



# North East focus RIIO-T3 Webinar

nationalgrid

# Thank you for joining

## Housekeeping

- Please note that this session will be recorded.
- Please add your questions via Q&A function for our dedicated session at the end of the talk – 30 minutes Q&A.
- Questions and Answers supported by Environmental, Connections, Responsible Business and Whole System Planning leads.
- Alternative for raising questions [pathwaytonz@nationalgrid.com](mailto:pathwaytonz@nationalgrid.com)

## Agenda

Introduction	5 mins
Forming Future Network Blueprints	10 mins
North East Future Network Blueprint	10 mins
Next Steps	5 mins
Environment commitments	5 mins
Update from Northern Powergrid	10 mins
Update from NESO	15 mins
Questions and Answers	30 mins

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# Introduction

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**Sara Habib**  
Head of Future Price Controls

National Grid Electricity Transmission





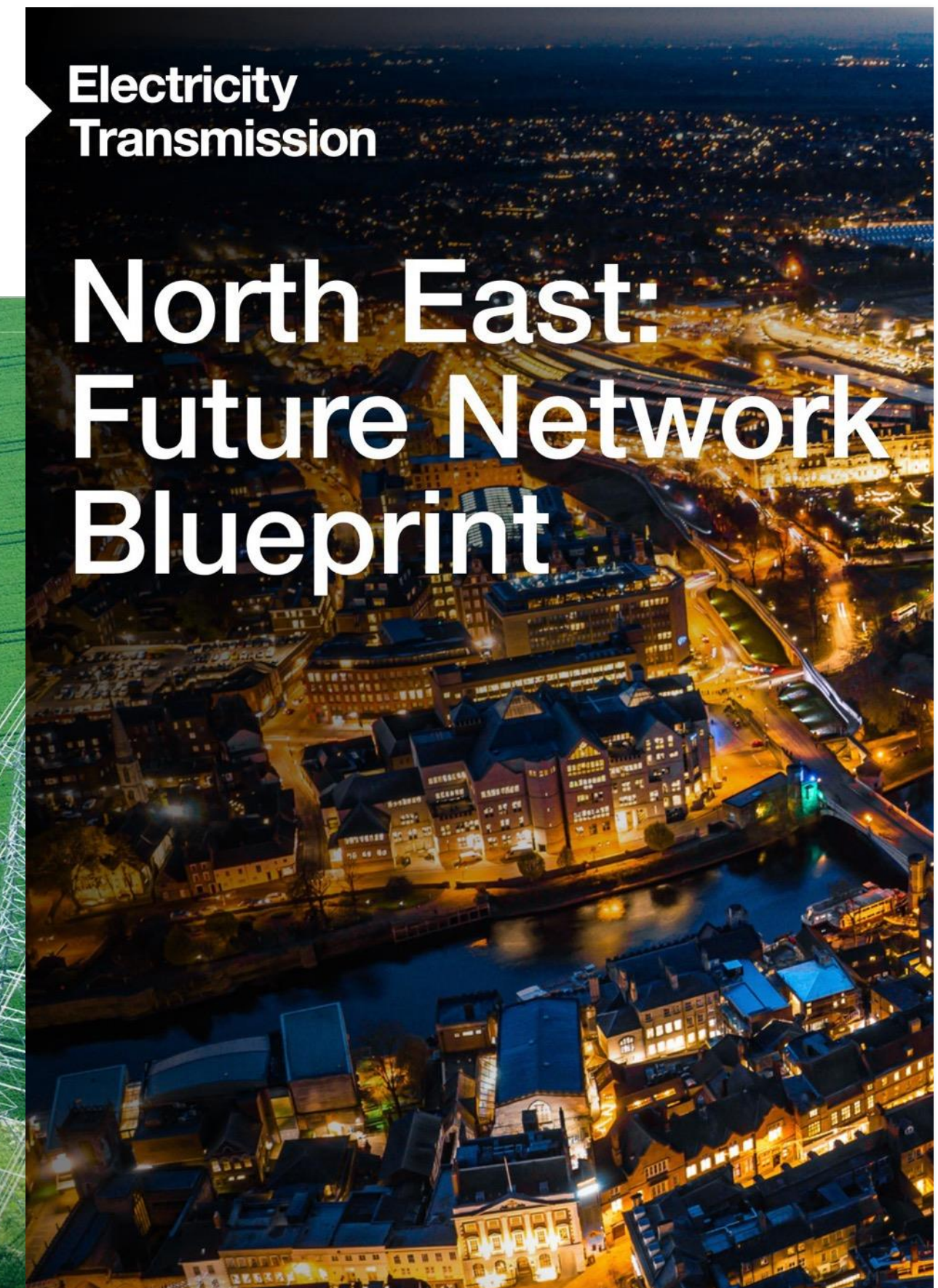
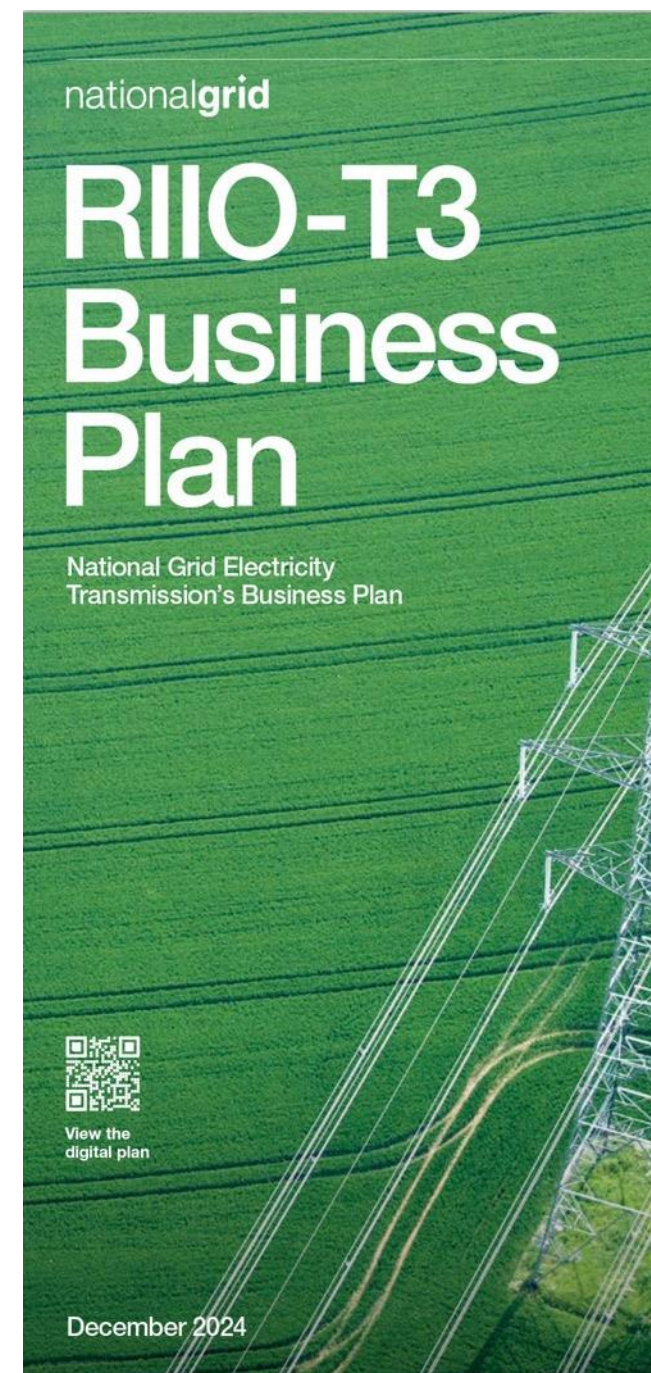
We own and operate  
the transmission network  
that is the backbone  
of electricity system in  
England and Wales

The objective of today's webinar is to set out the North East view of the future network outlined in our business plan for 2026-2031.

Our £35bn business plan was submitted in December 2024 and is being assessed by Ofgem.

Our plan will nearly double the amount of power we can transfer across England and Wales and more than double the rate of connecting our customers.

We want stakeholders to be involved in the 'call for evidence' that Ofgem has opened as part of the RIIO-T3 price control process and to feel well-informed on what is included in our plan and why.



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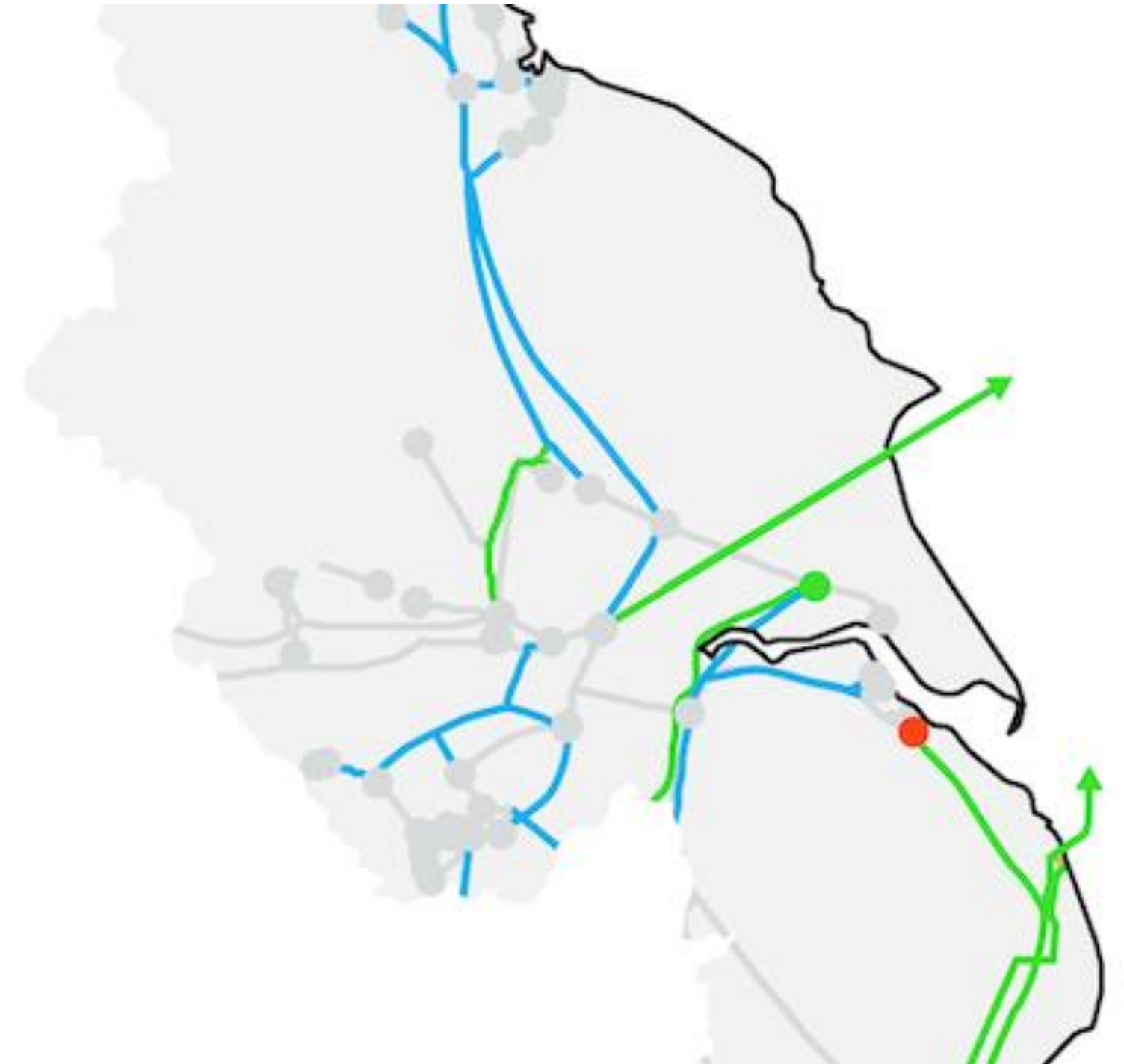
# Context on our regional plans

