



# Shaping Our Energy Future: Local Area Energy Plans and Future Energy Scenarios

Southern regional webinar - 3rd September 2020



# Welcome and agenda

Graeme Keddie

Director of Corporate Affairs, Regulation  
and Stakeholder Engagement, SSEN

# Housekeeping



**As we are expecting a large number of delegates, please help us manage the meeting effectively:**



**Please remain on mute unless invited to ask a question**



**Please use the chat function to register a comment or question at any time**



**To avoid bandwidth issues, only presenters should activate video**



**If you'd like to ask a question during a presentation to Q&A, please 'raise your hand'**

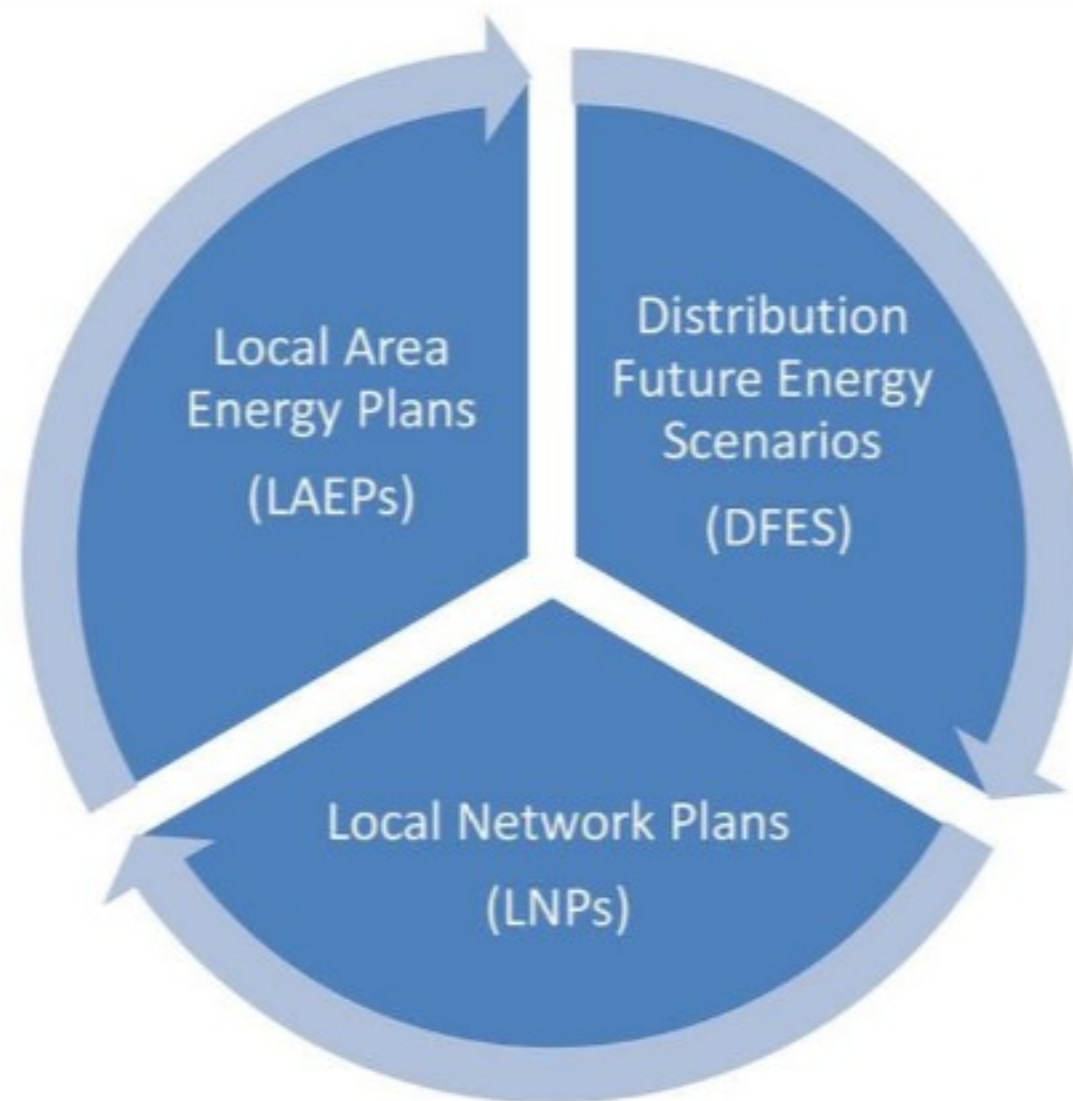
*If you have any technical issues, please use the chat function and someone will help.*

# What's the purpose of today's session?



## **CATAPULT** Energy Systems

To inform and engage on the concept of **Local Area Energy Planning** and the importance of **robust energy data** and evidence, social process and governance.



## regen transforming energy

To explain the role of **Distribution Future Energy Scenarios** in providing credible pathways for electricity demand and generation growth and understand your views on **the use of future energy technologies in your area**.

## **Scottish & Southern** Electricity Networks

To set out the role of **Local Network Plans** in delivering an electricity network that supports **net zero ambition**. We will also explain how SSEN will work with local bodies to **build the evidence required** for our regulatory business plan.

*Above all, we want your views, input and feedback...*

# Agenda



Time	Activity	Presenter
10.00 – 10.05	Welcome and agenda	Graeme Keddie – Director of Corporate Affairs, Regulation and Stakeholder Engagement (SSEN)
10.05 – 10.20	Introduction to SSEN and RIIO-ED2	Andrew Roper – ED2 Director (SSEN)
10.20 - 10.50	Planning Local Energy Systems	David Lee – Energy Systems Modelling Consultant (ESC) Bunmi Adefajo – Business Lead - Modelling (ESC)
<b>10.50 – 11.00</b>	<b>Break</b>	<b>All</b>
11.00 – 12.00	Regional Future Energy Scenarios <b>Interactive voting</b>	Ray Arrell – Head of Technical Development (Regen) Joel Venn – Head Analyst (Regen)
12.00 – 12.20	Local Network Plans	Trung Tran – Network Strategy Lead (SSEN)
12.20 – 12.30	<b>Q&amp;A session and close</b>	Graeme Keddie and presenters

# Use of Mentimeter today – interactive polling

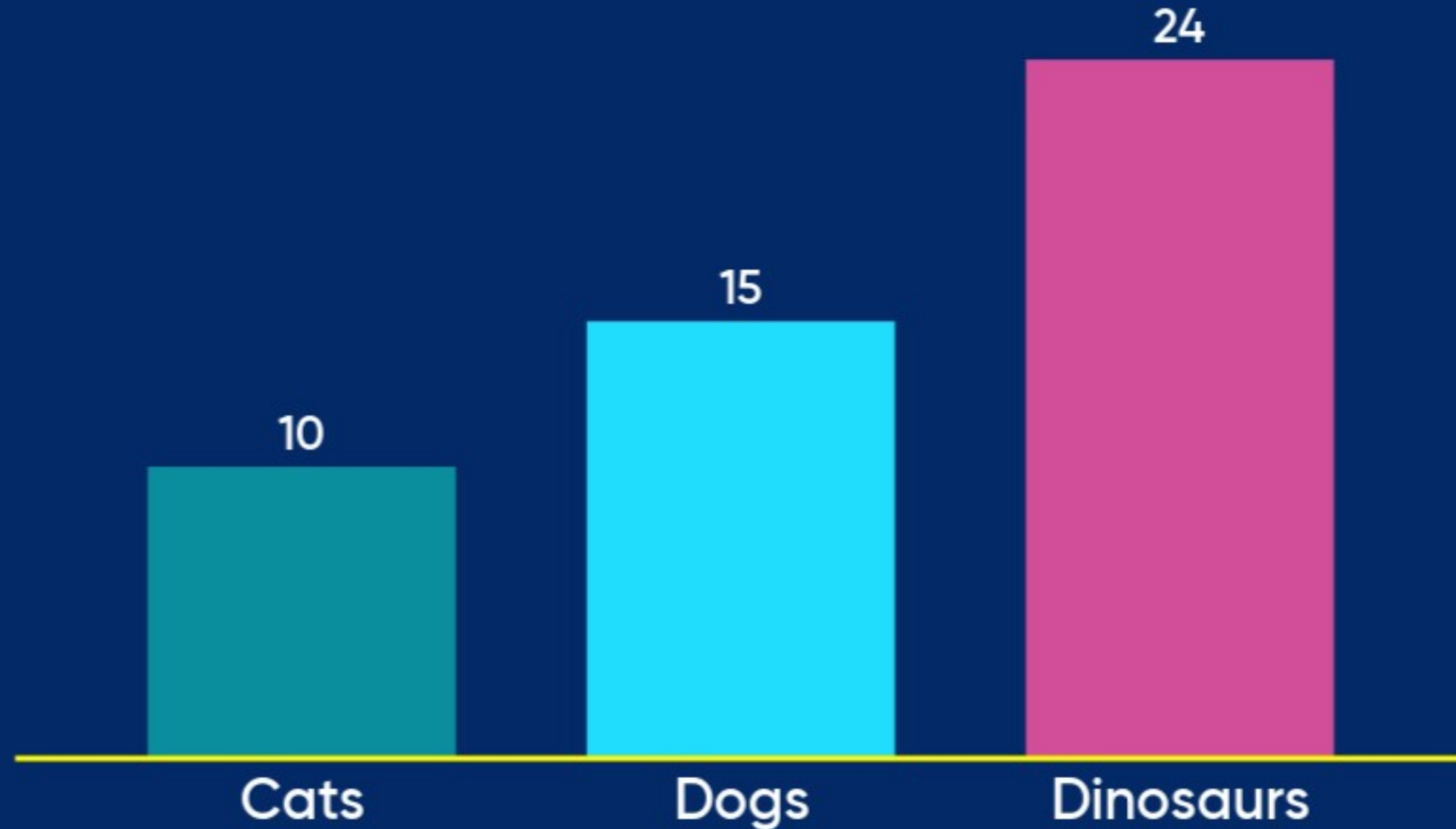


Enter the code

**86 85 16 4**

- Interactive polling platform we will be using alongside the main presentation
- The main webinar and polling results will be shown through Microsoft Teams during each vote
- When a polling question is up:
  - **Grab your smart phone**
  - **Tap on your internet browser**
  - **Go to [www.menti.com](http://www.menti.com)**
  - **Enter the event code**
  - **Enter your vote**
- See the results from everyone's votes live on screen through the webinar in Teams

