

Wales 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

Agenda

Introduction	5 mins
Forming Future Network Blueprints	10 mins
Wales Future Network Blueprint	10 mins
Next Steps	5 mins
Environment commitments	5 mins
Update from SPEN and NGED	15 mins
Update from NESO	10 mins
Questions and Answers	30 mins

Introduction

Jon Davies

Director of Network Operations and
Intelligence

National Grid Electricity Transmission

Please post any questions you have for us via Teams Q&A function or through :

pathwaytonz@nationalgrid.com





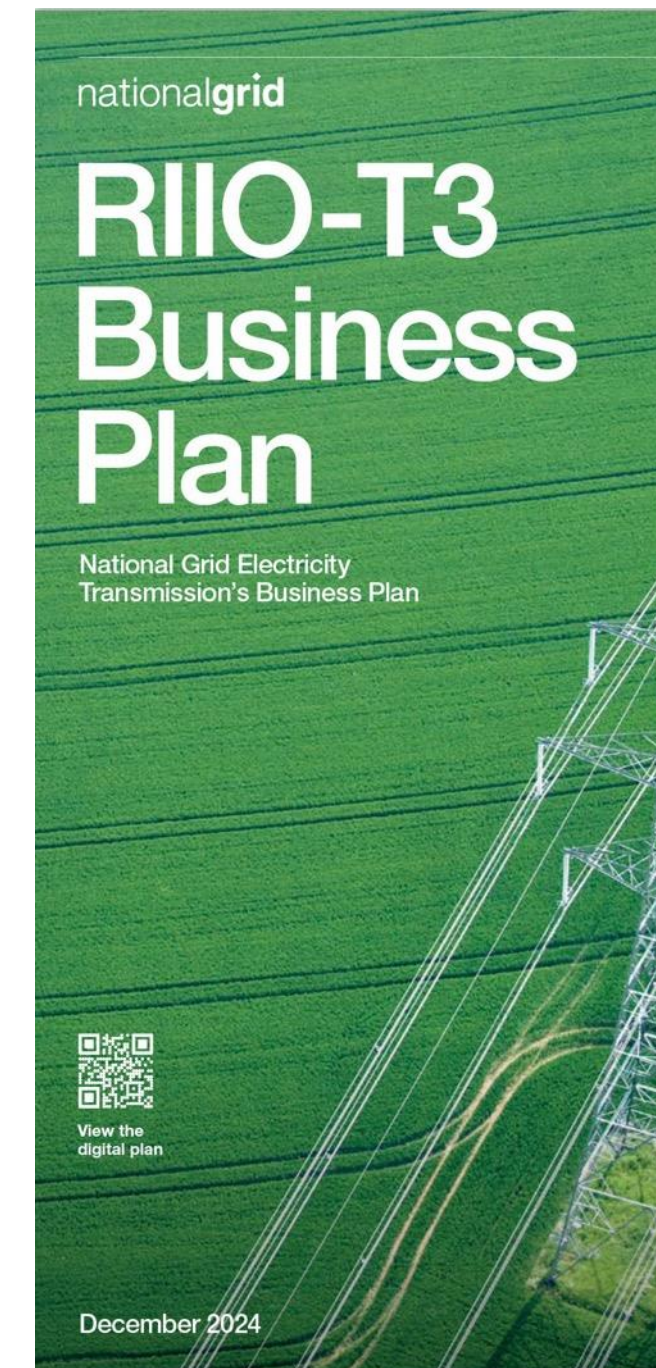
We own and operate
the transmission network
that is the backbone
of electricity system in
England and Wales

The objective of today's webinar is to set out the Wales 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.



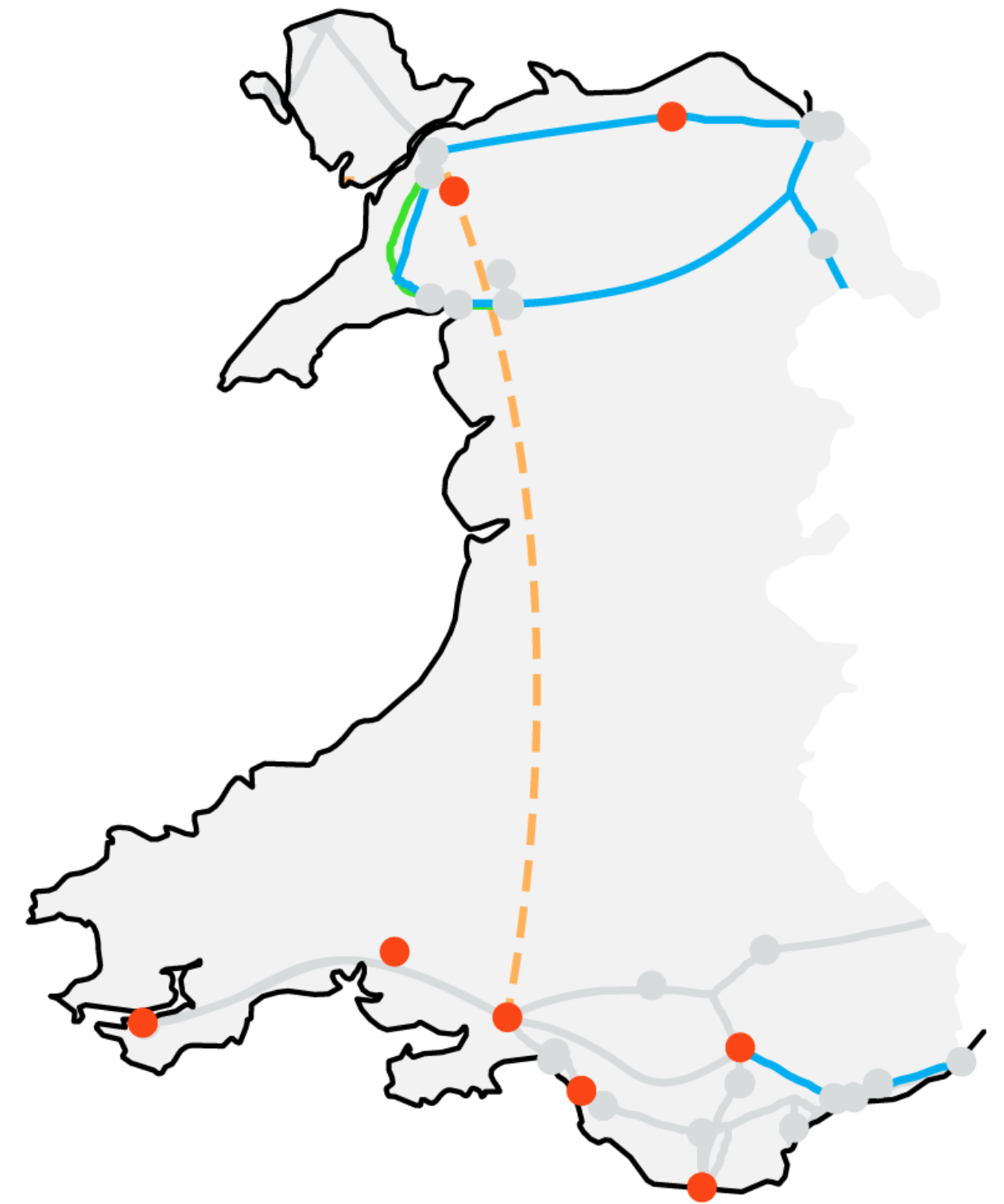
Context on our regional plans

This national 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

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.



Forming the Future Network Blueprints

Ben Haggerty
Head of Whole Systems

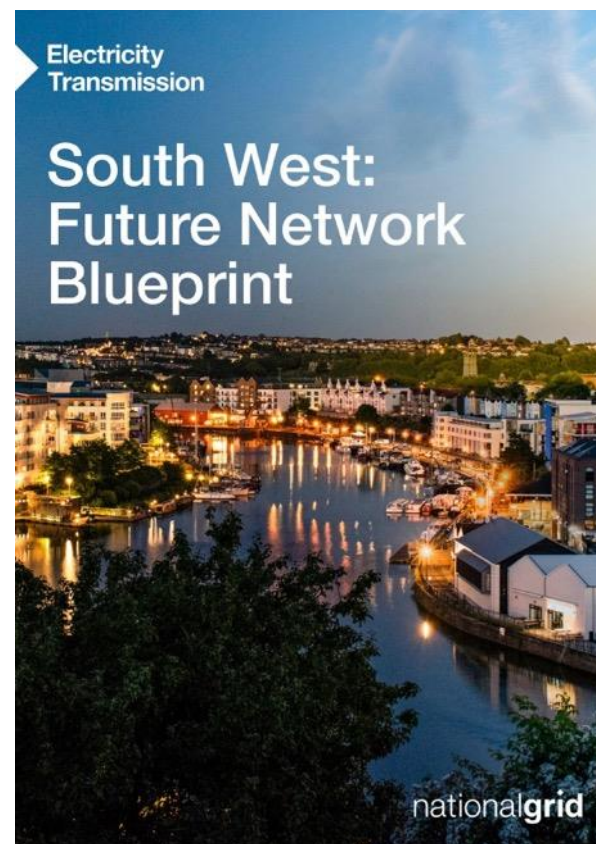
National Grid Electricity Transmission

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Future Network Blueprints



What are they?

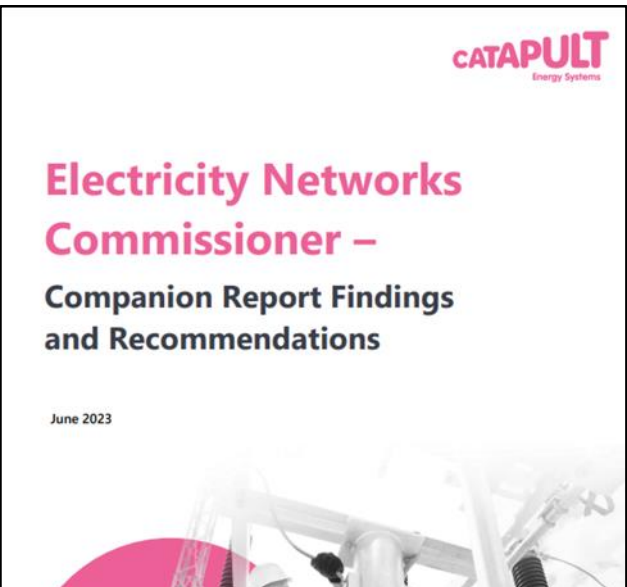
A single and coordinated ‘best view’ of the work needed across different regions of our network across England and Wales to enable the overall transition to net zero.

