



SSEN Distribution

DISTRIBUTION NETWORK OPTIONS ASSESSMENT (DNOA) METHODOLOGY

January 2024



Scottish & Southern
Electricity Networks

DSO Powering Change



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Who we are and our role as a DSO

The future energy system

If the UK is to deliver its net zero emissions target by 2050, the energy industry needs to embrace fundamental change in order to decarbonise transport and heat.

For this transition to be successful it requires:

- Greater utilisation of **flexible energy resources**, across electricity, heat and transport.
- A clear understanding of **the value flexible resources can provide** at any one time; and
- Greater **real-time coordination in energy system operation** to ensure that flexible resources can be 'optimised' across the energy system as a whole.

These services are being provided through functions within the Distribution Network Operators called Distribution System Operators (DSOs), which have three core areas:



- ✓ Our role is to work in partnership to optimise our electricity networks through flexibility services, access products and strategic investment, data, and emerging technology to facilitate decarbonisation of transport and heat at maximum pace, and at a minimal cost to all communities and consumers.
- ✓ Our approach is tailored to local needs to drive a just and fair transition, advising and guiding our stakeholders in coordination with local communities to help them deliver net zero at maximum pace and minimum cost.
- ✓ Our Net Zero Strategic Plans will play a crucial role in delivering network capacity in the most efficient and effective way. This will enable us both to maximise the opportunities from and for flexibility provider to delay reinforcement through flexibility and also identify sites with whole system benefits for strategic investment where it can accelerate net zero outcomes in the long term.

Our DSO Toolkit



Strategic investment

- Provide the capacity on the network to deliver net zero by 2050.
- Ensure that we're making appropriate use of flexibility services to deliver efficient whole-system solutions at the optimum time.

Flexibility services

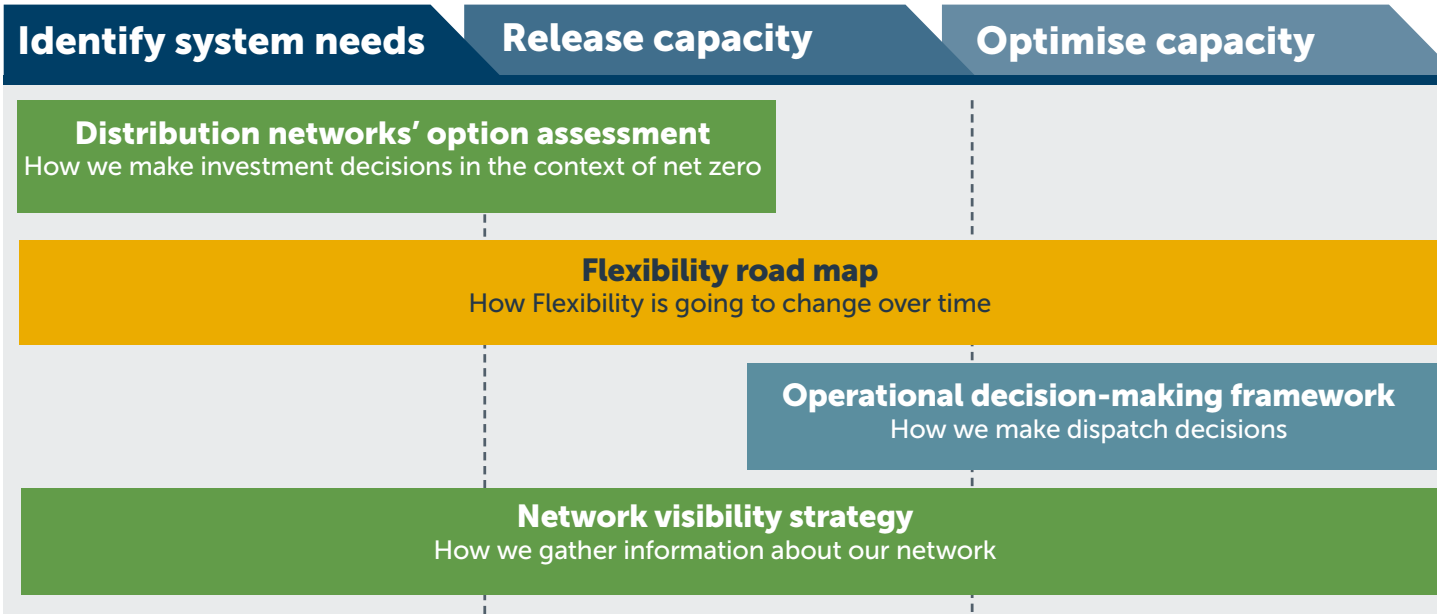
- Solutions that enable us to use our existing network efficiently.
- Acts as an investment signal for strategic investment.
- Provides an interim solution if there are long lead times for strategic investment.

Access products

- Connecting customers now, but with some level of compromise.
- Complemented by flexibility services or strategic investment to meet customers' full needs as soon as possible.



Delivering our DSO strategy



How we are driving transparency and coordination



This document

The Distribution Network Options Assessment (DNOA) is the process that helps us transparently demonstrate how we make decisions to meet the network's capacity needs through procurement of flexibility or investing strategically in our network.

This document provides a detailed overview of the DNOA methodology and how it relates to our Net Zero Strategic Planning. The outcomes of the process will be published on our website periodically in our DNOA Outcomes report.

Having access to this data will provide transparency about our governance and decision making to policy makers and other interested parties. It will also provide our stakeholders with relevant information about how we are planning to develop our network and potential upcoming opportunities for participating in flexibility schemes in our area.