# Test question! Which is your favourite?



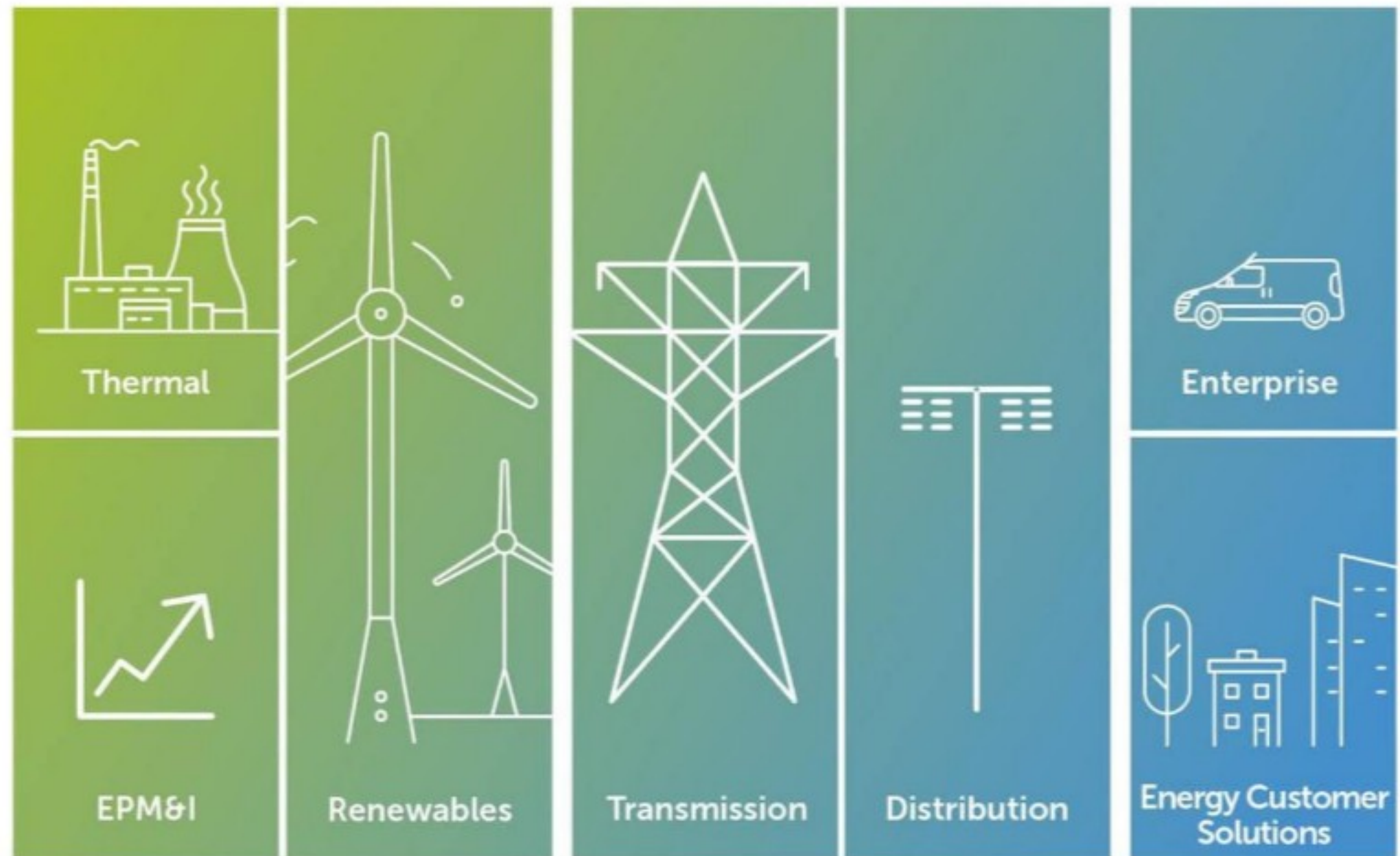
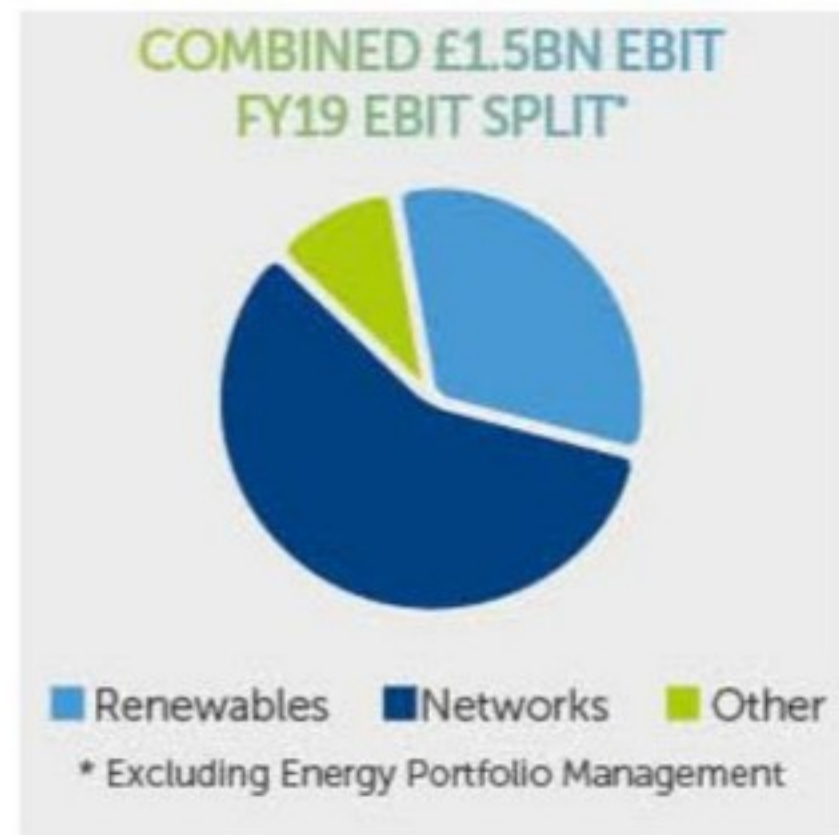


# Introduction to SSEN and RIIO-ED2

Andrew Roper - ED2 Director, SSEN



# SSE's Seven business units



# About SSEN

Our electricity distribution and transmission networks carry electricity to over 3.8 million homes and businesses across the north of the Central Belt of Scotland and Central Southern England.

Our skilled teams live and work in the communities they serve, supported by engineering and customer service teams based in major offices and depots in centres like Reading, Portsmouth, Perth and Inverness.



## Our network at a glance

over **4,000** employees,  
working from 85 depots  
and offices in the heart of  
the community

**106,000**  
substations

Power distributed to over  
**3.8m homes and**  
**businesses**

**130,000km** of  
overhead lines and  
underground cables

**100+** subsea cables  
powering island  
communities

**700,000+**  
vulnerable customers  
identified on our Priority  
Services Register



**Scottish & Southern**  
Electricity Networks

# Our Coronavirus Response – Four Key Priorities



**Maintain critical operations and protect our employees**

**Support our customers, communities and partners**

**Emerge financially sound**

**Play our full part in the green recovery**

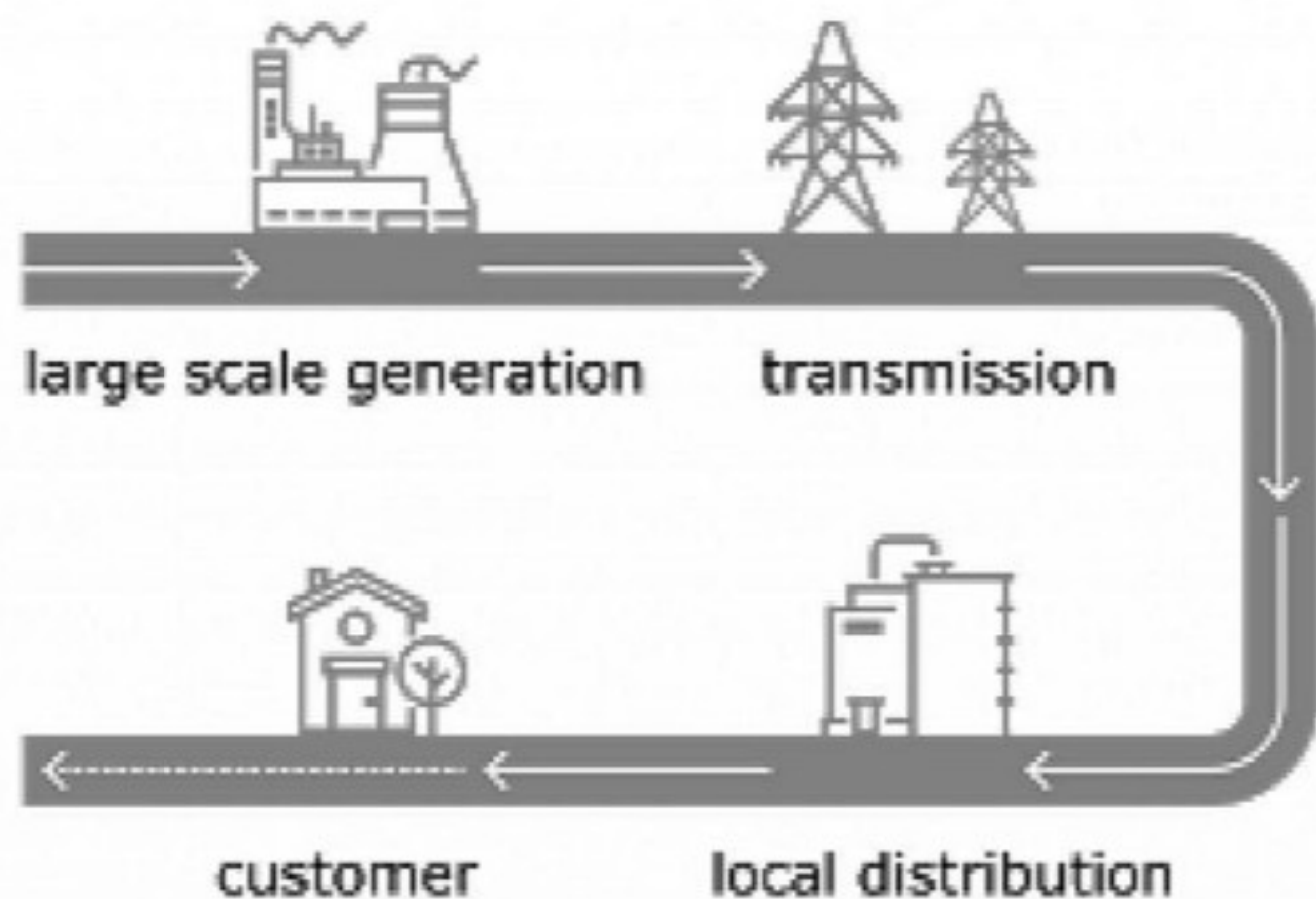


**Coronavirus  
(COVID-19)**



*We welcome your ongoing feedback and suggestions...*

# Networks are changing to meet future needs



**traditional model**

- Transmission level generation
- One way power flows
- Network sized for maximum demand
- Market limited to suppliers & generators



