

**DISTRIBUTION
NETWORKS OPTIONS
ASSESSMENT (DNOA)**
2025 METHODOLOGY REFRESH

Webinar



**Scottish & Southern
Electricity Networks**

DSO Powering Change



HOUSEKEEPING

- We're using Slido today to capture some of your thoughts and feedback.
- Please feel free to ask questions throughout the **Teams Q&A.**



Video/webcams off



Mics on mute
Please stay on mute
unless you are asking
a question



Technical queries
If you have any
technical questions
let us know



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AGENDA

10:00 - 10:10

Welcome and Introduction

Haulwen Goldie-Jones
Strategic Development Engineer



10:10 - 10:25

The DNOA Process

Michael Baker
Strategic Development Lead



10:25 - 10:35

DNOA Outcomes Report

George Benson
Strategic Development Engineer



10:35 - 10:45

Ensuring Transparency

Andy Wainwright
Whole System Manager



10:45 - 10:50

Next Steps

Haulwen Goldie-Jones
Strategic Development Engineer



10:50 - 11:00



Q&A and Close

Haulwen Goldie-Jones
Panel Host



WELCOME AND INTRODUCTION

Haulwen Goldie-Jones,
Strategic Development Engineer



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AIMS

1. Refresh understanding of DNOA process
2. Present the changes we're proposing as part of the refresh
3. Gather your initial feedback and explain how you can feedback further





WHO WE ARE

We are **Scottish and Southern Electricity Networks Distribution**.

Our electricity distribution network delivers power to over 3.9 million homes and businesses across the diverse and unique geographies of the north of Scotland and central southern England.