The figure on the left outlines how the DNOA methodology fits into our wider DSO functions and services.





Foreword

Our DSO functions are already creating the system capacity to enable customers' connections, while at the same time facilitating the decarbonisation of transport and heat. This is enabling the communities we service to undertake their journey to net zero, and unlock economic value at a local and national level.

As part of our refreshed DSO strategy published in October 2023, we committed to publishing our Distribution Network Options Assessment (DNOA) process and to consult stakeholders on our proposed methodology. Our DNOA aims to enhance industry transparency by outlining our decisions to meet future capacity needs across our licence areas. The methodology encompasses:

- Ensuring transparency: our approach to providing transparency and visibility of our decisions to our stakeholders, while adopting clear functional separation between our DSO and DNO.
- Forecasting through DFES: our investment decisions are informed by the Distribution Future Energy Scenarios (DFES), offering a forward-looking perspective to stakeholders.
- Long-term strategic view: we go beyond the industry standard 5-10 year view of network needs provided in network development plans, considering future system needs up to 2050.
- Cost-benefit analysis: our proposed method involves using various tools to compare the costs and benefits of strategic investment options. This includes considering the socio-economic benefits of connecting customers earlier than required without delays, in tandem with the use of flexibility.

The DNOA methodology is part of our wider Net Zero Strategic Planning approach to investment which aims to provide the capacity on the network to deliver net zero by 2050 while retaining a clear focus on safety and reliability. This kind of proactive, rather than incremental, investment can avoid the costly disruption of repeated network upgrades, as demand and generation increases, as well as enabling connections ahead of need. The three factors we have considered when developing this approach include:

- Adopting a "flexibility-first" approach: ensuring that we're making appropriate use of flexibility services to deliver efficient whole system solutions at the optimum time. This requires collaboration with flexibility providers to eliminate barriers and enhance transparency in decision-making.
- Considering Future investment needs from Grid to the meter: addressing future investment requirements at all voltage levels, employing appropriate processes at all voltages and ensuring our network development aligns with the evolving needs of the communities we serve.
- Stakeholder-led: Recognising the importance of local energy planning and collaboration with the people it affects, we prioritise incorporating stakeholders' input to guide the network's development. This inclusive approach ensures that our network evolves to meet the diverse needs of our customers today and anticipates future demands.

The DNOA process establishes an open and transparent decision-making process, signaling opportunity for Distributed Energy Resources (DER) and other flexibility providers to meet our forecast needs. This process ensures that decisions are made that optimise stakeholder value and emphasises energy efficiency. This iterative process is subject to annual renewal. We will be incorporating stakeholder feedback and lessons learned from conflict resolution. We remain vigilant in monitoring the industry's maturity, drawing insights from other DNOs and the Electricity System Operator (ESO).

ANDREW WAINWRIGHT
Whole Systems Manager





How we are ensuring transparency

Optimising the use of the network, through flexibility and strategic investment, will ensure that sufficient capacity exists ahead of need to enable load growth and new connections. This can enable our customers to integrate low-carbon technologies more quickly, delivering benefits for customers and society and accelerating the investment needed to deliver net zero.

Compared to the Transmission system, the nature of the Distribution system requires far more coordination between the DNO and the DSO. Therefore, we believe that close working between DSO and DNO entities is critical to achieving net zero more efficiently. However, transparency is needed to ensure stakeholder and customer confidence in joint DSO and DNO operations.

Our approach to managing potential conflicts of interest involves providing full transparency and visibility of our decisions to our stakeholders, while adopting a functional separation between our DSO and DNO functions. This model helps us avoid any perceived conflicts of interest, giving our stakeholders greater confidence in flexibility markets, while allowing time for us to develop and mature our DSO capabilities in the coming years, without the loss of synergies that would be caused by more severe business separation.

Under our governance model, the DNO and DSO function are part of the same organisation, but stricter functional separation rules and measures are put in place to mitigate any bias for asset ownership. The table on the right summarises the responsibilities of the DNO and the DSO in relation to investment planning and decision making for load growth and new connections.

The design of the current regulatory framework in distribution, primarily through the Totex Incentive Mechanism and the emergence of local markets for flexibility, provide an important mitigation to potential asset ownership bias. However, to provide further confidence to our stakeholder we are implementing three layers of governance and assurance.

- Our DSO Advisory Board (DSOAB) will scrutinise our DSO delivery plans and operational decisions on a quarterly basis, and will commission and present an annual independent audit of the transparency of our operations.
- Independent auditing of investment proposals, including supporting CBAs and other justifications, will be undertaken on an annual basis. This will apply to projects above a £2M value.
- We have designed our planning process in a way that enables the DSO and DNO to collaborate and reach mutually agreeable solutions by providing their unique expertise. However, within this process we have created the appropriate escalation pathways in case of any potential conflicts in decision making.