**new thinking**

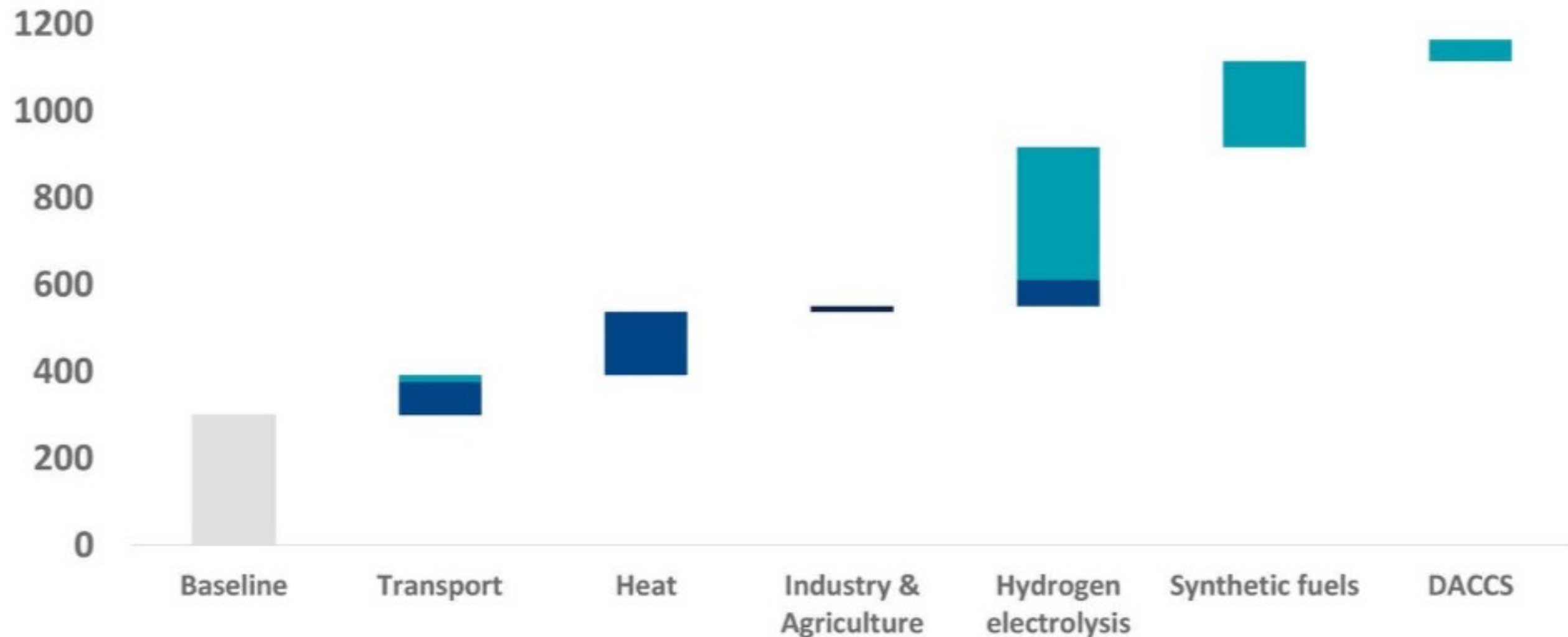
- Generation and storage at all levels of network
- Local and national two way power flows
- Demand and supply flexible to meet customer needs
- Consumers can be prosumers – take part in market

# Net Zero will fundamentally reshape electricity demand



Government advisers, the Committee on Climate Change, predict an **electrification of the economy**

## POTENTIAL NEW ELECTRICITY DEMANDS TO 2050 TO MEET NET ZERO (TWh/year)



**Electricity demand could increase by 2 or 3 times by 2050**

# RIIO-ED2 Regulatory Timeline



- RIIO-ED2 is a five year 'price control' period from April 2023 to March 2028
- Each DNO must put forward a business plan to the energy regulator, Ofgem, on the investment it requires for this period.
  - Initial business plan to be submitted by 1<sup>st</sup> July 2021
  - Full business plan by 1<sup>st</sup> December 2021
  - Determination by Ofgem to take place in late 2022

# Our RII0-ED2 Strategic Outcomes



Based on stakeholder feedback we have set out **four strategic outcomes** for our business plan, aligned to **three core principles**.



## CORE PRINCIPLES

### VALUE FOR MONEY

*...focusing on efficiency and creating value for customers and communities*

### INNOVATION

*...embracing new ways of doing things for the benefit of customers and communities*

### TRANSPARENCY

*...being open and accessible in our activity and engagement*





# Planning Local Energy Systems

- Bunmi Adefajo – Business Lead – Modelling, Energy Systems Catapult
- David Lee – Energy Systems Modelling Consultant, Energy Systems Catapult





# Contents

- Introduction to ESC
- Overview of approaches to planning local energy systems
  - Alignment with SSEN's Local Network Plans (LNP)
  - Best Practices
- Local area energy data
- Summary

# About Energy Systems Catapult

## MISSION

Unleash innovation and open new markets to capture the clean growth opportunity

## WHOLE SYSTEM EXPERTISE AND APPROACH



Electricity



Heat



Transport



Industry



Infrastructure



Consumer



# Our capabilities and assets



## Modelling



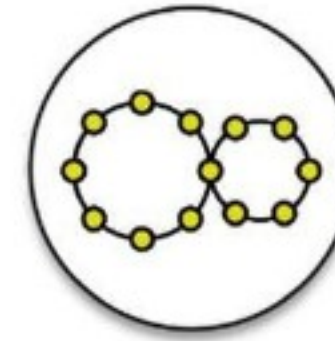
## Consumer Insight



## Markets, Policy and Regulation



## Digital



## Systems Integration



## Infrastructure and Engineering

National Energy System Modelling

Local Energy System Modelling

Building Energy System Modelling

Research

Design

Trials

Economic Analysis

Corporate Positioning

Policymaker interactions

Home Energy Services Gateway

Living Lab

Data Science

Data Systems

Energy Knowledge eXchange™

Systems Engineering and Integration

Business Model Innovation

Dynamic Energy System Architecting and Simulation

Energy System Integration Guides

Future Power System Architecture

Utility 2050

Bioenergy

Carbon Capture and Storage, Industry and Hydrogen

Networks and Energy Storage

Nuclear

Renewables

Transport

# Local Area Energy Planning (LAEP)

# Context



Decarbonisation - net zero by 2045 (Scotland) & 2050 (UK)

Cost of meeting UK net-zero target:  
1-2% (c . **£50bn**) of GDP in 2050<sup>1</sup>



Rapid transformation of the energy system



What needs to happen – when and where?

Delivering the Paris Agreement will require annual global **investment** of **\$1.6 – 3.8tn** on average **until 2050**<sup>1</sup>



To be cost-effective solutions will be dependent on place

<https://www.theccc.org.uk/wp-content/uploads/2019/05/Net-Zero-The-UKs-contribution-to-stopping-global-warming.pdf>

# Some of the toughest challenges for decarbonisation will likely require local and regional coordination and action



How to decarbonise buildings and what combinations of fabric upgrades, heating systems and infrastructure in different local areas



The future of the gas network (including the potential of hydrogen)



How to minimise the costs of the transition for consumers, including integration of electric vehicles and low carbon heating

# Significant ambition and commitment from local areas to decarbonise ahead of national carbon budgets



**Glasgow** - aims to become the UK's first net-zero emissions city and is co-hosting COP26 in 2021



**Bristol** - ambition to be carbon neutral by 2030



**Isle of Wight** – aiming to be net zero by 2030



**London** - committed to being carbon neutral by 2030



**Greater Manchester** - ambition to be carbon neutral by 2038





# What is Local Area Energy Planning?

**Local Area Energy Planning (LAEP)** is a concept developed by the ESC to enable data-driven, spatial and collaborative planning of local energy systems – summarised by these 7 steps.



Each local area is different - its people, geography, building stock, energy networks and ambitions and priorities



Local Area Energy Planning provides a data driven, spatial and collaborative means, involving local government & network operators, of exploring a range of possible future local energy scenarios to cost-effectively decarbonise



Resulting in the identification of energy network and system choices to support carbon neutral aspirations - informing what local action is needed and where