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



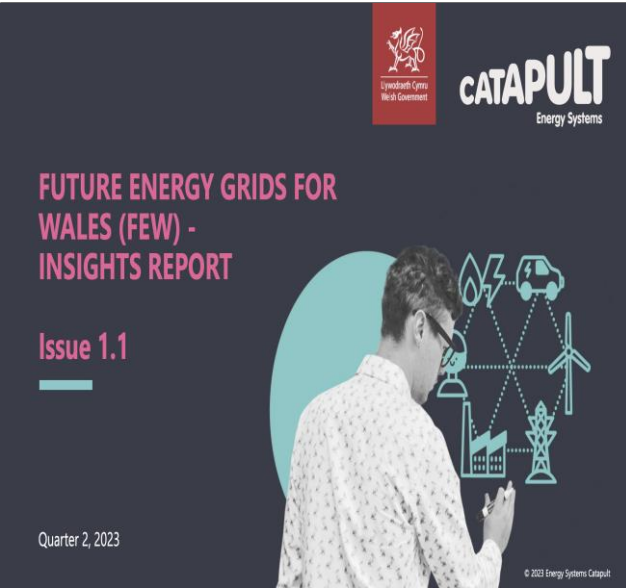
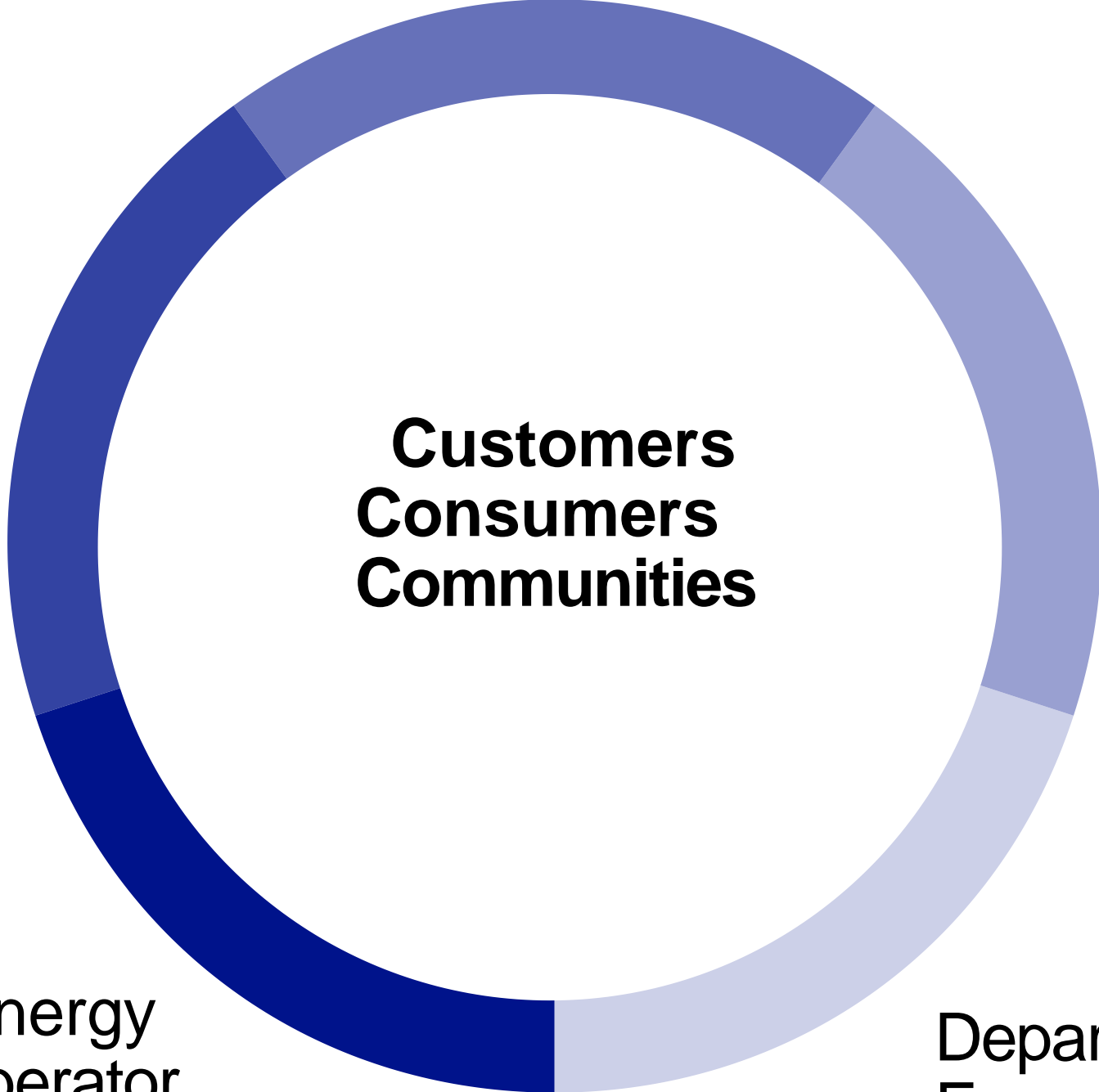
National Grid Electricity Transmission and other network companies

Ofgem

Welsh Government

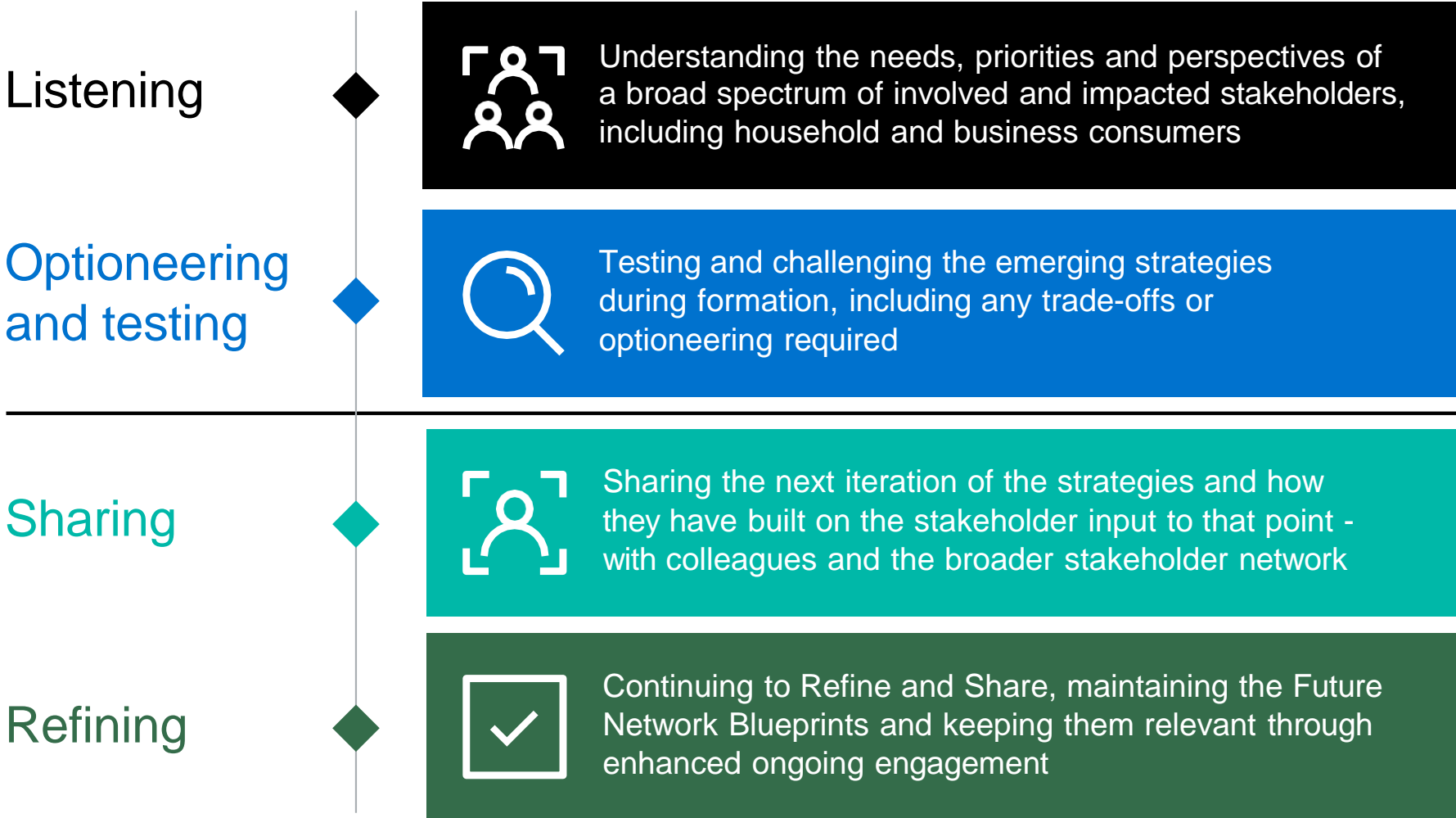
National Energy System Operator

Department for Energy Security & Net Zero



Our overarching 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 ambitions which shape our plan

We have developed a comprehensive framework to test and validate our 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

Step 1
Information gathering



- Regional context
- Current network view
- Design the right network


Step 2
Insights and analysis



- Stakeholder engagement
- Connections
- Safe and reliable network
- Strategic infrastructure

We now go on to unpack Step 2

Step 3
Develop strategic options



- 2050 backwards
- Network design principles
- Network compliance

Wales Future Network Blueprint



Wales | 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.



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

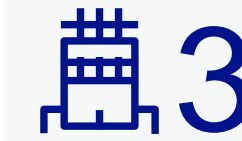
Our approach aligns asset health and new infrastructure plans to optimise best use of our resources.

Natural hazard resilience

By the end of 2025, all relevant Wales 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.



