Raigmore
- Waterloo Place

Inverness GSP is located within the Inverness region of the SHEPD licence area and currently supplies approximately 37,079 customers.

Table P2.23 Inverness GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Waterloo Place	33/11	23	38.1	TBC	N	Replace both 11.5/23MVA transformers with 20/40MVA units	CV1 - Primary Reinforcement



Table P2.24 Inverness GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Longman Drive	33/11	0	23.28	2024/2025	N	Establish a new 2 x 12/24MVA substation at Longman Drive	CV1 - Primary Reinforcement
Culloden	33/11	15	23.28	2026/2027	Y	Replace both 7.5/15MVA transformers with 12/24MVA units	CV1 - Primary Reinforcement
Inverness	33/11	10	14.55	2024/2025	N	Replace both 10MVA transformers with 7.5/15MVA units	CV7 - Asset Replacement



Keith

	<h3>Keith GSP Information</h3> <p>This GSP supplies the following primary substations:</p> <ul style="list-style-type: none"> • Aberlour • Buckie • Cullen • Dufftown • Huntly • Inch • Keith • Limehillocks • Marnoch • Rothes <p>Keith GSP is located within the Northeast region of the SHEPD licence area and currently supplies approximately 26,381 customers.</p>
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Table P2.25 Keith GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Dufftown	33/11	5	14.55	-	N	Replace both 5MVA transformers with 7.5/15MVA units	CV1 - Primary Reinforcement



Table P2.26 Keith GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Insch	33/11	7.5	14.55	2026/2027	N	Replace both 5/7.5MVA transformers with 7.5/15MVA units	CV1 - Primary Reinforcement
Insch	33/11	N/A	N/A	2026/2027	N	Replacement of the Insch Primary 11kV switchboard to increase circuit breaker ratings.	CV3 – Fault Level Reinforcement

Table P2.27 Keith GSP group reinforcement projects in detailed development and delivery

Network Area	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Keith 1	33	24.59	32.27	2028/2029	Y	A combination of network reconfiguration and reinforcement of existing assets	CV1 - Primary Reinforcement
Keith 2	33	20.34	21.64	2025/2026	Y	Reinforce voltage compensation equipment at the new Glenrothes Distillery 33kV switchboard and loop into the 33kV ring	CV1 - Primary Reinforcement



Kintore

Kintore GSP Information

This GSP supplies the following primary substations:

- Banchory
- Fyvie
- Inverurie
- Kemnay
- Methlick
- Midmar
- Oldmeldrum
- Park
- Skene
- Torryburn

Kintore GSP is located within the Aberdeenshire region of the SHEPD licence area and currently supplies approximately 33,997 customers.

Table P2.28 Kintore GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Oldmeldrum	33/11	8	-	-	N	Transformers to be upgraded, sizes unknown at this stage TBC	CV1 - Primary Reinforcement
Banchory	33/11	14	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement



Table P2.29 Kintore GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Methlick	33/11	5	8.19	2025/2026	N	Replace T1 with a 6.3MVA transformer to match T2	CV1 - Primary Reinforcement



Lairg



Lairg GSP Information

This GSP supplies the following primary substations:

- Lairg
- Torboll
- Tressady

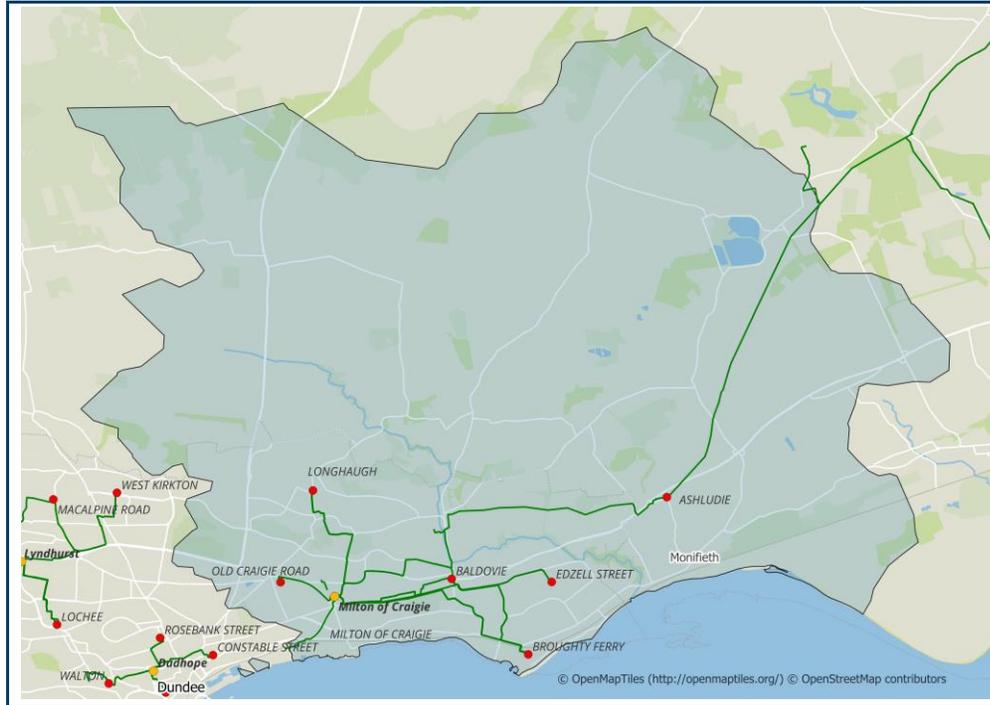
Lairg GSP is located within the Sutherland region of the SHEPD licence area and currently supplies approximately 1,153 customers.

Table P2.30 Lairg GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Tressady	33/11	0.5	1	2027	N	Replace the single 0.5MVA transformer with a 1MVA unit	CV1 - Primary Reinforcement



Milton of Craigie



Milton of Craigie GSP Information

This GSP supplies the following primary substations:

- Ashludie
- Baldovie
- Broughty Ferry
- Edzell Street
- Longhaugh
- Milton of Craigie
- Old Craigie Road

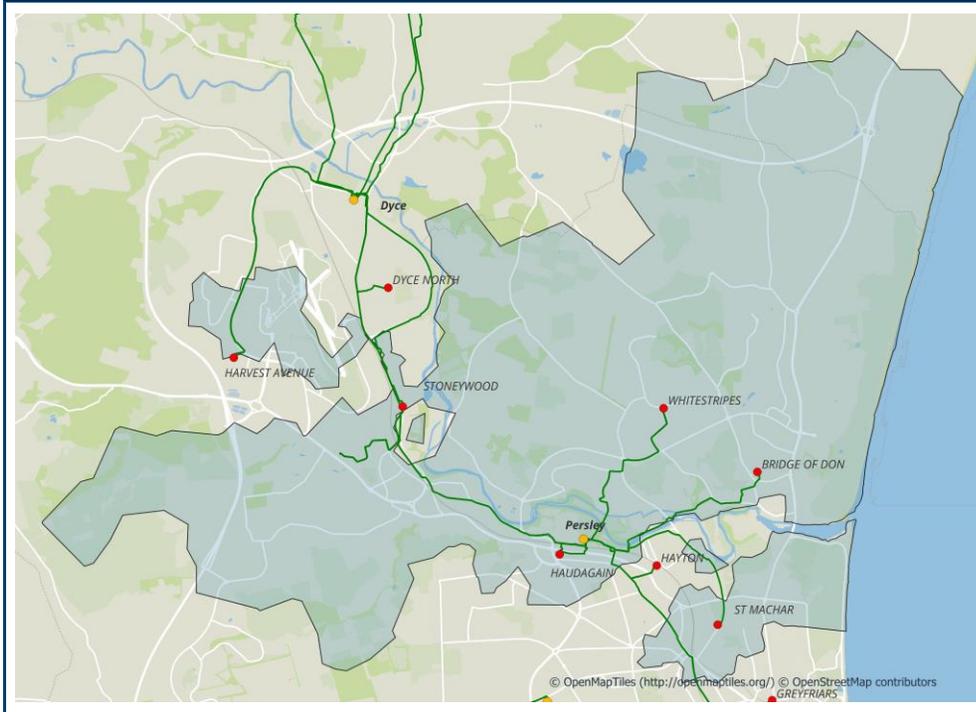
Milton of Craigie GSP is located within the Dundee region of the SHEPD licence area and currently supplies approximately 31,895 customers.