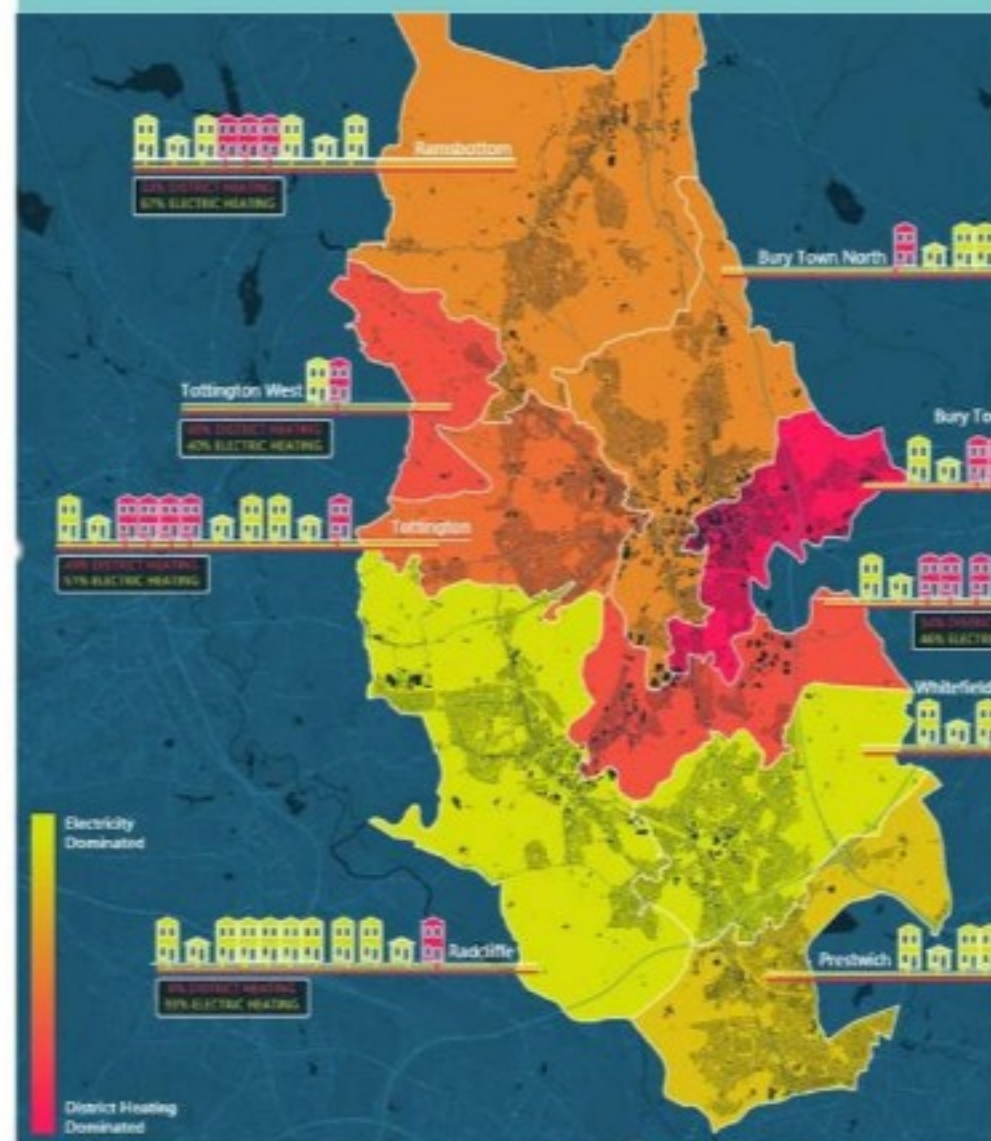


# Developed a structured & repeatable framework to produce a Local Area Energy Plan

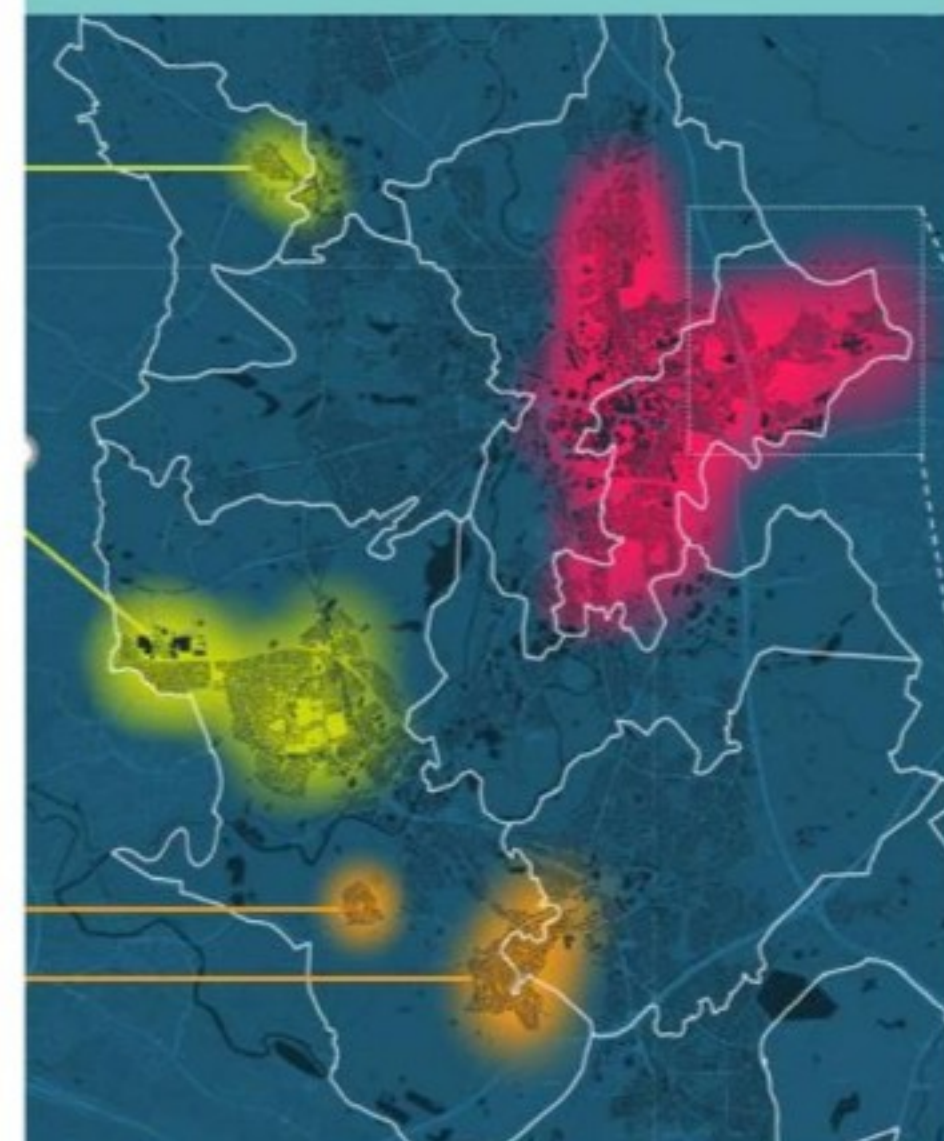
Understand **local options and choices for heat** in whole system context



Collaboratively develop a **long term evidence based plan** to decarbonise



Resulting in data and insight to **target innovation and deployment** projects



# Piloted in three different UK cities

**Smart System Heat Phase 1 & 2:** Piloted local area energy planning with three different local areas



**Bridgend**

**Newcastle**

**Greater Manchester**

Based on these pilots, we developed the approach with Ofgem to produce guidance for a future LAEP methodology and also on the Energy Data Task Force to set out **Data Best Practice Principles** to help networks open up relevant data.

# LAEP – The Best Practice Method

There are 4 key elements that constitute LAEP:



The use of **robust technical evidence** produced using analytical techniques which consider the whole energy system and make consistent use of available data



A comprehensive assessment of **wider non-technical factors** which need to be understood and addressed to secure change



A well designed and involving **social process** which engages appropriate stakeholders effectively, uses the technical evidence appropriately, and manages vested interests effectively, thus ensuring the resulting plan can be seen as an informed and legitimate representation of local intent in relation to energy system decarbonisation



A credible and sustained approach to **governance and delivery**

# SSEN Local Network Planning

- As you will hear shortly, SSEN are undertaking local network planning to better understand the plans of their supply areas impacts on their network.
- This helps SSEN make strategic investment decisions that will support decarbonisation in their network areas.
- As led by SSEN, the local network planning approach focuses on the electricity side of the system, at a level of detail that allows coverage of the network area
- This acts as key component of the technical part of a local area energy planning process and is a crucial stepping stone to the full process – which would also include:
  - The other energy vectors
  - A greater level of spatial detail
  - A wider social engagement process
  - Consideration of socio economic impacts and benefits for the local areas
  - Assessment of future uncertainty

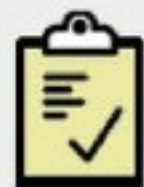
**The full process would need the local authority and all local network operators to work together**

# Local Energy Data

# Create & understand the local area energy system

The Local Area Energy Planning (LAEP) process involves assessment and creation of a baseline energy profile for a specific local area. ESC has developed a Local Energy Asset Representation (LEAR) tool to aid this.

## Local Energy Asset Representation (LEAR) is built on national data:



Have you...

- Understood the local area's current energy system, demands and other relevant characteristics?
- Identified the resources and approach to create a local area representation?
- Considered how data will be collated, assessed and utilised in the future to maximise its potential?
- Created a spatial representation of the local area's current energy system and future energy requirements?

