

**Electricity
Distribution**

South West Licence Area Overview – Sept 2025

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South West

nationalgrid ▶ **DSO**



Agenda

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NGED– DNO / DSO

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Investing in our Network – With insight into the South West

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Progressing your Projects

Electricity
Distribution

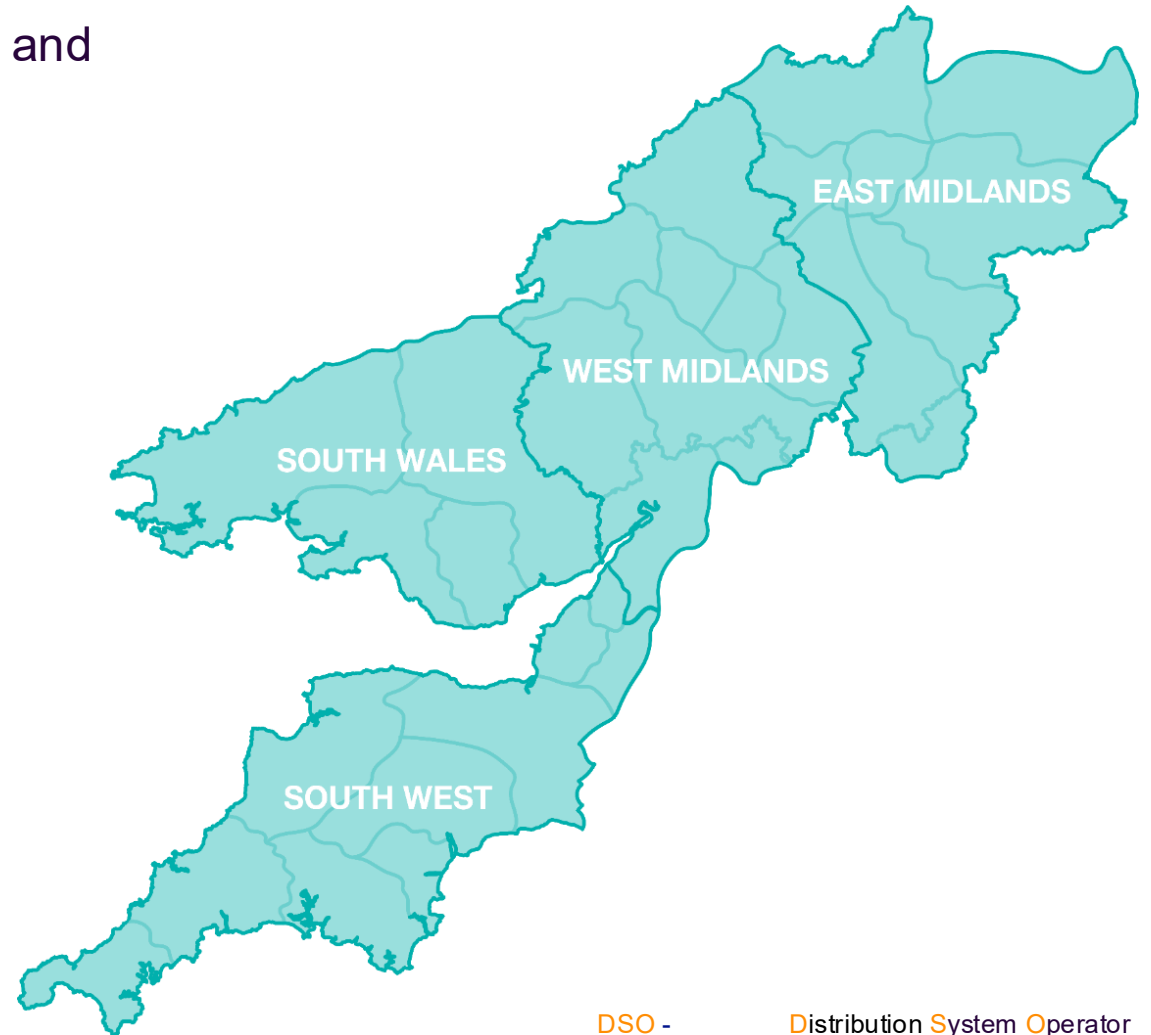
NGED DNO / DSO

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NGED DNO / DSO across our license areas

- We are part of the largest electricity transmission and distribution business in the UK
- We cover the 4 regional licence areas of:
 - East Midlands
 - West Midlands
 - South Wales
 - South West



Electricity Distribution

We are the **Distribution Network Operator**.



We design, install and maintain the cables, wires, transformers and substations that make up the distribution network in the Midlands, South-Wales and South-West.



We support customers to get new electricity connections by building new network assets.



Our Control Room switches our network assets in real time to make sure power is always safe and reliable for our customers.

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We are the **Distribution System Operator**.



We operate today's distribution system and plan the system of tomorrow, all based on the priorities of the local communities and businesses that we serve.



We help customers to connect faster or make smarter use of their connections through being flexible in their energy use.



Our Energy Management Centre coordinates and schedules customer assets to help them make the best use of our network.

Interaction between DNO and DSO

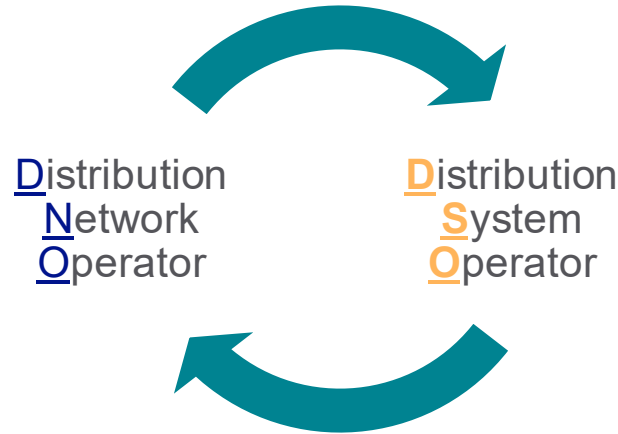
DNO

(Distribution Network Operator)

Today's Network

- Constructing & maintaining the physical Distribution Network
- Fault finding & fault fixing – Keeping the lights on
- Working with customers on their current connection requirements
- Providing quality & accurate data on network assets & loads

National Grid Electricity DISTRIBUTION NGED



DSO

(Distribution System Operator)

Future Network

- **Outreaching** to stakeholders to understand future connection requirements and needs
- **Forecasting** new capacity requirements to serve existing and future customers
- Making **decisions** on how to create new capacity to meet the forecasts of the future.
- Procures **flexibility** to meet Network needs