*This regional view considers electrical factors such as power transfers and access for planned outages and, where possible, aligned to the distribution network operator and local authority boundaries.*

*This webinar is not about the detailed project development, precise location, or technology options under consideration for individual network upgrades. That comes through individual project consultations, in line with Planning Act requirements.*

*Please contact us for project details at [Communityrelations@nationalgrid.com](mailto:Communityrelations@nationalgrid.com)*

*This webinar is part of our ongoing engagement. For the past couple of years we held regionally focused workshops, bringing together local organisations, like local authority representatives, businesses, other network companies and the National Electricity System Operator (NESO), to gather perspectives and co-create our network plans.*



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# Forming the Future Network Blueprints

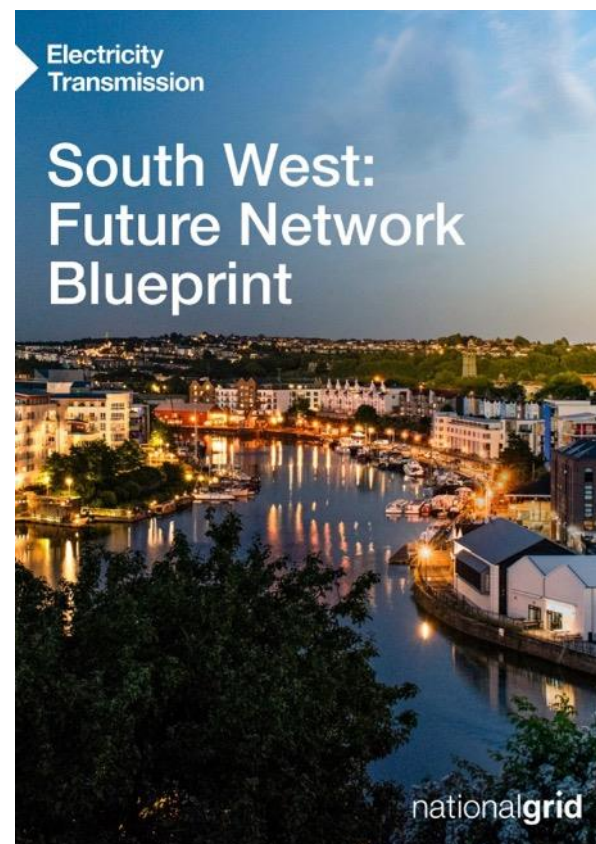
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**Ben Haggerty**  
Head of Whole Systems

National Grid Electricity Transmission



# Future Network Blueprints



## What are they?

A single and coordinated ‘best view’ of the work needed across different regions of our network across England and Wales to enable the overall transition to net zero.

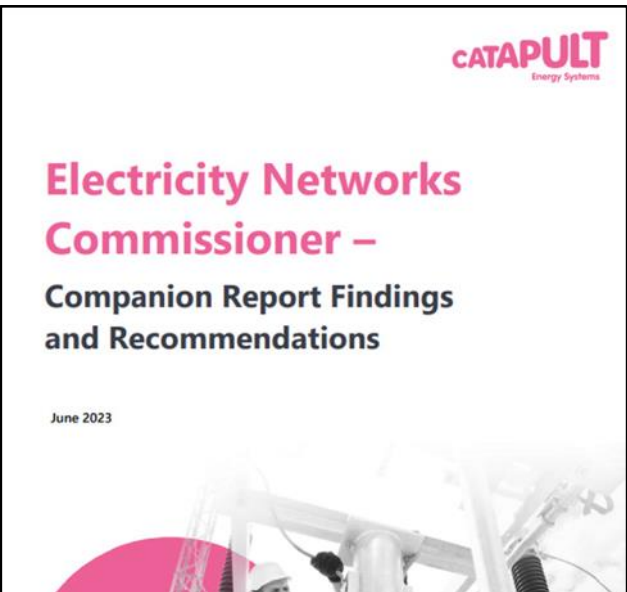
## What do they do?

They help us to make coordinated decisions about where, when and how to upgrade the grid.

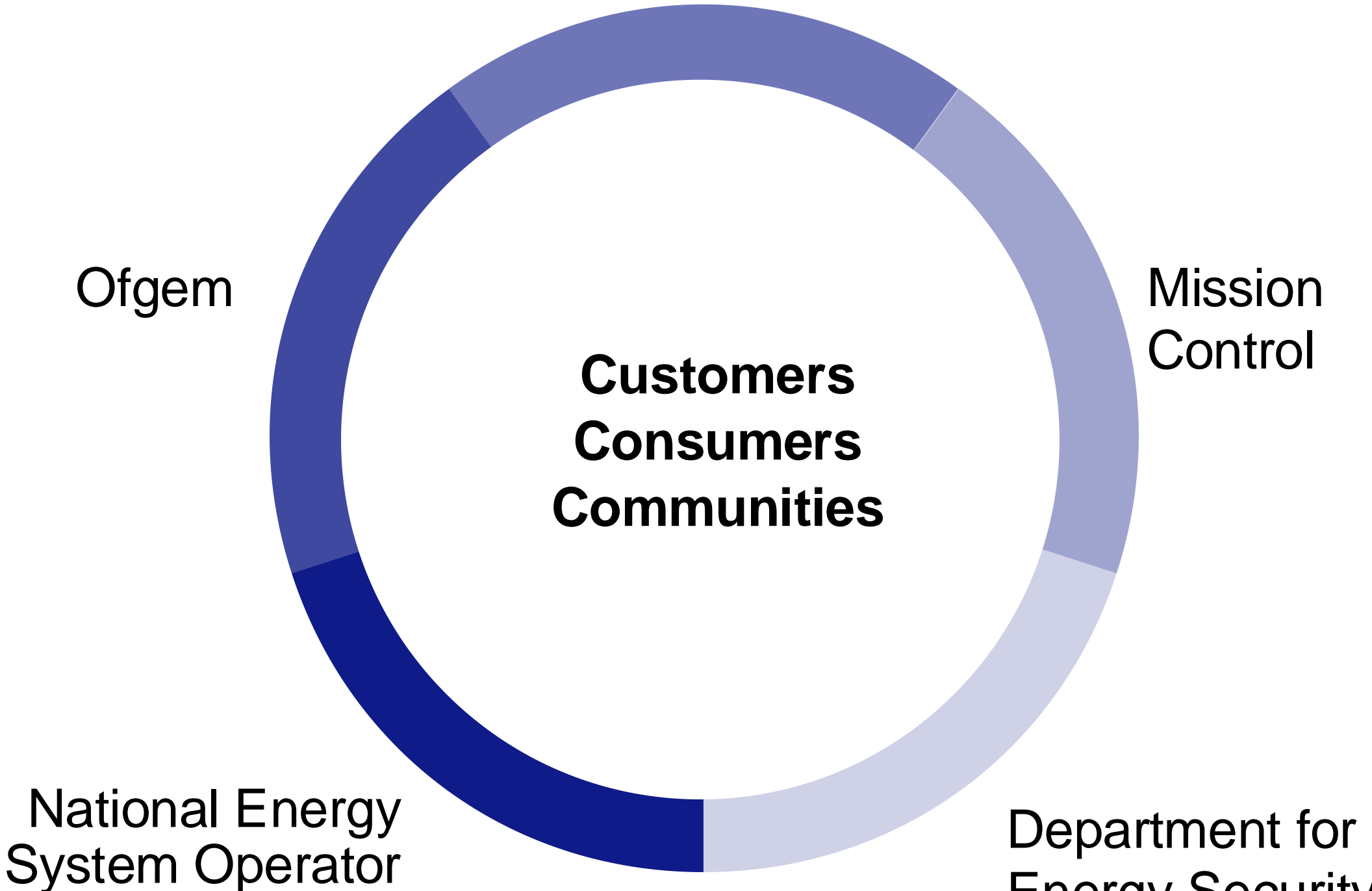
This forward- thinking, holistic planning approach allows all parties to enhance efficiency through collaboration and coordination – with an aim to do it once, do it right.



# The energy landscape

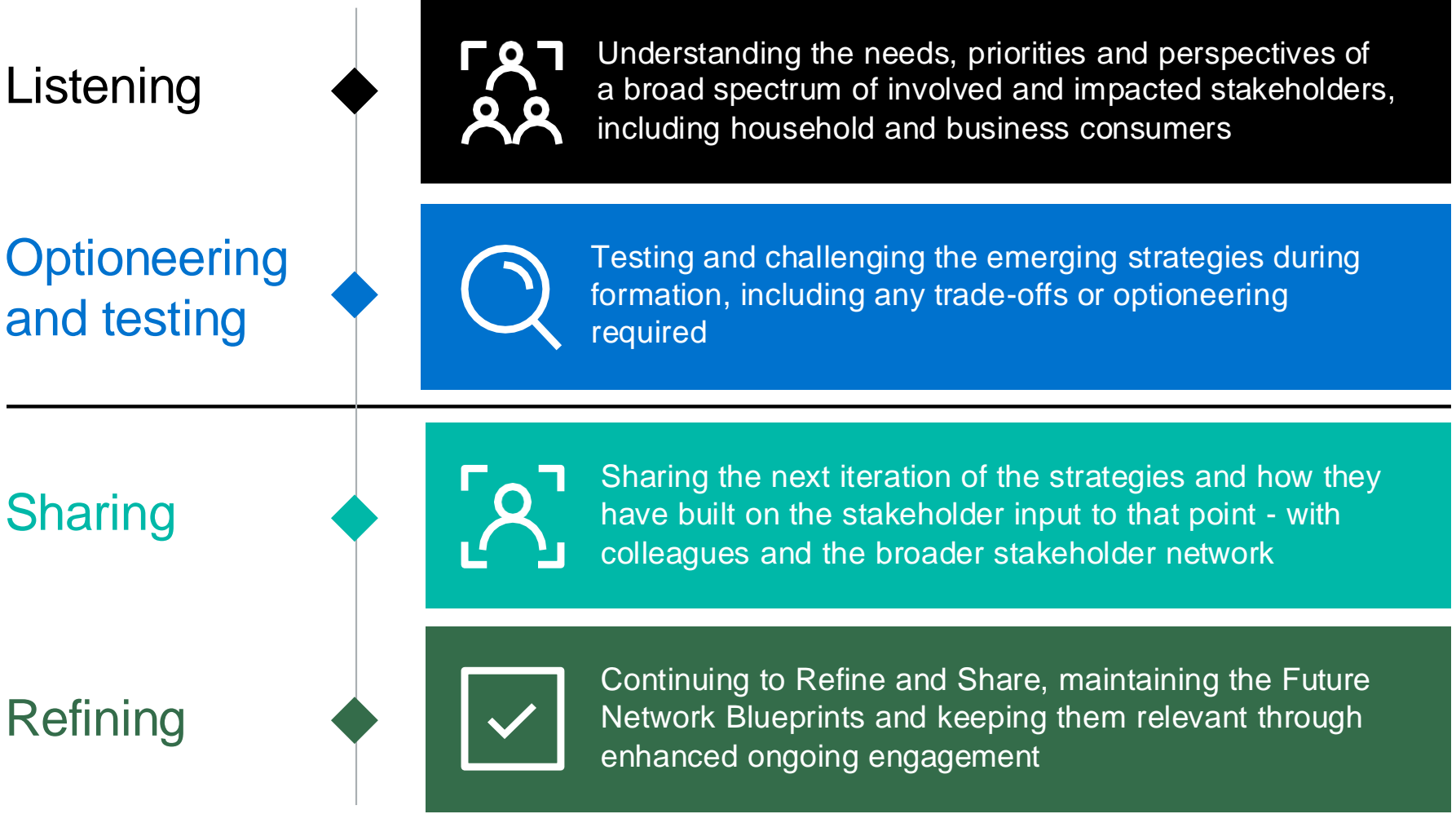


National Grid Electricity Transmission and other network companies



# Our overarching nationwide Stakeholder engagement approach

Since 2022 we have listened to and worked with those who are impacted by the design, timing, cost and delivery of the network upgrade...