OUR NETWORK AT A GLANCE

Over 3.9 million homes and businesses

More than customers 1m on our Priority Services Register

Over 128,000km of overhead lines and underground cables

460km subsea cables powering island communities

Over 4,400 employees across the country

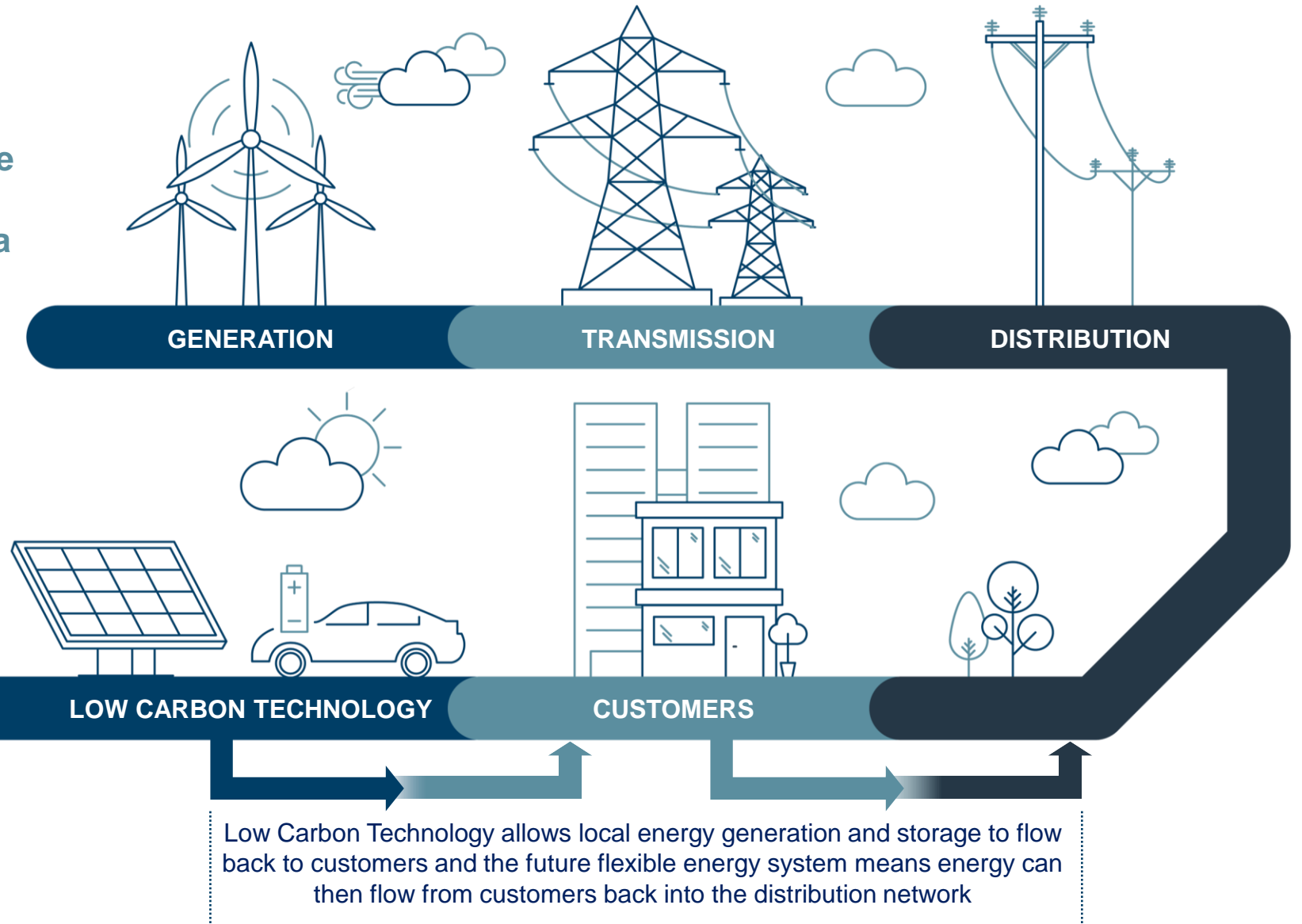




OUR ROLE IN THE ENERGY SYSTEM

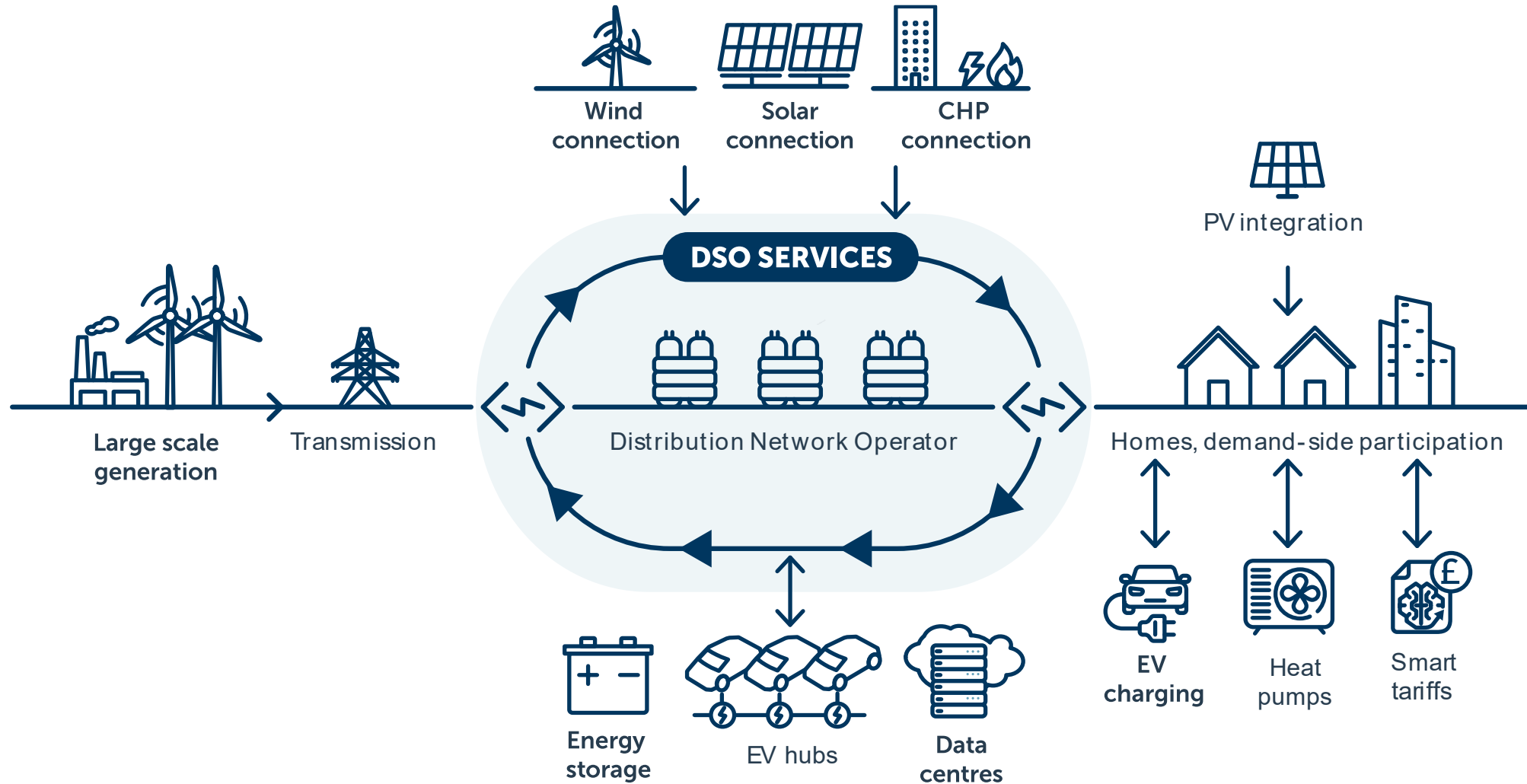
As a Distribution Network Operator, our role in the energy system is to carry electricity from the high voltage transmission grid to industrial, commercial and domestic users via a network of cables and poles.

We provide this service for every home and business in the north of Scotland and central southern England regardless of who you pay your energy bills to.





WHAT IS A DISTRIBUTION SYSTEMS OPERATOR (DSO)?





WHOLE SYSTEM TEAM

SSEN's Whole System team focuses on the long-term strategic development of the distribution network.

On our team, we have:



Net Zero Engagement Specialists building relationships with key stakeholders across our network areas to understand local planning, development, and decarbonisation pathways



Strategic Development Engineers planning for the long-term capacity needs of the network with an eye to net zero



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On a scale of 1 to 5 (1 being not at all and 5 being very), how would you rate your knowledge and understanding of the DNOA process?