Electricity
Distribution

NGED in the South West

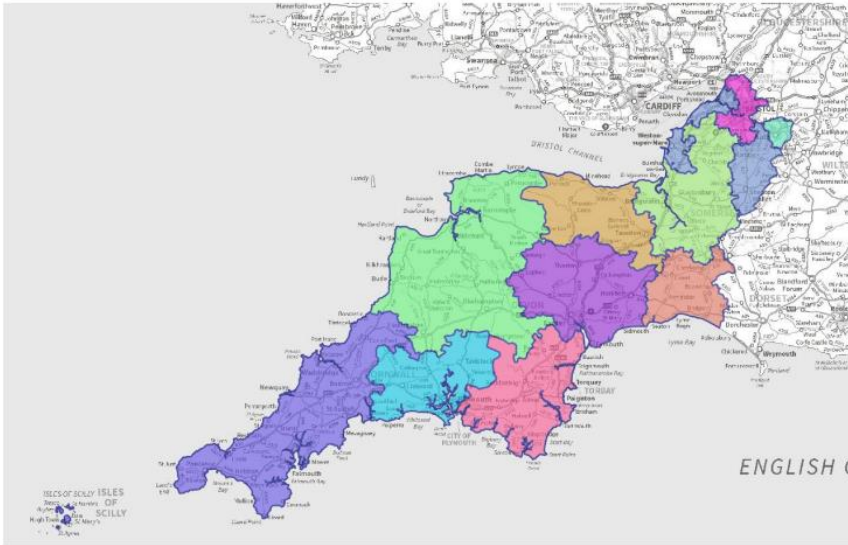
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NGED Overview – The South West

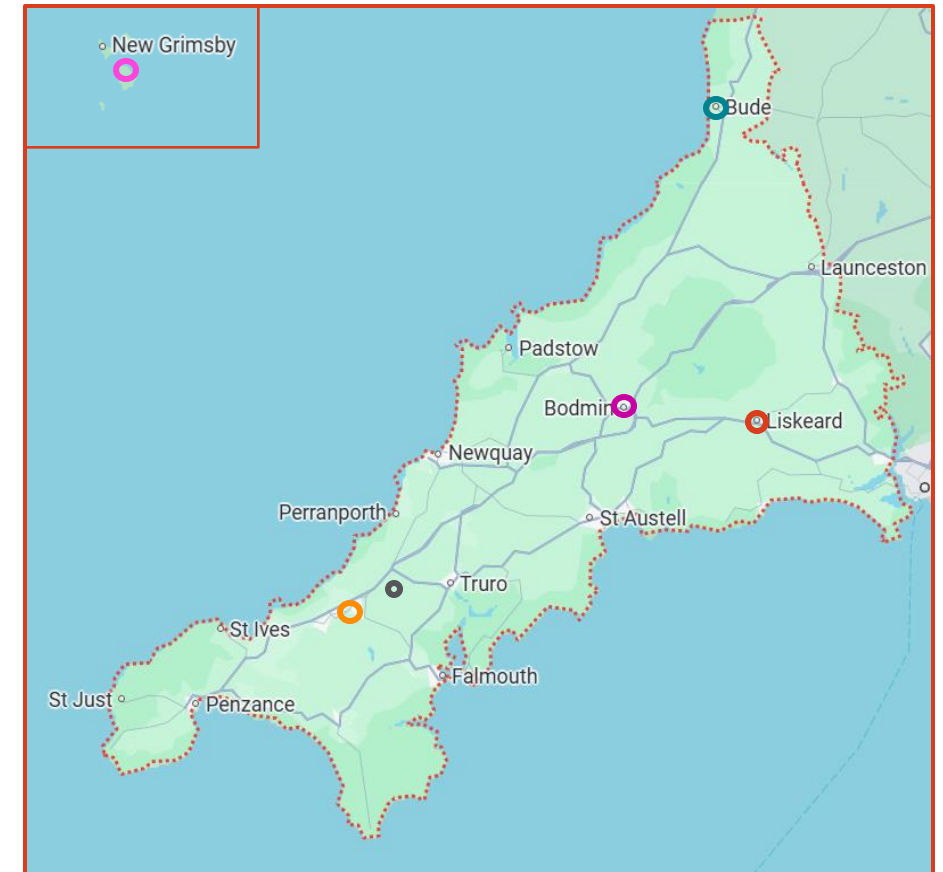
South West in Numbers

- Around 51,000 km of network
- Serving 1.4 million customers
 - homes and businesses
- 14,000 km² licence area
- 54,000 transformers
- Over 1,600 employees in 20 depots and offices



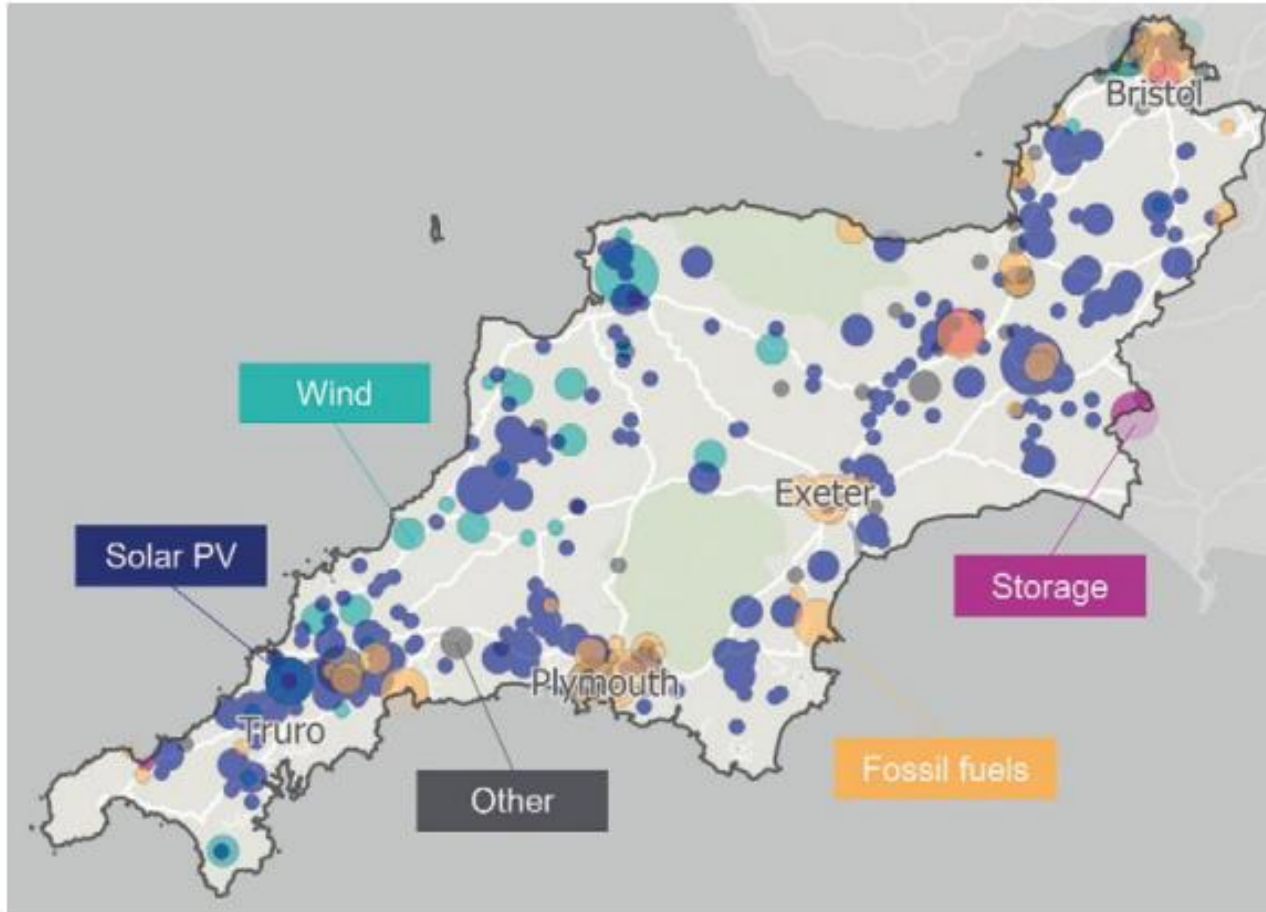
Five depots around Cornwall:

- Bodmin
- Bude
- Liskeard
- Redruth
- St Mary's (Isles of Scilly)

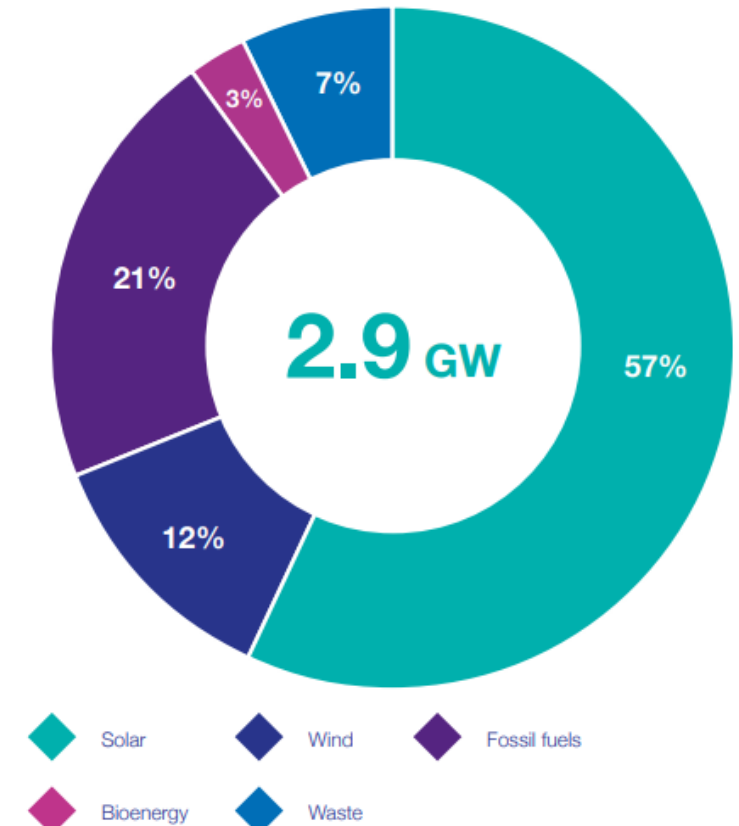


Existing Connections in the South West - Generation

South West licence area - baseline connections

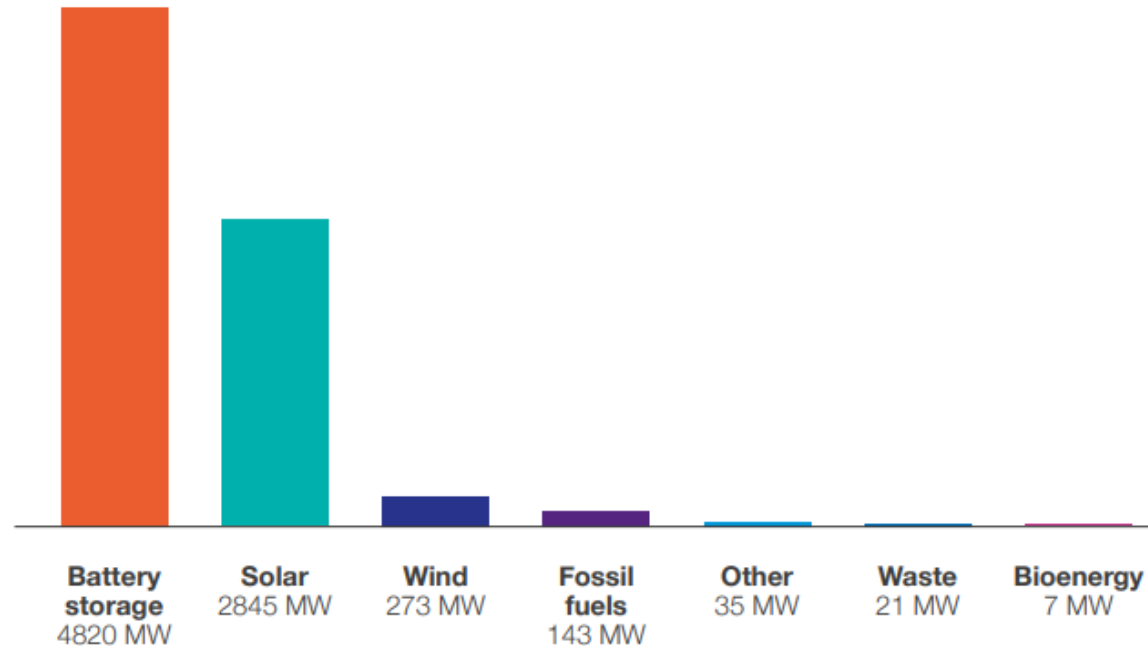


Total distributed electricity generation in the South West licence area



Prospective Connections in the South West - Generation

Generation and storage sites with an accepted connection offer in the South West licence area



Across South West

- *There are over 500 generation and storage projects, totalling 8.1 GW, that hold accepted connection agreements and could connect to the South West distribution network in the future. *As of December 2024

Across Cornwall

- Projecting 1365 MW of generation and energy storage connected to our network by 2035.
- ↑ That's 640 MW of additional generation and energy storage projected to connect to our network.

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Investing in our Network

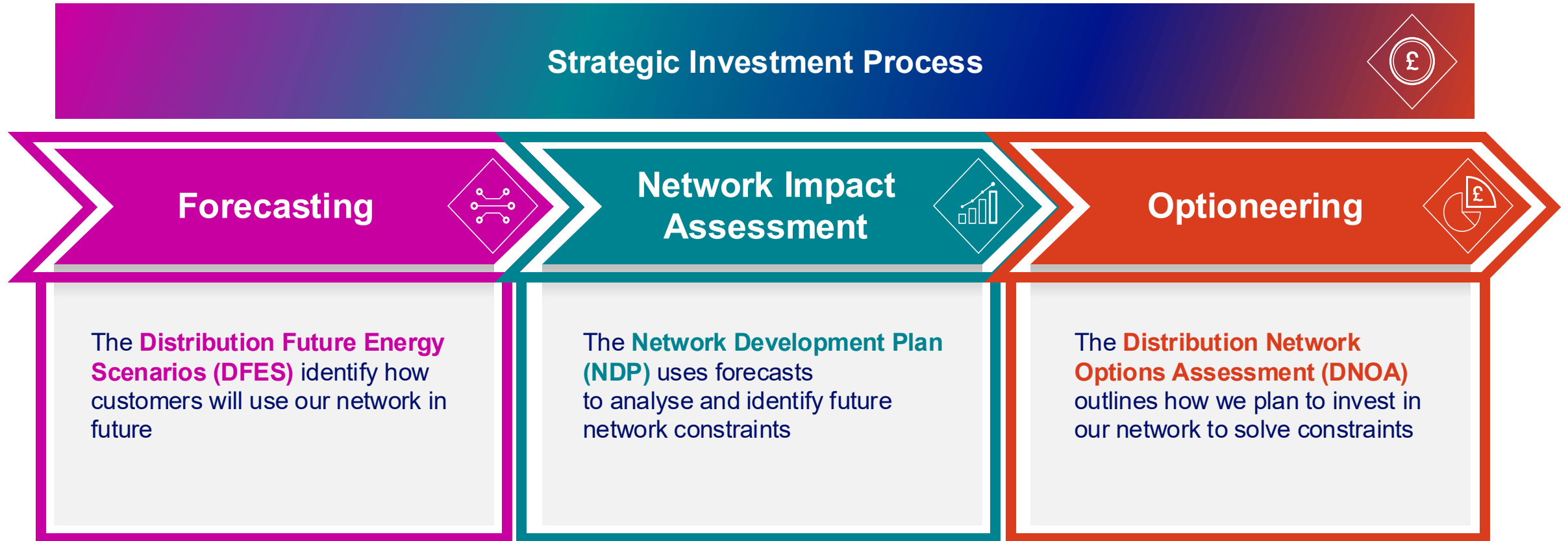
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How is NGED Investing in our network?