Strategic planning stage	DSO roles	DNO roles
Identifying future load-related system needs	Forecasting system needs	N/A
	Network visibility and open data	Provision of up-to-date network information
Developing options	Developing network and flexibility solutions	Providing asset specific information and approving network solutions Approve operability of flexibility solutions
Assessing options	Technoeconomic assessment of flexibility and asset solutions	Providing unit costs for network solutions
Update plan and deliver	Managing flexibility contracting and market development	Detailed development and delivery of asset solutions





The DNOA process as part of our Net Zero Strategic Planning

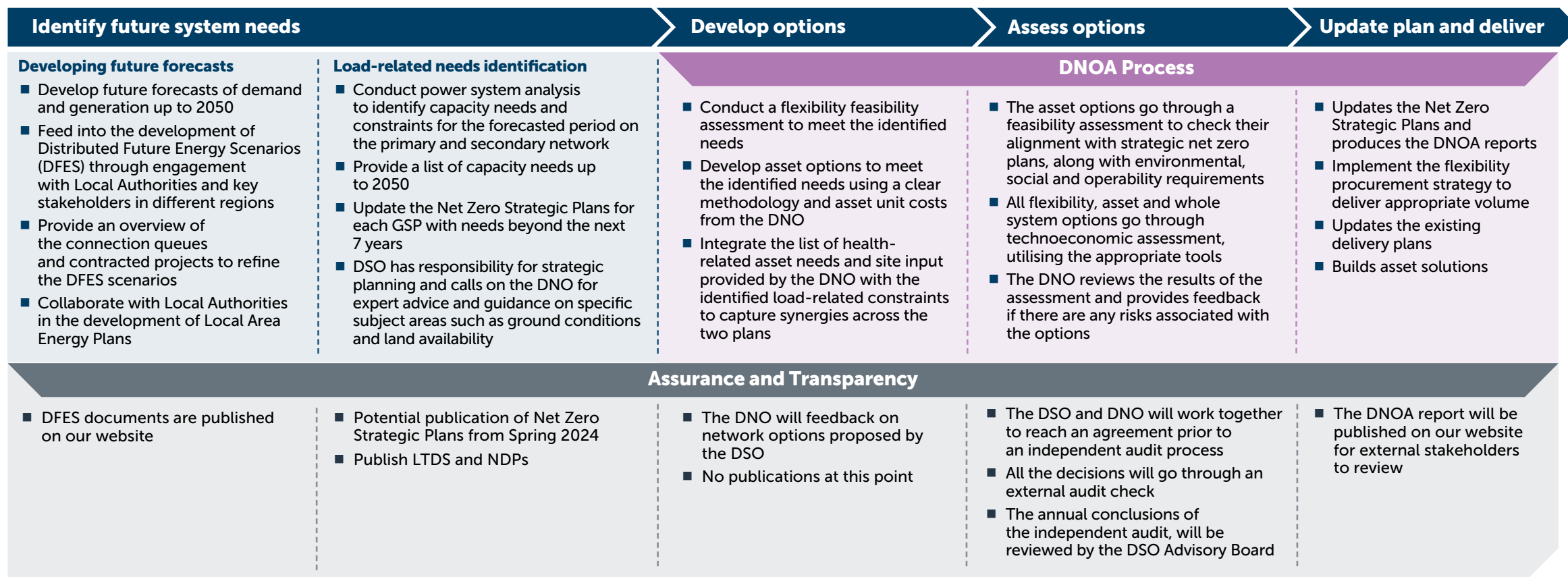
The aim of our Net Zero Strategic Planning process is to provide the capacity on the network to deliver net zero by 2050 while retaining a clear focus on safety and reliability. When developing this process, we have considered three factors in our approach:

Ensure that we're making appropriate use of flexibility services to deliver efficient whole system solutions at the optimum time

Consider future investment needs at all voltage levels and the appropriate processes at HV and LV

Stakeholder collaboration to ensure the network develops to meet the needs of our customers of today and tomorrow

Our strategic approach to identifying future network solutions builds on our current processes of taking a long-term view of future system needs; and developing proposals for future investments where these are evidenced out to 2050. Development of the strategic investment plan consists of four stages, and the Distribution Network Options' Assessment sits within this process. The diagram below describes how we collaborate with the different parts of the business to bring the right expertise to ensure our plans are deliverable and efficient.





Identify future system needs

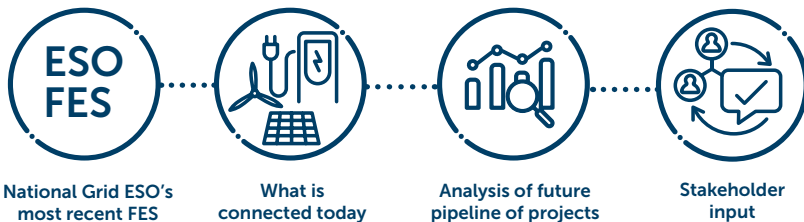
Developing future forecasts

We work closely with stakeholders to understand their future energy needs up to 2050. This includes Local Authorities in the development of their Local Area Energy Plans and local heating and energy efficiency strategies.

Through the Distribution Future Energy Scenarios (DFES) we leverage the national Future Energy Scenarios (FES) alongside these local insights to develop future forecasts for the deployment of generation and low carbon technologies.

We enhance this forecast further in the development of our Net Zero Strategic Plans, engaging with demand and generation customers to understand their specific aspirations to decarbonise. Key insights from larger customers, particularly in the industrial sector, are derived from bilateral conversations.

Our DFES is refreshed every year in April based on the National Grid ESO's most recent FES, whilst accounting for more granular stakeholder insights from agencies such as Local Authorities, and new distribution demand and generation connections.



These building blocks are then used to form credible scenarios for use in our analytical work to understand the future capacity requirements on the system. The modelling is influenced by what is connected today and an analysis of known projects in the connections queue. These future needs are then published allowing our stakeholders to understand how our future decarbonisation plans can create opportunity for them in reaching their net zero objectives.