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THE SSEN STRATEGIC PLANNING PROCESS

Making decisions today in light of long-term and whole system needs.

Forecasting needs



Create strategic plan



Develop detailed options



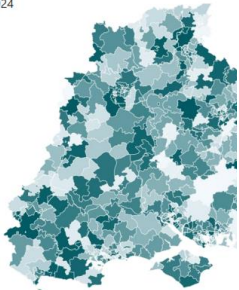
Deliver projects



SSEN DISTRIBUTION FUTURE ENERGY SCENARIOS 202

Results and methodology report for the Southern England

March 2024



SSEN Distribution STRATEGIC DEVELOPMENT PLANS METHODOLOGY

Draft for consultation September 2024



JUST TRANSITION, VULNERABILITY AND FUTURE ENERGY SCENARIOS

Planning for a fairer net zero future
September 2024



COWLEY GRID SUPPLY POINT: STRATEGIC DEVELOPMENT PLAN

Our network serving communities across Oxfordshire and High Wycombe
Draft for consultation
12/2024



SSEN Distribution DISTRIBUTION NETWORK OPTIONS ASSESSMENT (DNOA) METHODOLOGY

March 2024



SSEN Distribution DNOA OUTCOMES REPORT

November 2024



THE DNOA PROCESS

Michael Baker

Strategic Development Lead



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METHODOLOGY OVERVIEW



Develop options

Development of options – developing detailed network and flexibility options to resolve future needs.



Assess options

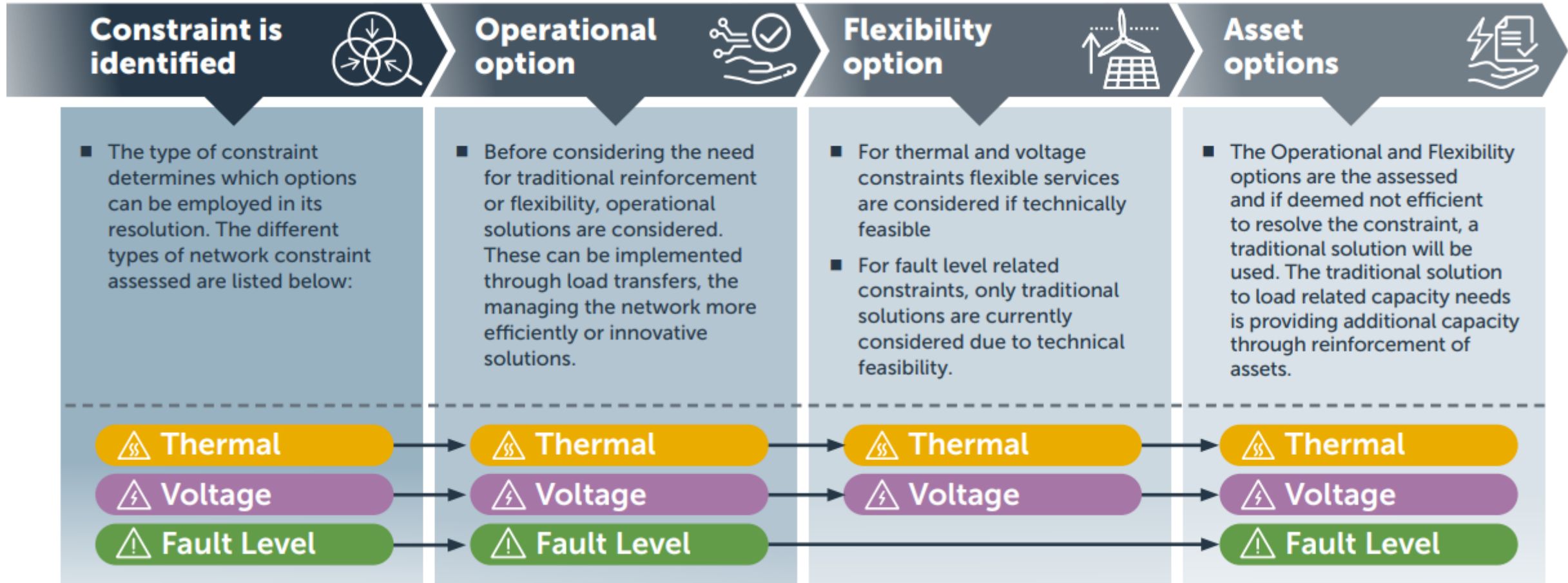
Assessment of options – transparently quantifying the costs and benefits of options to maximise consumer value



Communicate plans

Communication of plans – making stakeholders aware of our future developments and opportunities for flexibility provision.