- NGED **DSO** has a defined process to **assess, identify & initiate** ahead of need reinforcement & growth to our Network



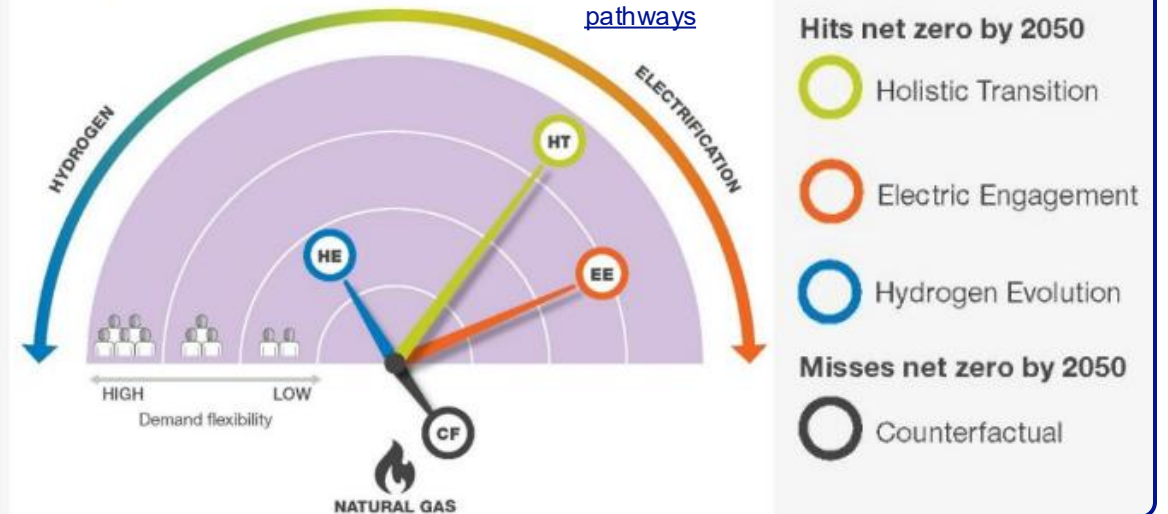
Forecasting

Load growth insights - DFES & Stakeholder Engagement

- NGED invites insights on future energy requirements from external stakeholders, such as Local Authorities, Net Zero Hubs, & Industry, to feed into the DFES analysis
- DFES - (Distribution Future Energy Scenarios) outline the range of credible future pathways* for the projected growth in demand, generation & battery storage on the Distribution Network

The Future Energy Scenarios (FES) is an annual report produced by NESO that outlines three pathways to Net Zero that representing different, credible ways to decarbonise our energy system as we strive towards our 2050 target.

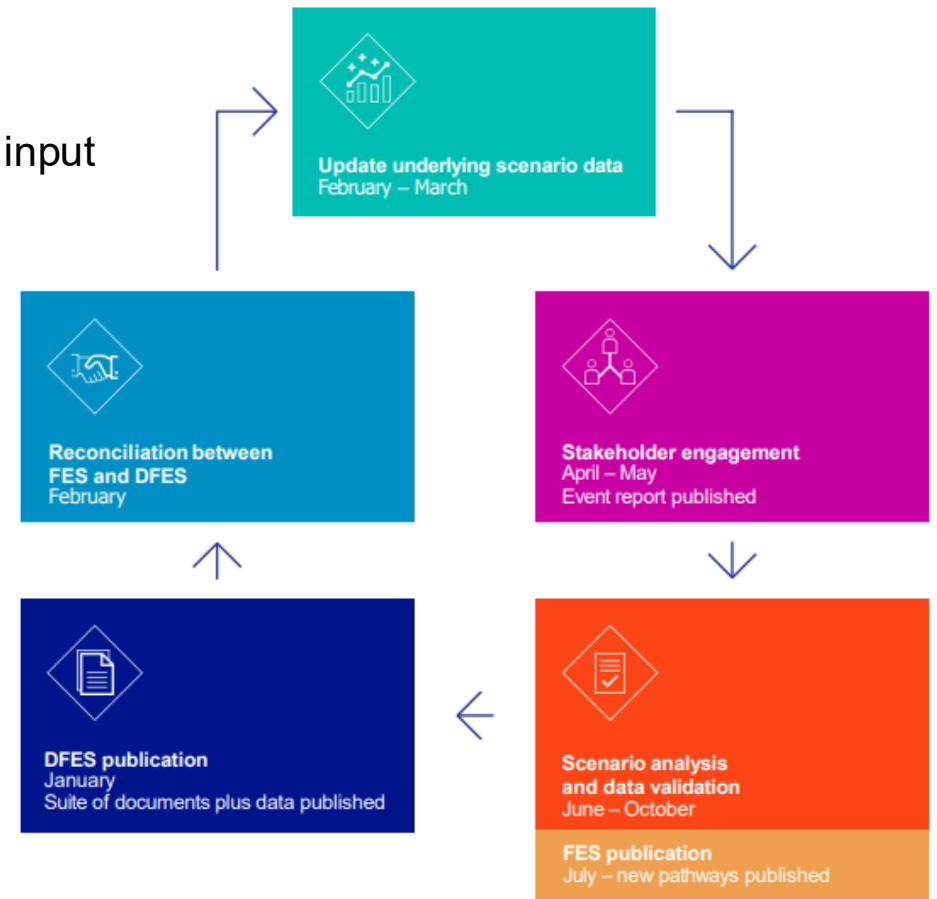
Pathways framework 2024



Forecasting

The DFES assessment cycle

- DFES analysis follows a **yearly process** that includes key **stakeholder input**
- Key overarching assumptions are published as part of the **NESO** FES framework for each of the **credible future pathways**.
- **Local and regional assumptions** are made by **REGEN** and NGED. This includes analysis of the **pipeline of projects** in NGED's **licence areas** and **regional stakeholder and project developer engagement** (i.e. **DFES Survey***)
- **Renewable energy resources, building stock and socio-economic factors** for **each local area** are also key factors in the regional analysis that informs the **DFES**.
- DFES data is used to create our **Network Development Plans (NDP)**, ensuring DFES informs our future investment in our network



Forecasting

DFES Survey - Cornwall

- There are 19 Local Authorities within South West Distribution Licence Area
- All are invited to participate in a yearly [DFES Survey](#) for insights into future energy growth
- Data submission for 2025 Survey closed on 26/07/25
- [Cornwall Council](#) responded to all 3 elements of the 2025 Survey Request – Thank-you!

