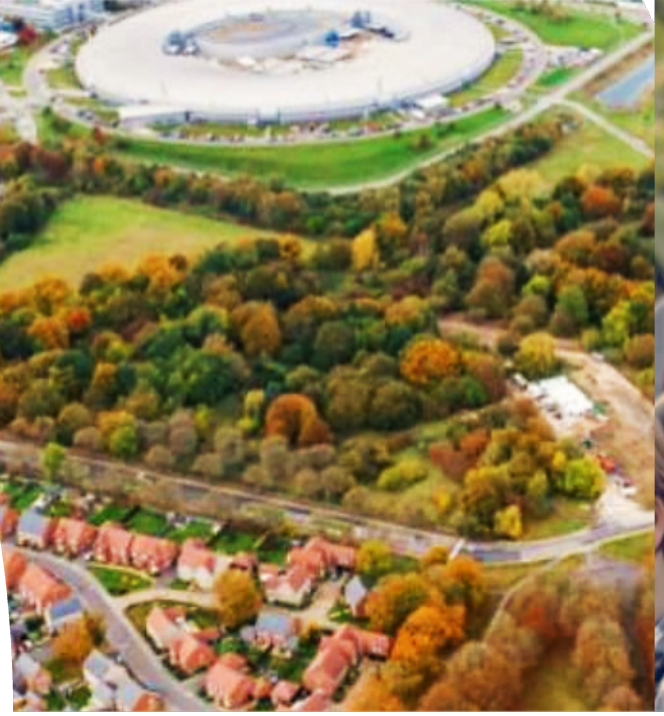


- **To the Grid Edge and back again**

- Embedding Local Area Energy Planning (LAEP) and Energy Coordination (LAEC) for Oxfordshire

Content:

- A bit about Oxfordshire and local area energy coordination (LAEC)
- What is Energy Planning
- The Oxfordshire approach to Energy Planning: (OxLAEP)
- Ways to get involved

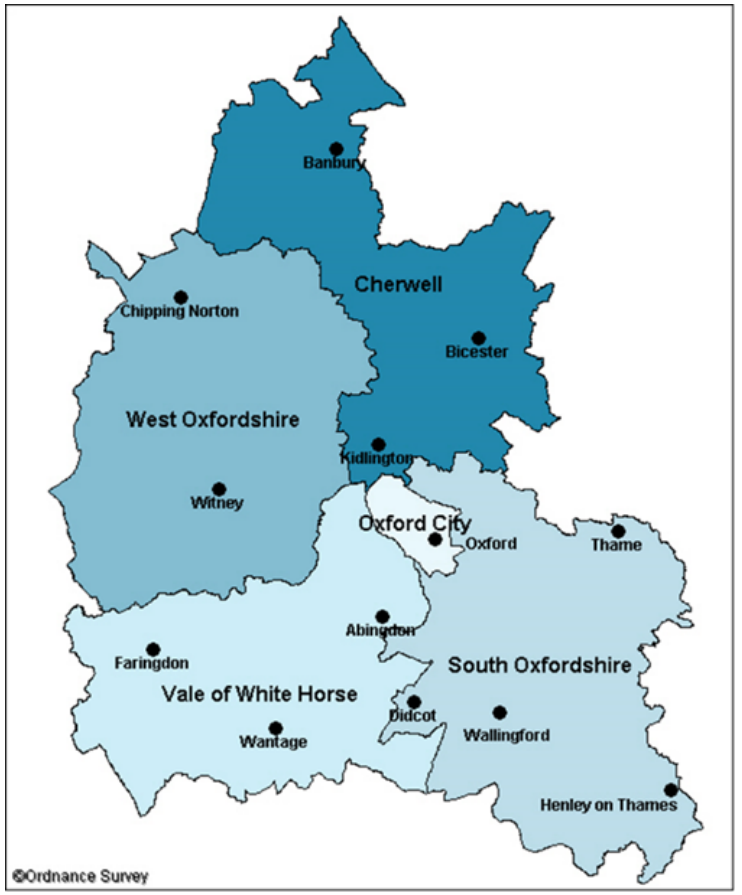
About Oxfordshire

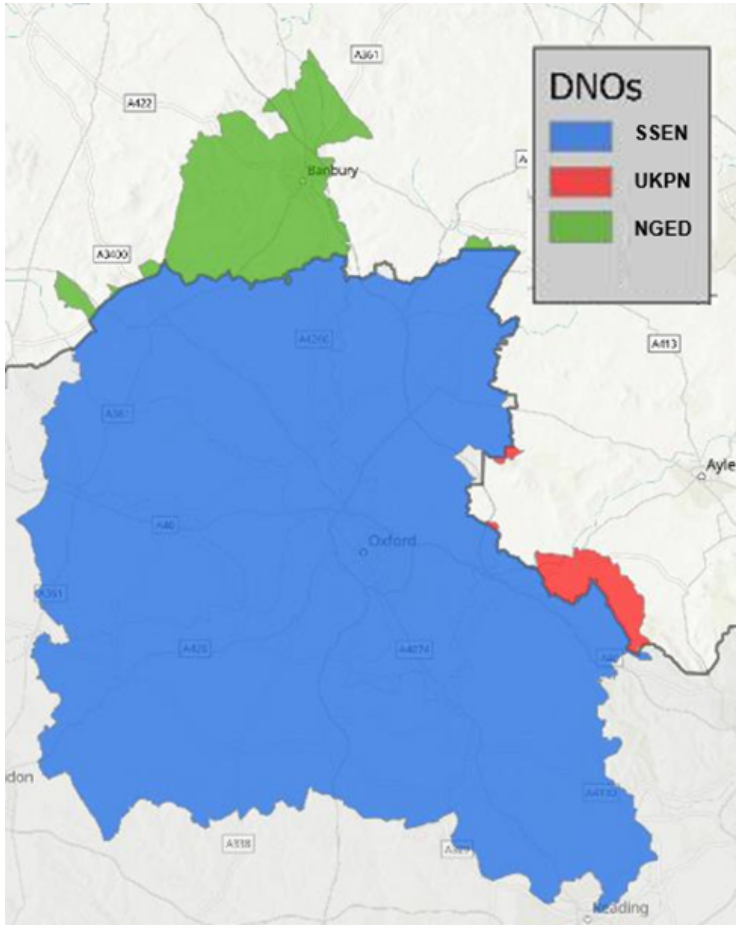
Oxfordshire is a region of contradictions:

- **A centre of excellence** for learning, research and innovation
- **One of only three Net contributors to the UK exchequer**: the Oxfordshire economy generates £21.9bn per year, with a population of just 750,000, and more than 30,000 businesses.
- **Highly unequal** – live expectancy in the poorest parish in Oxford lags 13 years behind the richest parish; pockets of deep, rural poverty.
- **One of the most rural** counties in England – 70% of land is agricultural.
- **Three highly protected National Landscapes**: Chilterns, Cotswolds, South Wessex Downs make up 25% of Oxfordshire's land mass.
- **Adoption of Net Zero technologies is pacing ahead** of the national average, with the EV and heat pump uptake amongst the highest in the UK.
- **9%+ population growth** expected by 2031.