# Create & understand the local area energy system

**LEAR can represent the energy assets of a local area including:**



Houses



Energy Networks



Social Data



Commercial and public buildings



Energy Demands



Embedded Generation



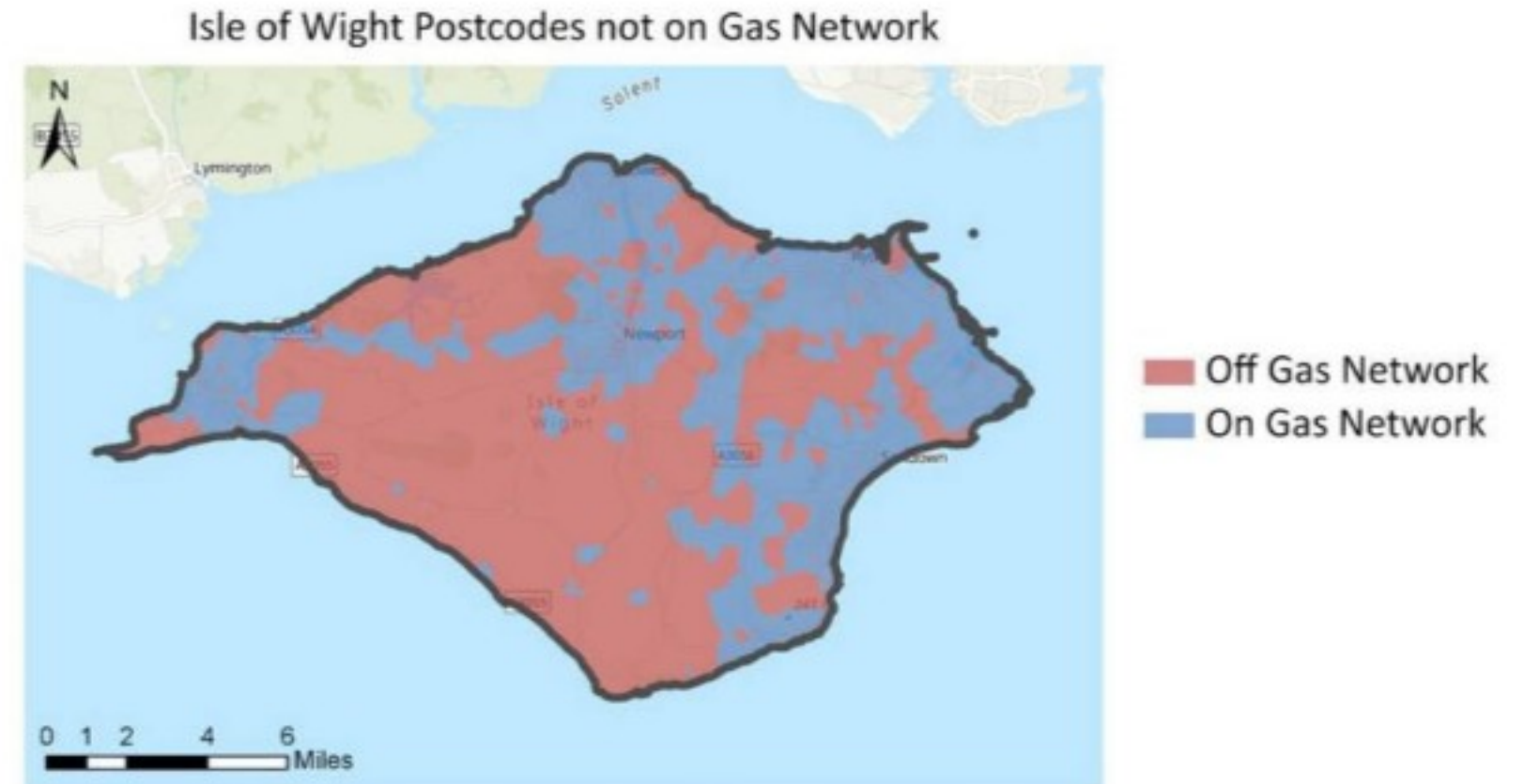
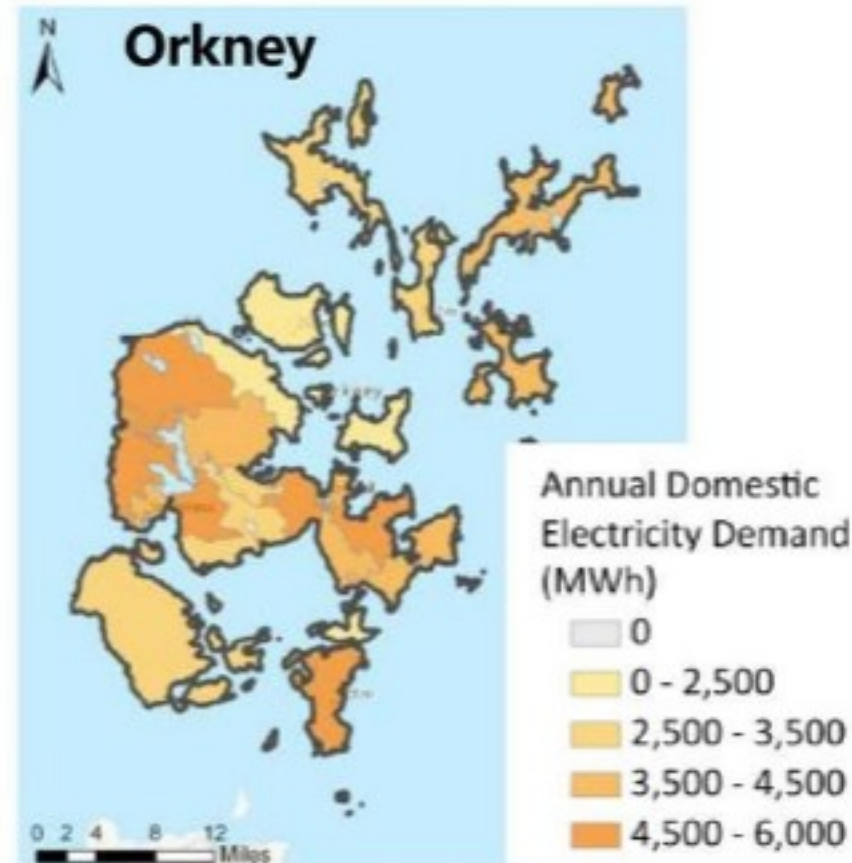
EVs and Charge points



Listed Buildings and Heritage Sites



Data Quality and Completeness





# LEARs also include Automated Spatial Analysis

- such as to identify off-street parking and rooftop PV sites

## Homes with potential space for off-street parking for charging electric vehicles



Percentage of dwellings on road with potential for off-street parking

- 0% - 20%
- 20% - 40%
- 40% - 60%
- 60% - 80%
- 80% - 100%
- N/A

## Homes suitable for rooftop solar panels



- Not suitable
- Suitable

Dwellings eligible for PV in area: 587

Combined capacity of these dwellings: 1,358kW



# Summary

**Local Area Energy Planning (LAEP)** is a process to enable data-driven, spatial and collaborative planning of local energy systems, to ensure cost-effective decarbonisation of local areas

There are 4 key elements that constitute LAEP:

- robust technical evidence
- wider non-technical factors which need to be understood and addressed to secure change
- well designed and involving social process which engages appropriate stakeholders
- credible and sustained approach to governance and delivery

**Data is Key** – our work on the Energy Data Task Force sets out Data Best Practice Principles to help networks open up relevant data, and unlock innovation to help decarbonise local areas

# A question for the break – how would you rank these benefits of a whole system approach to Local Area Energy Planning for your local area?





# Distribution Network Future Energy Scenarios (DFES)

- Ray Arrell - Head of Technical Development, Regen
- Joel Venn - Head Analyst, Regen



## A bit about Regen...

Not-for-profit centre of energy expertise and market insight based in Exeter, Devon

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We have a mission is to transform the world's energy systems for a zero carbon future

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We have delivered Distribution Network Future Energy Scenarios (DFES) assessments for electricity and gas network operators since 2015



## In this session we will be...

- Briefly summarising what DFES' are and how we do them
- Asking for your views on future energy technologies in the Southern region
- Giving you an opportunity to ask us some questions about DFES

DFES analysis is part of wider future forecasting and network planning processes





The DFES uses the National Grid ESO Future Energy Scenarios 2020 framework:



- Underlying societal/economic framing of scenarios
- Future technology assumptions
- National UK trends
- Regional datasets (where available)

**The DFES assesses:**

1) Key **distributed generation and electricity storage projects** that are (or will) directly connect to SSEN's electricity distribution network – projected in electrical capacity (MW<sub>e</sub>):



Renewable generation



Waste technologies



Fossil fuel generation



Electricity storage

H<sub>2</sub>

Hydrogen electrolyzers



**The DFES assesses:**

2) Key low carbon technologies that might connect to SSEN's network at lower voltages:



Electric vehicles



Electric vehicle chargers



Heating technologies



Domestic rooftop PV



**The DFES assesses:**

3) Strategic **new developments** that local authorities are aware of within the licence areas:



New homes / domestic developments



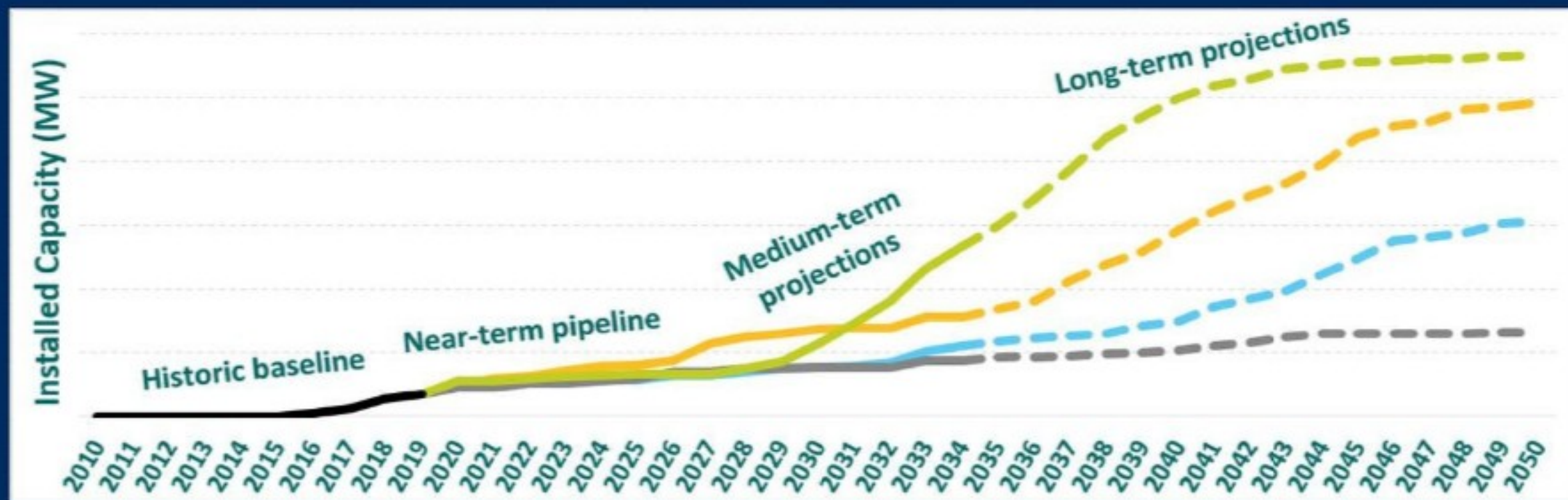
New non-domestic developments

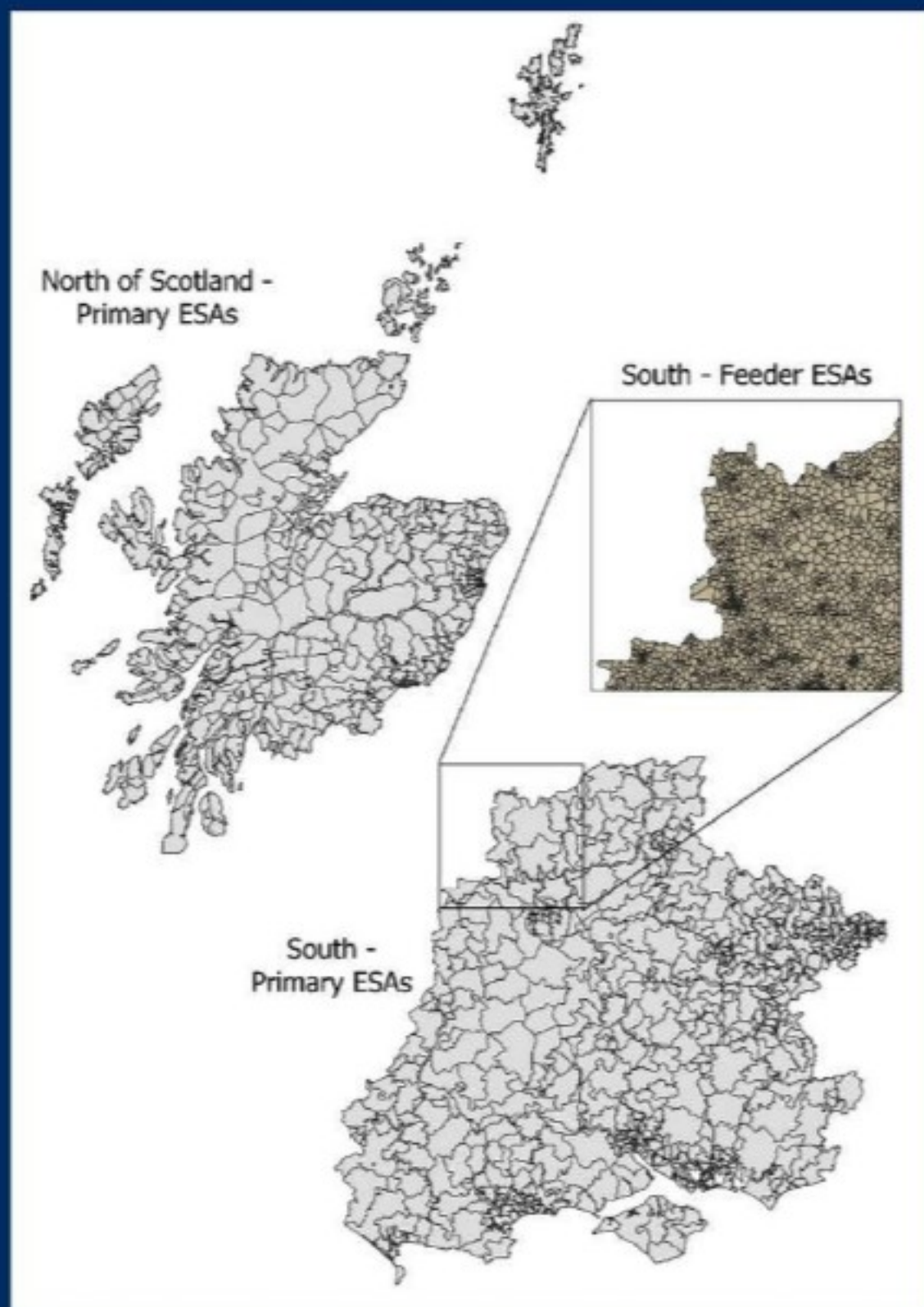
Sharepoint data exchange  
(thankyou!)



The DFES follows a four-stage process where, for each of the technologies in-scope, it:

1. Determines the existing baseline
2. Assesses the near-term pipeline
3. Develops medium and long term projections out to 2050
4. Geographically distributes these technologies/capacities within the licence areas





The DFES distributes its projections into **Electricity Supply Areas (ESAs)**

Using technology specific geographical factors

Generation & storage projections - 11kV substation level

LCT projections – feeder/secondary substation



## A bit more about you...

What is your name?

Where do you work?

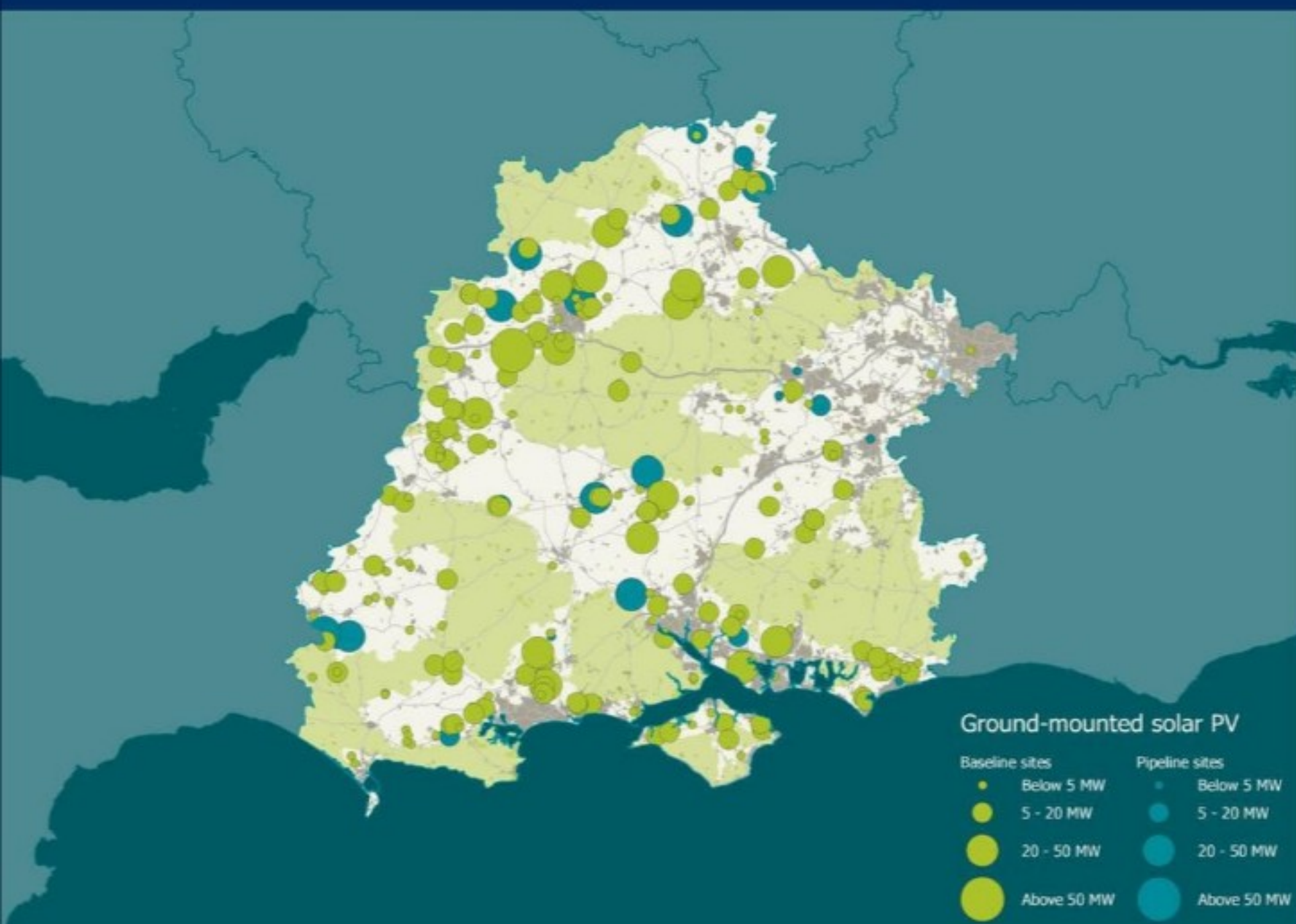
What sector do you work in?



# Generation & storage deployment

- Ground mounted solar PV
- Onshore wind generation
- Battery storage





### Ground mount solar in the Southern licence area

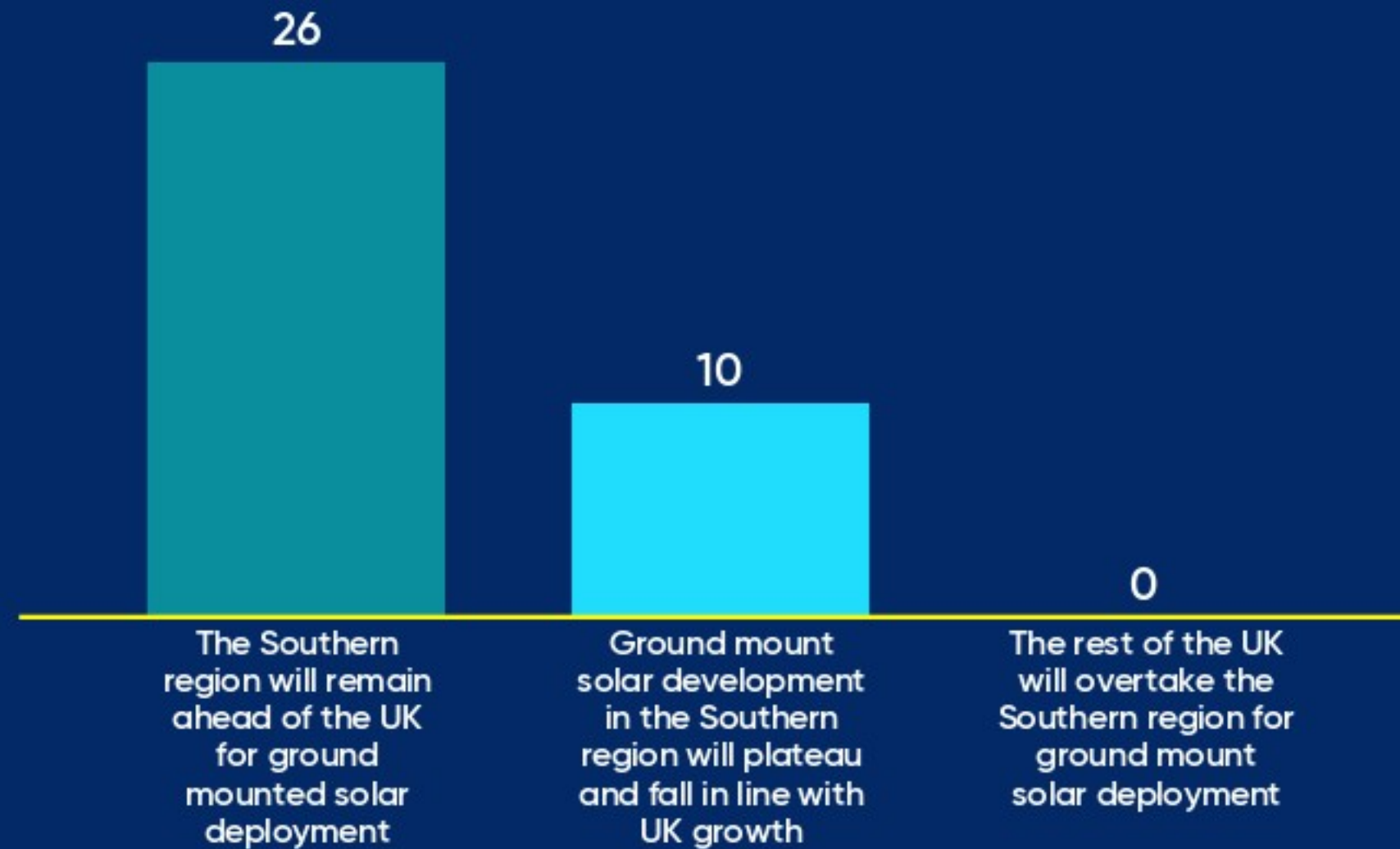
#### Baseline (up to 2020)