Table P2.31 Milton of Craigie GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Ashludie	33/11	13	29.1	2026/2027	N	Replace existing 10MVA transformers with 15/30MVA units	CV1 – Primary Reinforcement



Persley



Persley GSP Information

This GSP supplies the following primary substations:

- Bridge of Don
- Haudagain
- St Machar
- Stoneywood T1 & T2
- Whitestripes

Persley GSP is located within the Aberdeen region of the SHEPD licence area and currently supplies approximately 28,889 customers.

Table P2.32 Persley GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Stoneywood T1 & T2	33/11	23.28	38.1	-	N	Replace the existing 12/24MVA transformers with 20/40MVA units	CV1 – Primary Reinforcement



Table P2.33 Persely GSP group reinforcement projects in initial development

Network Area	Primary/Secondary Voltage (kV)	Released Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Persely to Stoneywood T1 & T2 33kV Network	33	6	-	N	Replacement of 33kV circuits feeding Stoneywood T1 & T2	CV1 – Primary Reinforcement



Port Ann



Port Ann GSP Information

This GSP supplies the following primary substations:

- Airigh-Na-Brodaig
- Bowmore
- Crinan
- Cromalt
- Inverneil
- Lochgilhead
- Lussagiven
- Port Askaig
- Port Ellen
- Stonefield
- Tarbert Jura
- Tarbert Loch Fyne

Port Ann GSP is located within the Argyll & Bute region of the SHEPD licence area and currently supplies approximately 9,023 customers.

Table P2.34 Port Ann GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Cromalt	33/11	0.05	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement



Crinan	33/11	1	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement
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Rannoch



Rannoch GSP Information

This GSP supplies the following primary substations:

- Blackmount
- Bridge of Gaur
- Glenetive
- Tyndrum

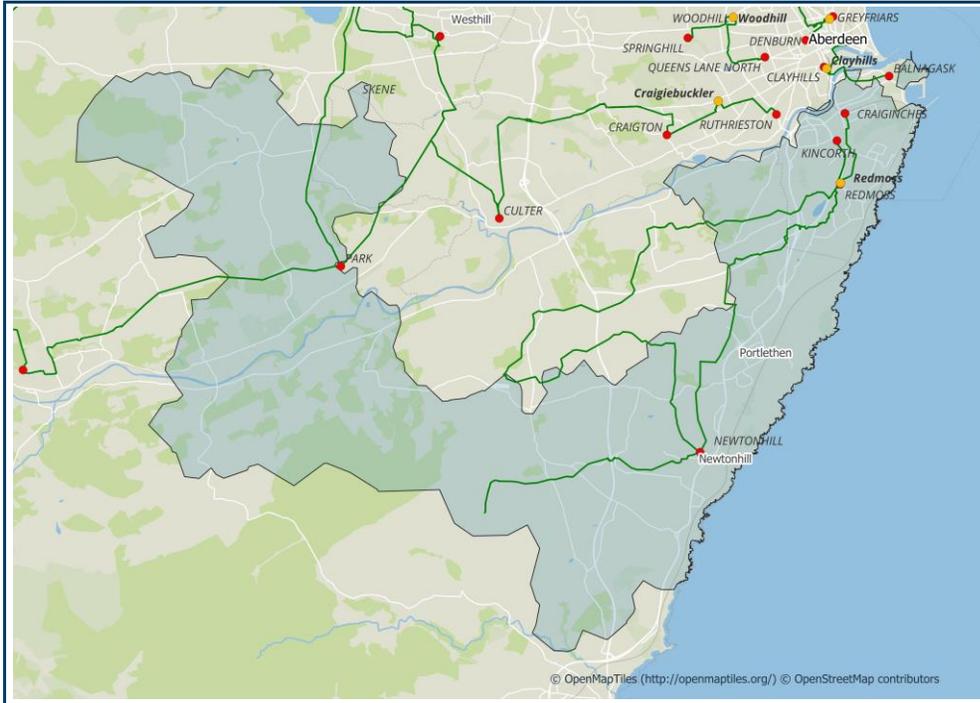
Rannoch GSP is located within the Perthshire region of the SHEPD licence area and currently supplies approximately 506 customers.