- **Climate Emergency declared** by all – but different net zero targets from 2030 to 2050
- **Recognised pioneers** in the energy transition: Project LEO – ESO – LEO-N
- **Retrofit need**: 300,000 dwellings, %53 D< rating
- **Adoption of Net Zero technologies** is pacing up to 10 years ahead of the national average.
- **Energy Planning projects**: ZCOP ID, Eynsham
  CAPzero, Bicester Energy Study

Two-tier authority structure, six authorities.





- Three DNOs: SSEN, UKPN, NGED

Oxfordshire’s Energy System expertise

Oxfordshire Energy System partnership projects – all councils

- **Local Energy Oxfordshire (LEO)** – whole system transition, flex, community energy, smart and fair
- **Energy Superhub Oxford (ESO)** – BESS with private wire
- **ZCOP Industrial Decarbonisation**
- **Heat Network Zoning** feasibility: Oxford, Banbury, Berinsfield.
- **Oxfordshire energy saver app** – smart data flex and retrofit support
- **LEO-N alpha**: Grid edge coordination, Local Area Energy coordination, smart community energy schemes (SCES)

Climate action | Oxfordshire County Council

Retrofit project portfolio to scale delivery and address key barriers:

OXFORDSHIRE COUNTY COUNCIL

cosy homes oxfordshire

100 TOGETHER:
Financing Oxfordshire's Green Future

ENERGY SAVER APP

Home Features Get Started FAQs

Take control of your home energy

Get personalised insights based on your energy use and unleash the power of your smart meter to...

- Use less gas and electricity at home
- Save £200 a year on your energy bills
- Reduce your household emissions

Download on the App Store | GET IT ON Google Play

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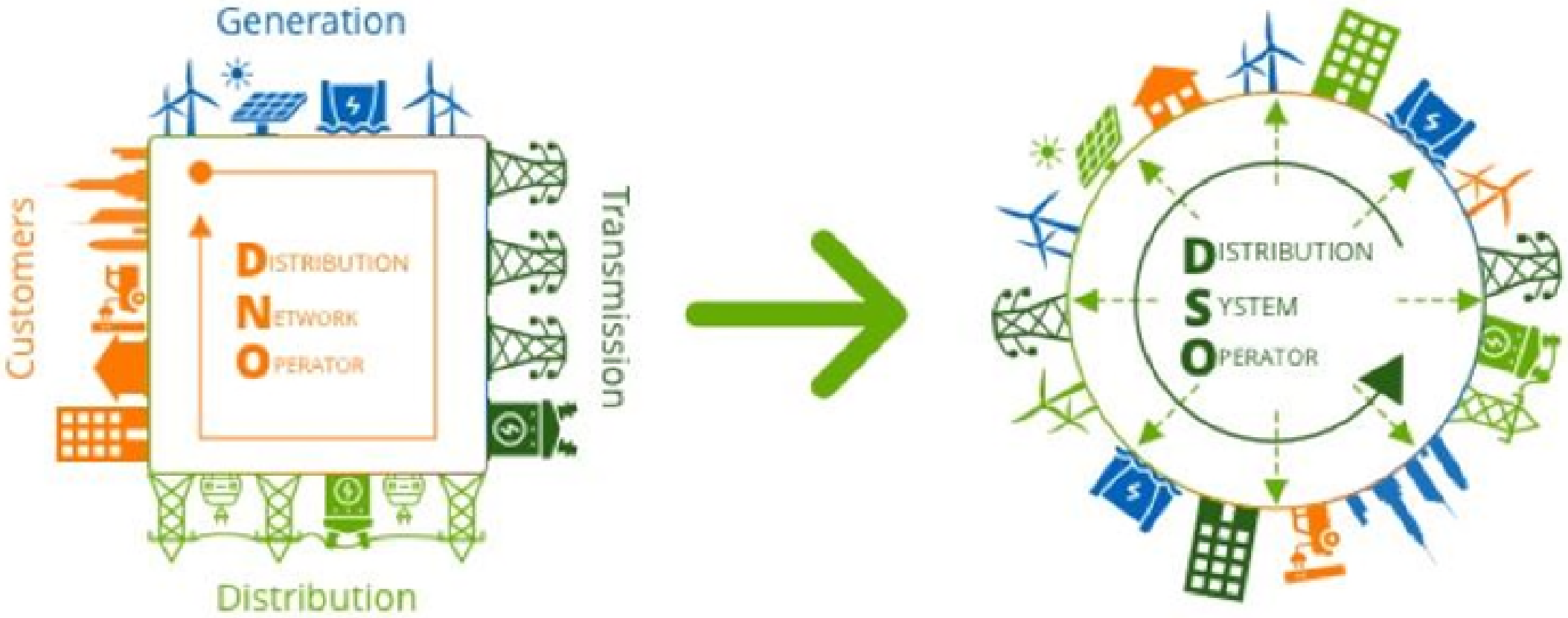
Welcome the Warmth Oxfordshire

Green Construction Centre

Clean Heat Streets

You’re all familiar with this sort of illustration



Credit: Iberdrola. A visual representation of the differences between the DNO model and the DSO model.

The reality feels a bit more like this:

Not everything is rosy:

The Oxford community divided by LTNs and why their fate will soon be sealed

MERIDIAN | OXFORD | TRAFFIC | ENVIRONMENT | Monday 16 October 2023 at 4:53pm

The small English city at the centre of the global 15-minute-city storm

Oxford has become a battleground between urban planners and Right-wing conspiracy theorists

Written by Ed Cunningham Monday 20 February 2023

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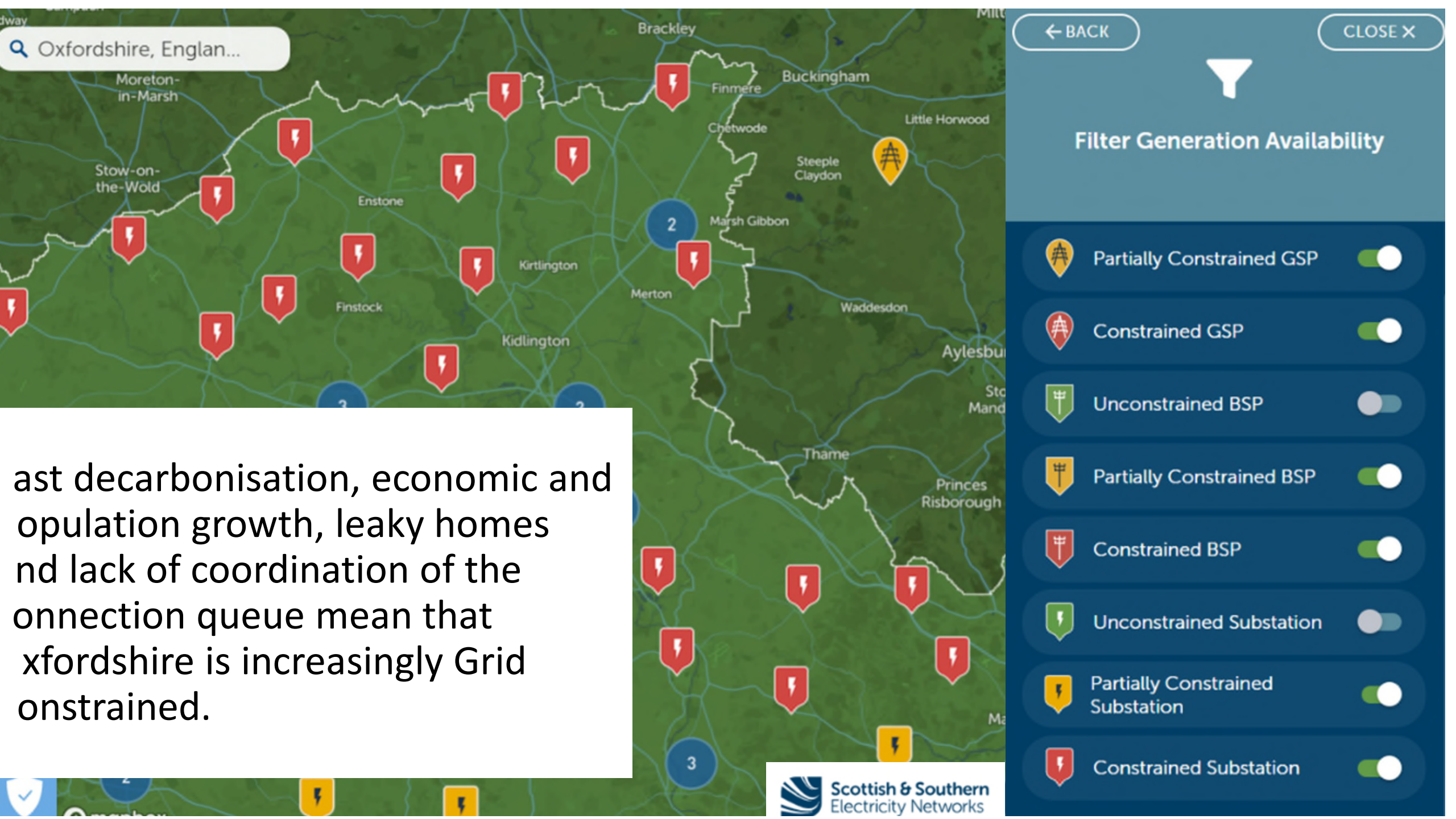
England | Local News | Regions | Oxford