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



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

Asset health intervention regional metrics



Circuit Breakers



Bay assets



Voltage management assets

Wales | Customer Connections

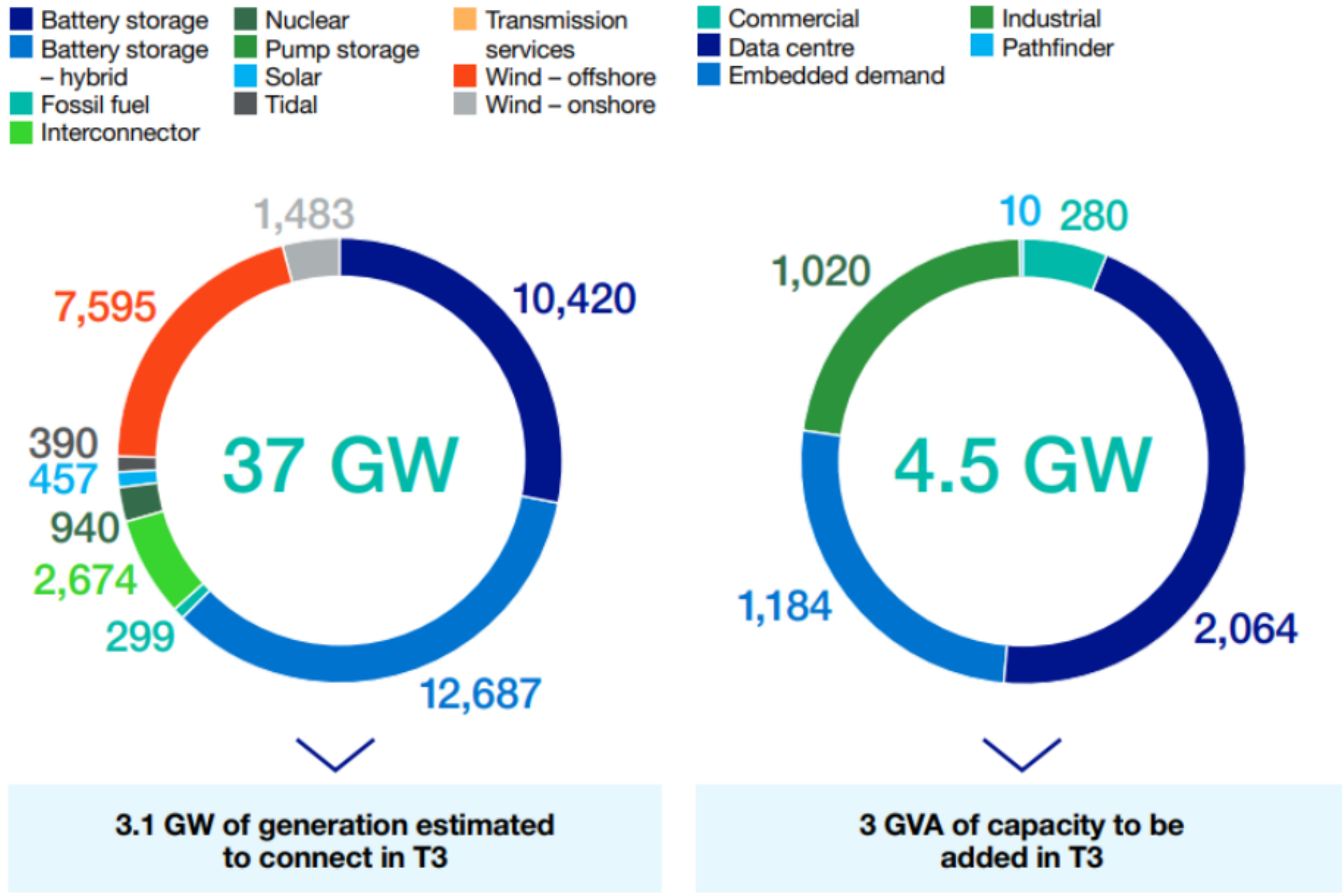
We need to make it easy to connect and use the electricity network

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 **37 GW generation** and **4.5 GW of demand connections** in Wales.

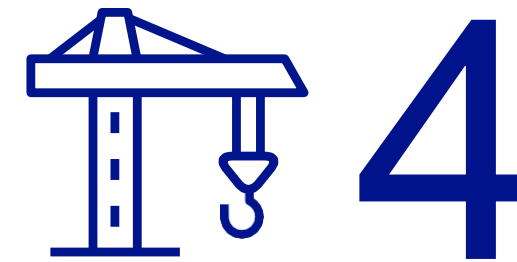
Wales | Strategic Infrastructure

Step 2
Insights and analysis

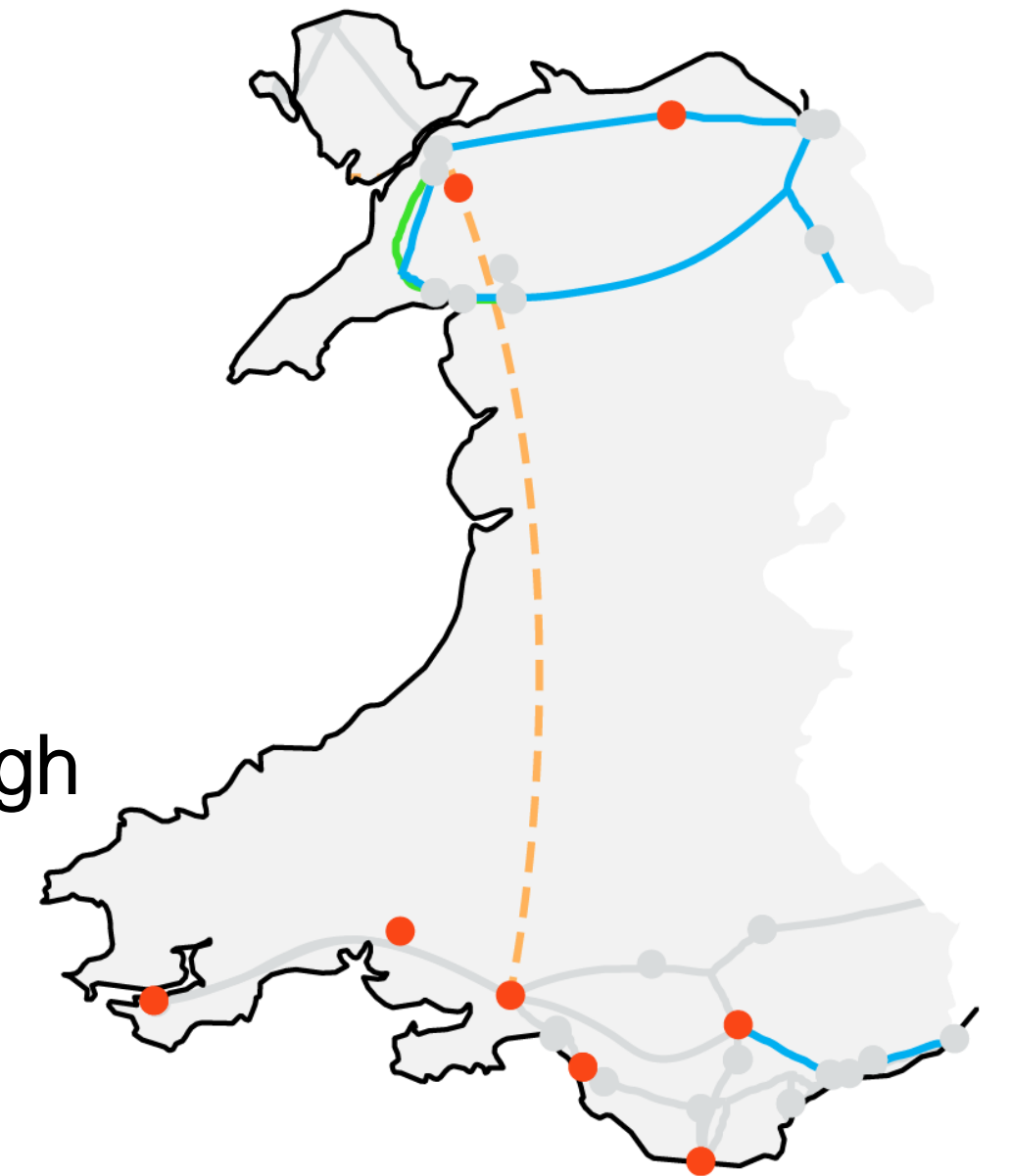
The National Energy System Operator (NESO) is responsible for identifying and timing of new strategic infrastructure on the electricity transmission network by incorporating;

- 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.



Strategic Infrastructure projects in Wales through RIIO-3 & beyond.



In Wales we are maximising the use of existing infrastructure through upgrades, whilst also establishing new infrastructure to support increasing power flows in the nation.

Wales | Plan Overview

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

We are focusing on upgrading the existing network and constructing new infrastructure to support the integration of renewable generation in both North and South Wales.

We are also at early stages of development for other projects recommended by NESO and assessing a range of possible options

These projects will enable clean and sustainable generation for Wales whilst also supporting the expected demand growth driven by increasing industrial needs.

£
£3.2bn
of investment

to maintain, upgrade and develop our network in T3

37 GW
generation

contracted to connect*;
3.1 GW estimated to connect in T3

4.5 GW
demand

contracted to connect*; **3 GVA** of additional capacity expected to be installed in T3

387 km
of overhead line

reconductoring planned within T3**, equating to 24% of the region



11

substation investments,
3 new and 8 major interventions



4

strategic infrastructure projects within the region

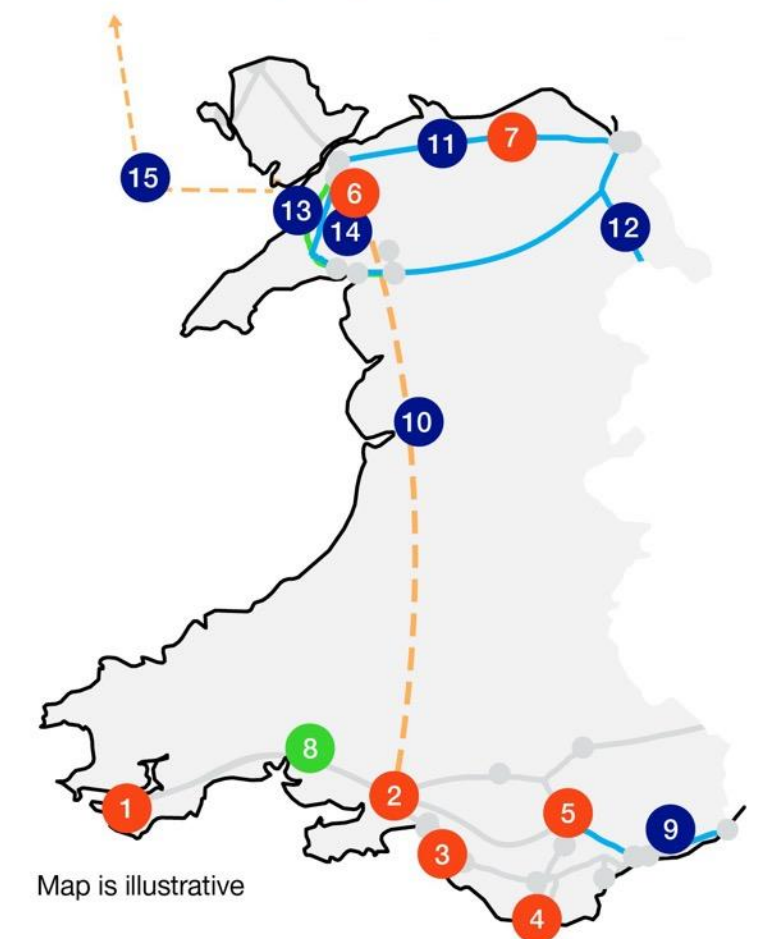
Wales Strategy

Substations

- 1 **Pembroke 400 kV**
Upgrade – T3 period
- 2 **Swansea North 400 kV**
Upgrade – T3 period
- 3 **Margam 275 kV**
Rebuild – T3 period
- 4 **Aberthaw 275 kV and 132 kV**
Rebuild – T3 period
- 5 **Cilfynydd 400 kV**
Upgrade – T3 period
- 6 **Dinorwig 400 kV**
Rebuild – T2/T3 period
- 7 **Bodelwyddan 400 kV**
Upgrade – T3 period
- 8 **Llandyfaelog 400 kV**
New proposed substation – T3 period