...And this approach continues beyond our December RIIO-T3 Business Plan submission to Ofgem, as we refine its details throughout delivery.

**12,000**  
voices

**We listened to over 12,000 voices** representing all stakeholder groups

**23,000**  
residents

**We consulted with over 23,000 residents** in communities already impacted

**35**  
workshops

**We held 35 region focussed workshops** with our industry partners and peers


We hosted a playback webinar on our T3 plan in November




# What we learnt – forming our network planning approach


With an ever-evolving energy landscape, we needed a more comprehensive approach to our network planning

 During our listening phase we got to understand the detail...

 By thinking differently, and working closely with stakeholders, we can help transform the electricity network to meet everyone's future energy needs.

 We need to work more closely than ever with all our stakeholder groups

 Local network needs differ, requiring a more focused approach

 Visibility of our investment planning is critical

 We need to coordinate and collaborate on our plans

 We need to be flexible to changes and not wait for 100% certainty



# The process

Based on insights from our stakeholder engagement programme we set three overarching ambitions which shape our plan

We have developed a comprehensive framework to test and validate both national and local investments against our new ambitions.

This encompasses **whole system planning**; focused on an integrated and collaborative approach.

**Ambition A**  
Deliver the grid of tomorrow, today

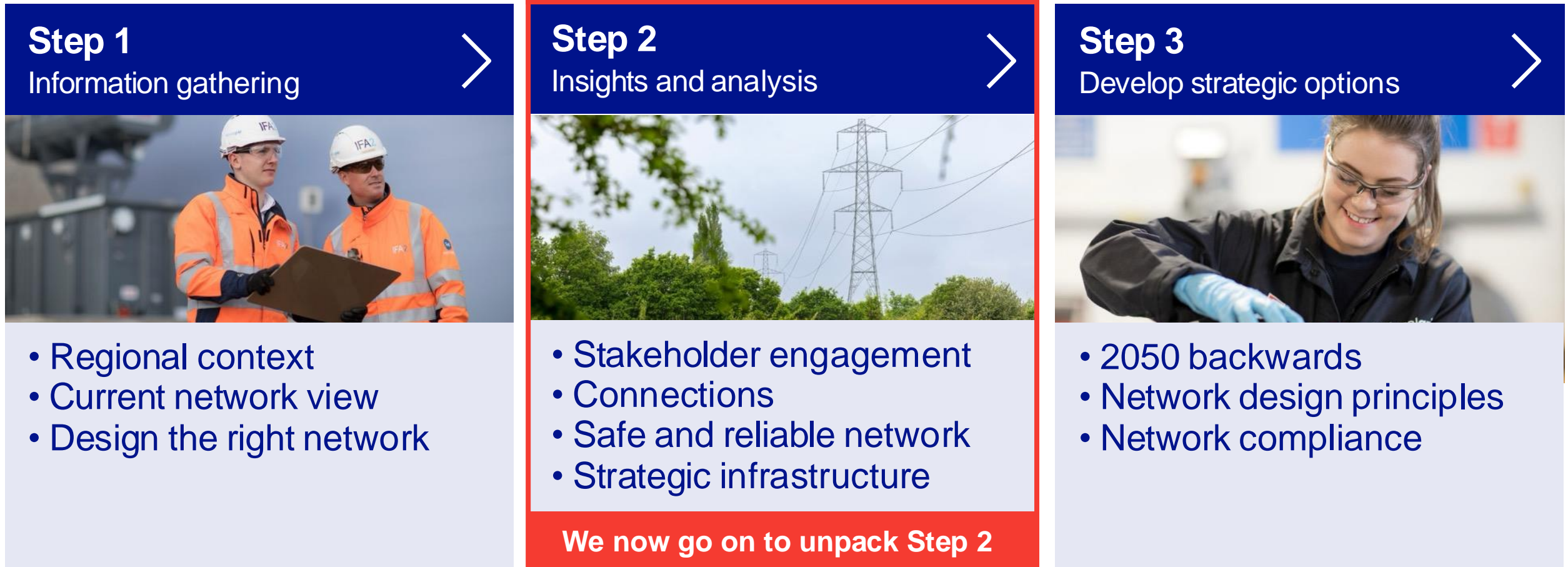
Deliver with urgency the Transmission Network needed for Great Britain's future growth and decarbonisation

**Ambition B**  
Do the right thing for consumers, communities and the environment

How we deliver is as important as what we deliver

**Ambition C**  
Transform the way we work

Transform our capabilities to deliver for consumers



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# North East Future Network Blueprint



# North East | Stakeholder Engagement

Distribution networks



We are working with local distribution networks (DNOs) to understand the impacts and requirements in that region and develop **‘whole-system’ solutions.**

**39**  
Indicates the number of whole system opportunities we have already identified in the North East

**💡**  
**What does the term ‘whole systems thinking’ mean to you?**  
(Pathway to Net Zero workshops, poll base: 91)



**What did stakeholders in the North-East initially tell us?**

**‘Being able to share data and accessing information is key.**  
Open and accurate data are key to facilitating the path towards net zero and to getting stakeholders more involved in this.’  
(Electricity & Gas licensee)

**‘If the (connection) speed were to remain as is, it would stall growth & development in our regions ... everybody in one form or another is connected to the electric grid so its absolutely fundamental.’**  
(Local Authority)

**‘Safe and reliable network and ease of connection are the priorities for me.’**  
(University Estate)

**🔌 84%**  
**Already impacted by connections queue**  
(Pathway to Net Zero workshops, poll base: 33)

# North East | Safe and Reliable Network

Step 2  
Insights and analysis



A reliable network is a top priority for everyone.



### Commitment

Maintaining a safe, reliable and resilient system through a period of growth and changing asset base.

### Natural hazard resilience

By the end of 2025, all relevant North East sites will be fully compliant with Energy Networks Association standard 138 on flood protection.

### Physical security resilience

With increasing generation and demand we are investing in enhanced physical security at sites within the region.



### Challenge

If we looked to do this portfolio of work in isolation, we would not have enough resource, supply chain support or access to the network to complete it.



### Solution

Our approach aligns asset health and new infrastructure plans to optimise best use of our resources.



High voltage substations identified in region that require enhanced asset health intervention



Overhead line in region that requires replacement in the next 10 years

### Asset health intervention regional metrics



Super grid transformer



Circuit breakers



Voltage management assets



Bay equipment replacements

# North East | Customer Connections

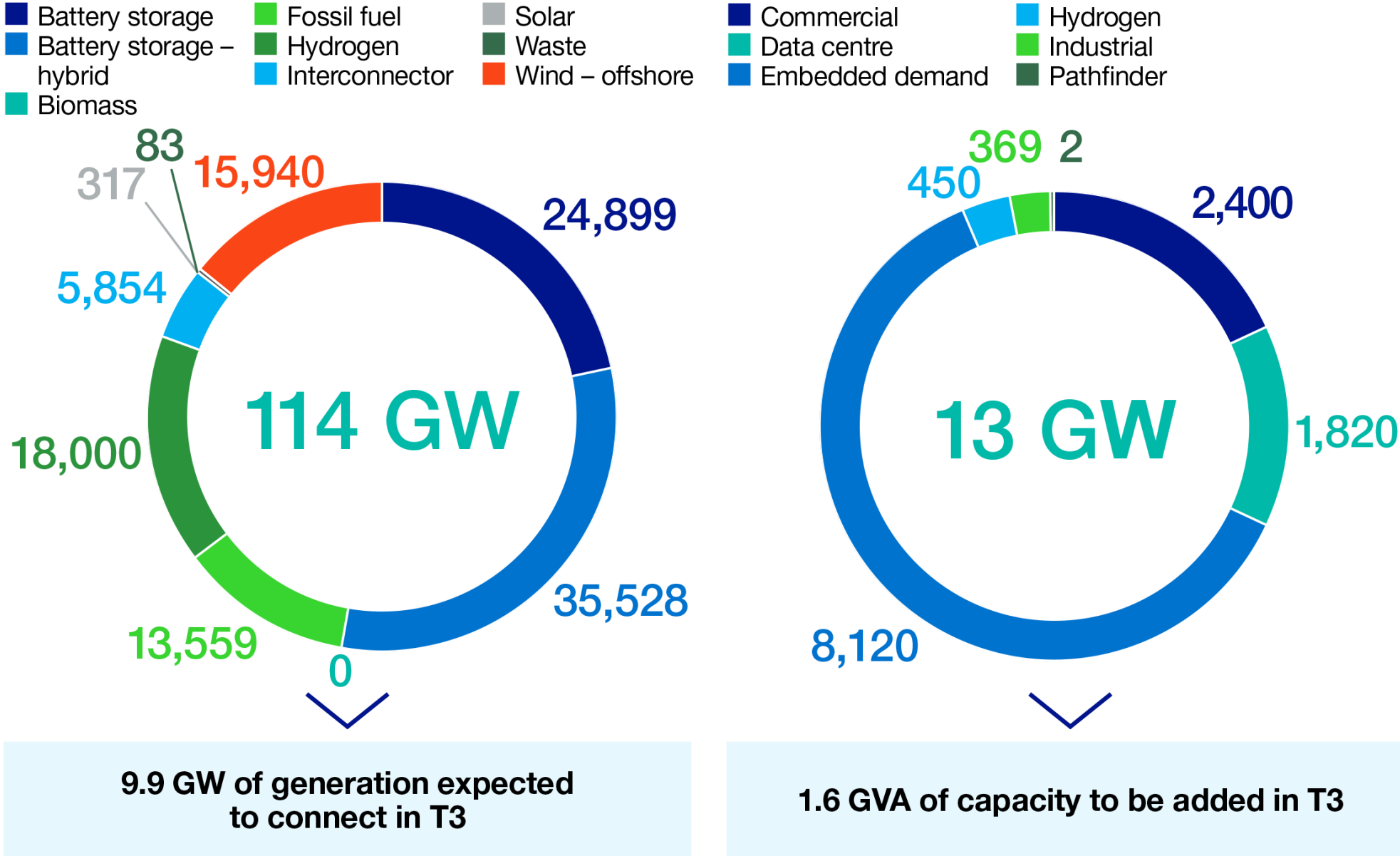


We need to make it easy to connect and use the electricity network

**Commitment**  
Enable the connection of new generation and demand customers to support Government targets.

**Challenge**  
Not all the connections in the queue will connect to the network.

**Potential solutions**  
We have progressed a number of connections which form a baseline and pipeline plan of work.  
  
Connections Reform will help enable connections to the network by reviewing the current connections queue.



Customers have contracts for new connections to 2037 that would deliver **114 GW generation** and **13 GW of demand connections** in this region.