False climate lockdown claims in Oxford lead to death threats

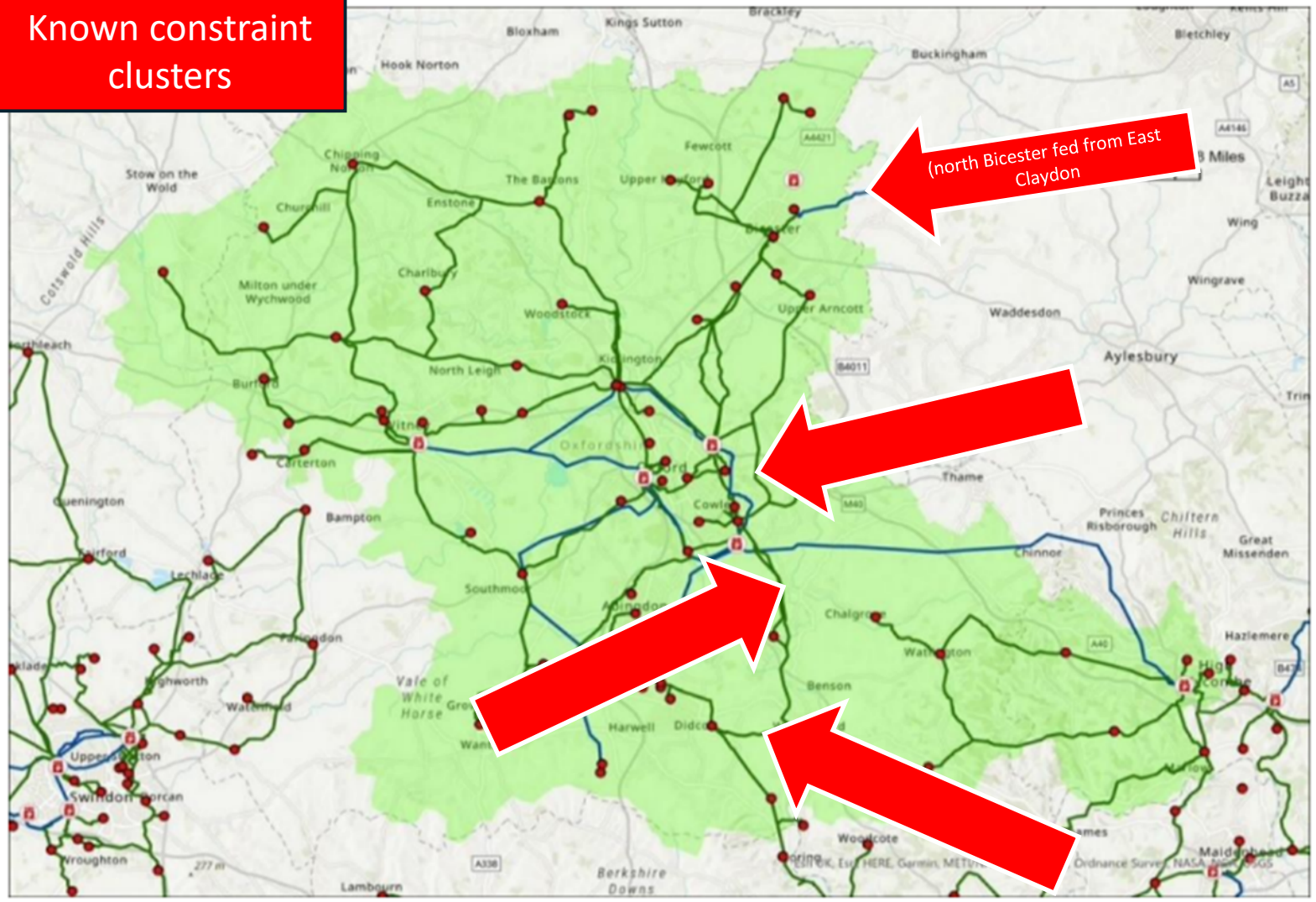
18 December 2022



ast decarbonisation, economic and opulation growth, leaky homes nd lack of coordination of the onnection queue mean that xfordshire is increasingly Grid onstrained.

Cowley GSP supplies approx. 80% of Oxon

Known constraint clusters



Cowley GSP

This GSP supplies the following BSPs

- Cowley
- Drayton
- Headington
- High Wycombe
- Oxford
- Witney & Yarnton

Cowley GSP is located within the Ridgeway region of the SEPD licence area and currently supplies more than 279,300 customers.

Map curtesy of Scottish & Southern Electricity Networks

What is Local Area Energy Planning

What is a Local Area Energy Plan?

LAEPs are **spatial plans** that identify the most **feasible energy projects** to advance climate action, economic growth, energy security **in alignment with local strategies, policies and agreed objectives** across a geographic area.