- Major site strategy
- New proposed substation
- Coastline
- Existing network
- Upgrade existing
- New build
- Developing only*

3 In addition we will be investing in 3 new proposed substations including Llandyfaelog



Circuits

- 9 **Cilfynydd – Seabank – Whitson**
Reconductor OHL circuit – T3 period
- 10 **PSNC**
New circuit between North Wales and South Wales – Beyond T3
- 11 **Bodelwyddan–Deeside–Pentir 1 and 2**
Reconductor OHL circuit – T3 period
- 12 **Deeside – Legacy – Trawsfynydd 1 and 2**
Reconductor OHL circuit – T3 period
- 13 **PTNO/PTN2**
Second circuit in North Wales on an existing route – T3 period
- 14 **PTC1/PTC2**
Pentir to Trawsfynydd reinforcement – T3 period
- 15 **AC6 – HVDC link from Western Scotland to a substation in Wales**
– Beyond T3

*Including T3 and beyond

**Some km already completed where projects started in RIIO-T2

Next Steps



What's next for Wales 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 Scottish Power Energy Networks (SPEN) 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.



Environmental Update for Wales

Alison Fulford
Carbon Technical Lead

National Grid Electricity Transmission



Please post any questions you have for us via Teams Q&A function or through :





pathwaytonz@nationalgrid.com

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 Wales
	<p>We will achieve 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.</p>	<ul style="list-style-type: none"> • 50% reduction in scopes 1 and 2 emissions from 2018/19 baseline; • 50% reduction in SF6 emissions by 2030 from a 2018/19 baseline; • 20% substation energy efficiency improvement from a 2022/23 baseline; • Purchase 100% zero emission vehicles for our light-duty fleet; • Deliver our construction projects as low carbon intensity as possible; • Achieve net zero emissions for our corporate property office estate. 	<p>Case study Ancient bog restoration at Rhigos, South Wales</p> <p>National Grid needed to build a new 400kV substation to connect to the Pen y Cymoedd onshore windfarm. As part of development process National Grid's land ownership boundary was increased to include an area of ancient peat bog.</p> <p>We worked with Rhonda Taff Council, Butterfly Conservation and other specialist stakeholders to develop a 25-year habitat management plan that would start to reverse the decline and restore the peat bog and preserve, enhance and expand the habitat for Marsh Fritillary Butterfly.</p> 
	<p>We will contribute to the 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'.</p>	<ul style="list-style-type: none"> • Deliver at least 10% or greater Biodiversity Net Gain (or equivalent in Wales) plus wider environmental and societal benefits. • Advance understanding in the development and delivery of effective marine restoration and enhancement; • Work with grantors to deliver nature connectivity. • Disclose our material nature-related risks and opportunities. 	
	<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"> • Improve our circular economy maturity levels and aim to be in the 'engaged' level in BS8001 circular economy standard; • Deliver zero avoidable waste in construction • Requirements for 10% recycled / reused content in key construction materials. 	



nationalgrid DSO

Planning our future distribution network

**Kathryn Thomas
DSO Strategic Engagement Officer**



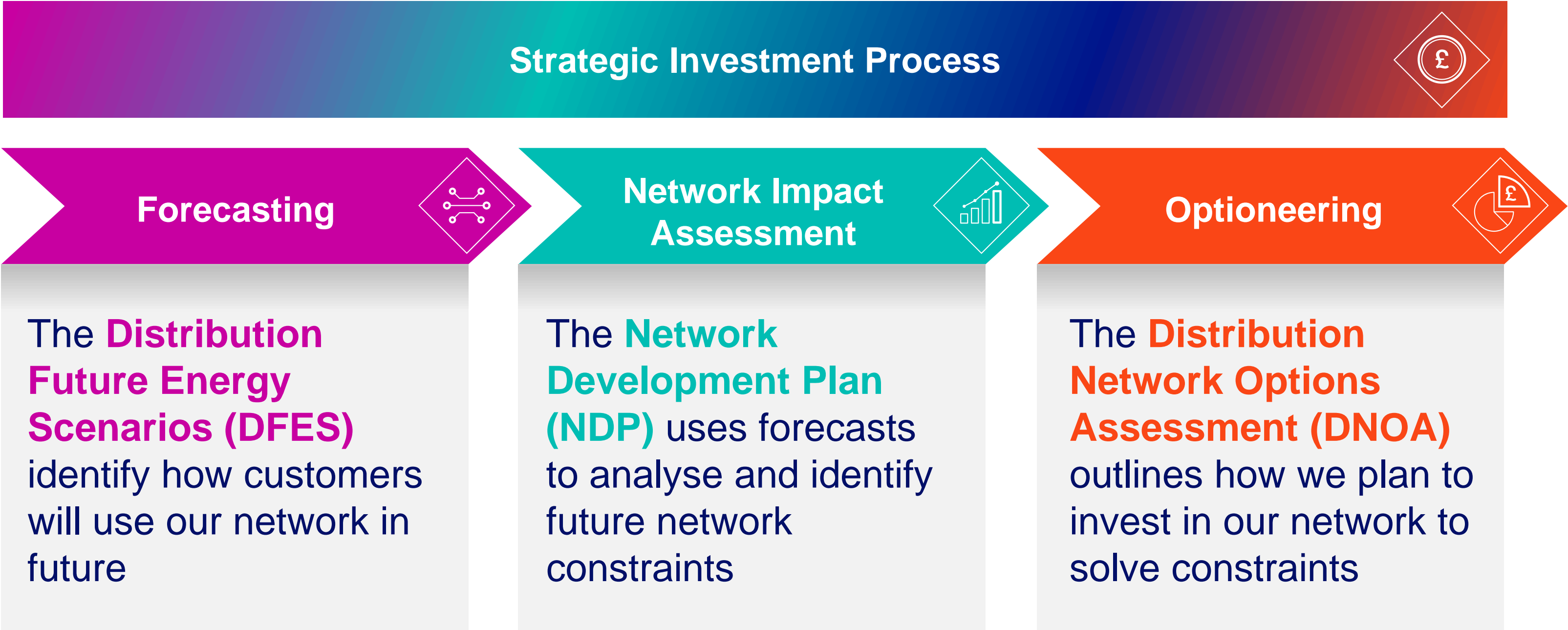
What we are working towards

1 We are committed to evolving and improving how we collaborate and coordinate the local energy transition across the whole system, in partnership with key stakeholders, working together in order to identify network improvements required for decarbonisation.

2 We are taking a more strategic approach to how we design and build our distribution network going forward with strategic investment that is evidence based.

3 This approach is based on open and transparent conversations about our network and doing all we can to support our stakeholders achieve their decarbonisation aspirations

Investing in our network



Network Investment and the Importance of Stakeholder Engagement

Our strategic investment process will ensure we:

- Maximise the use of 'hidden' capacity on the network, whilst ensuring network investment is delivered when it's needed and to keep consumer bills low in the process.
- Collaborate and coordinate across the whole-system, to help stakeholders achieve their decarbonisation plans.

Please scan the QR codes below for further details of our **Distribution Future Energy Scenarios (DFES)**, **Network Development Plan (NDP)** & **Distribution Network Options Assessment (DNOA)**

DFES



NDP



DNOA



nationalgrid DSO

Thank you for listening.

If you have any questions you can email
nged.energyplanning@nationalgrid.co.uk.

National Grid Electricity Distribution plc.
Avonbank
Feeder Road
Bristol BS2 0TB

nationalgrid.co.uk

Update from SP Energy Networks

Rachel Shorney
Strategic Optimisation Manager



Please post any questions you have for us via Teams Q&A function or through :