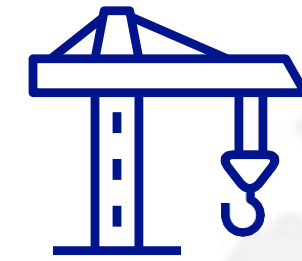
# North East | Strategic Infrastructure

Step 2  
Insights and analysis

The National Energy System Operator (NESO) is responsible for identifying and timing of new strategic infrastructure on the electricity transmission network by incorporating;

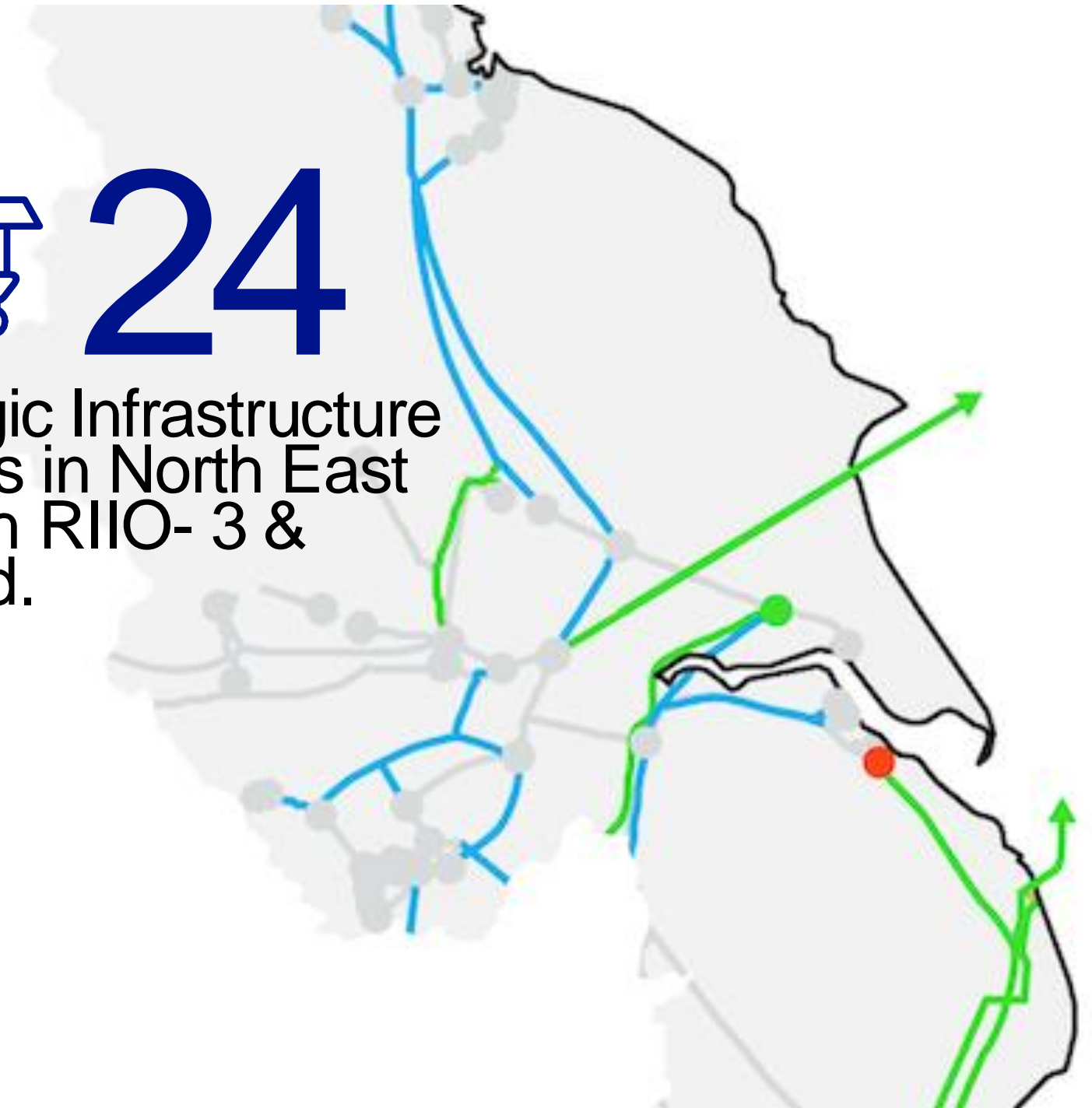
- Energy scenario analysis
- Alignment with government policies on decarbonisation
- Market intelligence
- Stakeholder engagement to predict future energy needs.

The process is evolving to ensure that strategic infrastructure development is proactive, addressing both current and future challenges, and supporting the transition to a sustainable and reliable energy system.



# 24

Strategic Infrastructure projects in North East through RIIO- 3 & beyond.



In the North East, we are building new infrastructure and optimising our existing network through upgrade projects to support increasing power flows in the region.

# North East | Plan Overview

National Grid’s electricity transmission strategy in the North East focuses on upgrading and expanding the network to support substantial renewable energy integration and enhance grid resilience.

Several regional projects are part of the Great Grid Upgrade initiative

We are investing heavily in upgrading existing sites and building new ones to integrate the significant offshore wind power landing in the Humber region as well as new onshore generation connections.

In Lincolnshire we are building critical new infrastructure to enable transmission of clean power whilst at the same time creating capacity for new connections within the region.

**£8.6bn**  
of investment

to maintain, upgrade and develop our network in T3

**13 GW**  
demand

contracted to connect\*; 1.6 GVA of additional capacity expected to be installed in T3

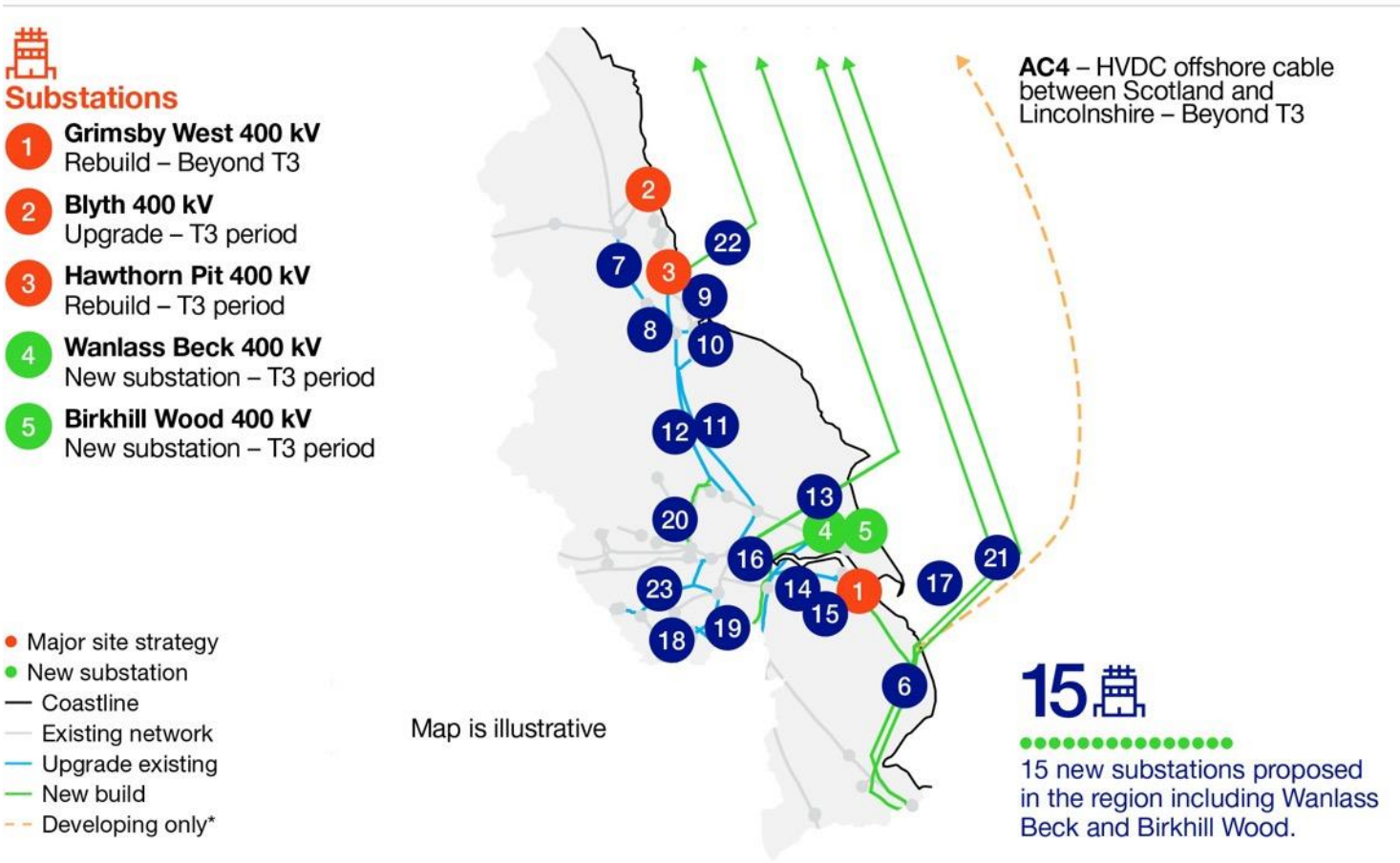
**114 GW**  
generation

contracted to connect\*; 9.9 GW estimated to connect in T3

**831 km**  
of overhead line

reconductoring planned within T3, equating to 25% of the region

## North East Strategy



**18**  
substation investments; 15 new and 3 major interventions

**24**  
strategic infrastructure projects within the region

- Circuits**
- 6 GWNC – Grimsby to Walpole – New circuit – Beyond T3
  - 12 NOR6 – Norton to Osbaldwick Upgrade circuit – T3 period
  - 18 Sheffield ring cable replacement – Beyond T3
  - 7 SPRE – Spennymoor to Stella West – Upgrade circuit – T3 period
  - 13 E4D3 – Eastern Green Link 2 – New circuit – T3 period
  - 19 BTR2 – Brinsworth to Thorpe Marsh – Upgrade circuit – T3 period
  - 8 SNRE – Spennymoor to Norton – Upgrade circuit – T3 period
  - 14 Creyke Beck – Humber Refinery – Keadby – Reconductor OHL circuit – T3 period
  - 20 OPN2 – Yorkshire Green – New circuit – T3 period
  - 9 HNRE – Hawthorn Pit to Norton – Upgrade circuit – T3 period
  - 15 Creyke Beck – Keadby – Killingholme – Reconductor OHL circuit – T3 period
  - 21 E4L5 – Eastern Green Link 3 – Beyond T3
  - 10 Lackenby-Norton 1 – Reconductor OHL circuit – T3 period
  - 16 CGNC – North Humber to High Marnham – New circuit – Beyond T3
  - 22 E2DC – Eastern Green Link 1 – T3 period
  - 11 LTRE Lackenby – Thornton 1 and 2 – Reconductor OHL circuit – T3 period
  - 17 TGDC – Eastern Green Link 4 – New circuit – Beyond T3
  - 23 ETRE – Upgrade Eggborough – Thorpe Marsh to increase capacity – T3 period

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# Next Steps



# What's next for the North East Future Network Blueprint?

We want to be transparent about our plans today and into the future. Planning is an ongoing, evolving process and we want to ensure we incorporate the needs and expectations of those impacted by their shape, direction and timing.

- Outcomes from Clean Power 2030 and Connections Process reform – We have designed our plans to be adaptable to changes.
- We continue to work with our network partners Northern Powergrid (NPg) and National Grid Electricity Distribution (NGED), stakeholders and the newly formed National Energy System operator (NESO) RESP team to evolve our 'Whole System' planning approach and regional plans.



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# Environmental Update for the North East

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**Carolyn Helm**  
Sustainability Technical Manager

National Grid Electricity Transmission





# Delivering a sustainable electricity transmission network

## Our ambition

The changes we are proposing to our Environmental Action Plan in T3 will support the energy transition in a way that achieves **sustainable operations** and **contribute to a nature positive future**, whilst being **respectful of planetary boundaries**.