DEVELOPING OPTIONS TO RESOLVE





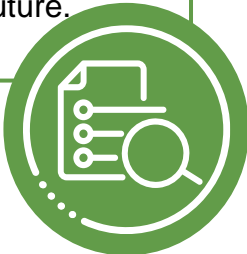
THE DNOA PROCESS; ASSESSING OPTIONS

Tool	Purpose
Deterministic Cost Benefit Analysis (CBA)	Used by all DNOs to develop reinforcement options and the basis of regulatory submissions. This is used to compare technically feasible network options to determine the optimum solution.
Common Evaluation Methodology (CEM) CBA	The CEM tool is used to quantify the benefit of flexibility services and determine the number of years for which flexibility services should be used to defer the identified reinforcement.
The Strategic CBA	<ul style="list-style-type: none"> Accounts for all network actors and wider economy Considers cost associated with delays in connections for developers. Enables users to test multiple actions under different market scenarios Allows optimise for the Least Worst Regret in alignment with the NESO Network Options Assessment methodology.

Flexibility market viability assessment

A flexibility market assessment is carried out to determine whether there are sufficient assets to resolve the constraint. Data is gathered from:

- Historic Flexibility Service procurement in SSEN, all other DSOs and the NESO.
- Data from flexibility providers given through the procurement process and uptake of LCTs.
- Engagement through bespoke RFIs for potential providers who are not ready to participate in flexibility services but may in the future.





COMMUNICATION OF PLANS

- We have refreshed the potential DNOA outcomes to provide greater clarity to stakeholders.
- We also list below how our DNOA outcomes have been spread against these categories through 2024/25.
- We have identified which of our decisions will be subject to annual review. This information will also be published for specific DNOA outcomes in our annual summary report.

DNOA outcome	Subject to annual review	% of 2024/25 DNOA outcomes that related to this solution
Flexibility	Yes to signal latest views of flexibility needs	5%
Asset solutions	No as handed to DNO function for delivery	30%
Operational management	Yes to confirm continued operational viability	0%
Flexibility followed by asset solutions	Yes to signal latest views of flexibility needs	32%
Operational management followed by asset solutions	Yes to confirm continued operational viability	33%
Signpost	Yes to signal latest views of flexibility needs	0%



2025 DNOA ENHANCEMENTS



Streamlining of network option outcomes



Improved transparency on DSO and DNO interactions



Extending insights beyond our extra-high voltage network, to include our high voltage and low voltage networks



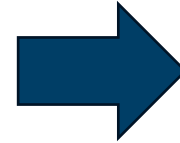
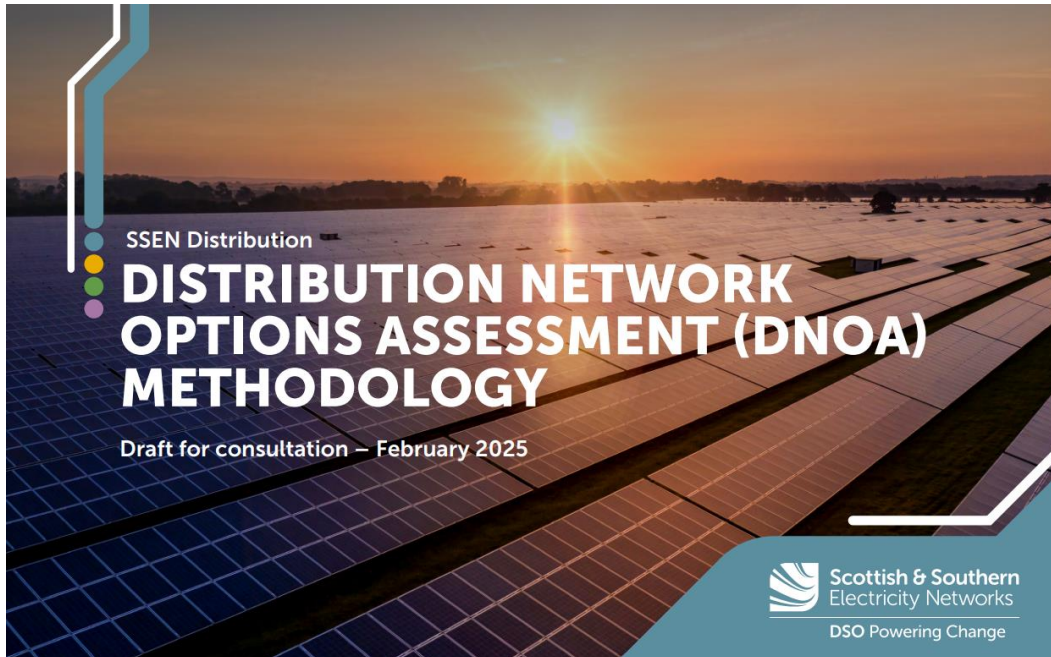
Increasing the DNOA outcome timescales from seven to ten years



Develop a DNOA review criteria process



OVERVIEW



- Explanation of the DNOA process.
- Illustrate the processes in place to ensure the decisions are made fairly and transparently

- Presentation of network investment decisions.
- Long term flexibility needs.

DNOA OUTCOMES REPORT

George Benson,
Strategic Development Engineer



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**How often have you
accessed and used our
DNOA outcomes reports?**

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COMMUNICATION OF PLANS – DNOA OUTCOMES

- 1 ■ The DNOA Outcome is now made clearer at the top of the page.
- 2 ■ Time horizons have been extended to 10 years to allow longer term visibility of plans.
- 3 ■ Removed areas of duplication to allow more space to describe the proposed interventions.
- 4 ■ Addition of the DNOA's corresponding SDP in the title.