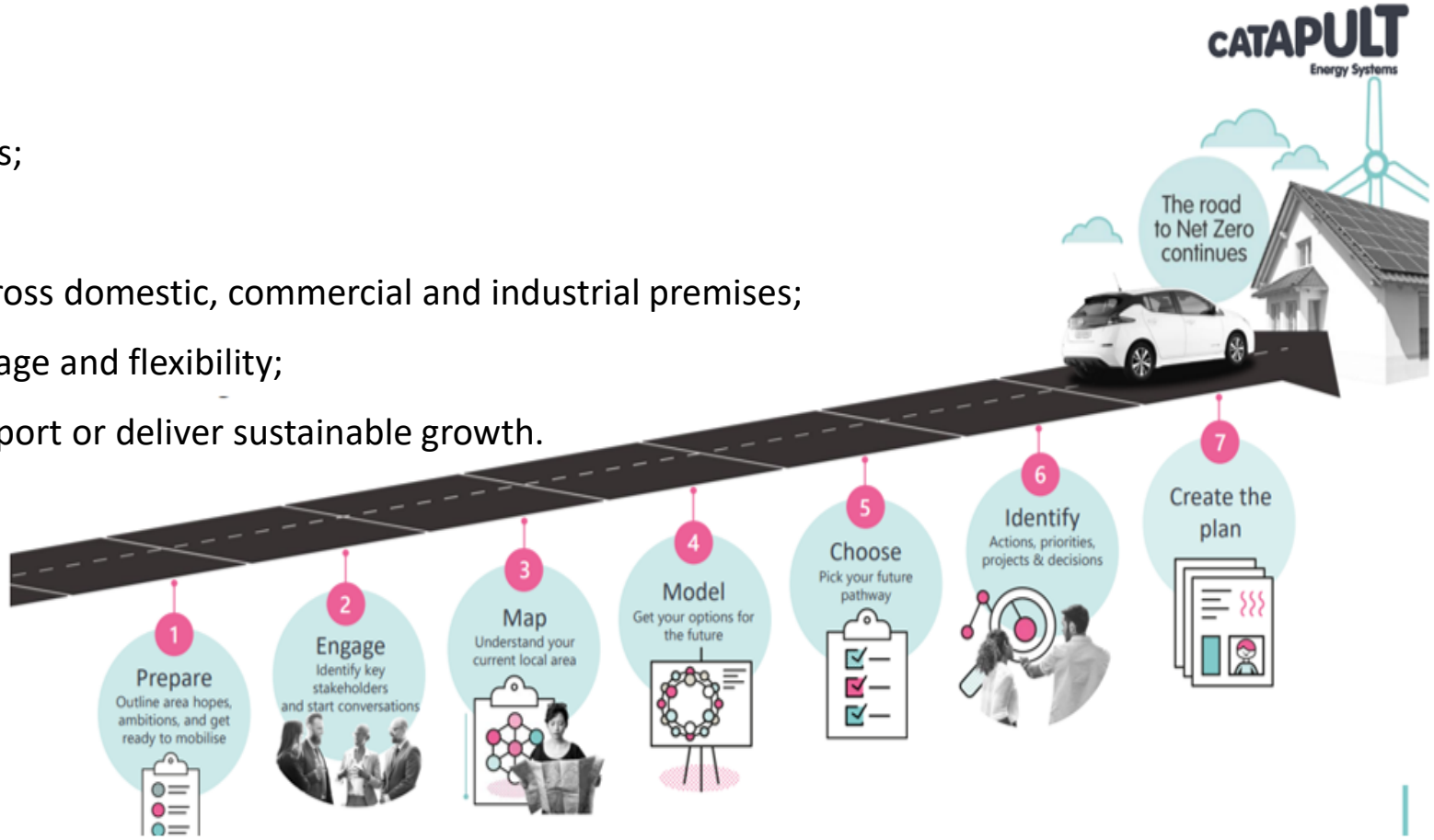
LAEPs **map the current local energy system**, and pinpoint spatially where action is needed or beneficial to achieve local objectives across one or more **decarbonisation scenarios**.

LAEPs can consider, for example:

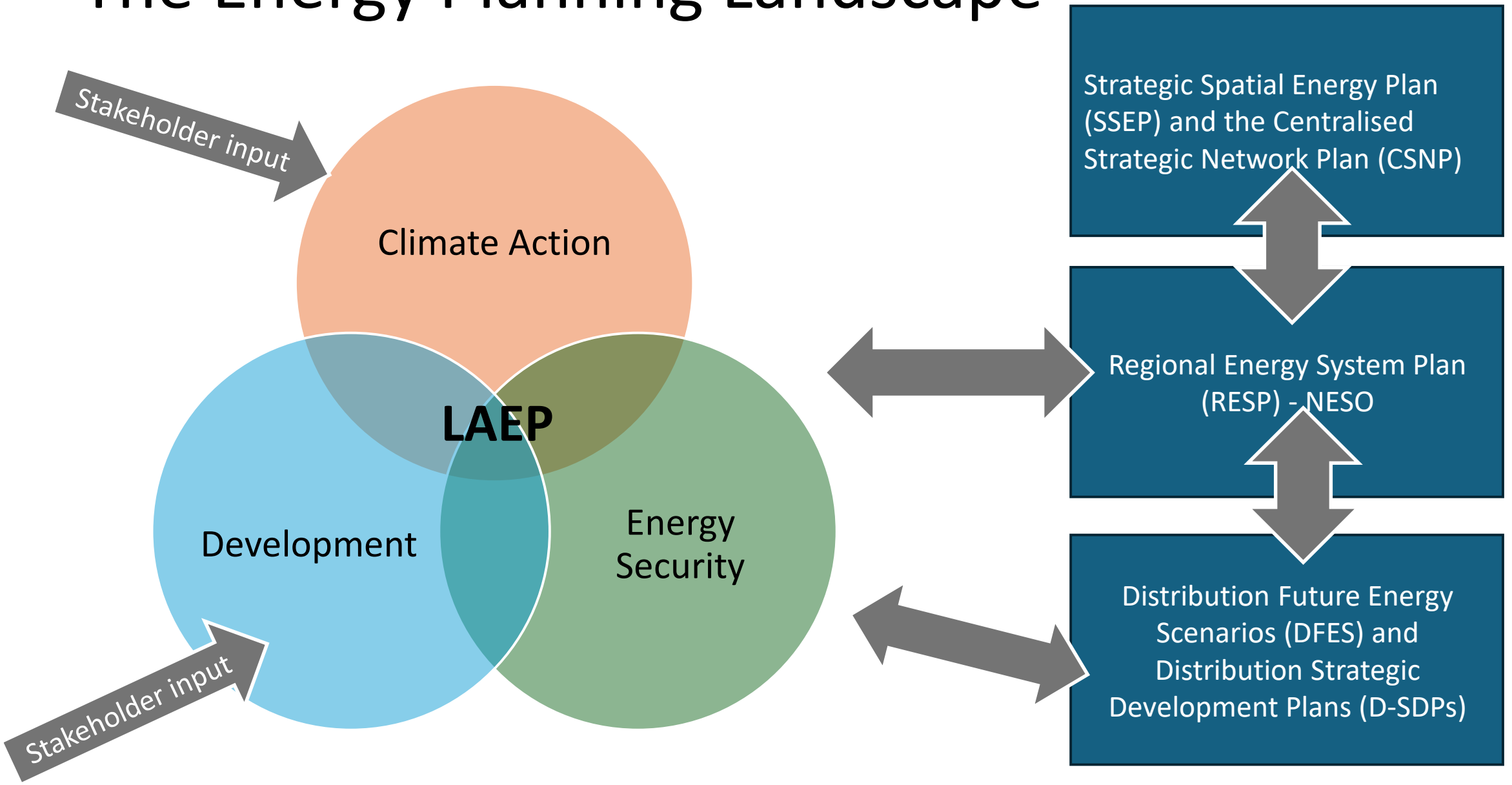
- Heat sources and locations for heat networks;
- Demand and potential for hydrogen;
- Energy retrofit and efficiency trajectories across domestic, commercial and industrial premises;
- Renewable energy generation, strategic storage and flexibility;
- Infrastructure required to decarbonise transport or deliver sustainable growth.