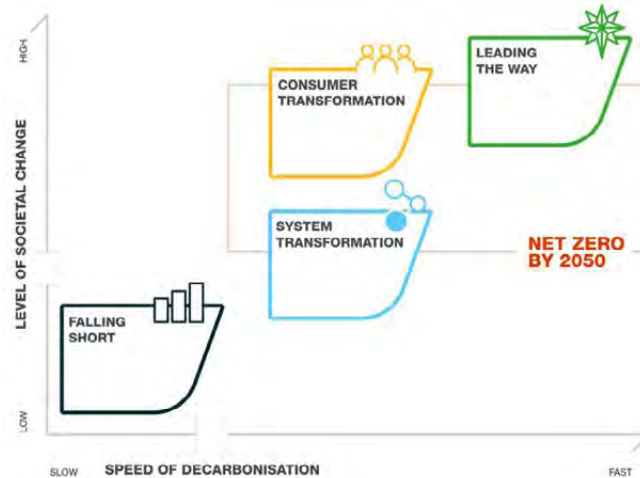


Figure source: National Grid ESO Future Energy Scenarios 2020, [link](#)

The four DFES scenarios shown in the diagram above provide a range of potential future scenarios for planning purposes that assess the impact of the net zero energy transition.

We consider all four scenarios from a system needs' perspective but currently take 'Consumer Transformation' as a credible 'best view' of future requirements. We use this scenario as the basis of our Net Zero Strategic Planning process but test the sensitivity of this model through use of the other three scenarios. This approach will be reviewed annually in consultation with stakeholders.

Going forward, we plan to incorporate the role of energy efficiency even more within the underlying assumptions of DFES. In parallel, we are embedding vulnerability features into our network planning through the Vulnerability Future Energy Scenarios to help us develop strategic plans that are smart and fair.

DSO / DNO coordination

- The DSO function will feed into the development of DFES through engagement with Local Authorities and key stakeholders in different regions.
- The DNO function will provide an overview of the connection queues and contracted projects to refine the DFES scenarios.

Assurance and transparency

Our DFES process is carried out annually by Regen. The findings and methodology are provided on our data portal.

Stakeholder input

SSEN recognises the critical role of local area energy planning and meaningful collaboration with the communities it serves in order to successfully implement sustainable, long-term network plans aligned with our collective goal of achieving net zero. We have fostered strong relationships with local communities, serving as a foundation for our shared commitment to net zero. Moving forward, we aim to further cultivate these partnerships across our regions, including through any regional planning bodies that arise.



Identify future system needs

Constraint analysis

Based on future forecasts, we use power system analysis to identify capacity needs and constraints for the forecasted period.

On the primary network, this includes a range of assessments including thermal, voltage and fault levels to identify any areas of the network that may be impacted due to the increase in demand and generation.

The large volume of assets at the LV level and the lack of historic measurements make identifying needs more challenging. Through our network visibility work, we have installed LV network monitoring and enhanced our capabilities to use smart meter data to better inform power flow analysis at EHV, HV and LV. We have access to over two million smart meters in our SEPD and SHEPD regions, collecting and receiving data at a granular level, allowing us to monitor parts of the network previously unseen. This level of visibility allows us to plan with more certainty, to manage our assets more effectively on our network before considering options to address each of these.

This "first-pass" assessment, and subsequent categorisation, allows us to identify and prioritise constraints. The results of the constraint analysis, along with already-committed projects - including the current view of projects developed through engineering justification papers and works - are used to update the previous year's Net Zero Strategic Plan.

As 2023/24 is the first year we will be implementing this new process, the basis of the Net Zero Strategic Plans was submitted to Ofgem as part of the ED2 business planning process. The needs case identification will be triggered annually by the update of the DFES report and capacity needs will be forecasted out to 2050, with decreasing accuracy beyond 7-10 years. Therefore, the needs identified beyond the 7-year time horizon will not routinely go through detailed optioneering process, instead, they will trigger an update in the Net Zero Strategic Plan to be reassessed and reevaluated in the following year. An exception is where when we believe there is a possibility that solutions may require longer than seven years of lead time for design and construction (for example large substations requiring transmission upgrades).

Our DFES is refreshed every year in April based on the National Grid ESO's most recent FES whilst accounting for more granular stakeholder insights from agencies such as Local Authorities and new distribution demand and generation connections.

Assurance and transparency

The initial steps of identifying system needs include publishing high-confidence forecasts for our networks five years in advance (LTDS), establishing annual network headroom (NHR), and issuing infrastructure and flexibility services plans biannually (NDR).

These details are accessible on our data portal. The table below shows how these steps help us publish our DNOA report.

	Network Development Plans (NDPs)	Long-term Development Statement (LTDS)	DNOA Outcome Report	Net Zero Strategic Plans
Purpose	NDPs consist of Network Development Reports and Network Headroom Reports. They present our best view and three alternative scenarios of network capacity. They draw upon our plans for the RIIO-ED2 Price Control period (2023-2028) and other key publications.	This provides information for assets connecting to the EHV distributed system and the HV busbar of primary substations. It looks at the entire network according to the latest demand forecasts and helps identify potential constraint zones.	This report informs stakeholders, including flexibility providers (FPs), local councils, Ofgem, DESNZ, about our plans for meeting the network needs. It updates FPs on flexibility market opportunities, enhances transparency in our decision-making when looking at network needs, and supports stakeholders in net zero development plans.	The Net Zero Strategic Plans are external-facing document to communicate long-term plans at a regional level with Local Authorities and other key stakeholders for local area energy planning.
Time Horizon	0-10 years	0-5 years (2028)	0-7 years	Up to 2050

We are committed to ensuring that any load-related investment first considers the use of flexibility services. Based on the needs identified, a range of options will be considered that will resolve system needs including flexibility services, reinforcement and smart network solutions.