DNOA Outcome Report

4 Related SDP: Cowley

Area Served (GSP/BSP/PSS)

1 DNOA outcome: Operational management followed by asset solution.

Scheme description

- The reinforcement of the XXXX PSS/BSP/GSP will increase capacity in the XXX area. Postcode(s): [insert].
- Local authority:
- Load related – substation/circuit thermal overload/voltage issues during FCO/SCO/intact conditions due to forecasted demand growth.

Proposed option

- Flexibility/Asset Solution: Describe reinforcement works
- This option addresses the forecasted thermal overload/voltage issues at XXXX PSS/BSP/GSP out to 20XX.
- Capacity released: XXMVA

Indicative flexibility price (if available):

- Availability price: N/A £XX/MW/h Utilisation price: N/A £XX/MWh

3

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System need requirement											
J	F	M	A	M	J	J	A	S	O	N	D

DNOA History					
2024/25	2025/26	2026/27	2027/28	2028/29	
Initial assessment					

Estimated peak MW outside firm network capacity under each scenario											
	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34	34/35	
CT	-	-	XX	XX	XX	XX	XX	XX	XX	XX	
ST	-	-	-	-	XX	XX	XX	XX	XX	XX	
LTW	-	-	XX	XX	XX	XX	XX	XX	XX	XX	
FS	-	-	-	-	-	XX	XX	XX	XX	XX	

2

Constraint management timeline

Year

1 | Scottish and Southern Electricity Networks Distribution | DNOA Outcomes Report XXXX 2025 – Ref XXXX-XX



PROVIDING INSIGHTS AT HV/LV

- This year we will be introducing HV/LV DNOA outcomes within our published material.
- There are approximately 88,000 secondary substations that have been assessed.
- We also intend to build on the strategic insights developed through our Vulnerability Future Energy Scenarios (VFES) project.
- Our proposed format is shown on this slide. We would welcome views on this approach and any potential enhancements.

Area	Local Authority	Number of sites assessed	
		Percentage of sites situated in vulnerable communities (e.g. classified as very high or high vulnerability)	Percentage of sites recommending flexibility
SHEPD	xxxxxx	xxxx	
		xx%	xx%
xx	xxxxxx	xxxx	
		xx%	xx%
xx	xxxxxx	xxxx	
		xx%	xx%
xx	xxxxxx	xxxx	
		xx%	xx%
xx	xxxxxx	xxxx	
		xx%	xx%
xx	xxxxxx	xxxx	
		xx%	xx%

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Do you believe that DNOA outcomes reports provide valuable information for you or your organisation?

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What support do you need to make DNOA outcome reports more accessible?

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ENSURING TRANSPARENCY IN DECISION MAKING

Andy Wainwright,
Whole Systems Manager



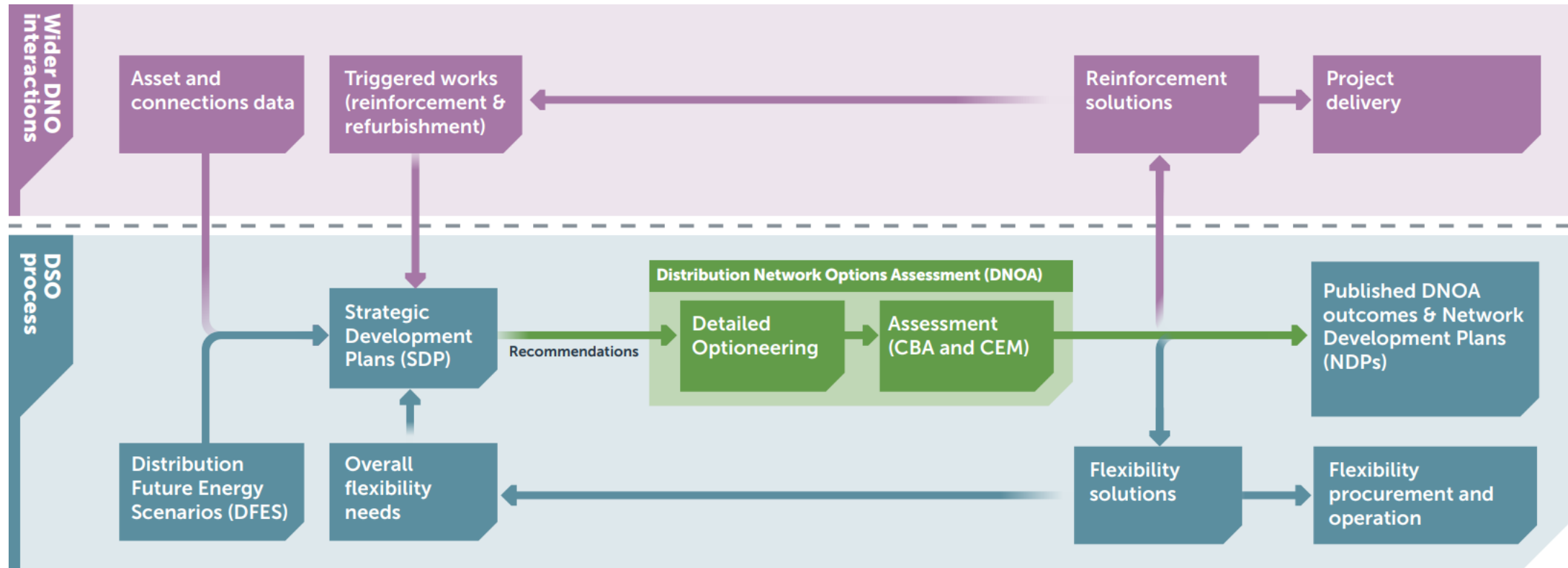
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HOW OUR DSO WORKS WITH WIDER DNO FUNCTIONS