Local Area Energy Plann***ing*** is the process of creation, implementation and monitoring of LAEPs.

[LINK to Catapult Video: Example of a LAEP]



The Energy Planning Landscape



RESP is still under consultation, so things may change.

What is the Regional Energy System Plan?

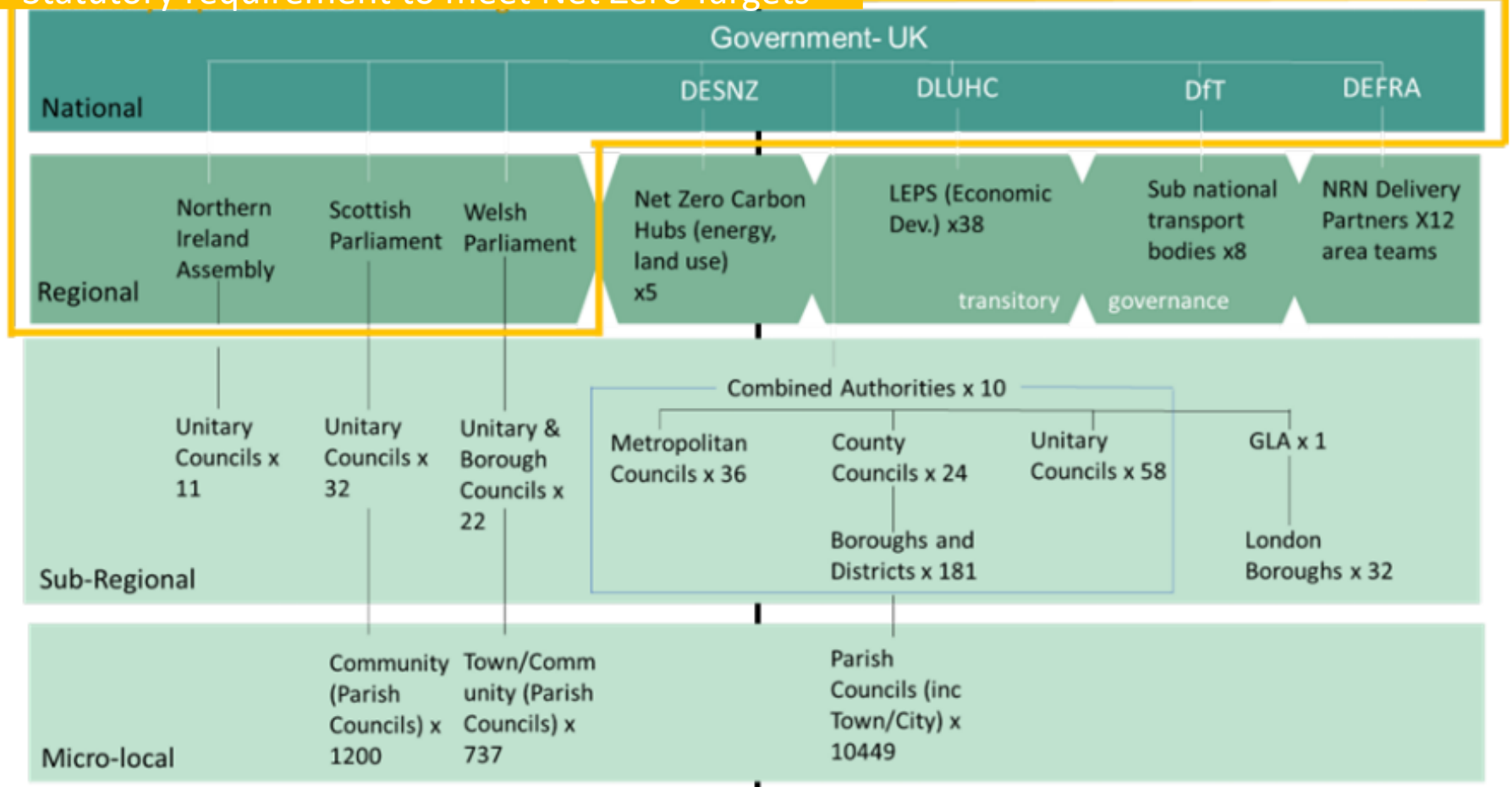
Table 1: Provides an overview of each building block and the components produced.

Strategic direction setting: modelling supply and demand	Strategic direction setting: identifying system need	Technical coordination
Component	**Component**	**Component**
• A long-term vision and agreed priorities. • Short-term pathway and multiple long-term pathways that show energy supply and demand projections.	• Information to guide system needs including consistent assumptions. • Spatial context of projections. • A narrative to steer strategic investment.	• A set of coherent plans (RESPs and network plans) which resolve gaps and inconsistencies and identify whole system opportunities.

Net Zero Governance – no Role for LA's

Figure 1: UK governance of the climate emergency

Statutory requirement to meet Net Zero Targets



Sources: PCAN interviews for the present study; National Assembly for Wales, 2007; LGIU, 2022a, 2022b; NI Direct Government Services, 2022

Strategic Spatial Energy Plan (SSEP) and the Centralised Strategic Network Plan (CSNP)

Regional Energy System Plan (RESP) - NESO

?

Image adjusted from ON MULTI-LEVEL CLIMATE GOVERNANCE IN AN URBAN/RURAL COUNTY – Surrey case study

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Figure 1: UK governance of the climate emergency