Develop options to resolve

Network solutions

The traditional solution to load-related capacity needs is providing additional capacity through the reinforcement of assets. Before considering the need for additional investment, we assess if there is a way to remove or defer the network constraint through smart solutions, meaning managing the network more efficiently, or through implementation of innovative solutions.

The conventional asset options considered to remove network constraint involve upgrading existing circuits, building new circuits, reconfiguring existing substations or building new substations. However, the dramatic increase in connection requests and the impending surge in demand from de-carbonising heat and transportation, necessitates a shift to a more strategic network development approach, due to the accelerated pace and volume of work required to achieve net zero.

Our proposed Net Zero Strategic Planning approach represents a strategic shift aimed at delivering a network that meets the demands of the future while aligning with local and national decarbonisation objectives.

A proactive investment approach, as opposed to the conventional incremental approach, can avoid costly disruption of repeated network upgrades as demand gradually increases and could prevent connections queues in the future.

The key advantage lies in satisfying these requirements just ahead of their actual need. Under this approach, we assess needs cases against strategic investment triggers and propose a range of detailed strategic investment and reinforcement options to resolve the constraint where proactive and anticipatory triggers have been met. Examples of these triggers are provided in the table below:

DSO / DNO coordination

In developing the reinforcement options, the DNO will provide the DSO with the specific site information to help develop different asset options, including baseline reinforcement, smart network solutions or strategic investment options.

After developing the different options, the DNO will review and feed back if any changes are required before the techno-economic assessment of the options.

Pro-active/low-regret triggers	Scenario-based triggers
the need is certain and there is consumer value for bringing work forward	there is a clear long-term need but less certainty on timing, location and solution scope
New connection(s) triggers work	Analysis indicates investment required within next seven years
Asset condition triggers work	Quantified socio-economic cost of delaying works
Third party works trigger work (e.g. diversions)	Non-suitability of flexible alternative and resultant impact on system resilience

A high-level feasibility assessment will be completed to refine the list of possible strategic investment and reinforcement options. This qualitative assessment may consider the likelihood that an option is required, along with the environmental, social and deliverability aspects of each option.





Develop options to resolve

Flexibility options

As part of our Flexibility First approach, the use of flexibility will be the primary option considered in all cases. Procuring flexibility services allows us to delay or avoid investment decisions to reinforce the network to meet demand and reduce the risk of long-life stranded assets.

Flexibility also enables us to improve the efficiency of the existing network through increased levels of utilisation. Developing flexibility options requires us to make estimations rooted in data from various sources. These estimations include:

- The volume and price of flexibility for each year- estimated based on connected assets and trends on flexibility uptake.
- The hours per day and the number of times per year flexibility is likely to be needed – estimated based on the DFES projections.

These assumptions feed into the Common Evaluation Methodology (CEM) where the output determines if flexibility is the economic option, what the option looks like and how it changes over time.

If a flexibility solution has been identified as economically favourable in this process, then we investigate if this flexibility solution is technically viable with the flexibility available on our network.

To improve participation in DSO markets and ability of the ESO to coordinate with DSO flexibility markets, the DNOs have been continually working with the Energy Networks Association (ENA) to develop a set of common flexibility products. As result of this collaboration the initial flexibility products – Sustain, Secure, Dynamic, and Restore – have been replaced with the list of new products in the table on the right that will be used for all future procurement rounds.

Product name	Utilisation instructions	Availability refinement	Payment structure
Peak reduction	At Trade	N/A	Utilisation
Scheduled Utilisation	At Trade	N/A	Utilisation
Operation Utilisation	Real Time or Week Ahead	N/A	Utilisation.
Operation Utilisation + Schedule Availability	Real Time or Day Ahead	Not allowed	Availability + Utilisation
Operation Utilisation + Variable Availability	Real Time or Day Ahead or Week Ahead	Week Ahead or Month Ahead	Availability + Utilisation

SSEN annually publishes the SLC31e procurement statement to provide an overview of the flexibility services that will be procured in the coming year. In addition, we signpost on our website the locations and requirements for our upcoming flexibility service procurement exercises.

The DSO flexibility market space is still developing, and policy is still being formed in multiple areas that will likely impact our flexibility market and how we procure services. Ongoing consultations and areas of uncertainty may change the context in which our flexibility market is developing, and we will continue to take an active part in all relevant policy consultations processes.

Stakeholder engagement

In September 2023, we initiated an engagement program for potential flexibility providers in our license areas to participate in our network-wide call for flexibility. We will further refine our engagement activities to inform and involve market participants and stakeholders through targeted webinars and one-to-one conversations.

Improving domestic energy efficiency means the reduction of peak loads and the reduction of the need for both flexibility service procurement and traditional network reinforcement. Going forward, we will look for opportunities to enable third parties to use Energy Efficiency as a flexibility solution.



Assessment of options

Techno-economic assessment

Currently we justify future network investments through Engineering Justification Papers (EJPs) which are submitted to Ofgem alongside a deterministic Ofgem directed CBA. As part of the Flexibility First approach, we use Open Networks' Common Evaluation Methodology (CEM) to decide on flexibility options to defer reinforcement.