## How we deliver is as important as what we deliver

Pillars	Goals	Metrics	Delivering in the North-East
	<p>We will achieve <b>net zero by 2050, ensuring alignment to climate science and industry best practice to avoid the worst effects of climate change on people and the planet.</b></p>	<ul style="list-style-type: none"> <li>• <b>50%</b> reduction in scopes 1 and 2 emissions from 2018/19 baseline;</li> <li>• <b>50%</b> reduction in SF6 emissions by 2030 from a 2018/19 baseline;</li> <li>• <b>20% substation energy efficiency improvement</b> from a 2022/23 baseline;</li> <li>• Purchase <b>100% zero emission vehicles</b> for our light-duty fleet;</li> <li>• Deliver our <b>construction projects as low carbon intensity</b> as possible;</li> <li>• Achieve <b>net zero emissions</b> for our corporate property <b>office estate</b>.</li> </ul>	<p><b>Case study</b> Our Doncaster refurbishment centre and Oil Management Unit</p> <p>There is an ever-increasing demand on the earth's resources, so it is essential that we make the most of all the materials we use.</p> <p>We have a dedicated refurbishment centres in Doncaster. Where possible, we refurbish -&gt; replace -&gt; dispose of our assets. Our refurbishment programme covers circuit breakers, disconnectors and earth switches.</p> <p>We also own Oil Management Units (OMUs), allowing us to remove dirty oil from assets during maintenance. Reconditioned oil is used to refill circuit breakers – reusing 100 per cent of the oil. We will recycle 700,000 litres of oil at our Oil Management Units between 2021–2026.</p> 
	<p>We will contribute to the <b>preservation, restoration and enhancement of the natural environment and contribute to the wider global Nature Positive goal to 'halt and reverse nature loss by 2030'.</b></p>	<ul style="list-style-type: none"> <li>• Deliver at least <b>10% or greater Biodiversity Net Gain</b> (or equivalent in Wales) plus wider environmental and societal benefits.</li> <li>• Advance understanding in the development and delivery of effective <b>marine restoration and enhancement</b>;</li> <li>• Work with grantors <b>to deliver nature connectivity</b>.</li> <li>• Disclose our material <b>nature-related risks and opportunities</b>.</li> </ul>	
	<p>We will operate within the limits of our planet by seeking to eliminate pollution and restrict the use of finite resources, so that humanity can continue to develop and thrive for generations to come.</p>	<ul style="list-style-type: none"> <li>• Improve our circular economy maturity levels and aim to be in the <b>'engaged' level in BS8001</b> circular economy standard;</li> <li>• Deliver <b>zero avoidable waste in construction</b></li> <li>• Requirements for <b>10% recycled / reused content</b> in key construction materials.</li> </ul>	



# Update from the DNO

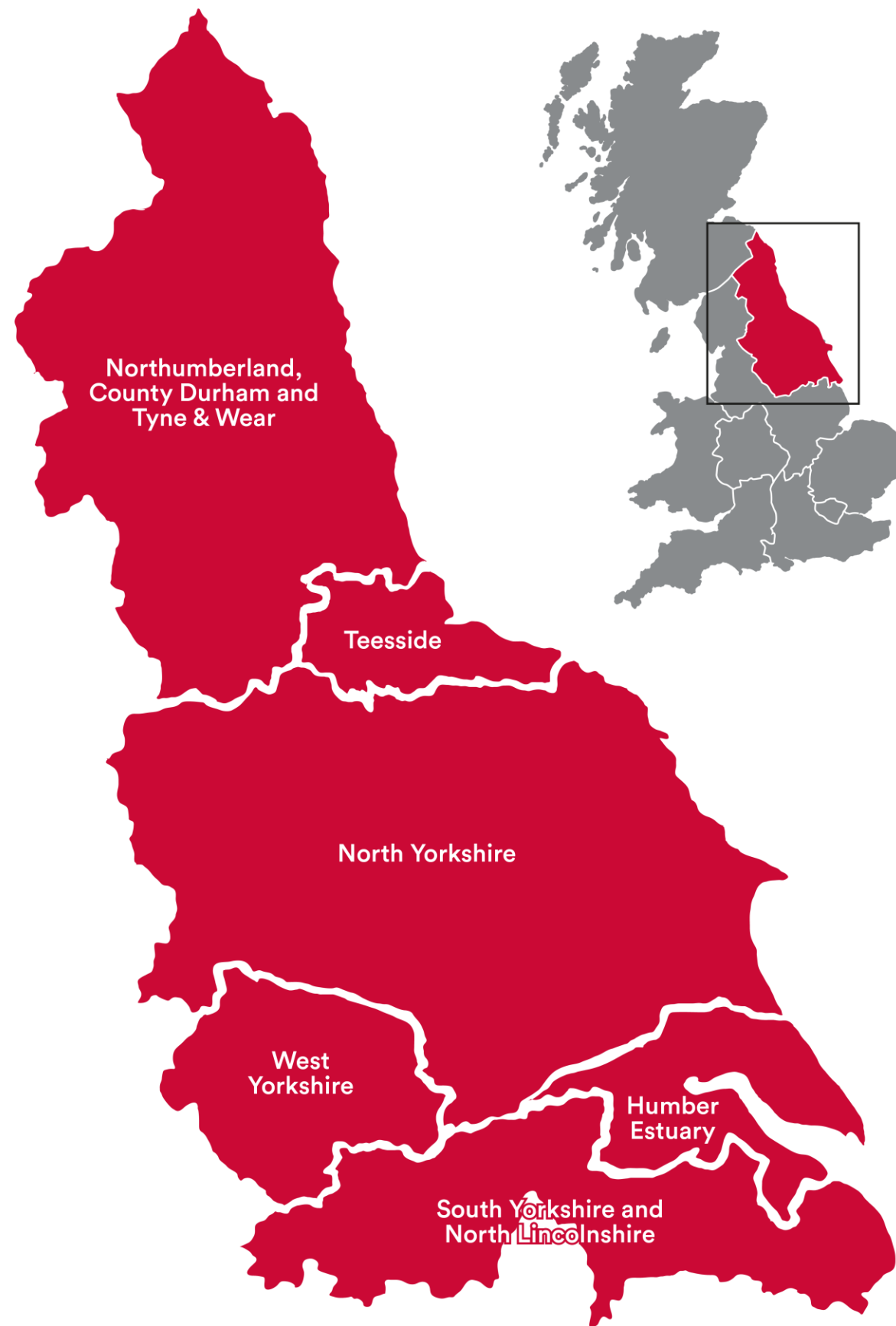


# Delivering in the North East and Yorkshire

Jim Cardwell, Head of Energy Systems Policy

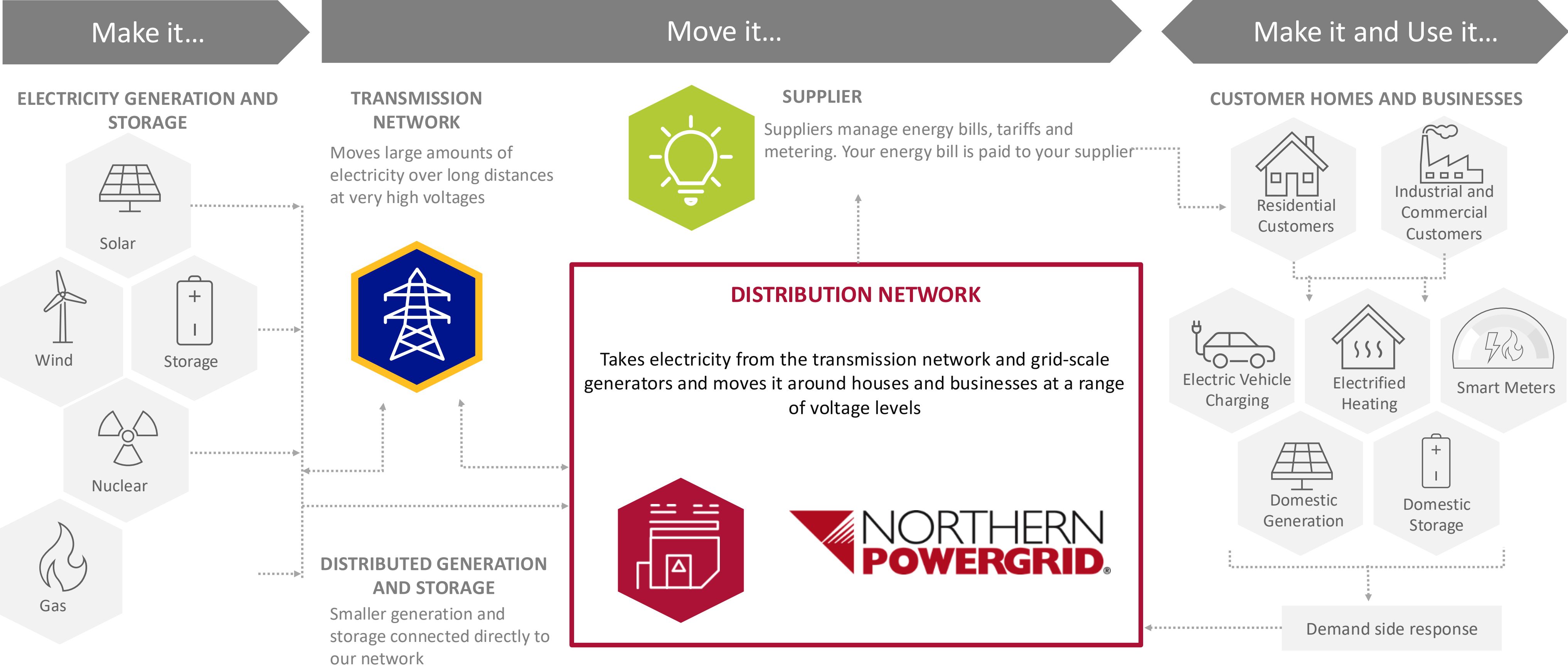


# Introducing Northern Powergrid

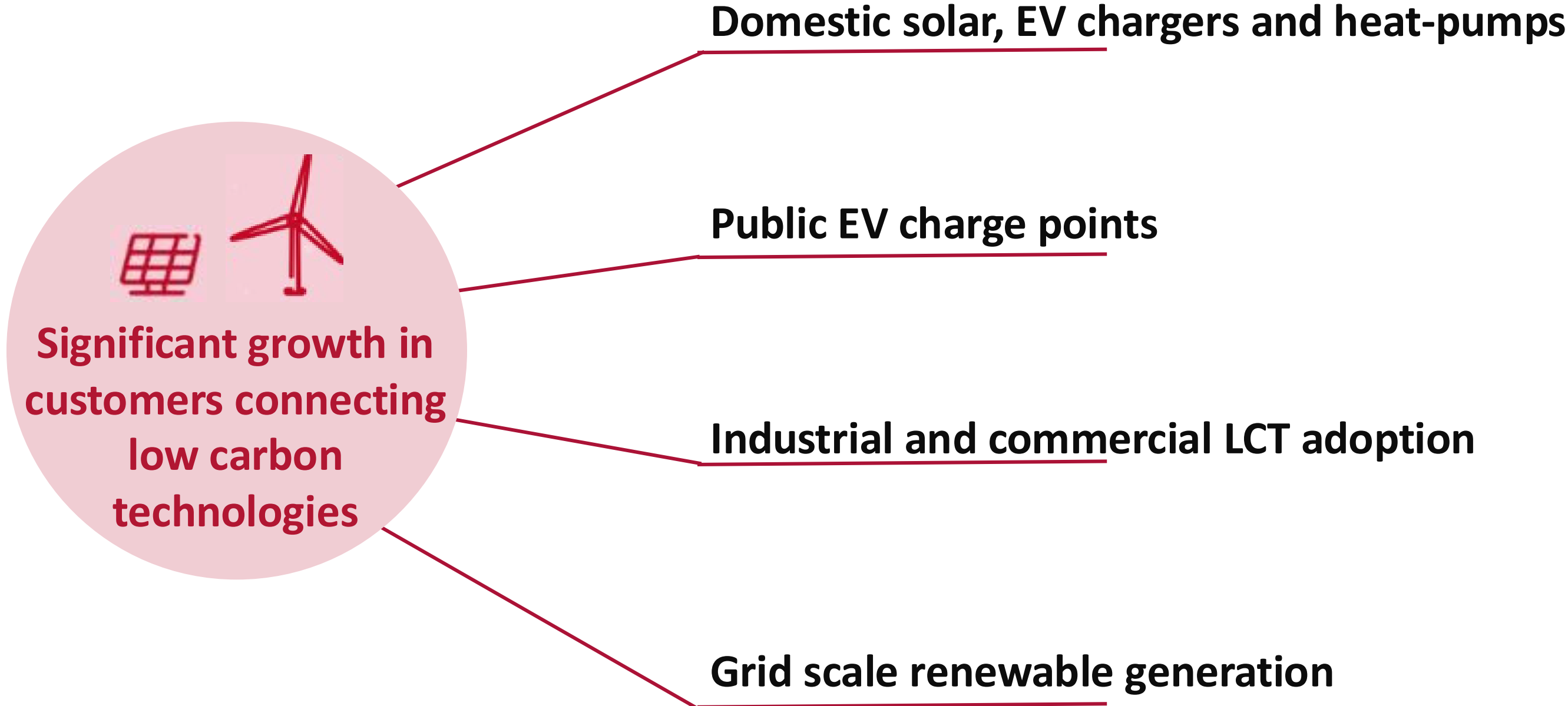


- Northern Powergrid is responsible for the **electricity distribution network** in the North East, Yorkshire and Northern Lincolnshire.
- We are a **Distribution Network Operator (DNO)**.
- We move electricity from where it's generated to homes and businesses.
- We are the equivalent of the **A and B roads** of the electricity networks in Great Britain.
- We are a **regulated** business – we are regulated by Ofgem to make sure the way we work, the plans we make for the future and the costs we charge via electricity suppliers are fair for customers.