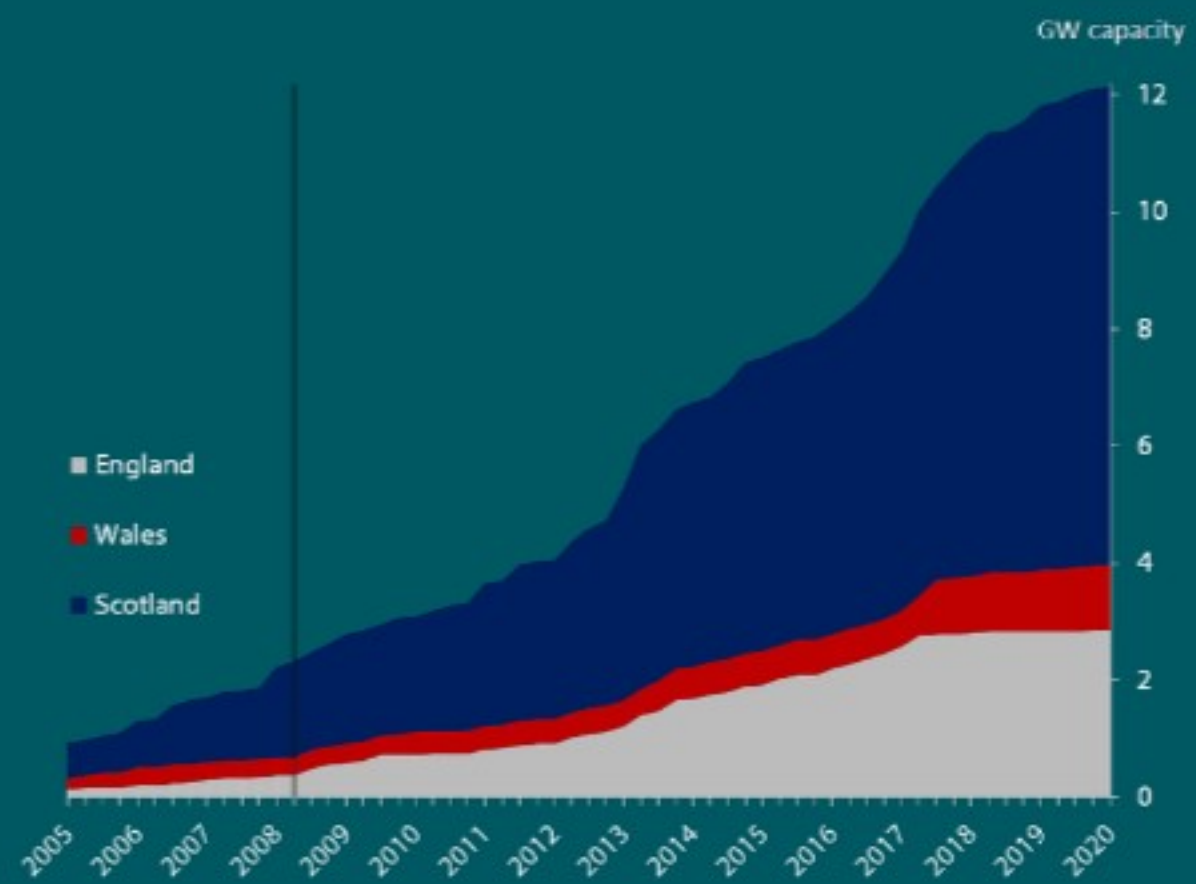
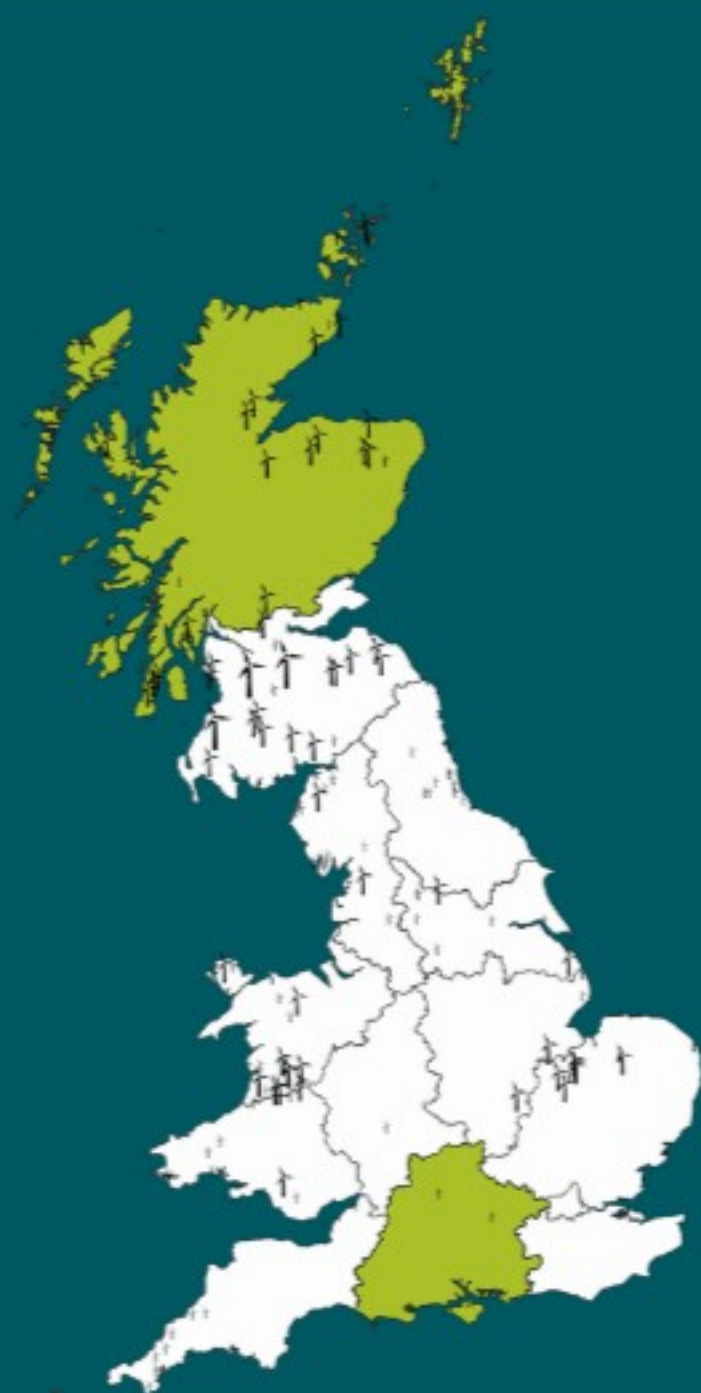
- **217** solar arrays currently connected
- Total capacity of **c.2GW**
- Average array capacity of **9MW**

#### Pipeline

- **30** new arrays
- Total capacity of **530MW**
- Average array capacity of **18MW**