In our proposed Strategic Investment approach, we compare the cost and benefits of strategic investment alongside baseline reinforcement and the use of flexibility. This approach is supported by an analysis carried out by NERA economic consultants that estimated that societal benefits in order of £1.1 billion could be created by 2050 if strategic investment prevented delays due to insufficient network capacity and reduced the time to connect for new connections by as little as one year.

In practice, strategic investment can be done to different degrees, requiring different analysis, tools, capabilities, data and levels of coordination.

We have considered different models alongside the recommendations of the NERA report and have decided to implement a phased approach to strategic investment throughout ED2.

As such, we will first focus on assessing the wider economic / societal benefits when assessing network intervention (including the benefits of enabling earlier connections), before considering the requirements for future models.

Where required, we will also compare the costs and benefits of whole system solutions alongside the use of flexibility, reinforcement, and strategic investment options. To do this we will use various tools as described below:

Tool	Purpose
Deterministic Cost Benefit Analysis (CBA)	Used by all DNOs to develop reinforcement options and the basis of RIIO-ED2 plan.
Common Evaluation Methodology (CEM) CBA	Used where one or more of the options considered are flexible services. The primary use case for this tool is to assess the deferral of conventional reinforcement through the procurement of flexibility services.
The Whole System CBA	Used to account for all network actors and wider economy / society when planning network interventions. This includes the opportunity cost associated with delays in connections for developers. It also enables coordinating works with other utilities (e.g., water, gas) to minimise cost and disruption. As per the CEM, this tool enables users to test multiple strategies / actions under different load growth or market scenarios and allows optimise for the Least Worst Regret in alignment with the ESO Network options Assessment methodology.

Cost-benefit analysis will need to be reviewed on an annual basis. This will ensure we are utilising the latest information on flexibility unit costs and may result in acceleration or deferral of strategic investment.

DSO / DNO Coordination

The results of the CBA will be subject to an internal check by the DNO to ensure the solution meets is deliverable and maintains safety and security of supply. The DNO ensures the solution is in line with the current portfolio of plans.

Assurance and Transparency

All the decisions will go through an independent audit process. The results of the audit are reviewed by the DSOAB and have an opportunity to feedback and escalation.

The DSO and DNO will work together reach an agreement prior to an independent audit process.

Stakeholder engagement

We will be engaging with industry stakeholders and the rest of the DNOs on our proposed approach the use of the whole system CBA.



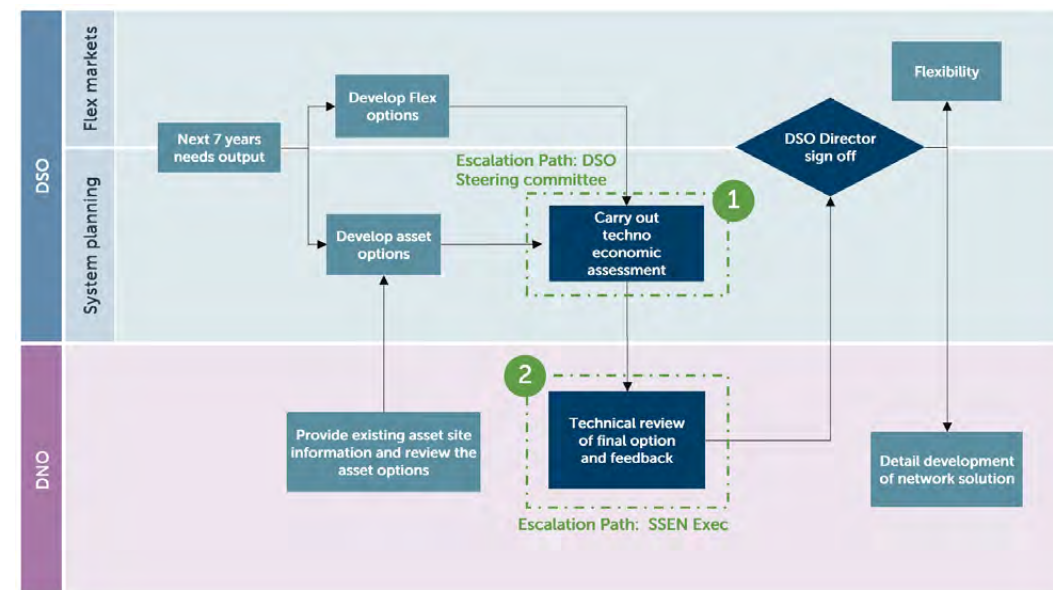


Assessment of options

Our DNOA decision-making process sits within the overarching Strategic Planning process. We have introduced proportionate measures at the appropriate step to facilitate decision-making, manage conflict resolutions and increase transparency to our stakeholders.

The simplified view of the key decision points in this process is presented in the flow chart on the right. 1 and 2 are the two steps within the process that may require additional measures to form a resolution. The path of escalation at each point is described below:

	Resolution required when	Escalation path
1	In developing options to resolve constraints, system planning and flexibility market functions have differing views over the flexibility service solutions.	DSO Steering committee.
2	In reviewing DSO's recommendations for constraint removal, the DNO provides feedback on deliverability as well as operational and safety of the scheme and a common solution cannot be reached.	SSEN Executive through Director of DSO or DNO.



In addition, we have introduced independent oversight on our process and decisions. All schemes above £500k will go through the DNOA process and the results will be published on our Data Portal. Based on the size of the scheme, the proposed solution will go through an independent audit process.