# Our role in the electricity system



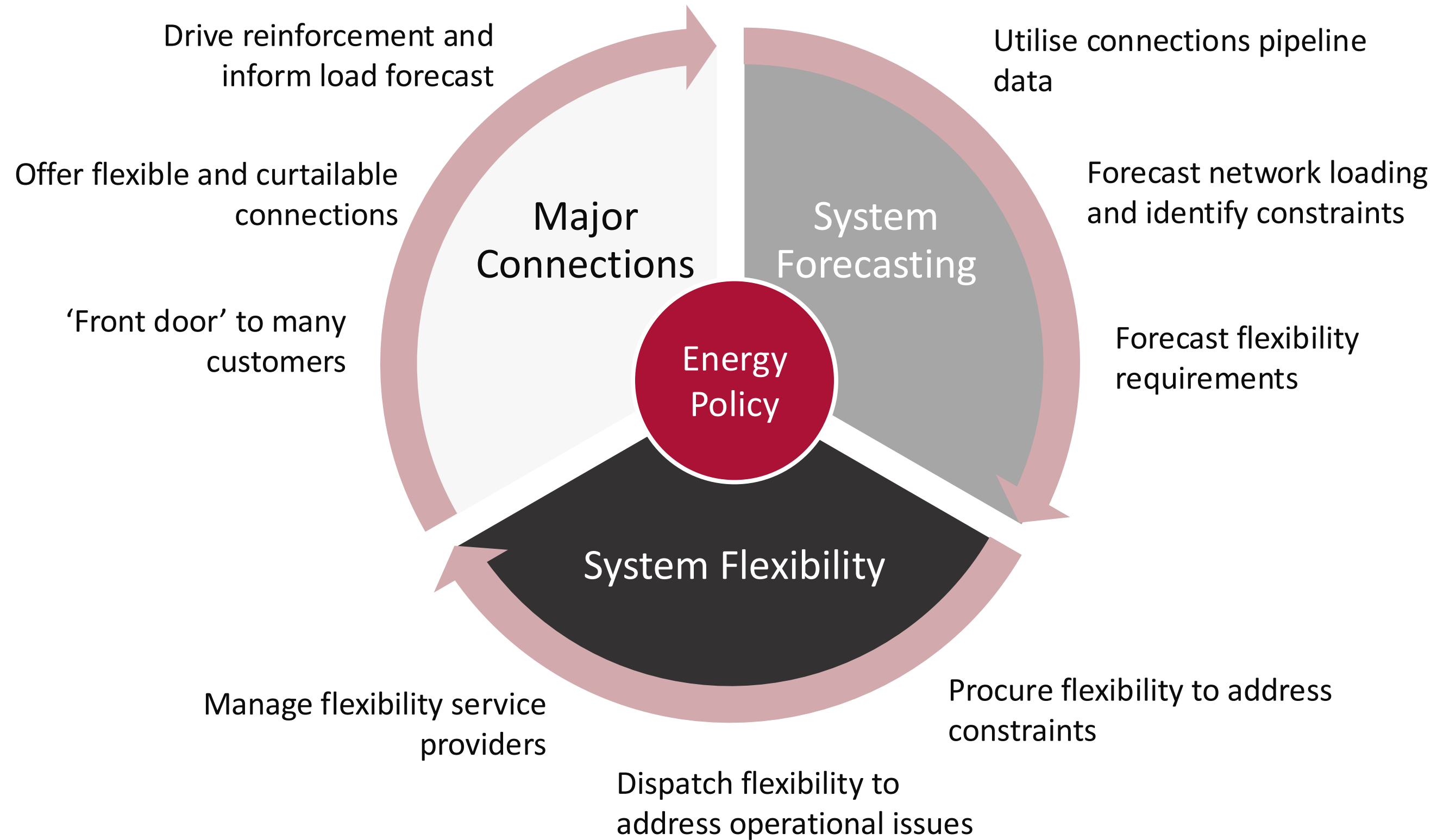
# Connecting new generation and demand to our network is a key enabler to decarbonisation



## ***By 2030...***

- 1.8m electric vehicles
- 350,000 heat-pumps
- 1GW domestic solar
- 21,000 electric buses and HGVs
- 3.3GW large scale solar
- 1.7GW large scale wind
- 1.3GW energy storage

# Distribution System Operation delivering decarbonisation



# Empowering solutions

## Network Data and self-service tools

- Enhanced network capacity heat maps
- AutoDesign for local network connections
- Major connections pipeline look-up
- Mass low carbon technologies (LCT) uptake tool

## Enhanced support pre-application

- Connections Surgeries to discuss projects
- Ask the expert service for domestic LCT
- Education and resources available on our website

## Innovation in flexibility and connections

- Variable access contracts and system upgrade to enable required capacity most of the time
- Wholesale reform to the major connections queue
- Solutions to forecast and inform customers of upcoming curtailment
- New flexibility offers and innovation – e.g. long term storage and AI load forecasting



# Input and insight

## Upcoming Regional Decarbonisation Workshops\*...

- 27 Feb Humber - Jubilee Central, Hull
- 4 March Northumberland, County Durham and Tyne & Wear - Discovery Museum, Newcastle
- 5 March Teesside - Leonardo Hotel, Middlesbrough
- 11 March South Yorkshire - Cutlers Hall, Sheffield
- 12 March North Yorkshire - Guildhall, York
- 18 March West Yorkshire - City Museum, Leeds

\* Registration available on our engage website soon



## What's new on our site...

 Event	<b>06 Feb 2025</b> New Distribution Future Energy Scenarios (DFES) 2024 to 2050	 Event	<b>15 Jan 2025</b> Local Authority Open Data Portal Dashboard Webinar	 Event	<b>18 Dec 2024</b> Connections Customer Webinar: Impact of Connections Reform (NPg and NESO)
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<https://engage.northernpowergrid.com/events/upcoming-events>

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# Timeline



# Planning next steps for the North East



**Ofgem's Call for Evidence 18 December to 10 February**

All responses welcomed

Your response will help to inform Ofgem's Final Determinations.

Please send your response to [RIIO3@ofgem.gov.uk](mailto:RIIO3@ofgem.gov.uk)

More information at Ofgem Call for Evidence RIIO-3







# Introduction to the NESO

Public

# NESO update on Strategic Energy Planning (SEP)

January 2025

**Chris McBride – Stakeholder Engagement Manager**

Regional Energy Strategic Planning

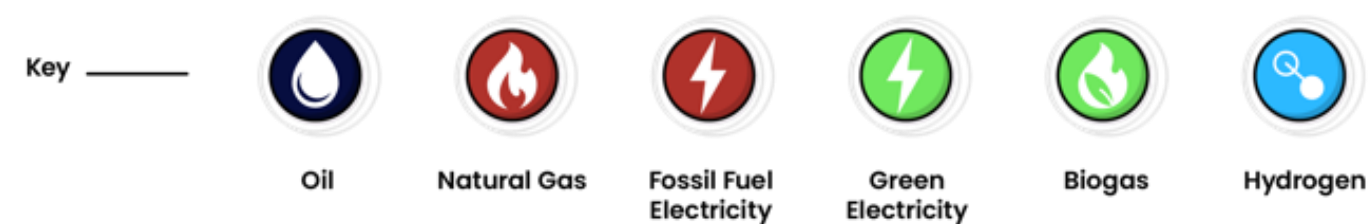
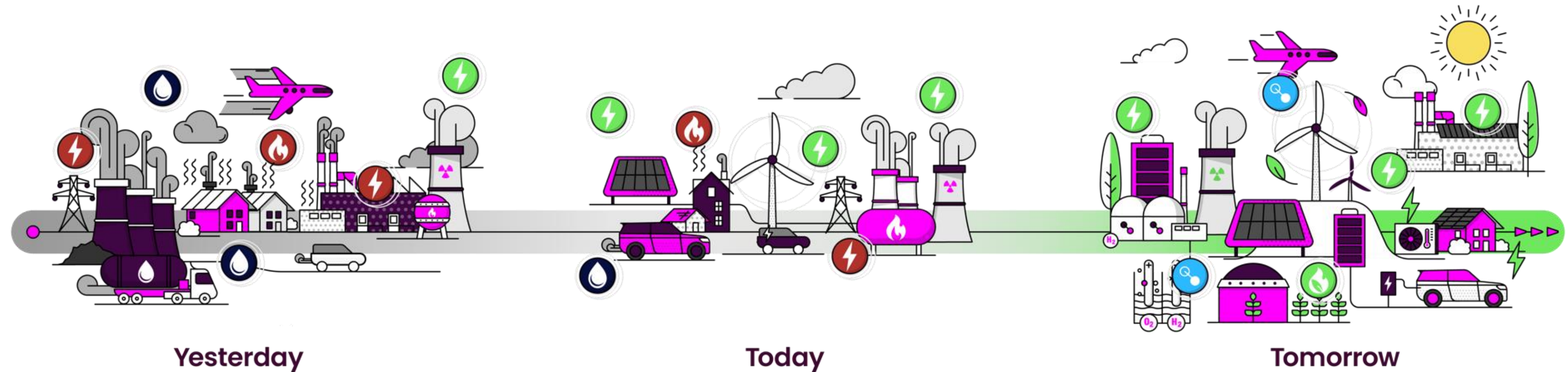
National Energy System Operator

# Overview

1. National Energy System Operator overview
2. Strategic energy planning (SEP) overview
3. Next steps (milestones)

# A changing energy landscape

- The energy system is critical to almost all aspects of our daily lives and fundamental to decarbonising the economy.
- **The way we use, store and source energy is significantly changing** and we have an opportunity in this period of change to shape an energy system that fosters economic growth and prosperity for Great Britain, creating jobs and building skills.
- This valuable opportunity will help **protect the environment** for current and future generations and ensure energy is **affordable** for everyone.