DFES Survey Quick View

Local Authority: Cornwall

A quick lookup of key technology projections asked about in the DFES Survey by 2035 under the **holistic transition** scenario

See 'Volume Projections' tab if you wish to further interrogate the DFES projections

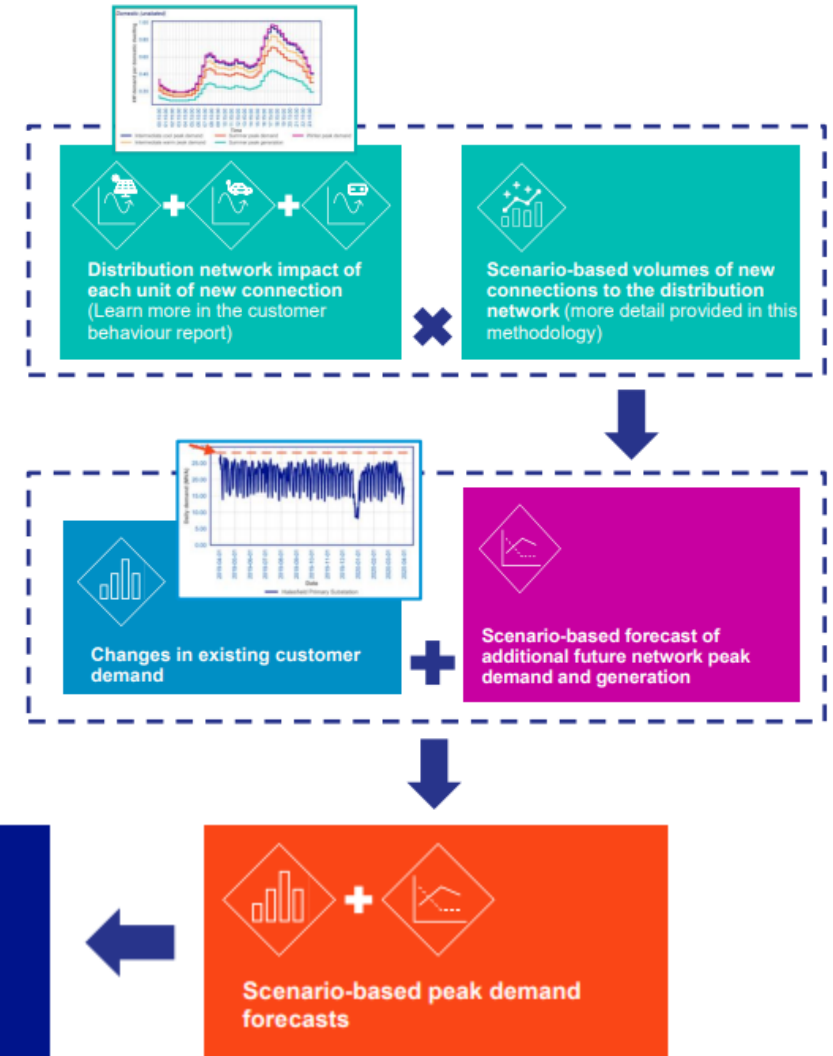
Technology	Units	Scenario	2024	2035	Change by 2035
District heating	Number of customers on network	Holistic Transition	-	959	959
Domestic	Number of dwellings	Holistic Transition	278,399	305,663	27,264
Electric vehicles	Number of electric vehicles	Holistic Transition	11,598	270,196	258,598
EV Charge Point (number)	Number of EV Charge Points	Holistic Transition	8,352	154,834	146,482
Heat pumps (domestic)	Number of heat pumps	Holistic Transition	15,620	125,902	110,282
Non domestic	Floorspace (metres squared)	Holistic Transition	3,244,086	3,624,025	379,939
Solar (commercial rooftop)	MW (installed capacity)	Holistic Transition	61	141	80
Solar (domestic rooftop)	MW (installed capacity)	Holistic Transition	111	317	206

[Distribution Future Energy Scenarios \(DFES\) - DFES 2024 Local Authority Workbook - Connected Data Portal | National Grid](#)

Network Impact Assessment

Using the DFES projections, NGED undertake further work to assess the impact and demand peaks on individual network assets.

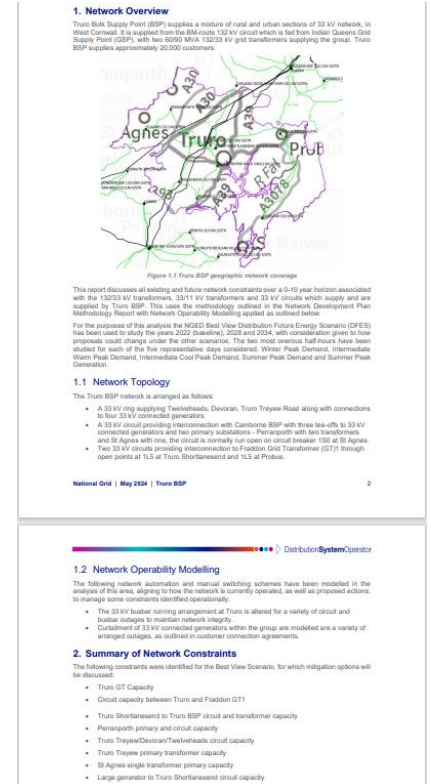
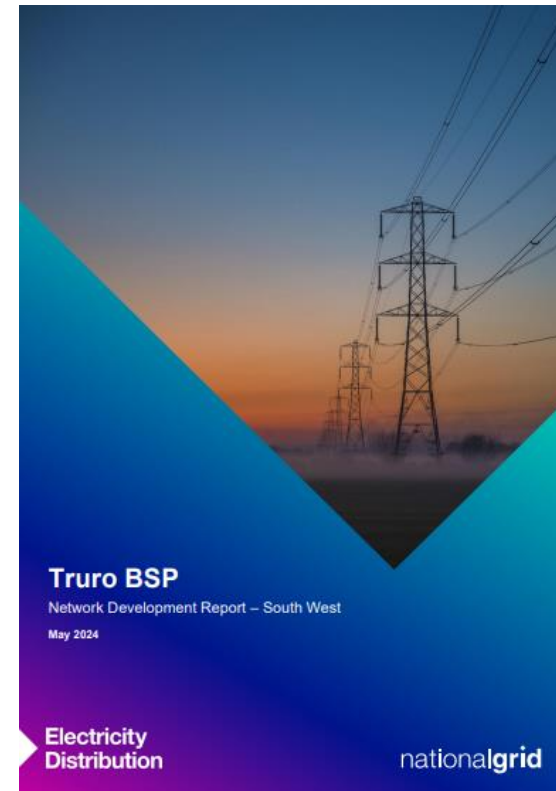
- This is done through applying customer behaviour assumptions to the volumes, to understand when and how these customers will be using our network.
- Existing customer demand is also included in the load sets through the incorporation of measured data from NGED DNO
- NDPs are then derived from these insights