The results of the independent audit will be overseen by our DSO Advisory Board and will be published on our website. We will share the results of the independent audit as part of the annual submissions.

Thresholds	Proposal approved by	Independent audit	Assurance	Process
Between £500k and £2m.	Head of system planning.	No	The annual conclusions of the independent audit, will be reviewed by the DSO Advisory board.	In batches.
Between £2m and £4m.	Head of system planning.	Yes		In batches.
Between £4m and £20m.	Director of DSO.	Yes		Scheme by scheme.
More than £20m.	Distribution Executive Committee.	Yes		Scheme by scheme.



Update plans and deliver

The table below demonstrates the different results of our assessment, some of which are conventional options we have been using in asset planning, while other options are in early implementation and will mature and become embedded in our processes.

We will continue to consider incorporating additional layers to our methodology to ensure we are meeting the needs of our stakeholders now and in the future.

Investment decisions will be published as part of DNOA documents to allow stakeholders to understand how we will develop our networks in the next 7-10 years. If the delivery trigger is met, plans are passed on to the delivery team, otherwise they will be re-assessed in the next period.

Outcomes	Solution options	Description	Implementation status
Procure flexibility solutions	Efficient use of flexibility.	Where deferring reinforcement with flexibility is feasible and the economically optimal solution considering the networks short-term and long-term needs.	Implemented as part of the Flexibility First Approach.
	Emergency use of flexibility.	Where deferring reinforcements with flexibility is feasible but not the economically optimal solution, however there is network constraint becomes live before the asset option can be built.	Implemented as part of the Flexibility First Approach.
	Flexibility to enable project delivery.	Where deferring reinforcements with flexibility is feasible but not the economically optimal solution however the use of flexibility is required to prevent system outages to delivery asset projects.	Implemented as part of the Flexibility First Approach.
Asset solutions	Baseline network reinforcement.	Where deferring reinforcement with flexibility is not efficient or not possible but oversizing the assets is not required considering the networks short-term and long-term needs.	Conventional asset planning process.
	Strategic reinforcement.	Where deferring reinforcement with flexibility is not efficient or not possible but oversizing the assets is required considering the networks long-term needs.	Early implementation.
	Smart solution.	Where the constraint does not require planning interventions as the need can be met with operational solutions or innovative technologies that are economically viable.	Conventional asset planning process.
Defer decision	Signpost.	Where a delivery decision is not needed this year given the timescale for delivery.	Conventional asset planning process.
Other possible outcomes	Energy efficiency.	Where deferring reinforcements with energy efficiency is feasible and the economically optimal solution considering the networks short-term and long-term needs.	Not implemented yet.

The outcomes of the assessment will be published on our website twice yearly in our DNOA outcomes report. Having access to this data will help strategic planning and site new development at optimal points on the network, providing relevant information for customers and local communities. The DNOA report will not only demonstrate transparency, but also meaningfully empowers local decision making and the delivery of net zero.



2024 Timelines for data publications and key decisions

Our DNOA incorporates two documents:

1 DNOA methodology –
consulted on and updated annually

2 DNOA outcomes report –
published twice a year

Throughout the process, there are several publications including the DFES report, LTDS, and NDPs that will be published on our data portal.

We are currently reviewing our procurement activities, therefore the timelines for our procurement windows might change accordingly.

We are committed to publishing the results of each procurement round within 2 months of the procurement window closing.

As our process matures, we will modify the timelines of our publications based on stakeholder feedback and to align with other internal processes.

	Dec	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Transparency			DSOAB Mobilisation		DSOAB Quarterly meeting		Audit		DSOAB Quarterly meeting		Audit	DSOAB Quarterly meeting	
Publications		DNOA methodology Consultation		Publish DNOA Methodology		Initial Net Zero Strategic Plans	Future net zero strategic plan outputs						
				Publish Initial DNOA outcomes	Future DNOA outputs								
				DFES	Dispatch report **		LTDS						LTDS (update)
					Procurement statement **								
Engagement		DNOA consultation		Engagement on DFES	Strategic planning development		Engagement on Net Zero Strategic Plans						
	LENZA onboarding and LAEP engagement												

*Once every two years

**As part of SLC31E



DNOA Outcome Report outline

Scheme Name

Scheme description

- Location and relevant post codes
- Constraint details

Proposed option

- Outline/summarise the work to be done to remove the constraint
- Justification for decision

Constraint season

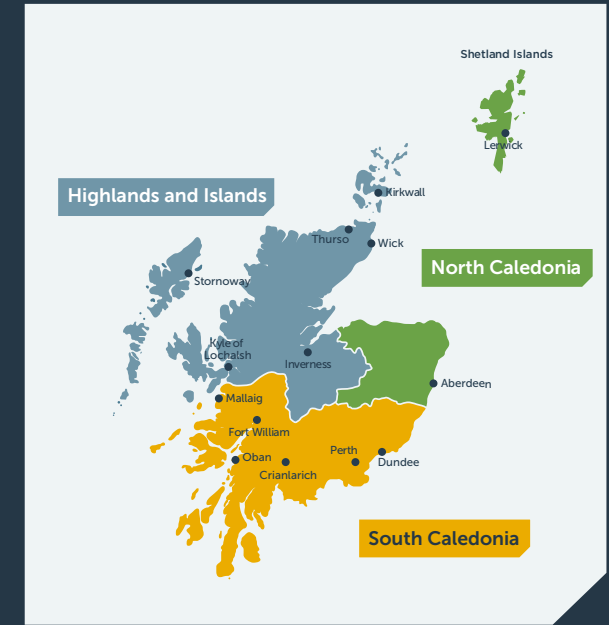
DNOA History

2023/24	2024/25	2025/26	2026/27	2027/28

Estimated flexibility price (if available):