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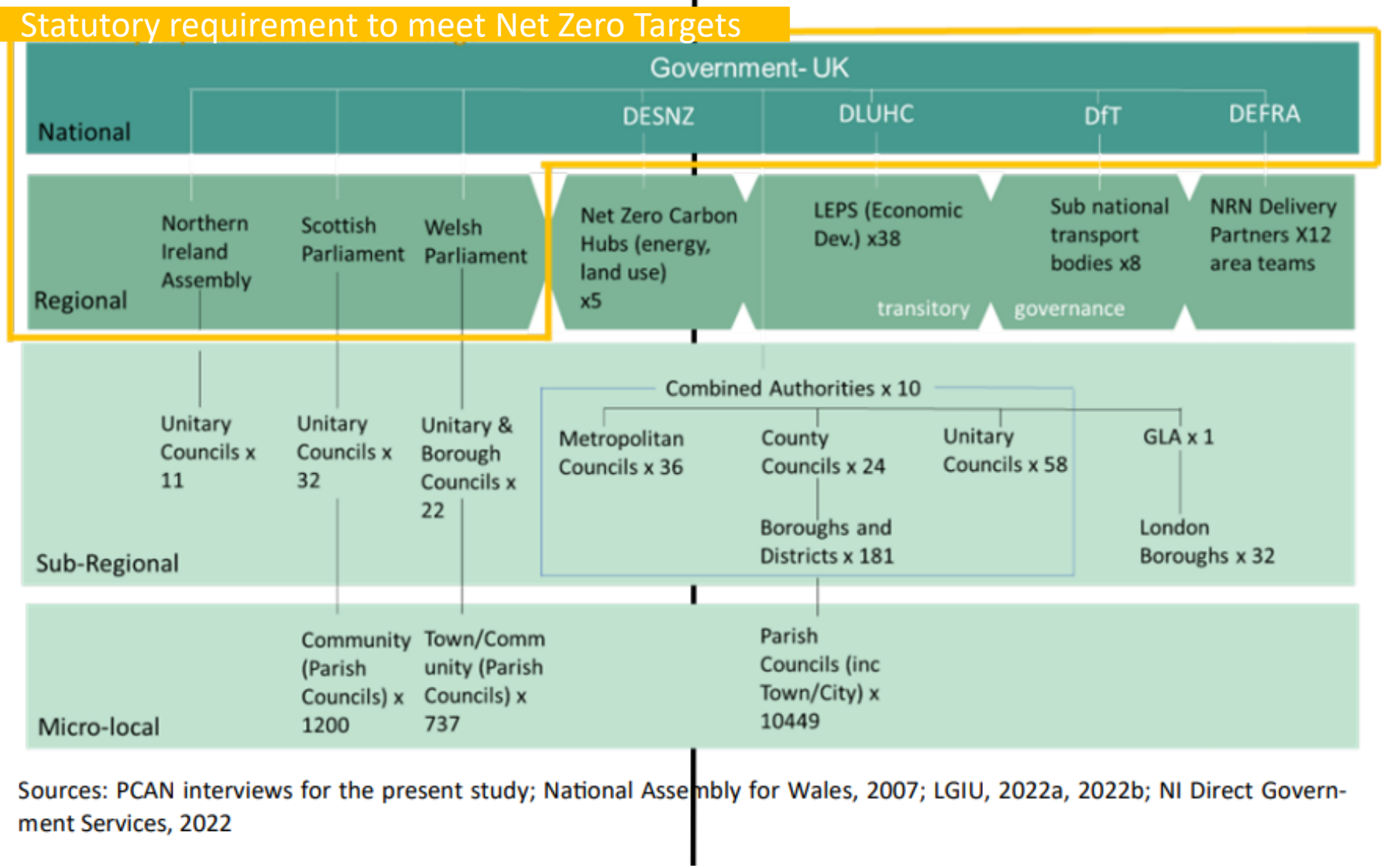

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Strategic Spatial Energy Plan (SSEP) and the Centralised Strategic Network Plan (CSNP)

Regional Energy System Plan (RESP) - NESO

LAEPs / DFES

Hyper-local LAEPs / Optioneering, Grid Edge coordination

Image adjusted from ON MULTI-LEVEL CLIMATE GOVERNANCE IN AN URBAN/RURAL COUNTY – Surrey case study

The OxLAEP

The Oxfordshire LAEP is informed by Project LEO-N alpha: Local Energy Oxfordshire - Neighbourhoods

- **LAEP function development**: New institutional arrangements are proposed to facilitate and drive local delivery, develop new delivery mechanisms including innovative financing options, mobilise the supply chain and improve community level energy planning to integrate with wider City or County wide plans.

- Digital, dynamic LAEPs: Local Area Energy Planning tools such as AITL's LAEP+/LENZA/Your Net Zero Hub, capable to "nest" datasets, action plans and project pipelines at different geographic levels, feed forecast demand and supply data directly back to DNOs to support infrastructure upgrade planning and enhance local authority capacity through automation. Data is shared with strategic partners.

- Grid Edge coordinators: specialist organisations that are bringing together the skills and expertise required to support communities with neighbourhood-level, hyper-local LAEPs AND deployment of Net Zero solutions to reduce and delay need for grid infrastructure upgrades and enable the sharing and trading of energy to maximise community benefits.

The OxLAEP programme

In 2023, the Future Oxfordshire Partnership (FOP) instructed Oxfordshire County Council in 2023 to convene local authorities and local network operators to scope a Local Area Energy Plan.

In July, FOP approved the recommended options for the OxLAEP.

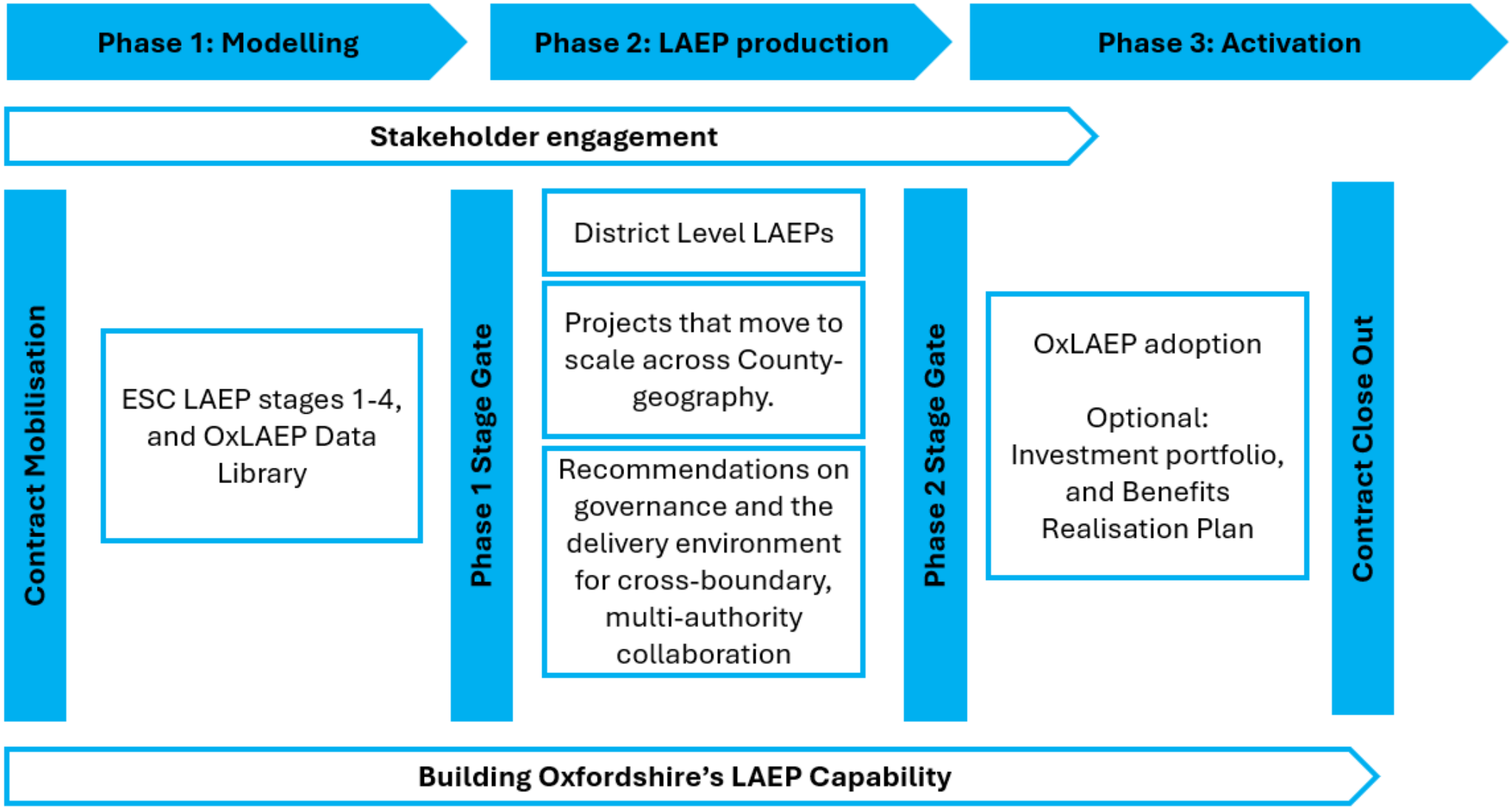
WS1 – LAE Plans

- LAEP baseline, scenarios and datasets for essential emissions sectors, suitable to be incorporated into GIS systems
- 5 District level LAEPs
- Integration of community energy projects into wider energy planning
- County-wide summary report