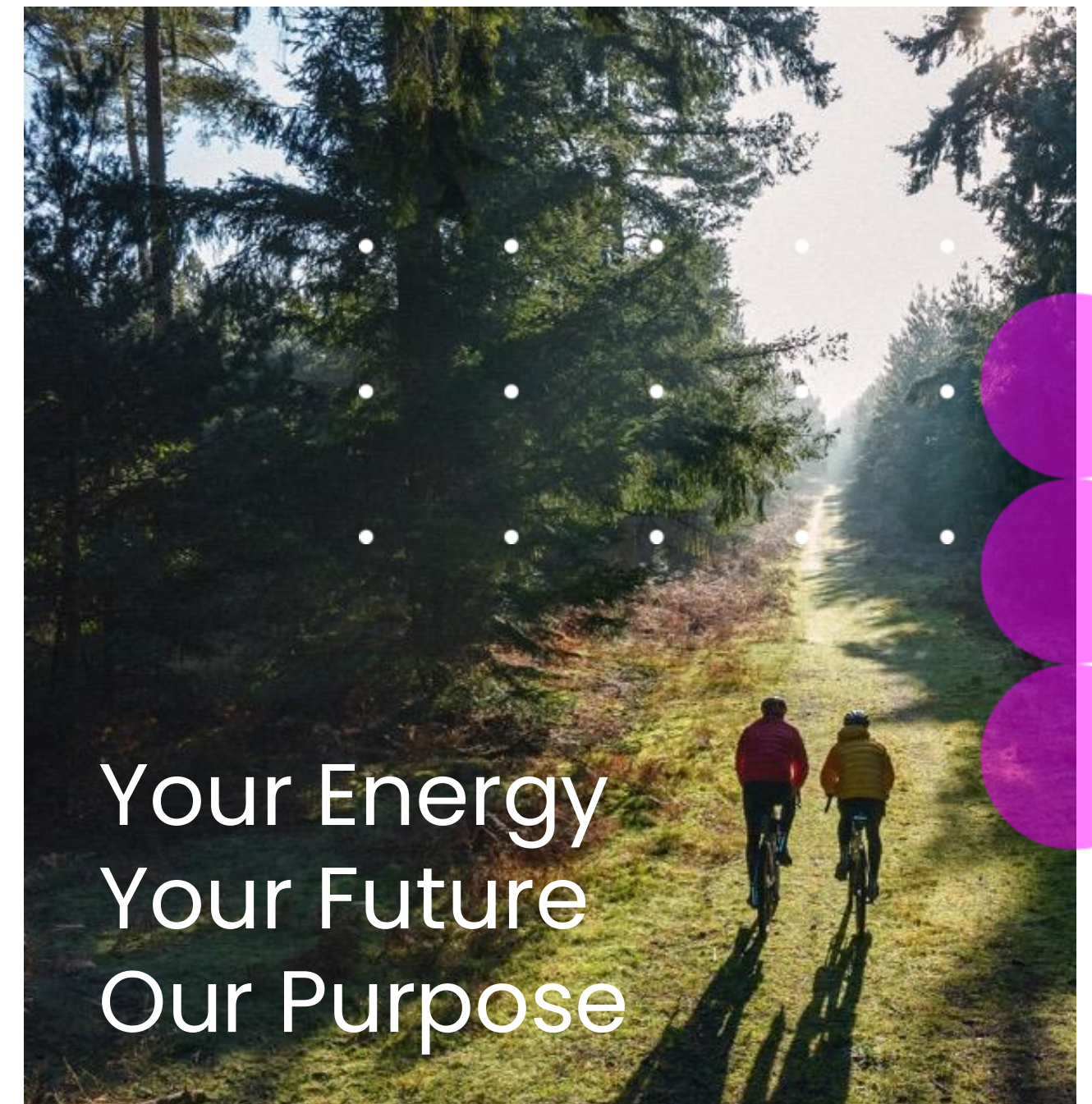
We must work collectively at a **local, regional and national scale** to realise the benefits of the energy transition for Great Britain, and the people who live here.

# 1. National Energy System Operator overview

## Who we are:

The National Energy System Operator, NESO, is an independent, public corporation at the centre of the energy system taking a **whole system view** to create a world where everyone has access to **reliable, clean and affordable energy**.

Our work will be the **catalyst for change** across the global community, forging the path to a **sustainable future for everyone**.



# Our Purpose, Vision And Values



Our purpose is to forge the path to a sustainable future for everyone.



Our vision is a future where everyone has access to reliable, clean and affordable energy; our work will be a catalyst for change across the global community.

Our values are what define us, setting the foundation for our purpose and guiding us as we move towards achieving our vision.



## Accelerate Progress

We deliver better outcomes at pace when we take accountability, are courageous and progress the bigger picture.



## Be Curious

We achieve more when we demonstrate a growth mindset, being curious, asking questions beyond and within our organisation to develop, learn and innovate.



## Build Trust

We build trust when we listen to and understand the needs of our colleagues and customers, are transparent with our actions and deliver on our commitments.



## Create Belonging

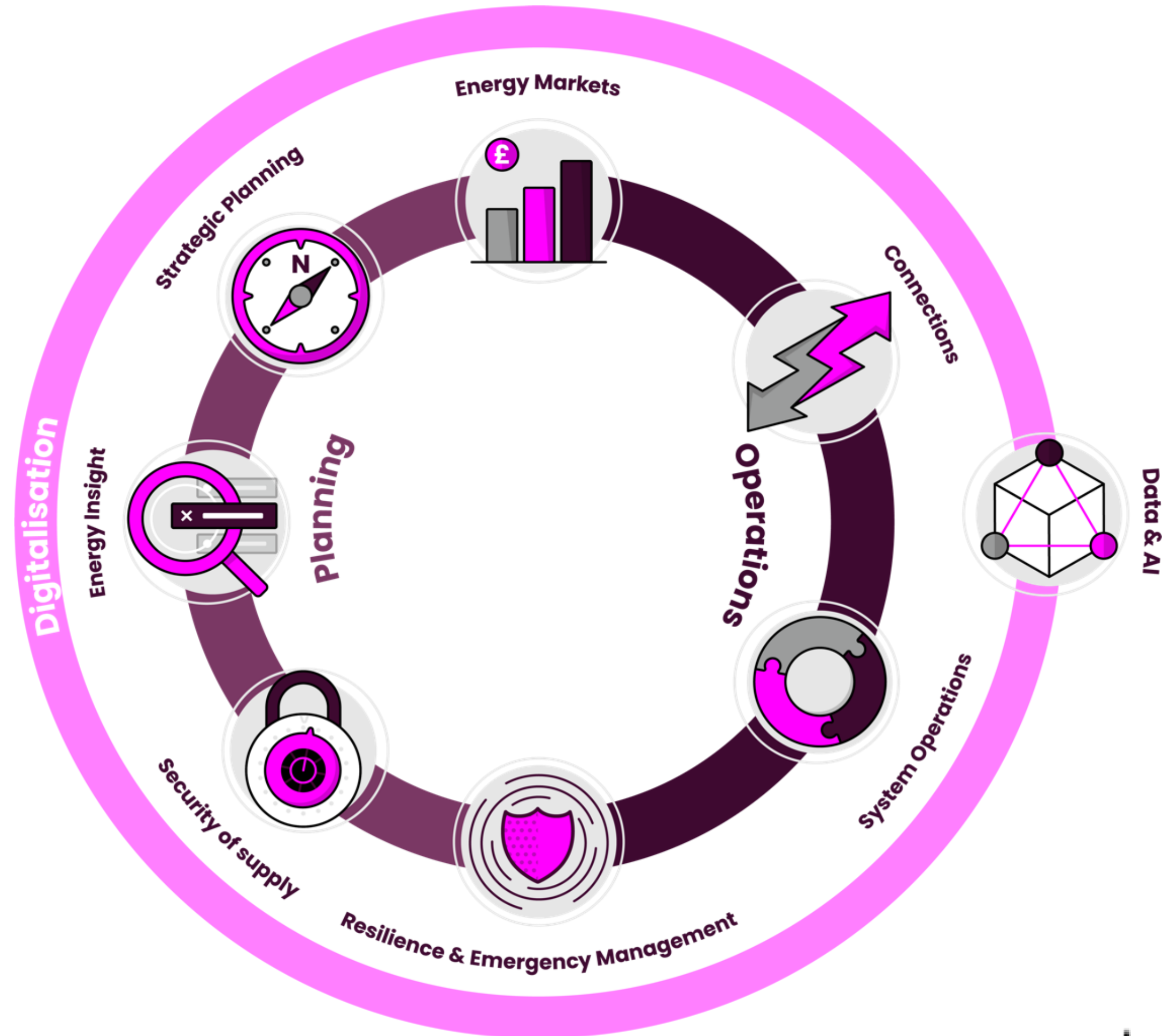
We perform at our best when we can be our true selves, embrace diversity and are truly inclusive.

# What we do:

We bring together **eight activities** required to deliver the plans, markets and operations of the energy system of today and the future.

Bringing these activities together in one organisation encourages **holistic thinking** on the most **cost-efficient and sustainable solutions** to the needs of our customers.

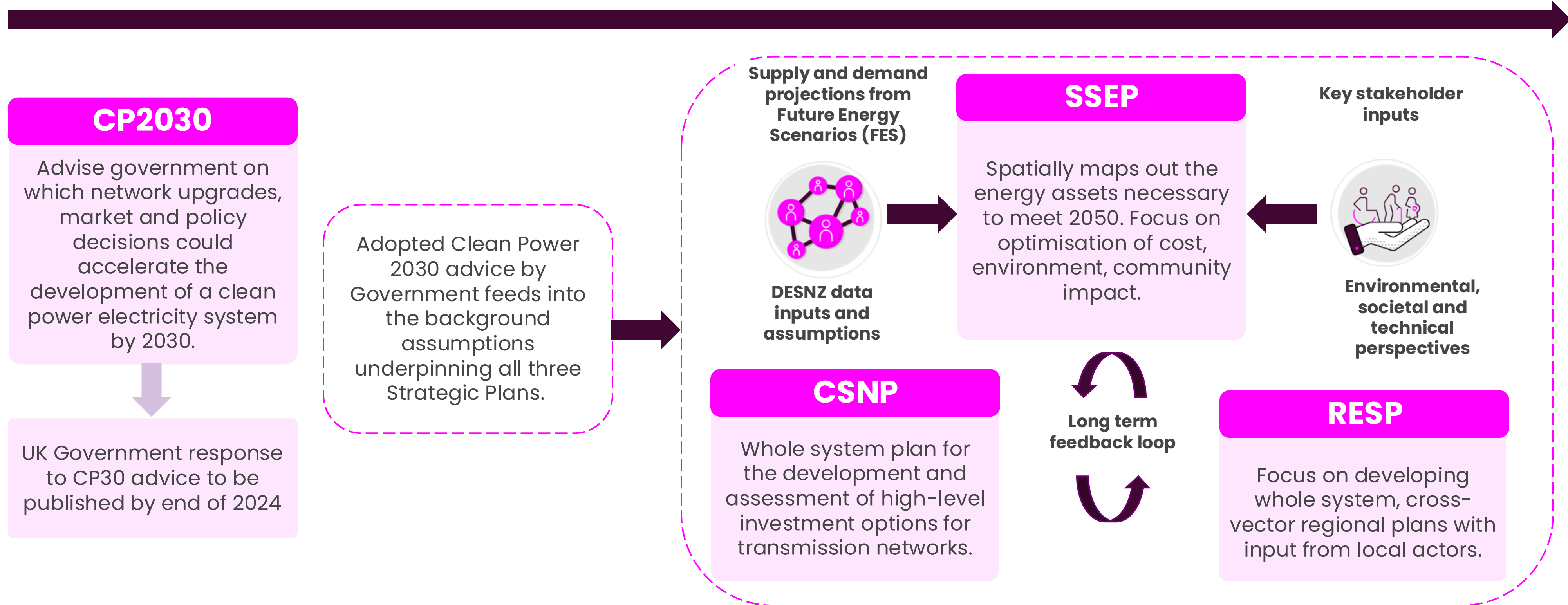
<https://www.neso.energy/what-we-do>



# 2. Strategic Energy Planning (SEP) overview

**Pre 2030**

**Post 2030**





# Strategic Spatial Energy Plan (SSEP) overview

## Accelerate clean, affordable, secure energy through certainty

The SSEP will accelerate and optimise Great Britain's transition to clean, affordable and secure energy by taking a holistic approach and providing greater certainty for key stakeholders.

## Zonal approach, taking account of environment and communities

Splitting Great Britain's energy system into zones to assess the optimal locations for electricity generation and storage of electricity and hydrogen.

Options identified using economic, environmental and technical input, with considerable societal, stakeholder and political engagement planned.

SSEP will not focus on specific projects, leaving the energy market or subsequent processes to determine the specific projects and exact locations.