Table P2.35 Rannoch GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Bridge of Gaur	33/11	0.5	1	2025/2026	N	Replace the single 0.5MVA transformer with a 1MVA unit	CV7 - Asset Replacement



Redmoss



Redmoss GSP Information

This GSP supplies the following primary substations:

- Kincorth
- Newtonhill
- Redmoss

Redmoss GSP is located within the Aberdeenshire the SHEPD licence area and currently supplies approximately 19,409 customers.

Table P2.36 Redmoss GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Newtonhill	33/11	15	29.1	2026/2027	N	Replace both 7.5/15MVA transformers with 15/30MVA units	CV1 - Primary Reinforcement
Craiginchies	33/11	22.86	-	-	N	Scope unknown at this stage TBC	CV7 - Asset Replacement



Shetland



Shetland GSP Information

This GSP supplies the following primary substations:

- Brae
- Firth
- Gremista
- Gutcher
- Mid Yell
- Sandwick
- Scalloway
- Sumburgh
- Tumblin
- Unst
- Voe

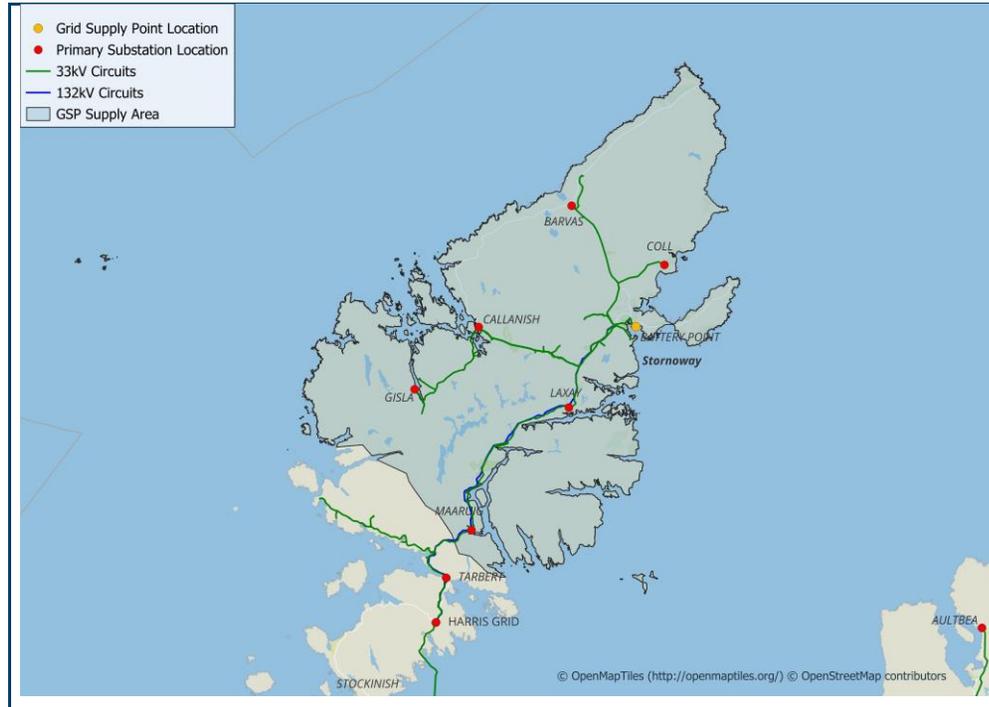
Shetland GSP is located on the Shetland islands within the SHEPD licence area and currently supplies approximately 14,436 customers.