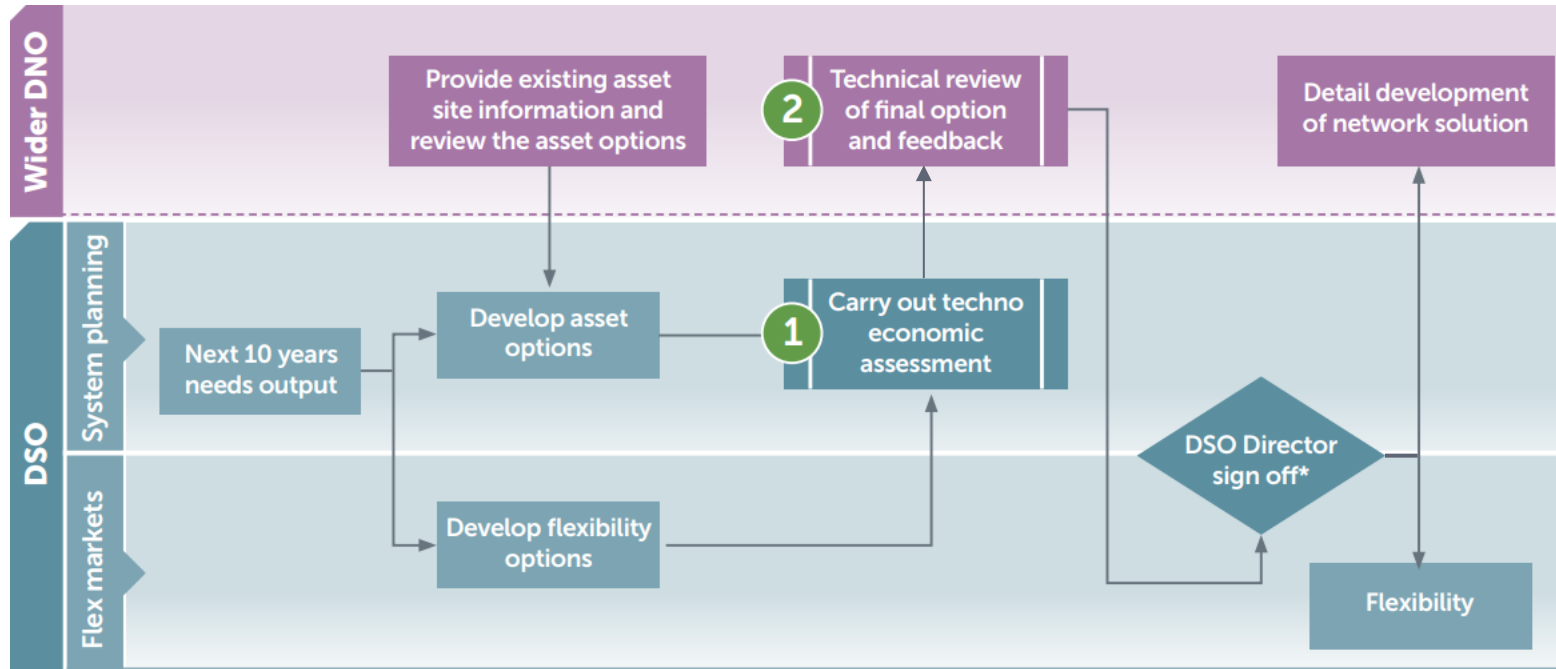
We believe that close working between DSO, Asset, Customer and Delivery teams is critical to efficiently achieving net zero. Under our governance model, DSO functions are separate from our Asset, Customer and Delivery functions but remain part of the same organisation enabling efficient end to end processes and systems.





ENSURING TRANSPARENCY IN THE DNOA PROCESS

- We have introduced proportionate measures at the appropriate steps in the DNOA process to facilitate decision-making, manage conflict resolutions and increase transparency to our stakeholders.
- These are embedded within the Distribution Governance and Investment Framework (DGIF). Further details on this framework can be found in our DSO service statement to be published shortly.



*DSO Head Of for <£4m

Key	Escalation path
1	DSO Director. (Direction sought from DSO Sub-Committee for new precedents)
2	SSEN Executive. Accountability with DSO Director to resolve with Asset Director.

●●●● INDEPENDENT ASSURANCE

We have implemented independent assurance on our DNOA process for DNOA outcomes of value greater than £2m.