Network Impact Assessment

NDPs - Network Development Plans:

- Derived from the DFES analysis, the **NDPs** assess a 10 year projection on the future suitability of the **Primary Distribution Network** to continue to deliver for our customers, under the **credible future energy scenarios**.
- The **latest NDPs** were published on **1st May 2024** and are available on our website
- NDPs are a condition of the Electricity Distribution Licence (25B) and requires NGED to publish **NDPs** every **2 years**

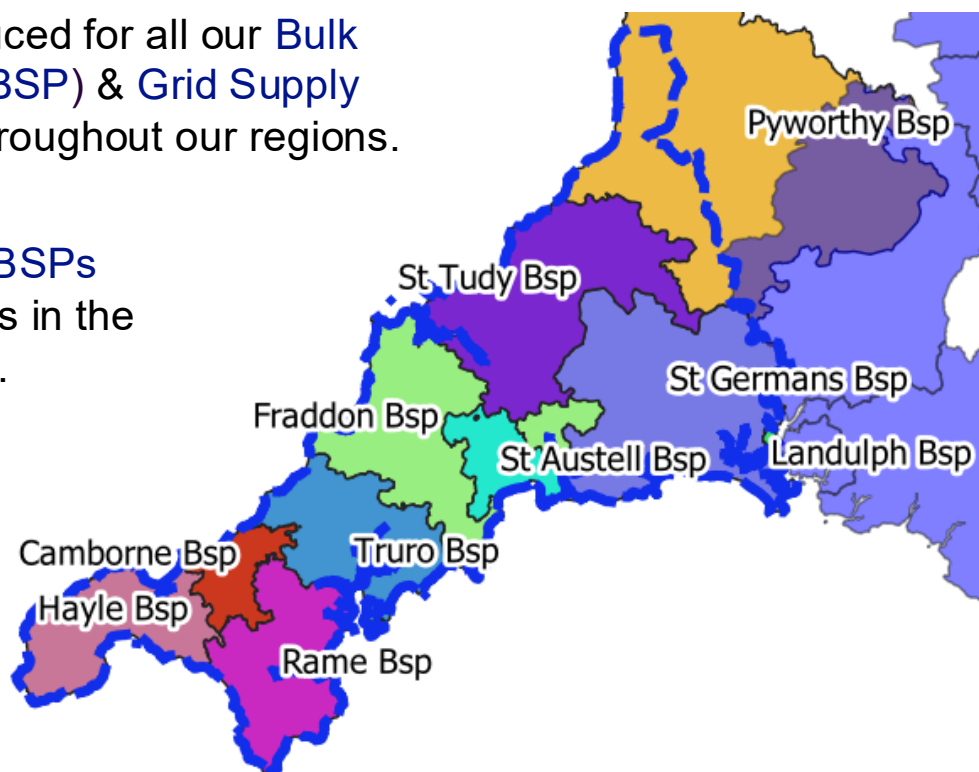


[National Grid DSO - Network development plan](#)

Network Impact Assessment

NDPs - Cornwall

- NDPs are produced for all our Bulk Supply Points (BSP) & Grid Supply Points (GSP) throughout our regions.
- There are 10 x BSPs fed via 3 x GSPs in the Cornwall region.



No. of constraints addressed in the Network Development Plans up to & including 2034

BSP/ 132kV	Number of constraints
132 kV network (Alverdiscott & Indian Queens GSPs)	6
Pyworthy North Tawton	7
Hayle	6
Rame	8
Fraddon	7
St Austell	6
St Tudy	5
Camborne	4
Truro	8
132kV (Landulph GSP)	3
Ernesettle	7
Landulph - St Germans	14

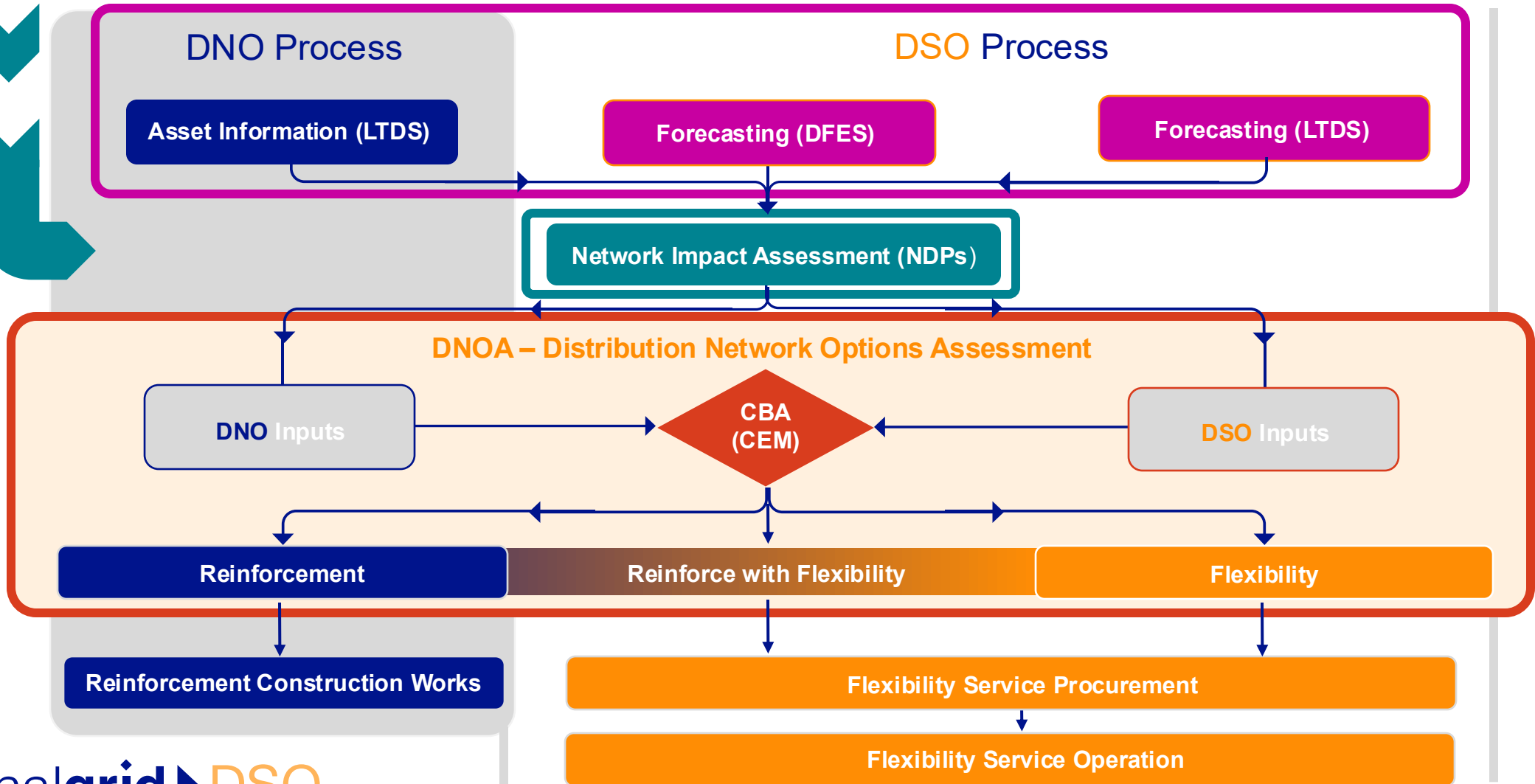
Optioneering

Distribution Network Options Assessment (DNOA)