- Availability
- Utilisation

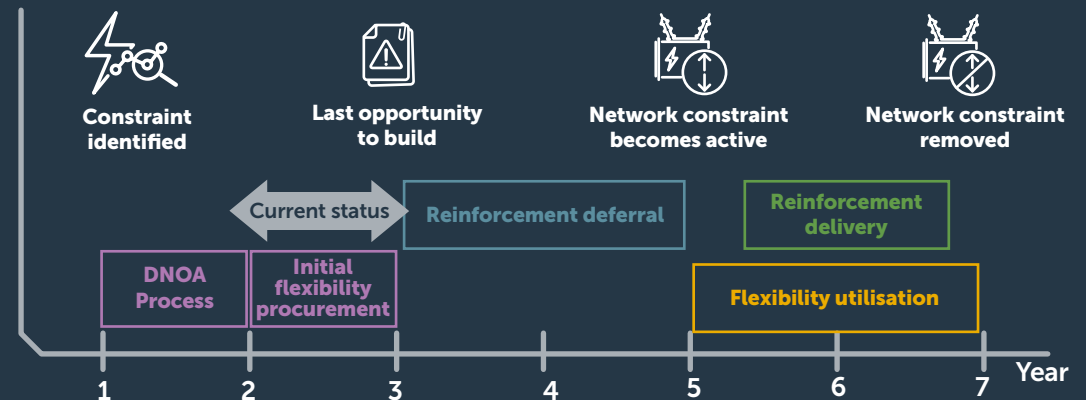
Reinforcement timeline



Estimated demand above firm capacity per year under each scenario (MW)

	2023/24	2024/25	2025/26	2026/27	2027/28
CT					
ST					
LTW					
FS					

Constraint management timeline (illustrative)





Engaging with our stakeholders

✓ Listening to our stakeholders

We have engaged with a range of stakeholders throughout the process of refreshing our DSO strategy in October 2023. Ranging from flexibility providers to the ESO and Local Authorities, we have captured the voices of relevant stakeholders on our future plans and defined our priorities based on their preferences.

The key activities and insights that have fed into our DNOA methodology include:

- Engaging with stakeholders on transparency and assurance and gaining their insights on managing uncertainty in our decision-making and how stakeholders want to be involved in our processes.
- We outlined our ambition to embed strategic investment in our strategy and the benefits of it as part of the DSO strategy and heard from our stakeholders about focusing on delivering network visibility, identifying system needs, transparent options assessment and whole system planning.

✓ What are we planning to do in the future?

SSEN is focused on delivering for the communities we serve and doing our part to ensure a just energy transition.

We understand that any evolution of electricity market governance arrangements must serve the needs of all stakeholders and customers, including the most vulnerable.

At every stage of development, we are taking time and care to consider how any changes to the way we manage the electricity distribution system may impact the most vulnerable in our society. We encourage community stakeholders to engage with us in this process, which has the potential to deliver savings for all customers, including vulnerable customers and communities, while also driving the journey towards net zero.

We will annually refresh our DNOA methodology document and publish the outcomes of the DNOA process at least twice a year. We look to get stakeholders' input on our overall DNOA process as well as the level of detail and the granularity we provide in the DNOA outcome reports.



Want to know more?

Topic	Last update
Forecasting the future of our network. Link to our DFES report	Updated annually
Network capacity information and constraints Link	NDR Updated bi-annually NHR and LTDs Updated annually
Local area energy planning support. Sign-up to LENZA	Onboarding of Local Authorities is ongoing
Flexibility tenders and documents. Link	Updated periodically
Outcome of our DNOA process	Published bi-annually



Consultation Questions



- 1 Are there any existing opportunities for considering wider whole system options to deliver identified needs at the lowest cost that we have not taken into account? Are there any cross-sector engagement opportunities we are missing in our process?
- 2 Do you recommend any changes to the DNOA report outline?
- 3 On a scale of 1-10, to what degree does our process provide transparency on our approach to managing potential conflicts of interest between the DNO and DSO? (10 = Very transparent, 5 = Somewhat transparent, 1 = not transparent at all) If our current process does not go far enough, how can we improve this in the short term and long term?
- 4 Do the tools we have included in our "assessment of options" step allow us to sufficiently recognise the value of options other than network reinforcement?
- 5 Does our DNOA methodology provide you with confidence that we are prioritising efficient and economic solutions in the long term when looking at different options? If not, how can we improve this in the short term and the long term?
- 6 We utilise trends of flexibility uptake and flexibility prices to estimate future prices, what other modelling would be useful?
- 7 Are there any other considerations with respect to flexibility that we should capture?
- 8 Do you have any further thoughts on our proposed consideration of energy efficiency going forward?

Your feedback

We'd greatly appreciate if you would take the time to tell us what you think of this document. It will help inform our decision making and future initiatives.

To tell us your thoughts; email: whole.system.distribution@sse.com 

Please could you provide your responses by 12th February 2024.





Glossary

Term	Description
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.
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.
DSOAB	DSO Advisory Board
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

Term	Description
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.
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

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For any queries or to request further information, please contact us on:



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