pathwaytonz@nationalgrid.com

Planning for Net Zero

Rachel Shorney
Strategic Optimisation Manager
SP Energy Networks

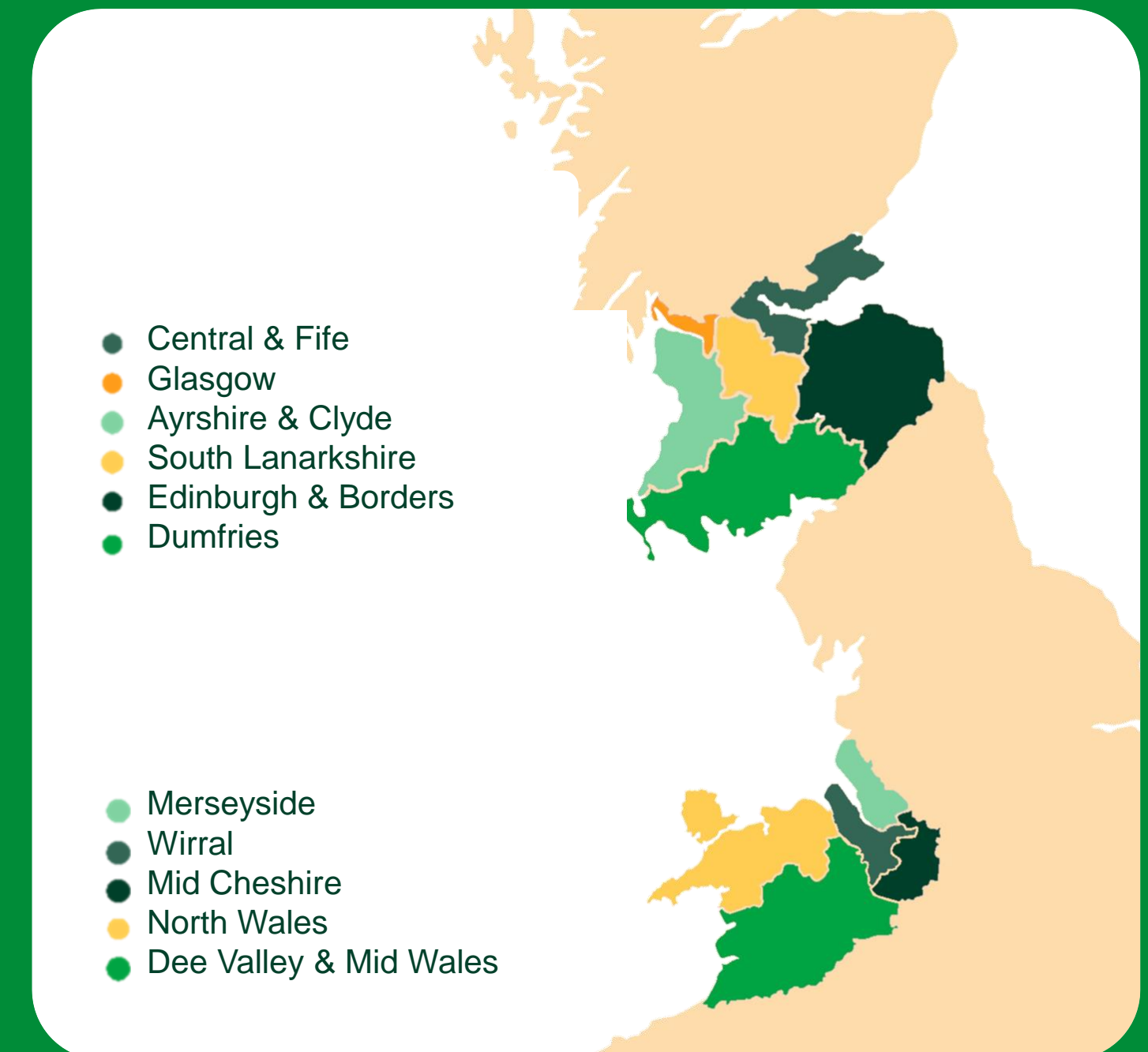


Engagement with UK, Scottish and Welsh Government

- 12 Regional & City Growth Deals
- 40 Local Authorities

NGET Wales Region:

- Ambition North Wales
- Growing Mid Wales Partnership
- 8 Local Authorities



Providing the network capacity our customers need safely, efficiently, and on time.

Forecasting

Distribution
Future Energy
Scenarios (DFES)

Network Assessment

Network Scenario
Headroom Report
(NSHR)

Options Assessment

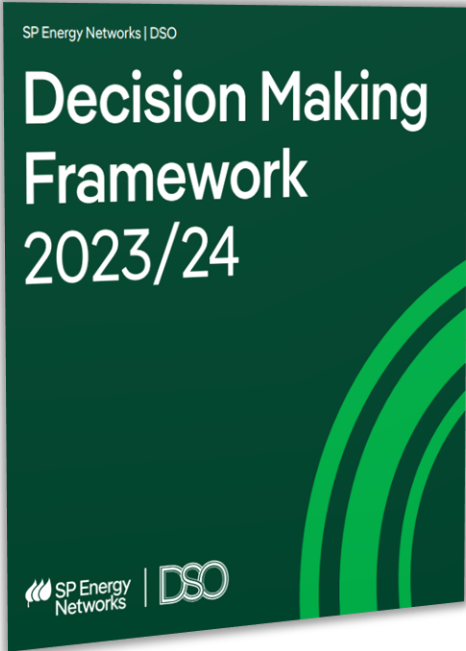
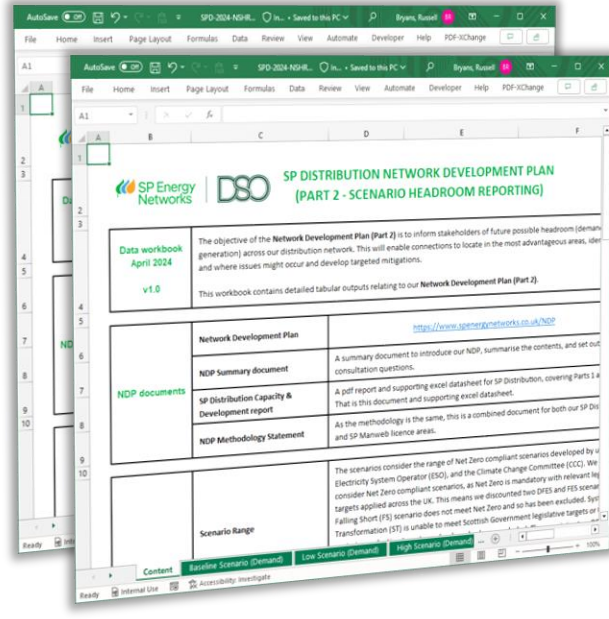
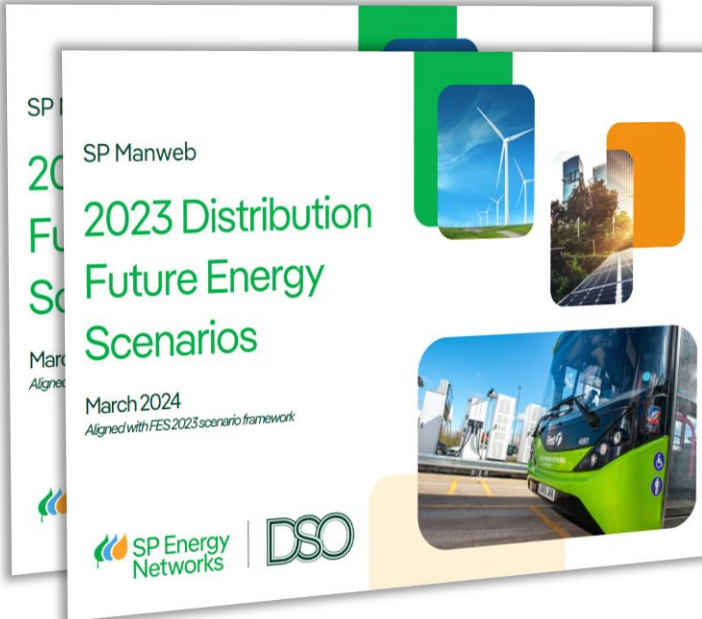
Decision Making
Framework
(DMF)

Flexibility Tendering

Piclo
Flexibility
Tendering
Platform

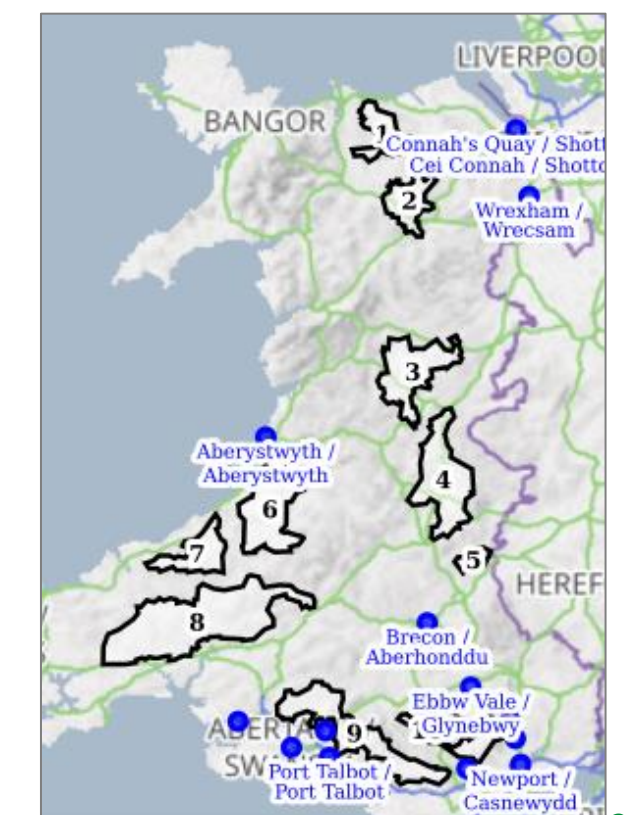
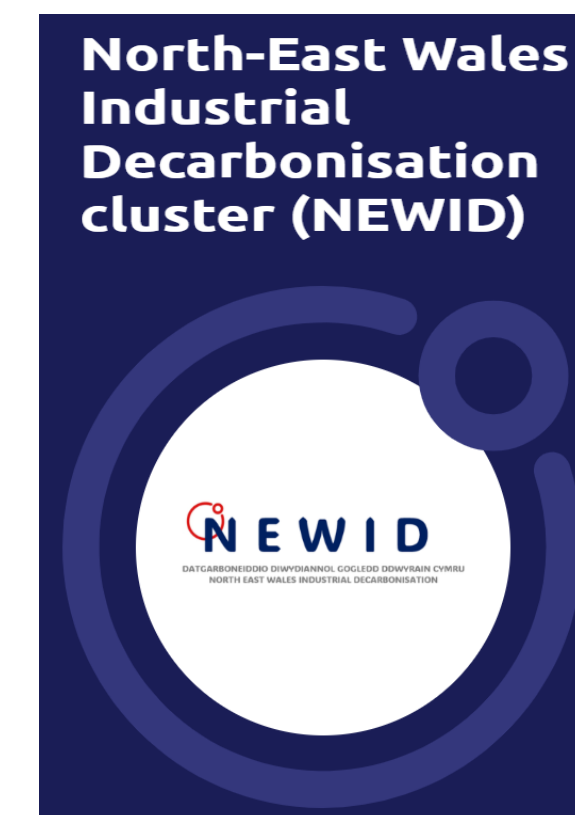
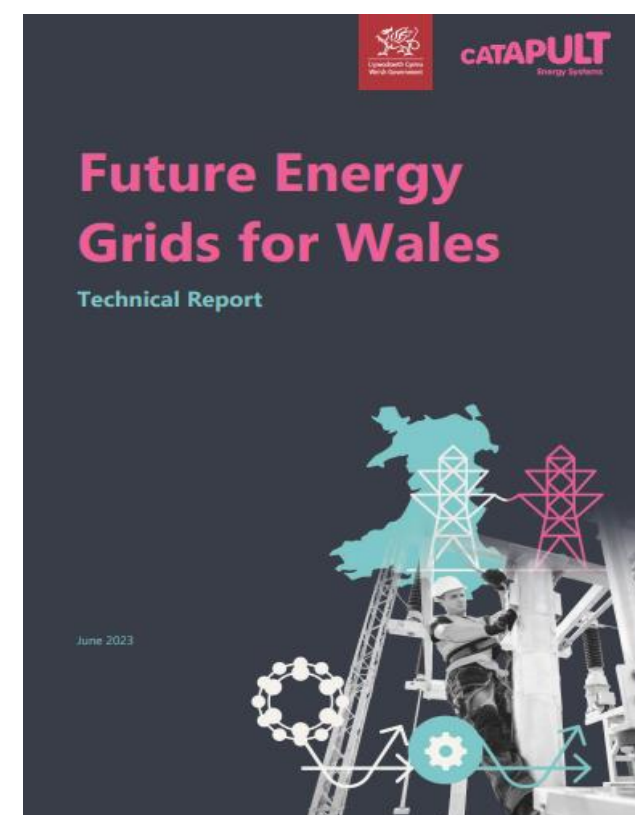
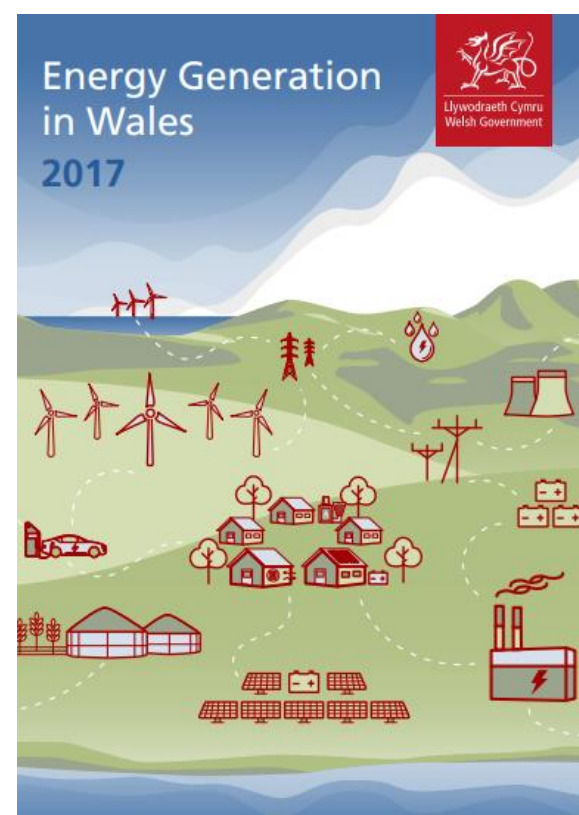
Intervention Decision