Table P2.37 Shetland GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Scalloway	33/11	1	7.76	2027/2028	N	Add a 2nd 8MVA transformer	CV1 - Primary Reinforcement
Sandwick	33/11	2.8	7.76	2027/2028	N	Add a 2nd 8MVA transformer	CV1 - Primary Reinforcement



Stornoway



Stornoway GSP Information

This GSP supplies the following primary substations:

- Arnish
- Barvas
- Battery Point
- Callanish
- Coll
- Gisla
- Laxay
- Maaruig

Stornoway GSP is located in the Western Isles region of the SHEPD licence area and currently supplies approximately 12,455 customers.

Table P2.38 Stornoway GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Gisla	33/11	1	-	-	N	Add a 2nd transformer to Gisla, size TBC	CV1 - Primary Reinforcement
Barvas	33/11	1	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement
Coll	33/11	2.5	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement



Table P2.39 Stornoway GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Battery Point	33/11	16	29.1	2026/2027	N	Replace all three 4/8MVA transformers with two 15/30MVA units	CV7 - Asset Replacement

Table P2.40 Stornoway GSP group reinforcement projects in detailed development and delivery

Network Area	Primary/Secondary Voltage (kV)	Released Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Stornoway	33	0.23	2026/2027	N	Add a 4MVA STATCOM to Stornoway 305 to alleviate forecast voltage issues.	CV1 - Primary Reinforcement



Strichen



Strichen GSP Information

This GSP supplies the following primary substations:

- Hatton
- Maud
- Mintlaw
- New Pitsligo
- Stoneyhill
- Strichen

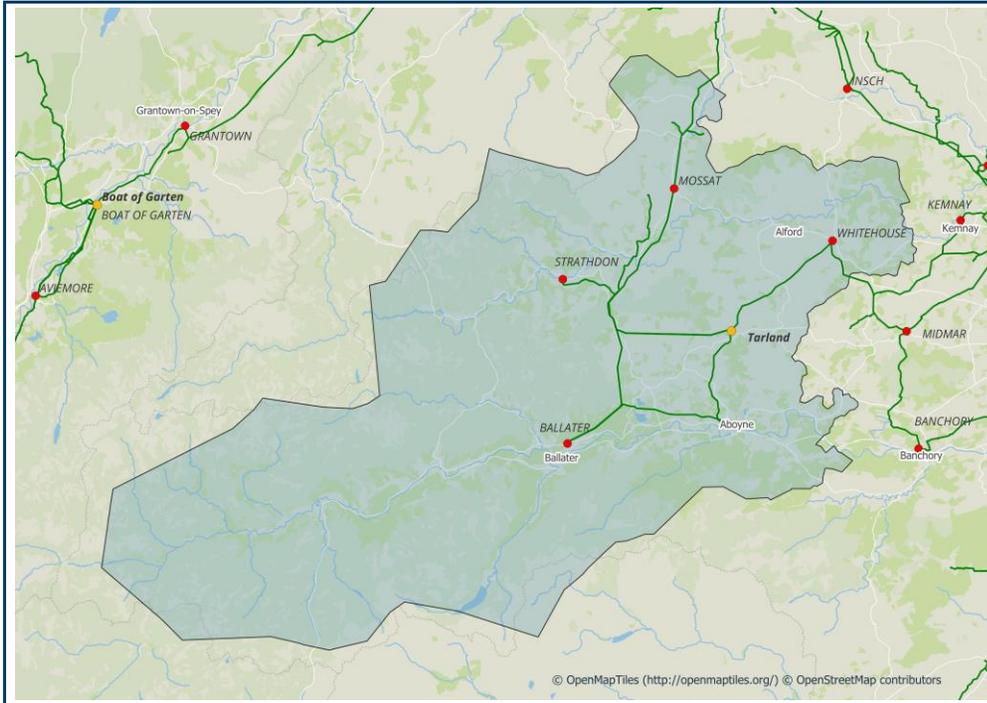
Strichen GSP is located within the Aberdeenshire region of the SHEPD licence area and currently supplies approximately 9,613 customers.

Table P2.41 Strichen GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
New Pitsligo	33/11	2.5	8.19	2025/2026	N	Replace both 2.5MVA transformers with 6.3MVA units	CV1 - Primary Reinforcement



Tarland



Tarland GSP Information

This GSP supplies the following primary substations:

- Aboyne
- Ballater
- Mossat
- Strathdon
- Whitehouse
- Braemar*

Tarland GSP is located within the Aberdeenshire region of the SHEPD licence area and currently supplies approximately 10,237 customers.