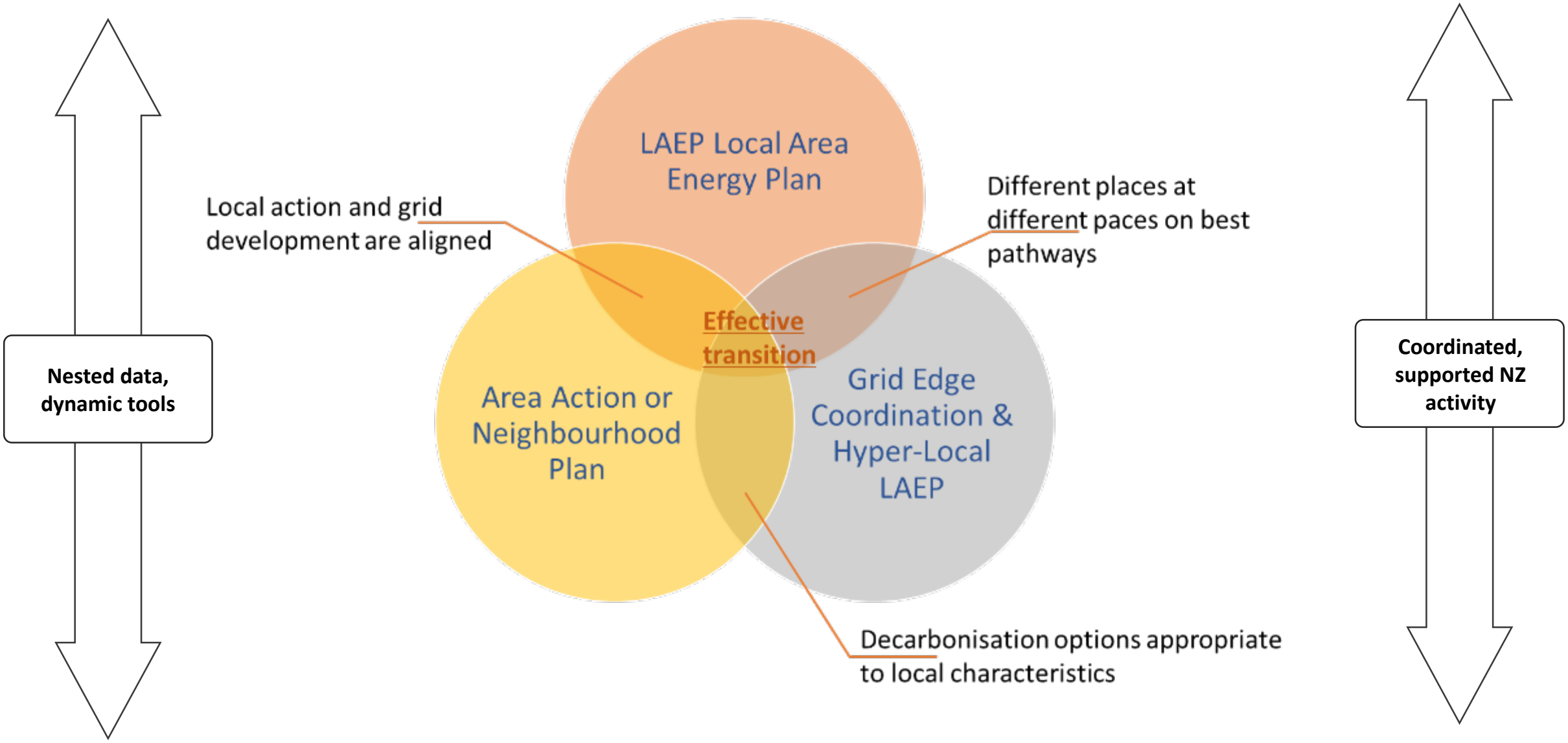
WS2 – LAEP Function

- Support the development of LAEP capabilities in Oxfordshire's authorities, able to navigate the impacts of grid constraints, and coordinate the Net Zero project delivery pipeline
- Embed LAE Planning into Oxfordshire authorities in the long-term
- Develop Investment programme

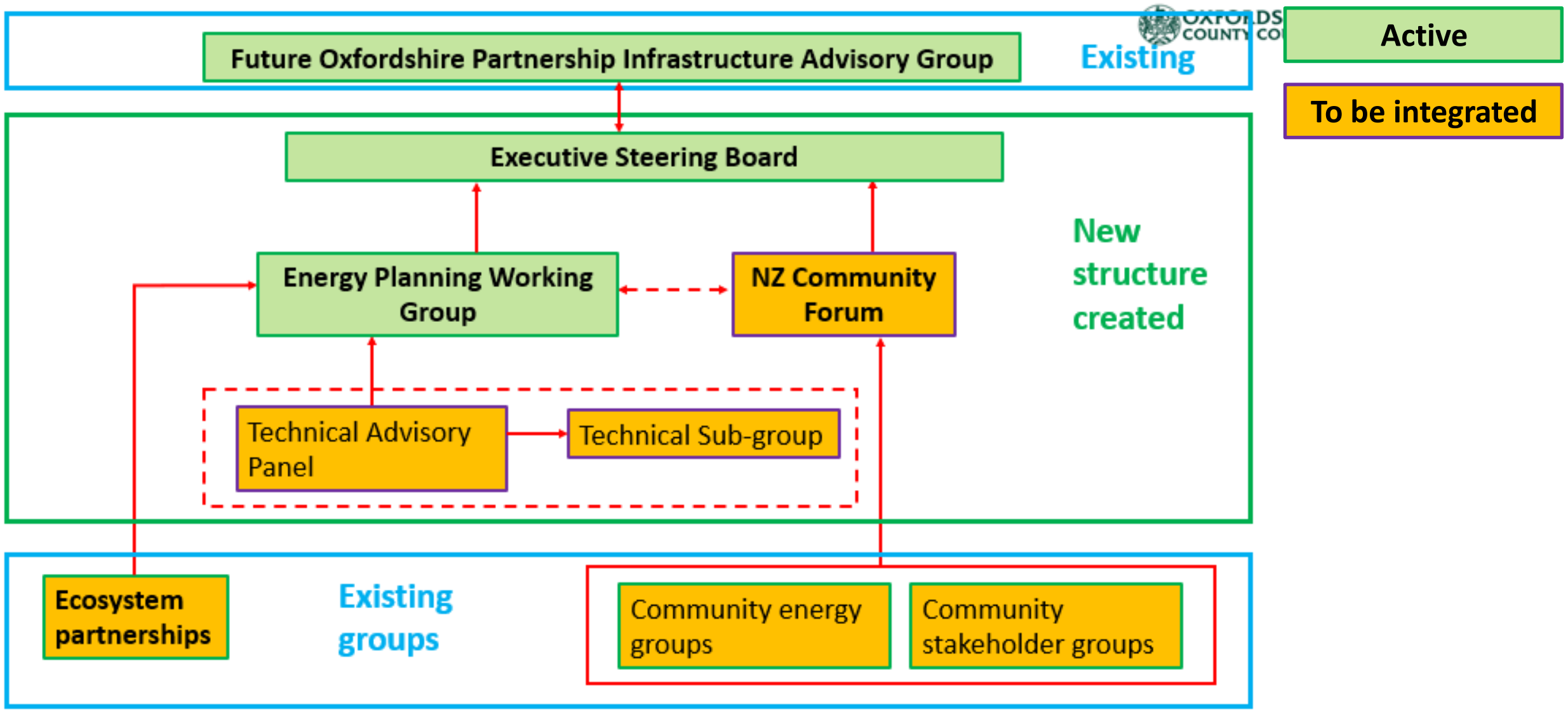
The OxLAEP project (Plans, not Function)