# CSNP framework

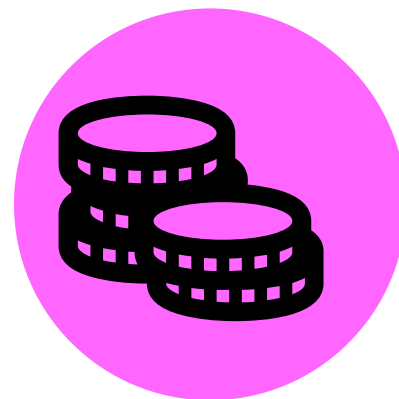
## Our vision

Provide an **independent, coordinated, and longer-term approach to wider network planning** in GB to help meet the government's net zero ambitions

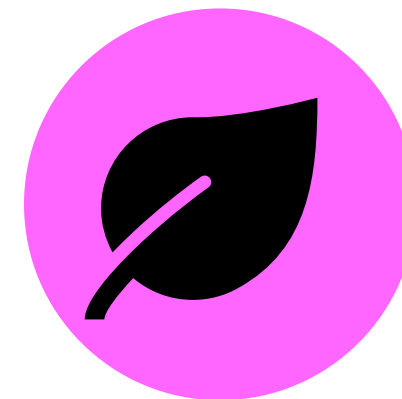
Provides a **network blueprint for the country**, mapping demand and optimal locations for onshore and offshore transmission infrastructure to support a decarbonised energy grid.



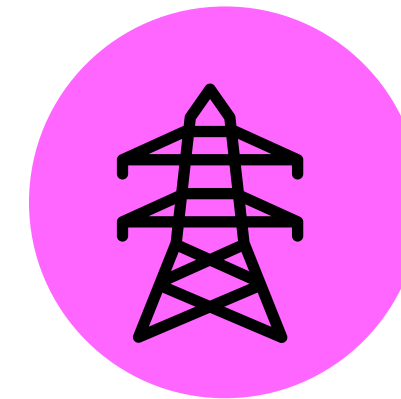
**25-year horizon**, on a three-year cycle



**Co-ordinate reinforcements and anticipate investments** ahead of infrastructure delivery



Balance development against **environment/community impacts** to maximise benefits



Understand transmission infrastructure needed for **onshore/offshore electricity transmission** and **interconnectors**

# Regional Energy Strategic Plans (RESP)

## Why?

To achieve local and national net zero targets we need:

1. **To accelerate electricity network investment** – enable heat & transport decarbonisation
2. **Consistency** – same approach for all network companies
3. **Whole system** – joined-up plan for all aspects of energy system

## Where? (proposed)

Map A1 – Ofgem's preferred GB RESP settlement



## Who? (proposed)

**Ofgem** – defining role

**NESO** – delivering role

**Strategic Boards & Working Groups**

**Local authorities:**

England: CAs, CCs, unitaries  
Scotland & Wales: unitaries

**Networks:** DNOs & GDNs

**Other local actors:** relevant to energy system & spatial planning

# Draft RESP Outputs

Ofgem have outlined 3 building blocks that the NESO RESP must deliver. So far, we have identified **6 key outputs** that will enable the NESO RESP Team to deliver credible whole energy regional plans. These outputs will be refined and validated when developing the RESP Methodology.

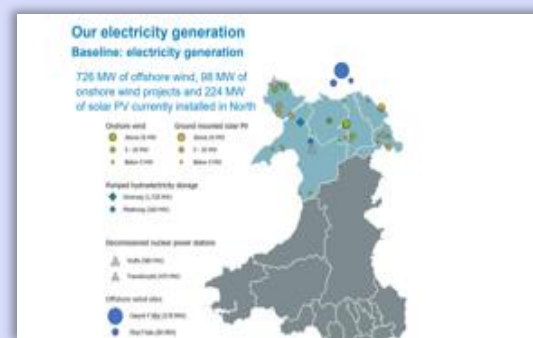
## The Regional Energy Strategic Plans

The RESPs will develop future energy pathways and hotspots where strategic investment need is likely to arise to meet the regional energy visions

**1**

### Regional Energy Vision

RESP will enable distinct Regional Energy Visions, reflecting local needs, to collectively support national objectives

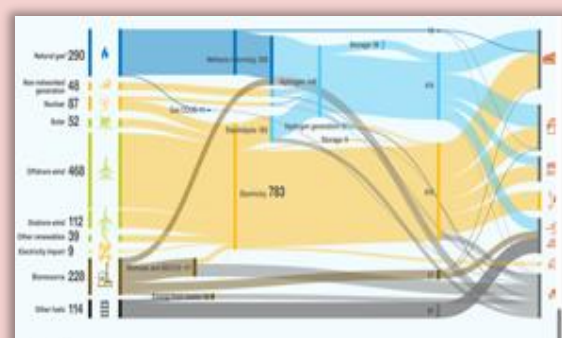


**a**

**2**

### Regional Pathways

RESP will create Regional Pathways built from bottom-up that are coherent with national needs. NESO will also develop consistent planning assumptions



**a b**

**3**

### Spatial System Need

RESP will identify strategic investment needs as well as spatial cross-vector system needs, resulting from the pathways considering network constraints



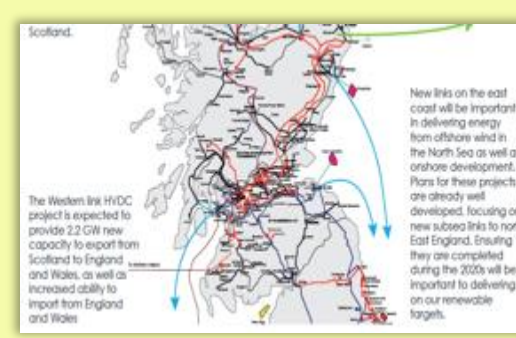
**b**

**4**

## Support for price controls

### Network plan Technical coordination

RESP will assure that regional network investment plans are integrated across vectors, built on consistent assumptions and deliver regional needs at pace, within national constraints

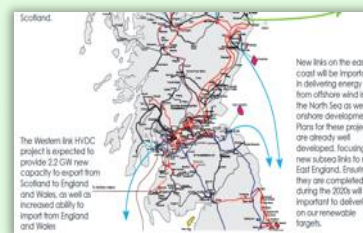


**c**

**5**

RESP Team will develop geospatial regional plans that provide transparency and visibility to local communities and national stakeholders. The RESP Team will continue to track and monitor the delivery of the RESPs including Strategic Investments.

**b c**



**6**

## Societal Impact Assessment

The RESP Team will review the societal impact at a local level of the energy transition (including jobs, transport, industry, environment etc.)



Ofgem consultation building blocks

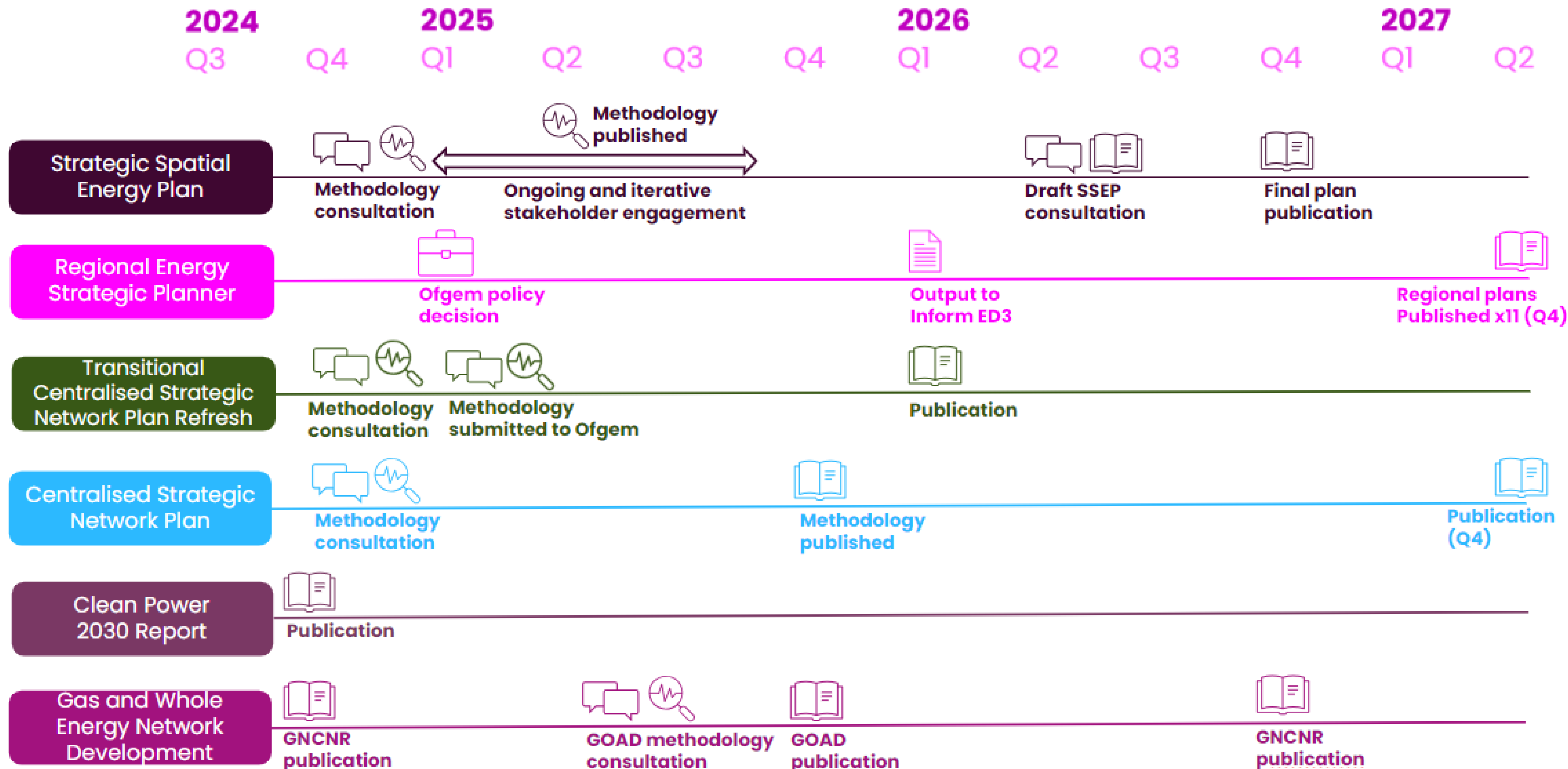
**a** Modelling supply and demand

**b** Identifying system need

**c** Technical coordination

# 3. Next steps - High level milestones\*

\*These are indicative dates and subject to change.



# Thank you

## NESO

<https://www.neso.energy/what-we-do>

## Strategic Energy Planning

<https://www.neso.energy/what-we-do/strategic-planning>

## Contact

[christopher.mcbride@nationalenergys.com](mailto:christopher.mcbride@nationalenergys.com)

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# Q&A



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# From NGET, joining Jim Cardwell for Q&A:



**Anna Turrell**  
Responsible business



**Jeni Ray**  
Stakeholder Insight



**Matthew Doherty**  
Connections Engineering



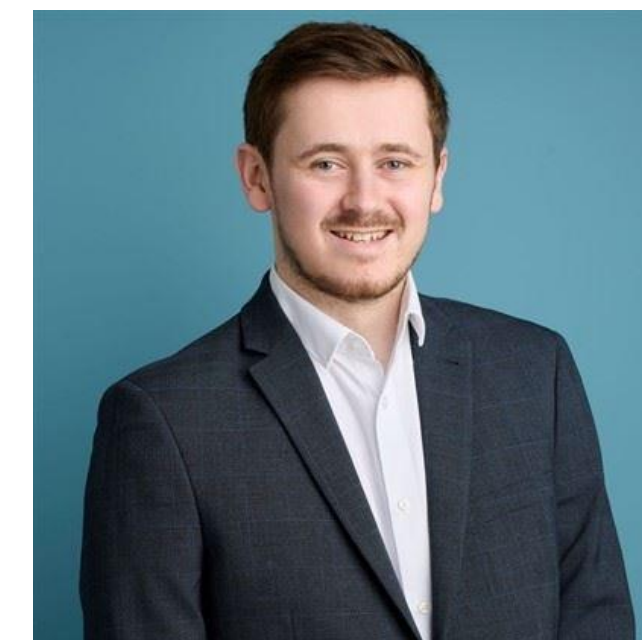
**Christopher Hartley**  
Regional Connections



**Caroline Helm**  
Environmental



**Ben Haggerty**  
Whole Systems



**Tom Beckford**  
External Affairs



We welcome your feedback on what you have heard today, our FNB process and how we can work better together ?

Please get in touch  
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nationalgrid