Table P2.42 Tarland GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Braemar*	33/11	0	8.19	-	Y	Establish a new twin 6.3MVA primary substation in the Braemar area	CV1 - Primary Reinforcement
Mossat	33/11	3.25	7.5	-	N	Replacement of the existing 2.5MVA transformers at Mossat Primary with 8MVA units.	CV1 - Primary Reinforcement

*New substation proposed; names have been assumed based on approximate proposed location for the NDP so may change



Table P2.43 Tarland GSP group reinforcement projects in initial development

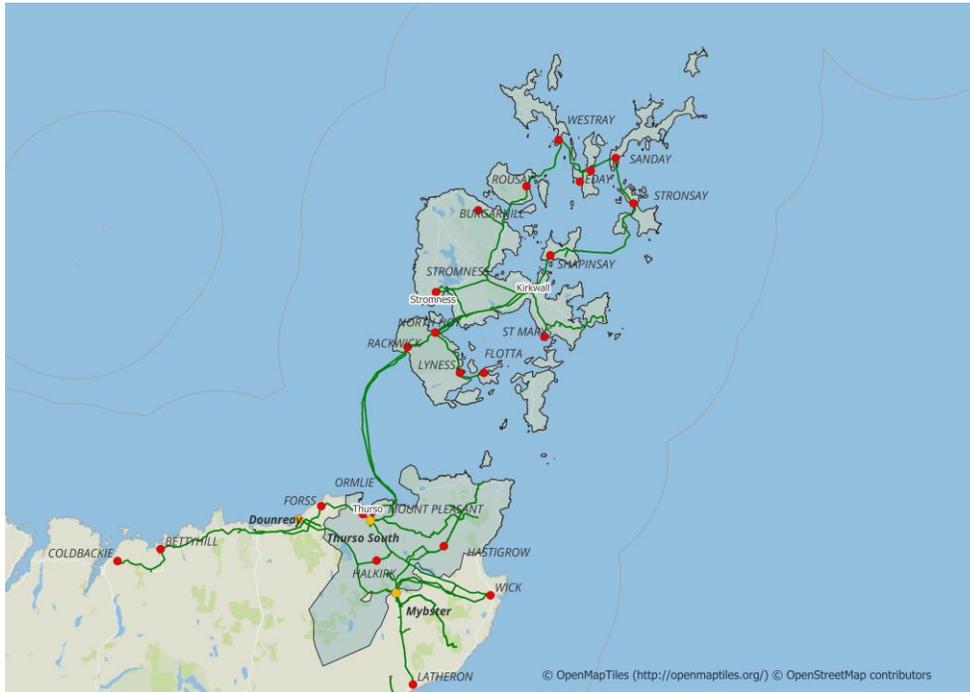
Network Area	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Tarland Interconnection Circuits	33	-	-	-	N	Reinforce sections of Tarland 3L5 and 4L5	CV1 - Primary Reinforcement

Table P2.44 Tarland GSP group reinforcement projects in detailed development and delivery

Network Area	Primary/Secondary Voltage (kV)	Released Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Aboyne & Ballater	33	15.6	2027/2028	Y	Separate Aboyne Primary from the Tarland 33kV ring and establish a new Primary Substation in Braemar.	CV1 - Primary Reinforcement



Thurso South



Thurso South GSP Information

This GSP supplies the following primary substations:

- Burgarhill
- Eday
- Eday Tidal
- Flotta
- Forss
- Halkirk
- Hastigrow
- Kirkwall
- Lyness
- Mount Pleasant
- North Hoy
- Ormlie
- Rackwick
- Rousay
- Sanday
- Shapinsay
- South Ronaldsay*
- St Marys
- Stromness
- Stronsay
- Westray

Thurso South GSP is located within the Caithness region of the SHEPD licence area and currently supplies approximately 22,765 customers.