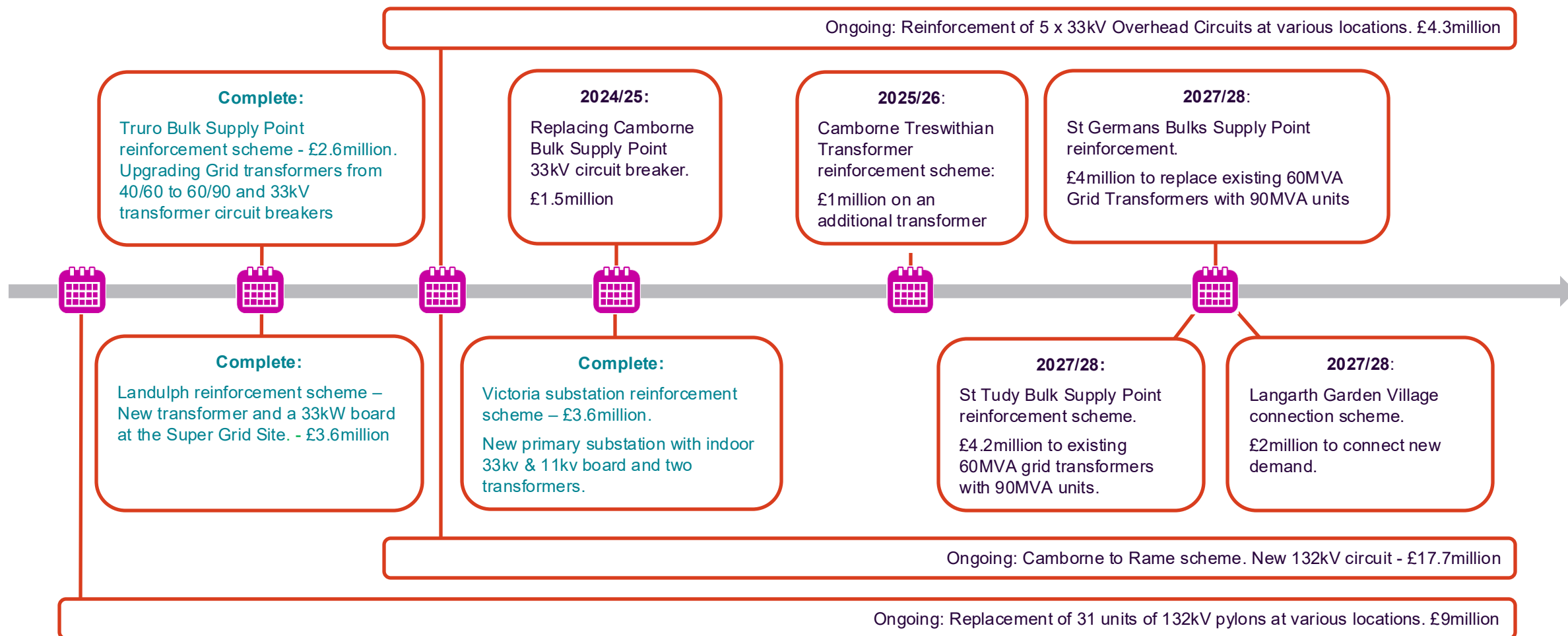
- Published since 2021
- Assesses constraints identified as part of the Network Development Plans
- Assesses Flexibility against conventional reinforcement



Optioneering – DNOA Process



Outputs of DNOA – Reinforcement in Cornwall



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Progressing Your Projects

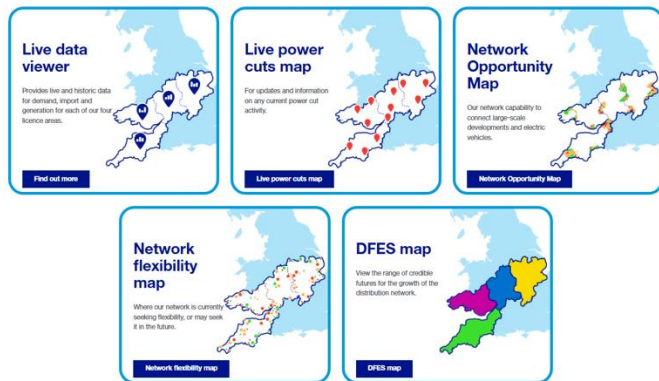
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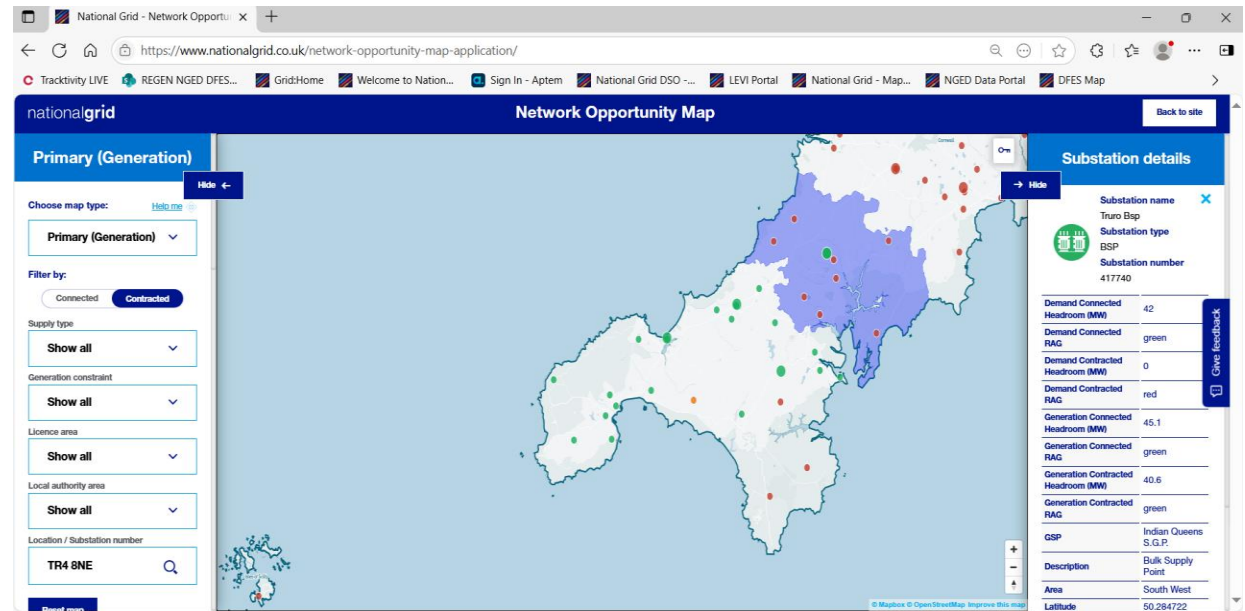
Progressing Your Projects

Network insights - Network Opportunity Map

- The **Network Opportunity Map** is an online tool providing **indicative** connection opportunities (Demand / Generation headroom) across all NGED's **BSPs** (Bulk Supply Points), **Primary** and **Distribution Substations**.
- The **colour** gradings are a **guide** to indicate areas of the Network where a connection is **more likely** to be achieved without significant distribution reinforcement.