Network
Development
Plan
(NDP)



Network planning data shared on SPEN Open Data Portal.

- Welsh Government
- Ambition North Wales
 - Ynys Mon, Gwynedd, Conwy, Denbighshire, Flintshire and Wrexham Councils
- Growing Mid Wales Partnership
 - Ceredigion and Powys Councils
- Transport for Wales
- Net Zero Industry Wales
- Welsh Government Energy Service
- Ynni Cymru





Introduction to the NESO

Public

NESO update on Strategic Energy Planning (SEP)

January 2025

James Leung – RESP Lead Specialist – Wales

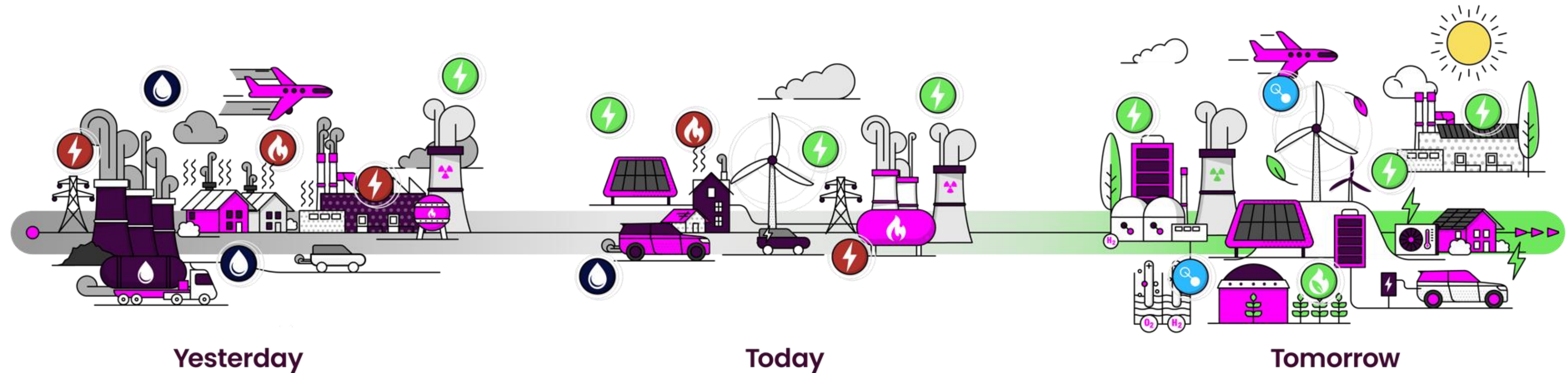
Regional Energy Strategic Planning
National Energy System Operator

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.



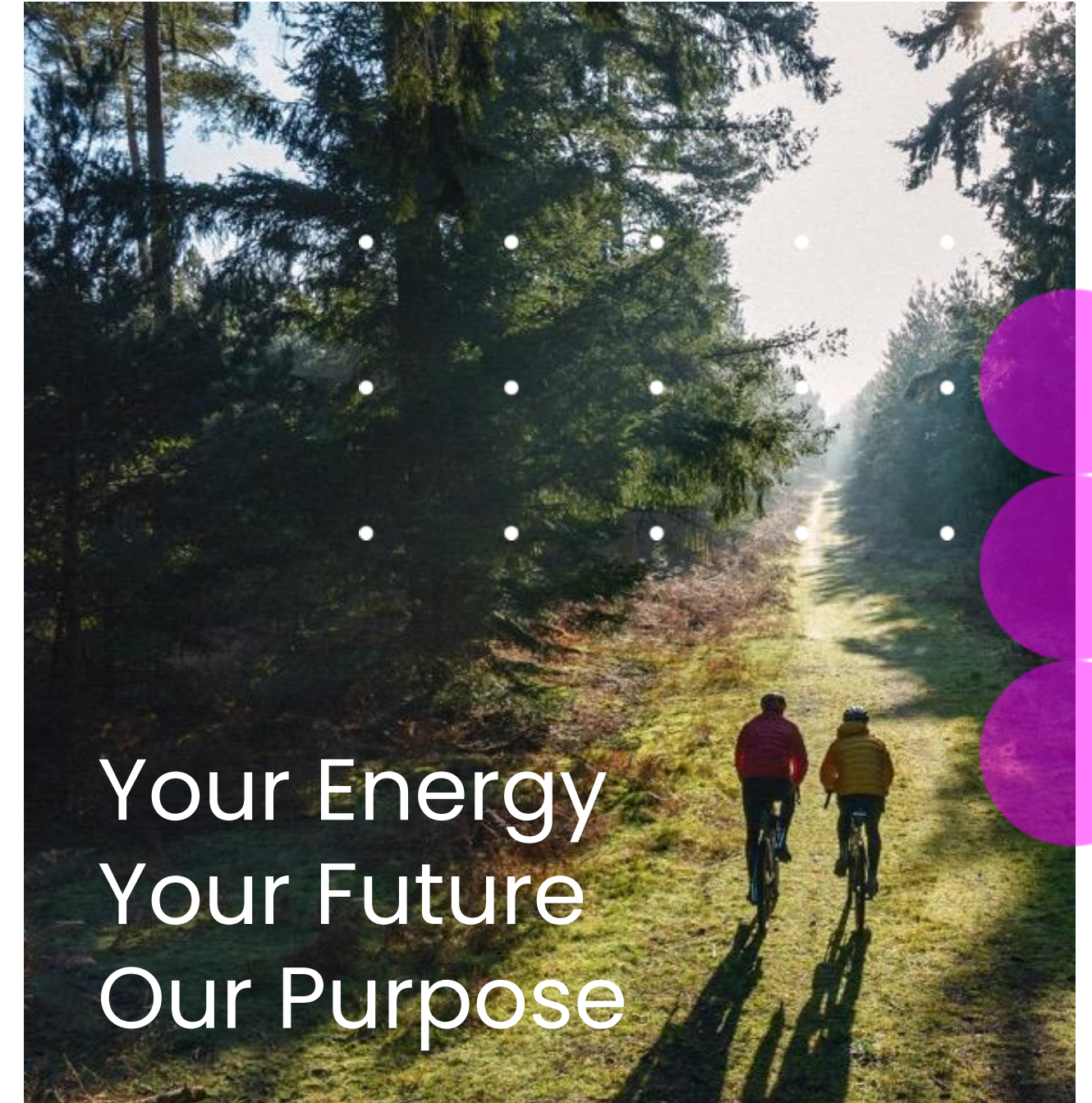
We must work collectively at a **local, regional and national scale** to realise the benefits of the energy transition for Great Britain, and the people who live here.

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.

Our Governance

NESO is operationally independent of government. We plan the electricity and gas systems and operate the electricity system.

Being independent means we can give impartial recommendations to the government and the regulator.

Our shareholder



The Department for Energy Security & Net Zero is responsible for national policy and providing strategic direction and targets in relation to UK energy

Our regulator



Ofgem is the energy regulator for Great Britain

Independent NESO Board

The NESO Board oversees our strategic direction, ensuring compliance with regulations and mitigation of corporate risks.