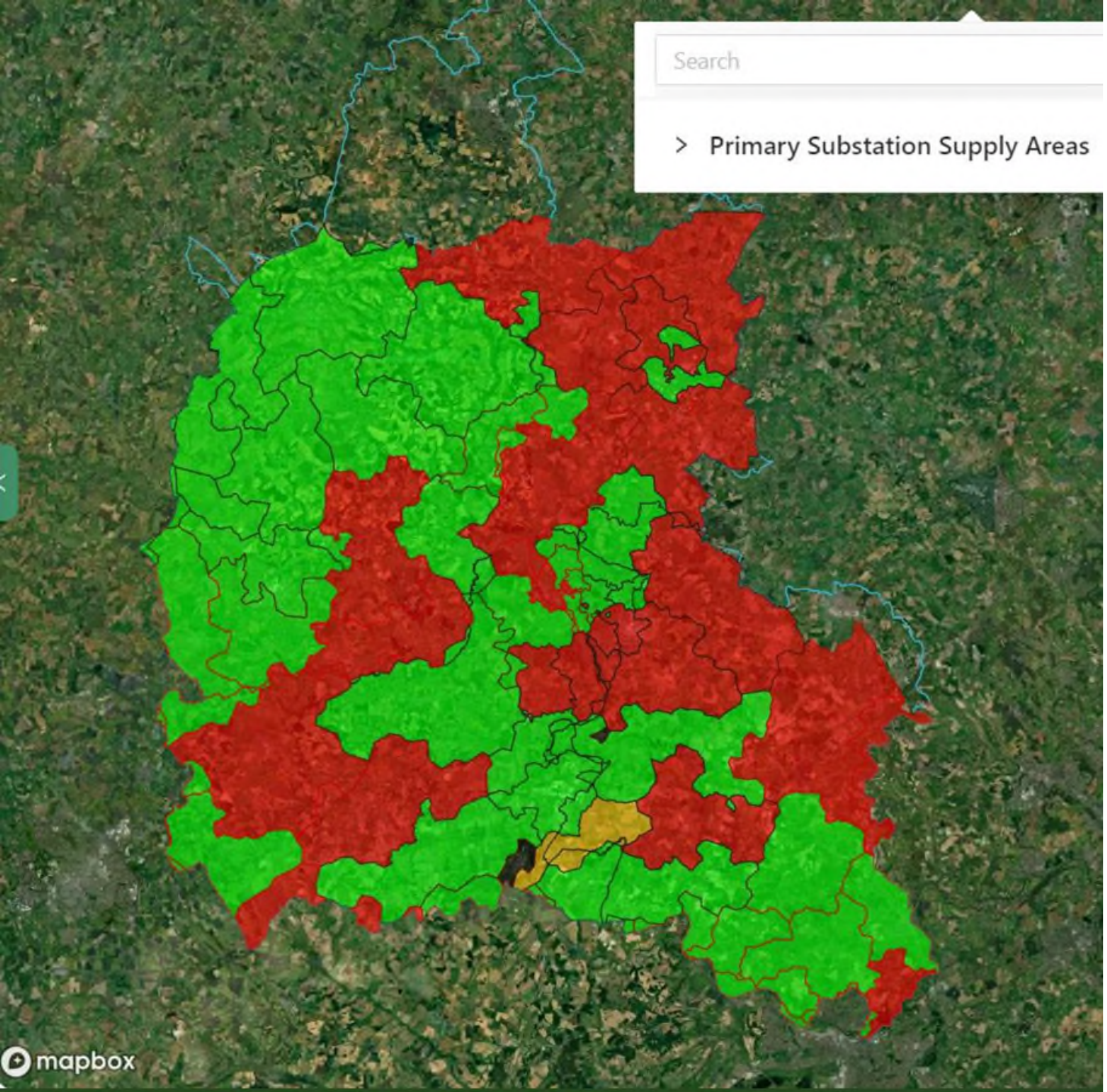
Integrated Planning: Local Area Energy Coordination



OxLAEP Governance



Outro



- The longer-term ambition: a hyper-local LAEP for each primary substation in Oxford, enabling our local communities and businesses to work with a range of skilled Grid Edge Coordinators to find the right solution for them: **Right place, right pace, right pathway.**

LAEC : Local Area Energy Coordination

Courtesy of Project LEO-N & Low Carbon Hub

Regional and Local Energy Planning

STRATEGIC LEVEL

- Open information flows and decision- making at local, network and regional levels
- Strategic engagement with local, regional and national stakeholders
- **Prioritisation aligned with local democratic mandates**

Closing the delivery gap

TACTICAL LEVEL

- Create Neighbourhood-level LAEPs (e.g one per primary)
- Net Zero Delivery Engine
- **Fast, iterative learning on-the-ground**
- Provide expertise to communities
- **Access community knowledge & drive & investment**
- Mediate learning to network operators & councils

Local-regional collaboration and governance - LAEP

Data Flow via Digital LAEP Platform

Grid Edge Coordination (GEC)

Net Zero Neighbourhoods Delivered

low carbon hub

Scottish & Southern Electricity Networks

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Baringa

OXFORD CITY COUNCIL

LAEC is all about the co-benefits.

Infrastructure upgrades and LAEPs are a means to an end – not a benefit in themselves. The co-benefits are the real benefits:

- Comfortable, efficient, healthy homes for all,
- Engaged and active communities,
- Equitable access to energy assets,
- Maximised efficiency
- Reduced carbon emissions,
- Agile, effective institutions.

We can’t just plan our way out of this.

LAEP will give us better visibility of infrastructure need and efficient pathways.

But we must prepare for chance and uncertainty and draw on the wisdom of our communities.

With the right tools, Grid Edge Coordination can help with that: **right place, right pace, right pathway**.

Ways to get involved:

- To contribute to the OxLAEP please express your interest at Climate.Action@Oxfordshire.gov.uk – reference OxLAEP
- OxLAEP newsletter – first issue December 2024 - sign up via Climate.Action@Oxfordshire.gov.uk
- If you have any project or funding ideas, please contact us at Climate.Action@Oxfordshire.gov.uk
- Energy Saver App – download in your app store – Oxfordshire residents only
- Climate Action Survey – open till 30th of September: Climate Action Oxfordshire | Let's Talk Oxfordshire
- Paid Internship programme – we will be looking for an intern for the OxLAEP programme The Summer Internship Programme | Oxford University Careers Service
- Local Innovation Fellowship open to researchers wishing to address local inequalities esrciaa@socsci.ox.ac.uk

OXFORDSHIRE COUNTY COUNCIL

ENDS

Thank you

sarah.hassenpflug@oxfordshire.gov.uk