[National Grid - Maps hub](#)



[National Grid - Network Opportunity Map](#)

Progressing Your Projects

<https://yourpowerfuture.nationalgrid.co.uk/our-engagement-groups/connection-customer-engagement>

Early engagement can give valuable insight

- You can request 3 unique Surgery Appointments online, to engage with local NGED Engineers to discuss your prospective projects ahead of submitting any formal application.

Connections surgery appointments

<https://yourpowerfuture.nationalgrid.co.uk/our-engagement-groups/connection-customer-engagement/community-energy-appointments>

- Provides insight into Network & Connection considerations:
(i.e. project complexity, reinforcement, capacity / constraints).
- Establish the viability of a scheme ahead of a formal application*:
(*where assessment and design fees would be applicable).

Community energy appointments

<https://yourpowerfuture.nationalgrid.co.uk/our-engagement-groups/connection-customer-engagement/connection-surgery-appointments>

- Supporting Community Energy, recognising the complexity & nature of volunteer-led projects:
(early discussions can help align your project with the evolving electricity system)
- Offering insight into processes, time-lines & Network considerations:
(constraints, reinforcement, technical & legal / consent considerations, etc.)

Net Zero surgeries

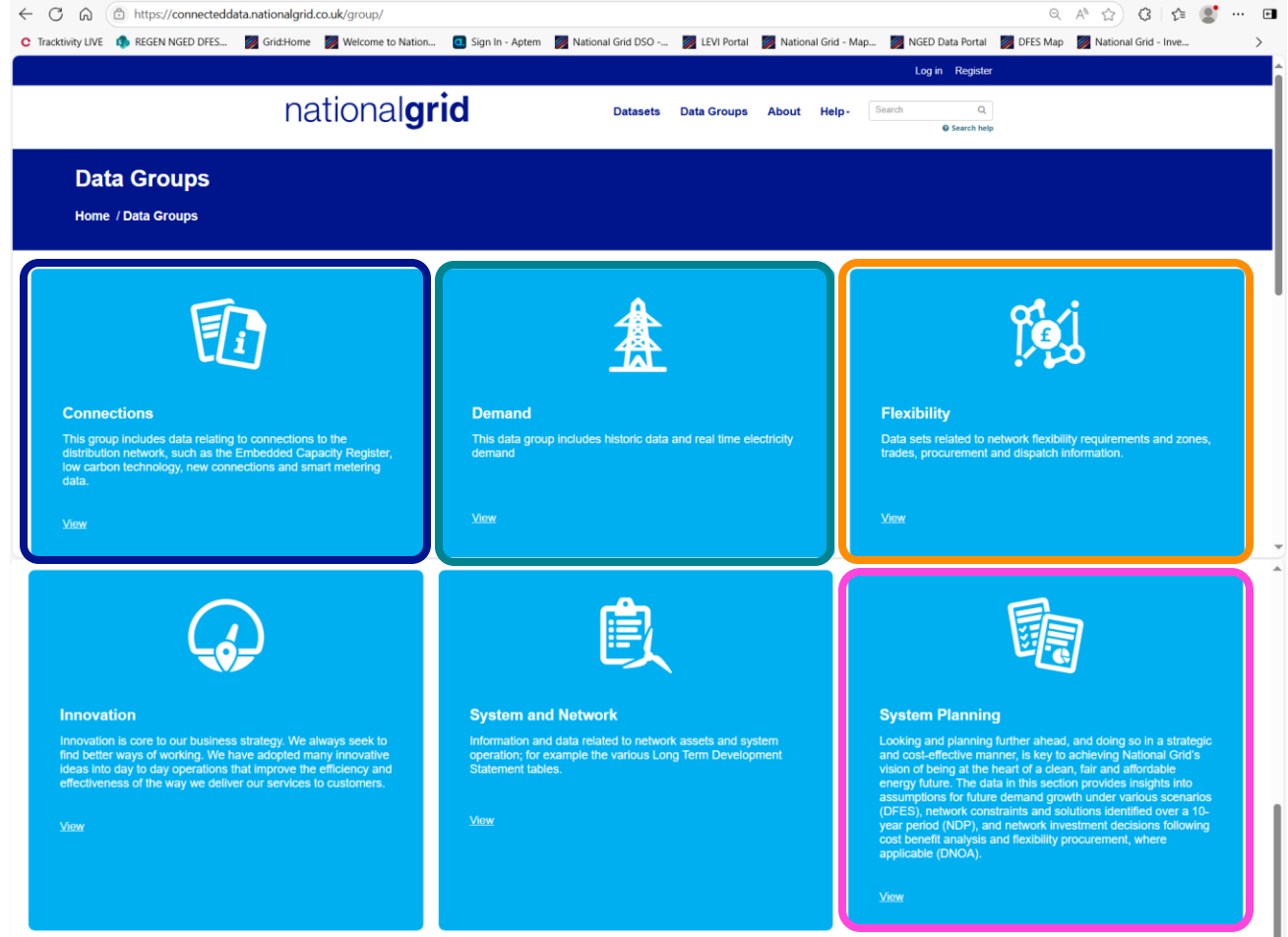
<https://yourpowerfuture.nationalgrid.co.uk/our-engagement-groups/connection-customer-engagement/net-zero-surgeries>

- Helping customers & stakeholders achieve net zero carbon ambitions:
(Responding to UK Government's intent to reach Net Zero by 2050)
- Supporting singular connections, or strategic decarbonisation across a region:
(network & process insights, time-scales, technical considerations & legal requirements, etc.)

Progressing Your Projects

Accessing NGED's Open Data

- A wealth of Open Data, to support your projects, is available online at National Grid's Connected Data Portal
- Includes data relating to:
 - Connections, such as Embedded Capacity Register, LCT, new connections & smart metering data
 - **System Planning**, (incl. DFES data), providing insight into future demand growth
 - **Demand**, including historic & real-time data
 - **Flexibility**, relating to network flexibility requirements & zones.
- Continually evolving & adding to Data sets in response to Stakeholder requests



Groups - Connected Data Portal | National Grid



Summary

Summary

NGED Structure

DNO – Distribution
Network
Operator

(Today's Network)

DSO – Distribution
System
Operator

(Future Network)

Investing in our Network

- Construction / Maintenance
- Fault Repairs
- Demand insights
- Reinforcement works
- Stakeholder Engagement
- Strategic Investment
(DFES / NDPs / DNOA)
- Reinforcement / Flexibility

Progressing your Projects

- Connection Surgeries
- Improved Connections Queue
- Improved Connections process
- Opportunities Map
- Surgeries
- Open Data on Data Portal

Thank you

We'd really like to hear from the communities, businesses, customers and stakeholders that we serve. If you have feedback about the contents of this pack or are interested in more information from us, please use these links:

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