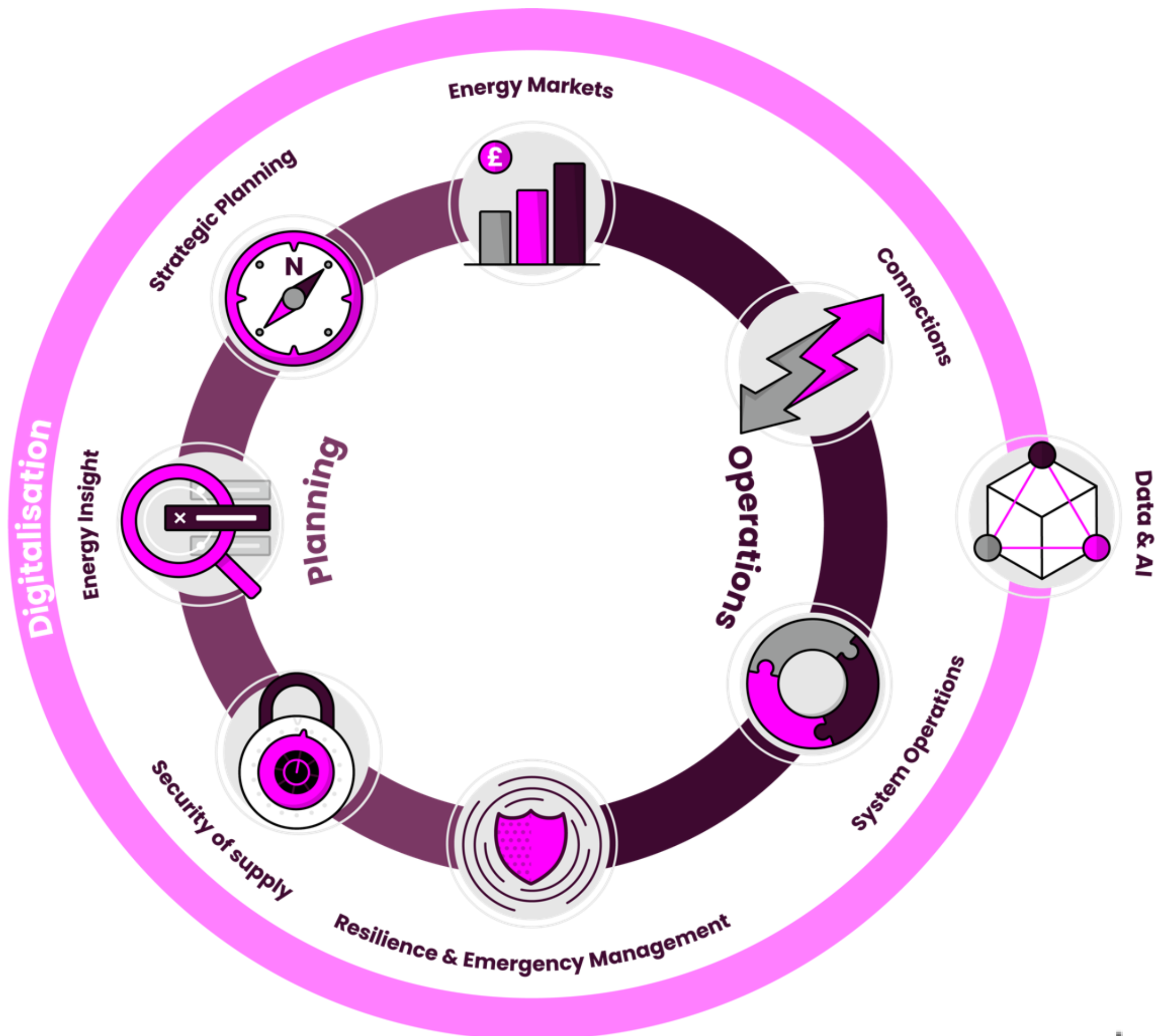
The Board ensures that we build strong relationships with customers and it evaluates performance.

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.

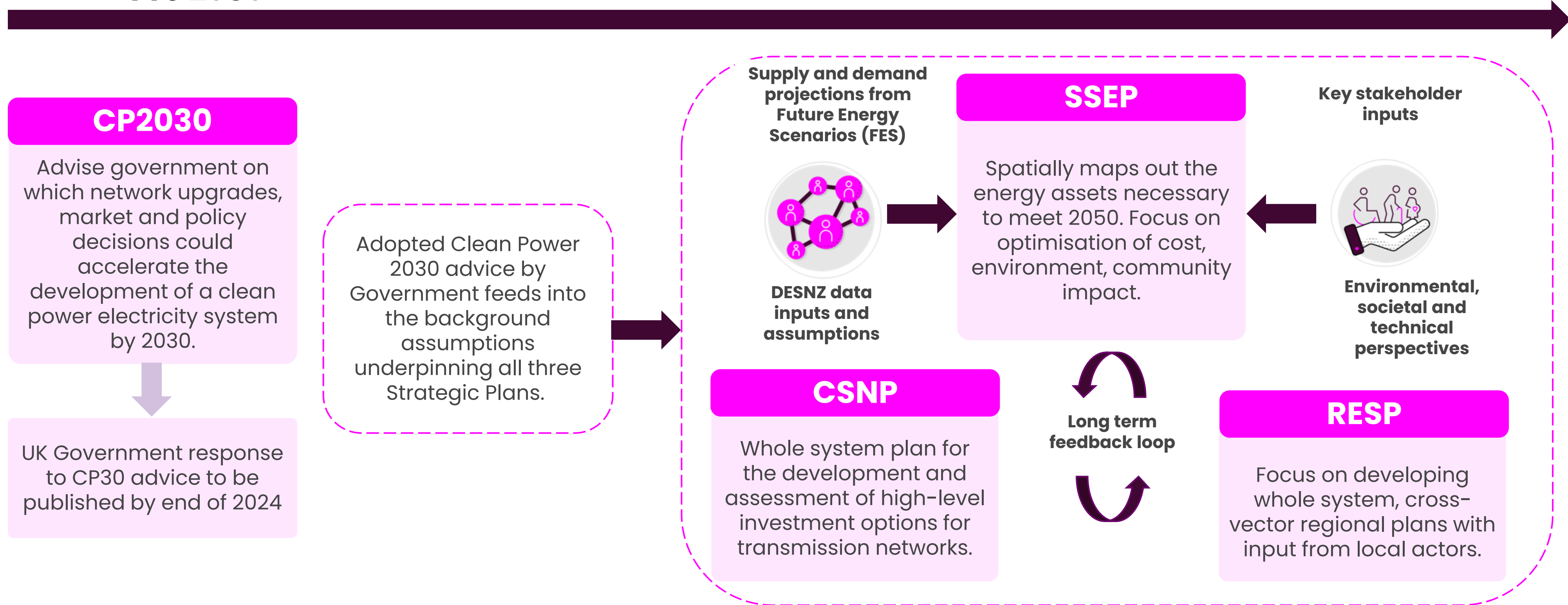
<https://www.neso.energy/what-we-do>



2. Strategic Energy Planning (SEP) overview

Pre 2030

Post 2030



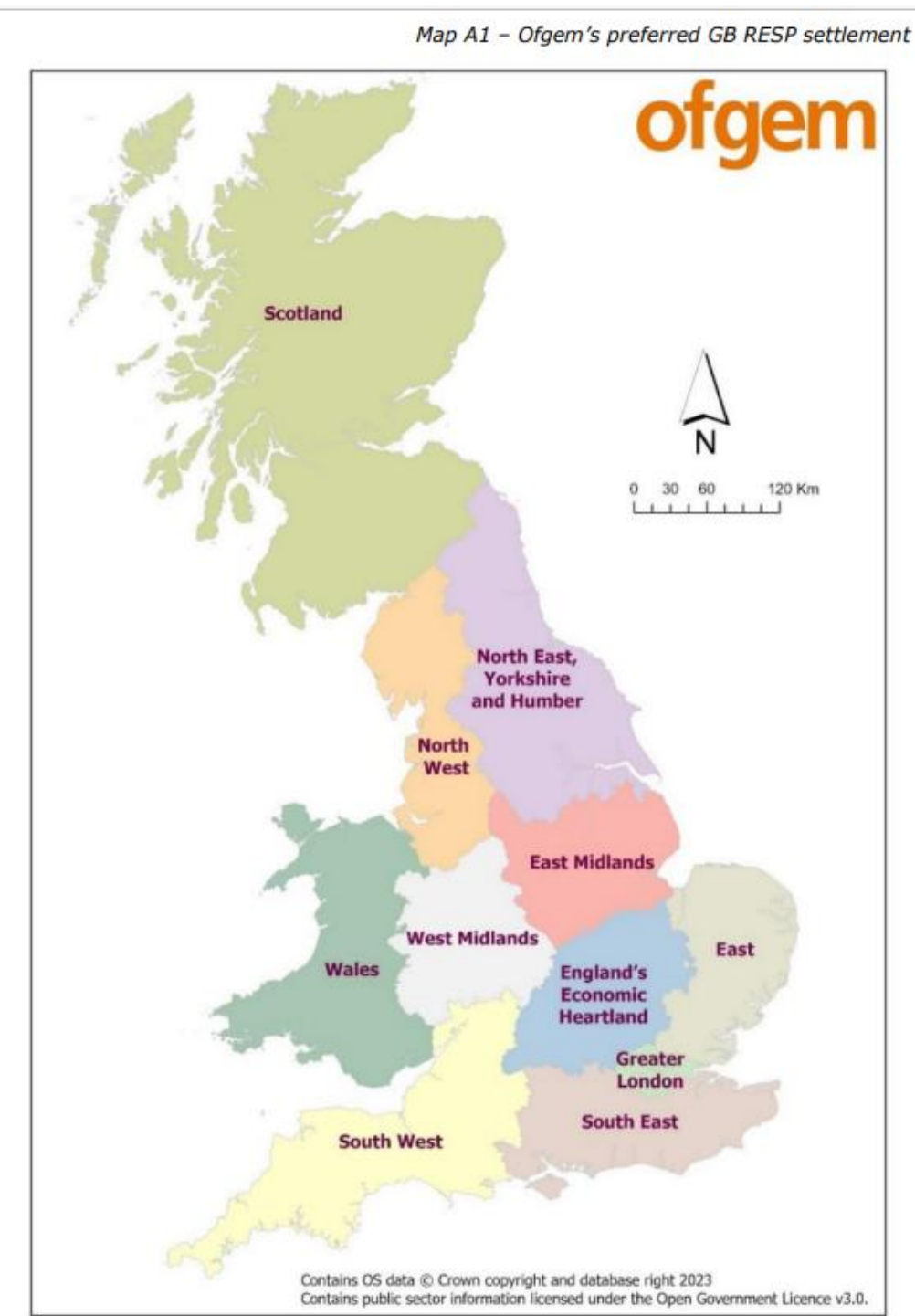
Regional Energy Strategic Plans (RESP)

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)



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.