The independent assurers select a number of DNOA outcomes from each quarterly report for review. These are selected to cover both SSEN licence areas and includes a range of outcome decisions.

The independent assurance consists of two types of review;

- A 'sample' review focused on reviewing the detailed technical reports and cost-benefit analysis undertaken
- A 'deep dive' review which also includes interviews with those involved in the development of the DNOA outcome.

Assurers assess whether DNOA outcomes have adhered to the DNOA methodology and make recommendations for improvements. The outcomes of the assurance process are shared with the DSO Advisory Board for further scrutiny and published online in DSO Publications & Reports found here: [Publications & Reports - SSEN](#).

Thresholds (option approval stage)	Proposal approved by	Independent assurance
Between £500k and £2m	Head of System planning	No
Between £2m and £4m	Head of System planning	Yes
Between £4m and £20m	Director of DSO	Yes



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On a scale of 1 to 5 (1 being low, 5 being high), please rate the following statement:

“SSEN have taken appropriate measures to ensure transparency in the DNOA process.”

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NEXT STEPS

Haulwen Goldie-Jones,
Strategic Development Engineer



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WHAT HAS CHANGED IN THE DNOA PROCESS



Streamlining of network option outcomes



Improved transparency on DSO and DNO interactions



Extending insights beyond our extra-high voltage network, to include our high voltage and low voltage networks



Increasing the DNOA outcome timescales from seven to ten years



Develop a DNOA review criteria process

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At first glance, the proposed updates to the DNOA methodology seem logical to me?

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On a scale of 1 to 5 (1 being strongly disagree, 5 being strongly agree), please rate the following statement:

“SSEN’s strategic planning process, provides me with the confidence that they are making the right network decisions.”

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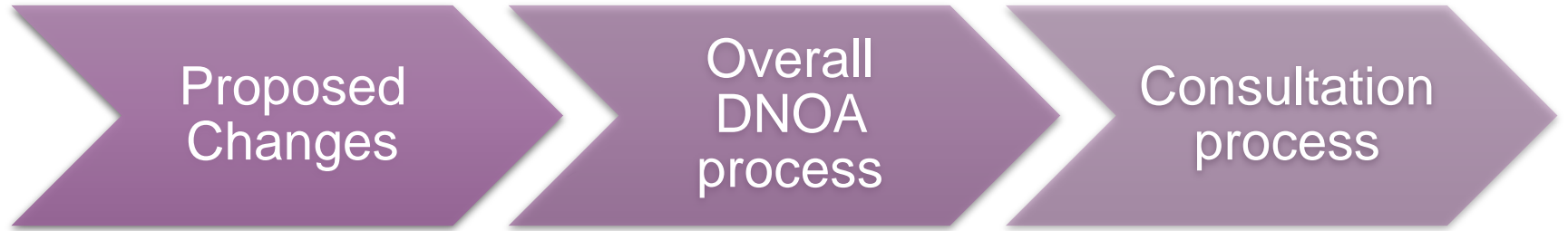


ENGAGING WITH STAKEHOLDERS

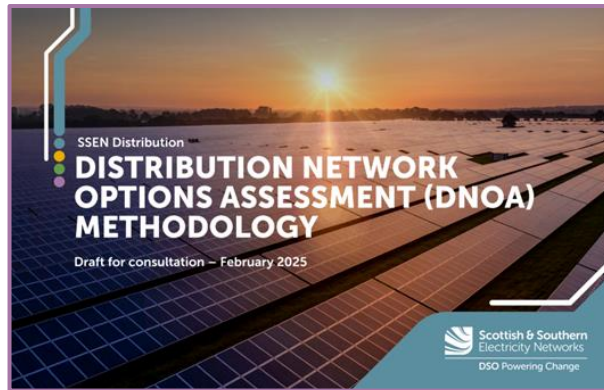
<https://ssen.engage-360.co.uk/surveys/59>



✓ How we're consulting

The DNOA consultation is open until 17th March and has the following categories of question:



The DNOA consultation portal includes the full document and our stakeholder personas document



Customer persona and summary of needs		Use cases for DNOA Outcomes	
Battery storage owner  <ul style="list-style-type: none"> Information about current and future network constraints Reliable flexibility forecasts to plan future investments and market participation 	Find information on... <ul style="list-style-type: none"> Where and when we will be using flexibility options and where your battery storage may be able to participate. Where, when and how much capacity we will be releasing in our network to enable future connections 	Tell us about... <ul style="list-style-type: none"> Any significant long-term load increase or expansion plans. Any other considerations with respect to flexibility we should consider The level of confidence you have in our methodology 	
Large energy user  <ul style="list-style-type: none"> Information about current and future network constraints To be aware of developments in local area energy plans 	Find information on... <ul style="list-style-type: none"> How LAEPs have informed our investment plans Where, when and how much capacity we will be releasing in our network to enable 	Tell us about... <ul style="list-style-type: none"> Any significant long-term load increase or decarbonisation plans for sites. 	

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After attending the webinar, how would you rate your knowledge and understanding of the DNOA process on a scale of 1 to 5 (1 being not at all and 5 being very)?

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On a scale of 1 to 5 (1 being strongly disagree and 5 being strongly agree), how would you rate the following statement?