Table P2.45 Thurso South GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Halkirk	33/11	2.23	-	-	N	Scope unknown at this stage TBC	CV1 - Primary Reinforcement
South Ronaldsay*	33/11	0	-	-	N	Scope unknown at this stage TBC	CV1 – Primary Reinforcement

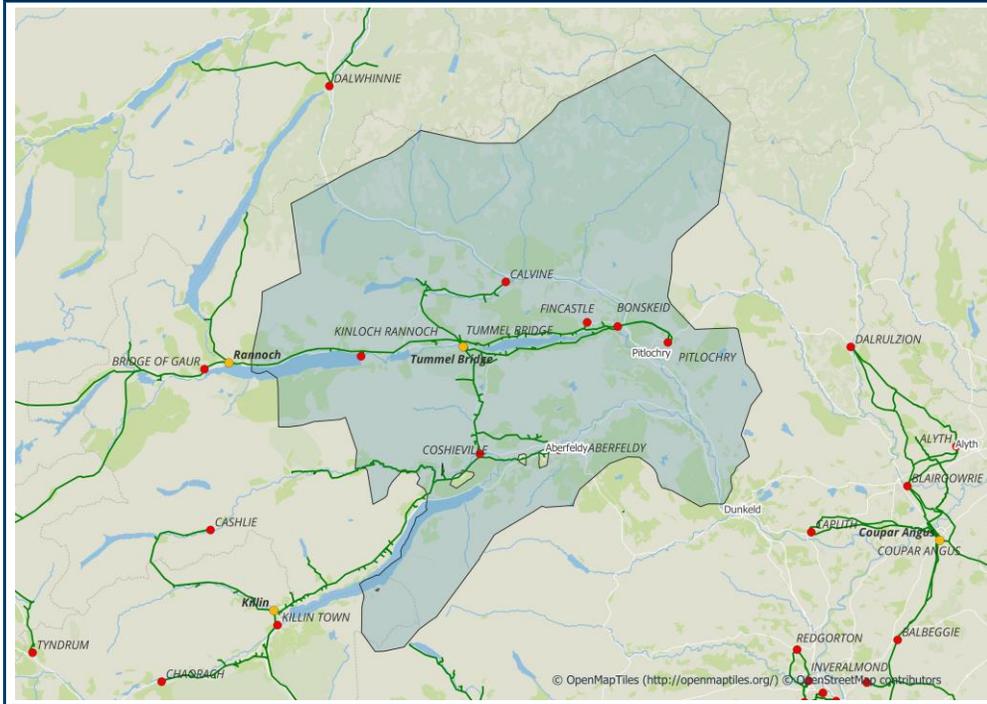
*New substation proposed; names have been assumed based on approximate proposed location for the NDP so may change

Table P2.46 Thurso South GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Ormlie	33/11	7.5	14.55	2024/2025	N	Add a 2nd matching transformer to Ormlie	CV1 - Primary Reinforcement
Mount Pleasant	33/11	7.5	14.55	2024/2025	N	Add a 2nd matching transformer to Mount Pleasant	CV1 - Primary Reinforcement
Lyness	33/11	1	1	2027/2028	N	Replace the single 1MVA transformer with a 2.5MVA unit	CV7 - Asset Replacement
Eday	33/11	1	1	2024/2025	N	Replace the single 1MVA transformer with a 2.5MVA unit	CV7 - Asset Replacement
Sanday	33/11	1	1	2026/2027	N	Replace the single 1MVA transformer with a 2.5MVA unit	CV7 - Asset Replacement
Stronsay	33/11	1	1	2024/2025	N	Replace the single 1MVA transformer with a 2.5MVA unit	CV7 - Asset Replacement



Tummel Bridge



Tummel Bridge GSP Information

This GSP supplies the following primary substations:

- Aberfeldy
- Bonskeid
- Calvine
- Fincastle
- Kinloch Rannoch
- Pitlochry
- Tummel Bridge

Tummel Bridge GSP is located within the Perthshire region of the SHEPD licence area and currently supplies approximately 6,836 customers.