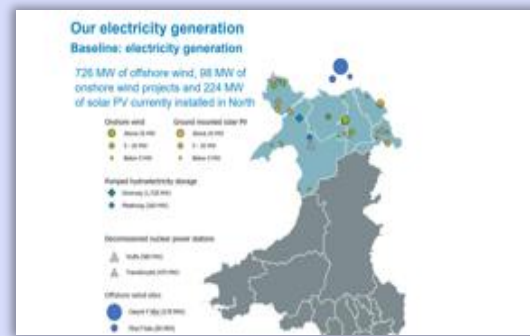
The Regional Energy Strategic Plans

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

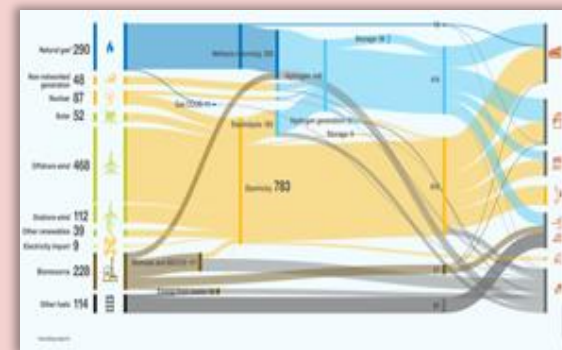


a

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



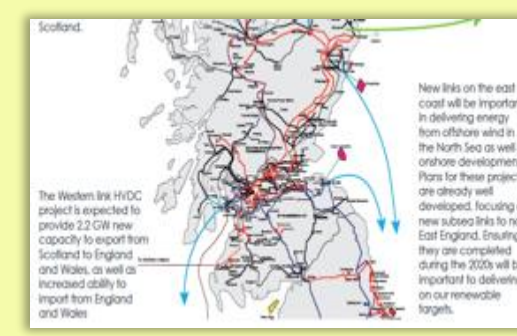
b

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

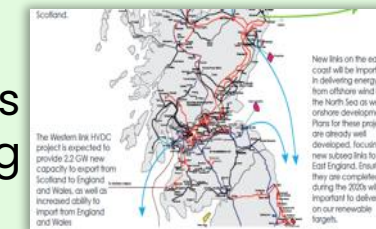


c

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

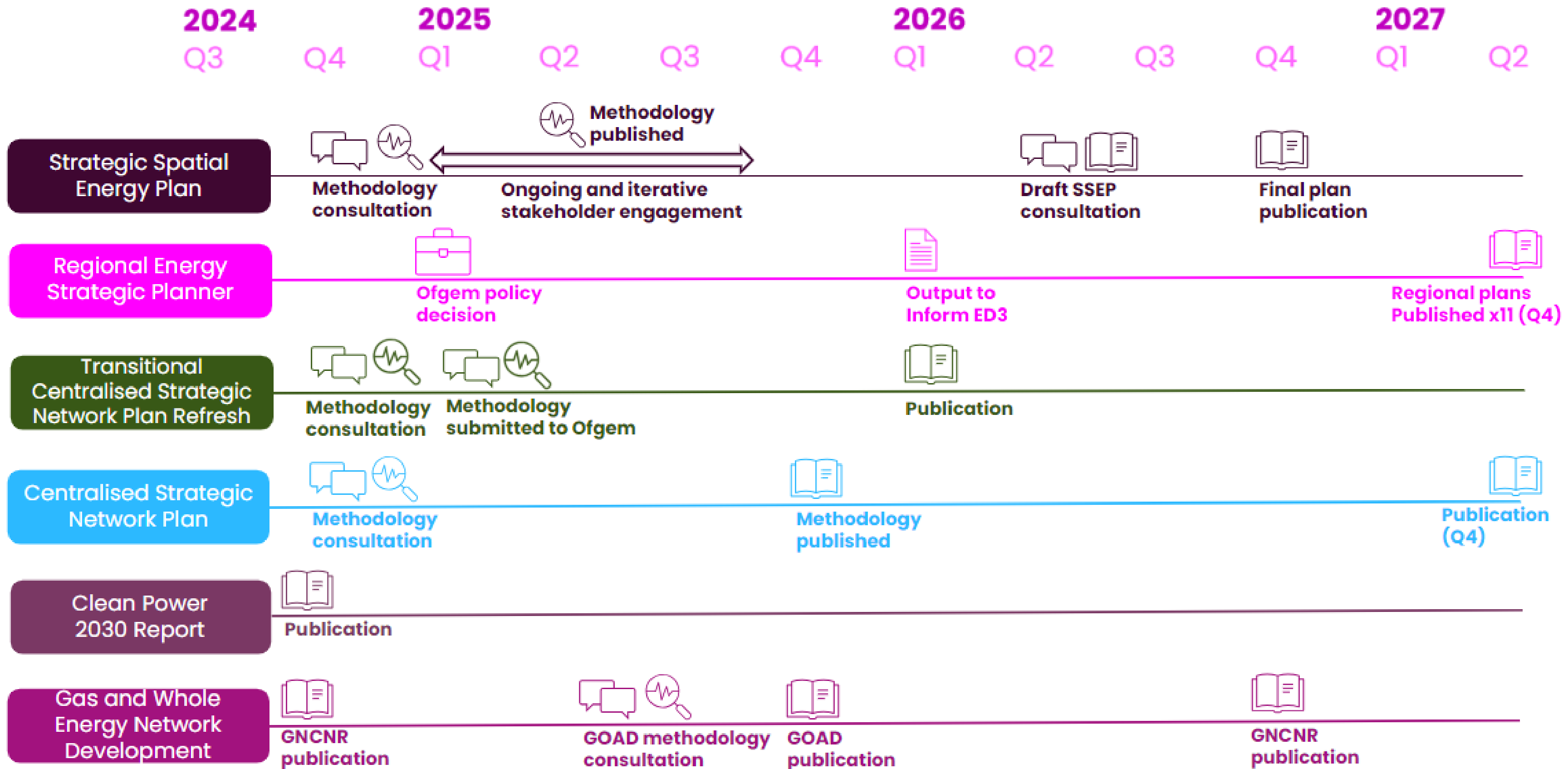
a Modelling supply and demand

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

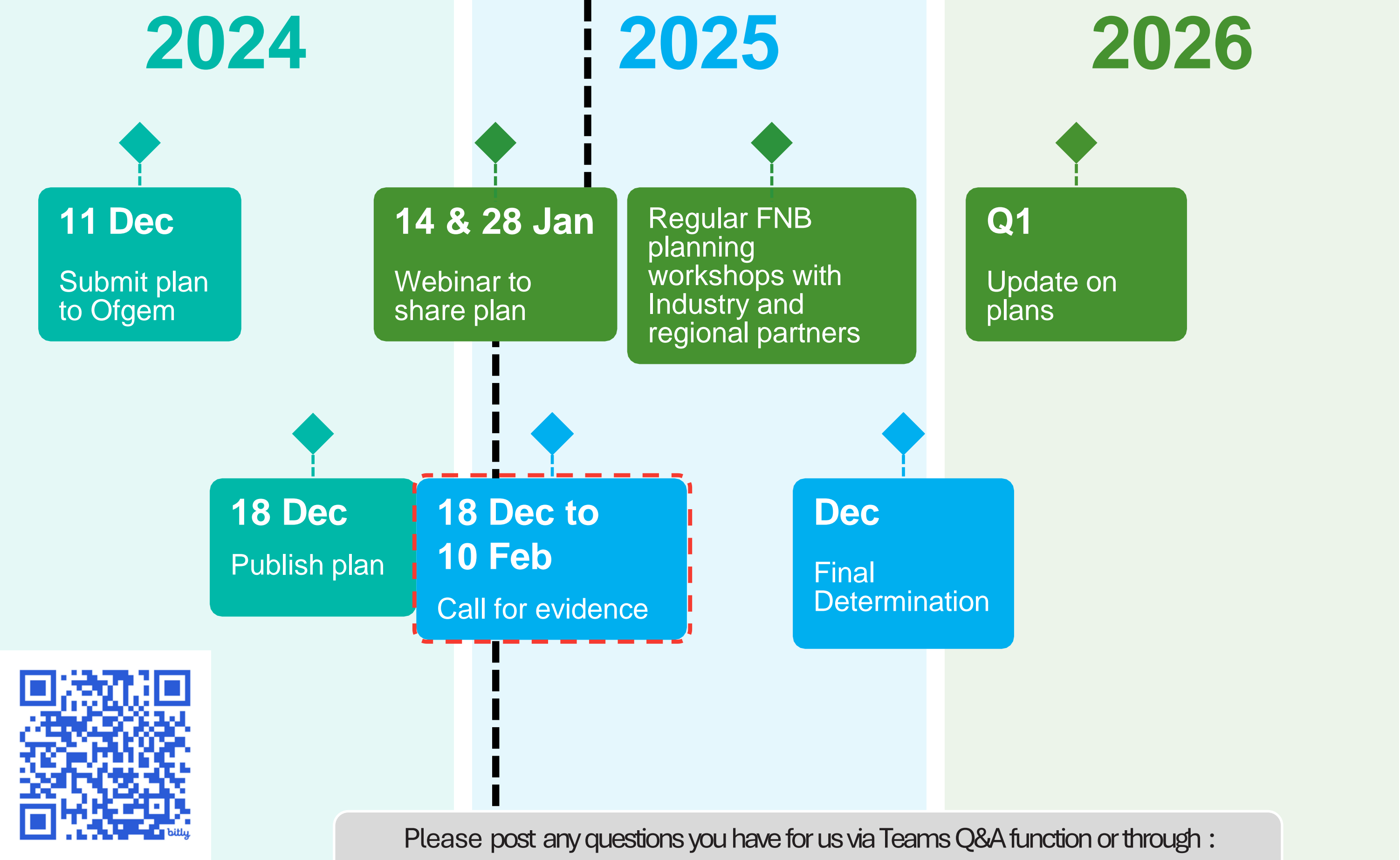
james.leung@nationalenergyso.com

Timeline



Please post any questions you have for us via Teams Q&A function or through :
pathwaytonz@nationalgrid.com

Planning the next steps for Wales



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

More information at Ofgem Call for Evidence RIIO-3

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Q&A

Please post any questions you have
for us via Teams Q&A function or
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pathwaytonz@nationalgrid.com



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

Please get in touch via pathwaytonz@nationalgrid.com



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Appendix



Our approach to local engagement

We consult and work with local residents, their representatives and statutory stakeholders through all stages of the planning and construction process.

Our approach is underpinned by the 5Cs:

- **Communities** play a vital role and should see the benefits from hosting new infrastructure.
- We undertake the highest standards of **consultation**.
- We identify and **collaborate** with partners to deliver tangible community benefits.
- Our communications **campaigns** will clearly explain the need for a reliable decarbonised grid, and greater energy security for Britain.
- Our **colleagues** are experts in the energy sector, land, planning and the environment.

How we engage with local communities

We consult and work with local residents and their representatives through all stages of the planning and construction process.

- Consultation and information events
- Stakeholder briefings
- Public webinars
- Community newsletters
- Dedicated e-mail and phone services
- Project websites



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