"Communication leading up to today was clear and appropriately frequent."

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On a scale of 1 to 5 (1 being strongly disagree and 5 being strongly agree), how would you rate the following statement?

"My understanding of the subject has improved."

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On a scale of 1 to 5 (1 being strongly disagree and 5 being strongly agree), how would you rate the following statement?

"Overall, today has been valuable and a good use of time."

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Q&A

SSEN DNOA Webinar



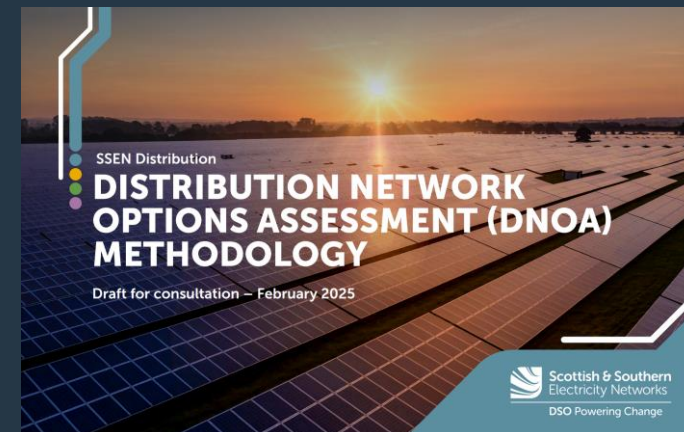
THANK YOU FOR JOINING US TODAY



Sign up to our
DSO Newsletter



DNOA Methodology
Report & Survey



Whole.system.distribution@sse.com



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GLOSSARY OF TERMS

Here is a helpful list of acronyms and terms in case you come across something you're unsure of.

Acronym/Term	Definition
Aggregators	A new type of energy service provider which can increase or moderate the electricity consumption of a group of consumers according to total electricity demand on the grid.
BAU	Business As Usual
CMZ	Constraint Managed Zones . These zones make use of technologies providing flexibility to alleviate network constraints, deploying them as an alternative to traditional network reinforcement in the management of peak demand.
Data triage	Systematically find issues which should inhibit open data, identify the 'least impact' mitigation technique(s) and make the process transparent.
Decarbonisation	Reducing the carbon intensity in terms of emissions per unit of electricity generated.
DFES	Distribution Future Energy Scenarios
DER	Distributed Energy Resources. Any resource on the distribution system that produces or stores electricity. This can include distributed generation, storage, heat pumps and electric vehicles as well as other technologies.
Digital System Map/ Digital Twin	A digital representation of a real-world entity or system.
DNO	Distribution Network Operator
DNOA	Distribution Network Options Assessment
DSO	Distribution Systems Operator. The directorate within SSEN that supports a more flexible network operation. Uniquely placed to ensure simple and consistent access to new markets for our active customers through maximising the utilisation of our existing electrical and communication networks.
DSAP	Digital Strategy and Action Plan
ESO	Electricity System Operator. The electricity system operator for Great Britain, making sure that Great Britain has the essential energy it needs by ensuring supply meets demand.
EV	Electric Vehicle
FSO	Future System Operator. Ofgem intend to set up an expert, independent FSO with responsibilities across both the electricity and gas systems and the ability to expand its remit to additional energy vectors when needed. The FSO will be in the public sector, with operational independence from government.
GDN	Gas Distribution Network
GIS	Geographic Information System
GW	Gigawatt
HV	High Voltage
IDNO	Independent Distribution Network Operator
kWh	Kilowatt hour

Acronym/Term	Definition
LAEP	Local Area Energy Plan. A data-driven and whole energy system, evidence-based approach that sets out to identify the most effective route for the local area to contribute towards meeting the national net zero target, as well as meeting its local Net Zero target.
LCT	Low Carbon Technologies
LENZA	Local Energy Net Zero Accelerator. SSEN's tool for supporting local authority LAEPs.
LEO(N)	Local Energy Oxfordshire (Neighbourhood)
LTDS	Long Term Development Statements. Designed to help to identify and evaluate opportunities for entering into arrangements with us relating to use of system or connection.
LV	Low Voltage
MW	Megawatt
NDP	Network Development Plan
NeRDA	Near Real-Time Data Access
NIA	Network Innovation Allowance
NMF	Neutral Market Facilitator will provide a market for trading use of Distributed Energy Resources (DERs).
Open Data	Data in a machine-readable format that can be freely used, shared and built on by anyone, anywhere, for any purpose.
PSR	Priority Services Register. Our register of vulnerable customers.
RiIO-ED2	Price control for Electricity Distribution (2023-2028)
RSP	Regional System Planner. Ofgem proposal for regional energy system planning bodies.
SDP	Strategic Development Plans
SDG	Sustainability Development Goals
SEPD	Southern Electric Power Distribution
SHEPD	Scottish Hydro Electric Power Distribution
SIF	Strategic Innovation Fund
SME	Small Medium Size Enterprise
SSE	Scottish and Southern Electricity
TO	Transmission Owner
TOM	Target Operating Model
VFES	Vulnerability Future Energy Scenarios
VIVID	Vulnerability Identification Via Informative Data