Table P2.47 Tummel Bridge GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Calvine	33/11	1	-	-	N	Replace the single 2.5MVA transformer with a 6.3MVA unit	CV1 - Primary Reinforcement
Coshieville	33/11	2.5	-	-	N	Replace the single 2.5MVA transformer with a 6.3MVA unit	CV1 - Primary Reinforcement



Table P2.48 Tummel Bridge GSP reinforcement projects in detailed development and delivery

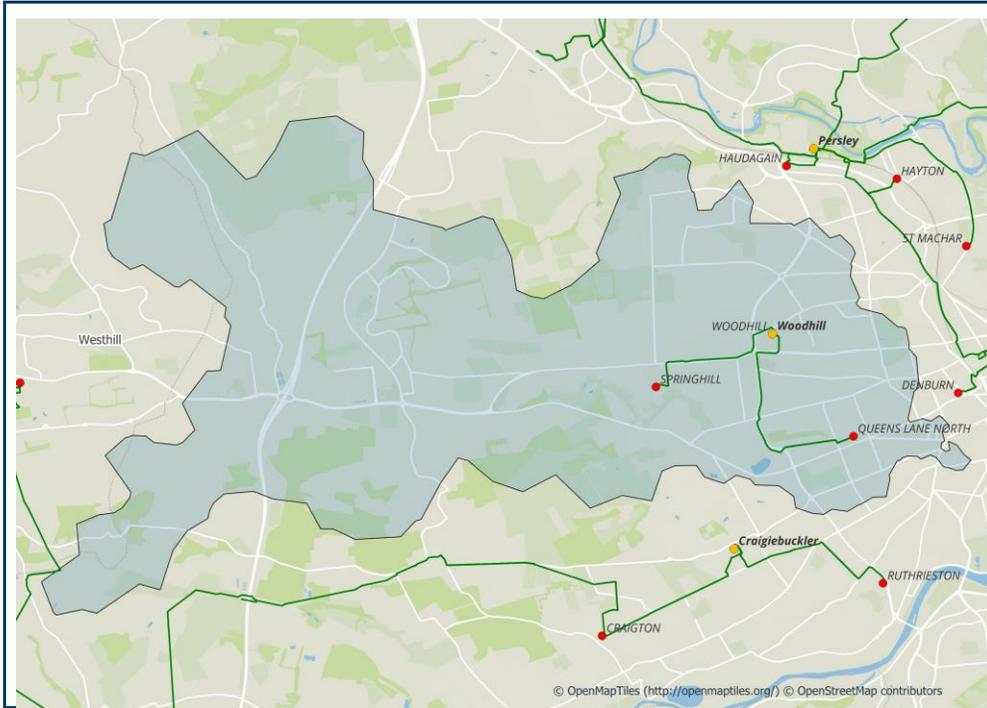
Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Bonskied	33/11	1	1	2024/2025	N	Replace single 5MVA transformer with a 6.3MVA unit	CV7 - Asset Replacement

Table P2.49 Tummel Bridge GSP group reinforcement projects in detailed development and delivery

Network Area	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Tummel Bridge – Errochty	33	21	90	2026/2027	Y	Transfer 5 x 33kV circuits from Tummel Bridge 33kV switchboard to the new Errochty 33kV switchboard	CV1 - Primary Reinforcement



Woodhill



Woodhill GSP Information

This GSP supplies the following primary substations:

- Queens Lane North
- Springhill
- Woodhill

Woodhill GSP is located within the Aberdeen region of the SHEPD licence area and currently supplies approximately 28,559 customers.

Table P2.50 Woodhill GSP reinforcement projects in initial development

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Springhill	33/11	21	38.1	2025/2026	N	Replace both 15/21MVA transformers with 20/40MVA units	CV1 – Primary Reinforcement



Table P2.51 Woodhill GSP reinforcement projects in detailed development and delivery

Substation Name	Primary/Secondary Voltage (kV)	Existing Capacity (MVA)	Updated Capacity (MVA)	Forecast Completion Date	Published DNOA	Project Description	Driver
Queens Lane North	33/11	12.13	29.1	2026/2027	N	Replace the existing 10/12.5MVA transformers with 15/30MVA units.	CV7 - Asset Replacement





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