# How might ground mounted solar PV development in the Southern licence area compare to the rest of UK out to 2050?

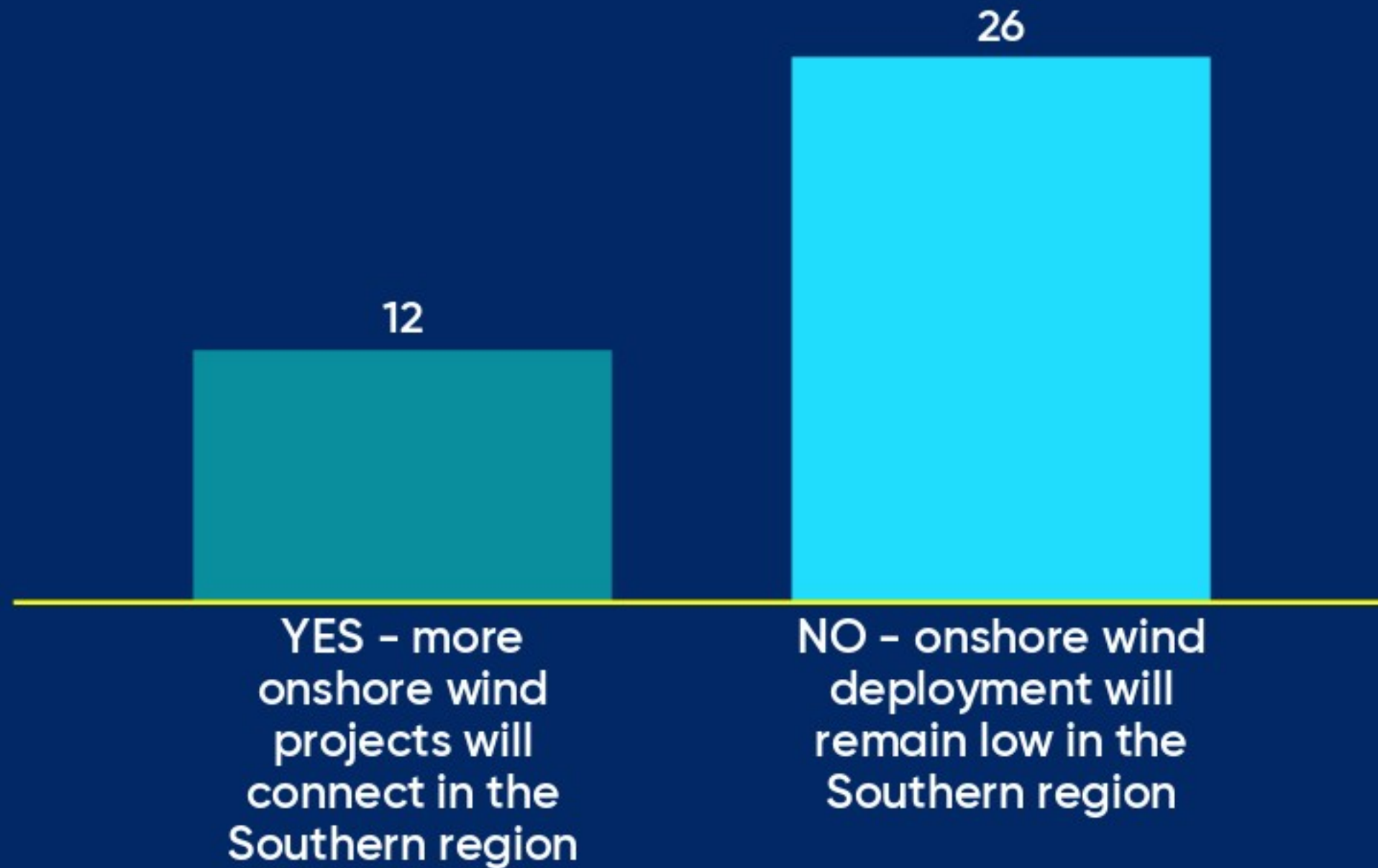




2008-03-28

**Onshore wind totals only c.0.3% of distributed generation in the licence area**

# Will distributed wind generation start to pick up in the Southern licence area out to 2050?



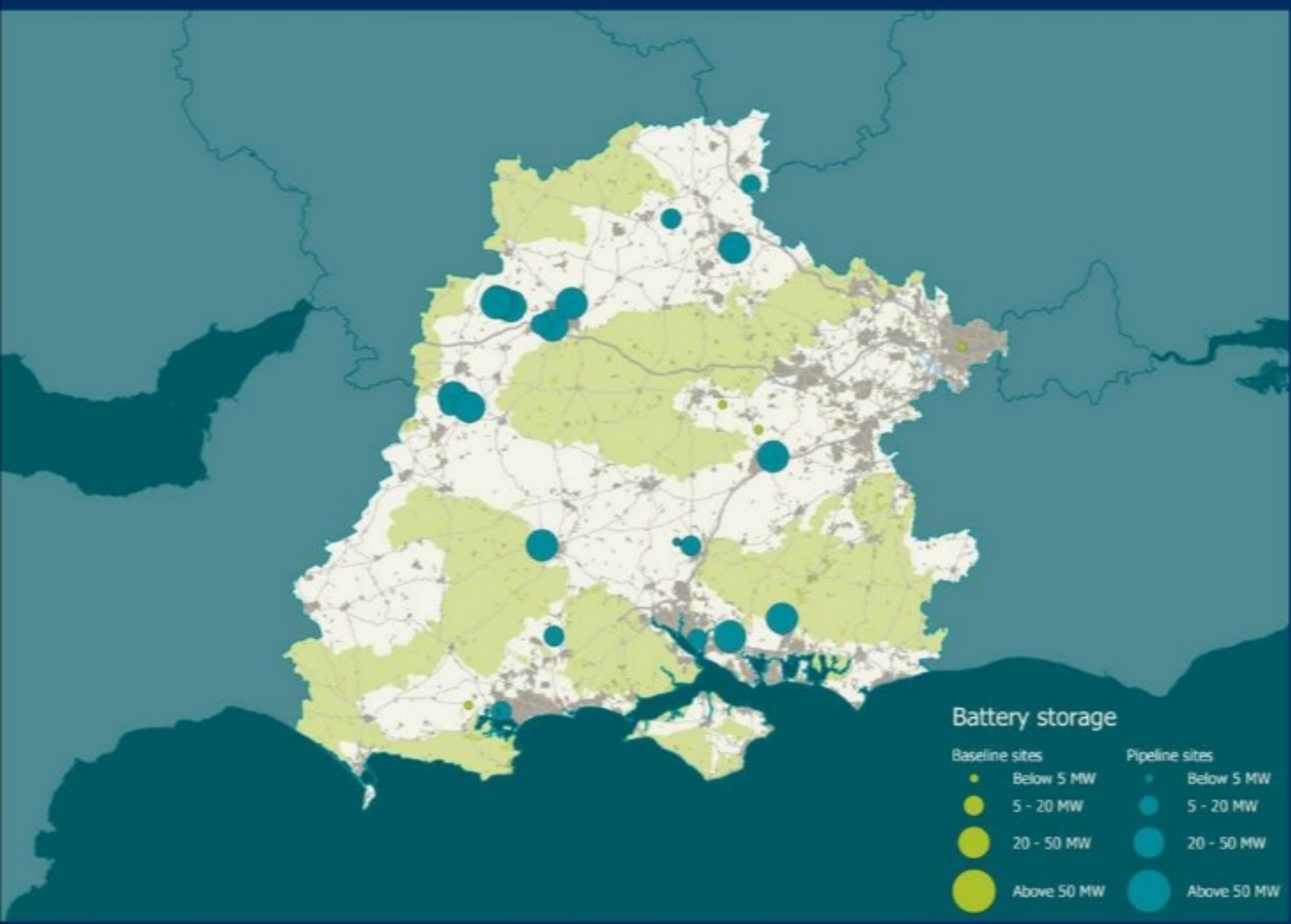


# Battery storage

- Business models
- Locational factors

DFES categorises electricity storage projects into 4 key business models:

Storage business model	Description	Typical size / scale	Energy storage duration
<b>Standalone grid services</b>	Dedicated storage projects providing balancing services to the network	Multiple MW (potentially up to 50/100MW)	Between 30mins and 2-4 hours (increasing out to 2050)
<b>Generation co-location</b>	Typically co-located with a solar, wind or potentially gas generation sites	Multiple MW (somewhat linked to generation project size)	Potentially 2-6 hours Varies by generation technology (increasing out to 2050)
<b>Behind-the-meter high energy user</b>	Co-located with a large energy consumer	Hundreds of kW to low MW scale (could be industry specific)	2-4 hours Could vary by industry
<b>Domestic batteries</b>	Home battery units, used with rooftop PV and for back-up	Typically up to 10kW-20kW scale	2-4 hours



### Battery storage in the Southern licence area

#### Baseline (up to 2020)

- 4 projects currently connected
- Total capacity of c.1.8MW
- Average battery power capacity of c.500kW

#### Pipeline

- 24 new projects in the pipeline
- Total capacity of c.800MW
- Average battery power capacity of c.30MW

# Which business model do you think will see the most capacity (MW) growth by 2050?



5

Standalone battery projects



19

Generation co-location projects



7

Behind-the-meter large energy users

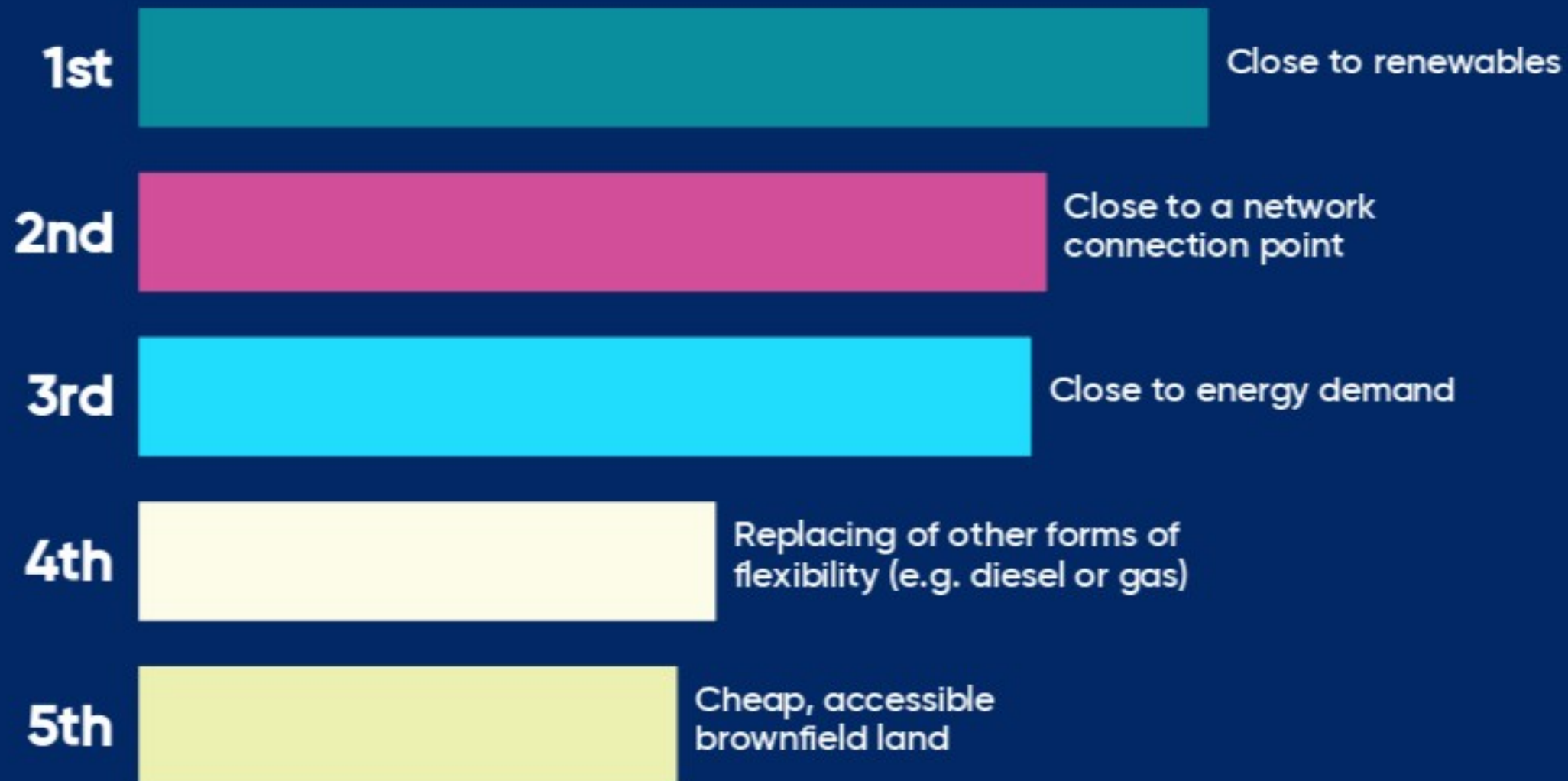


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Domestic batteries



# For a battery storage project, how would you rank these factors for where it could be located?





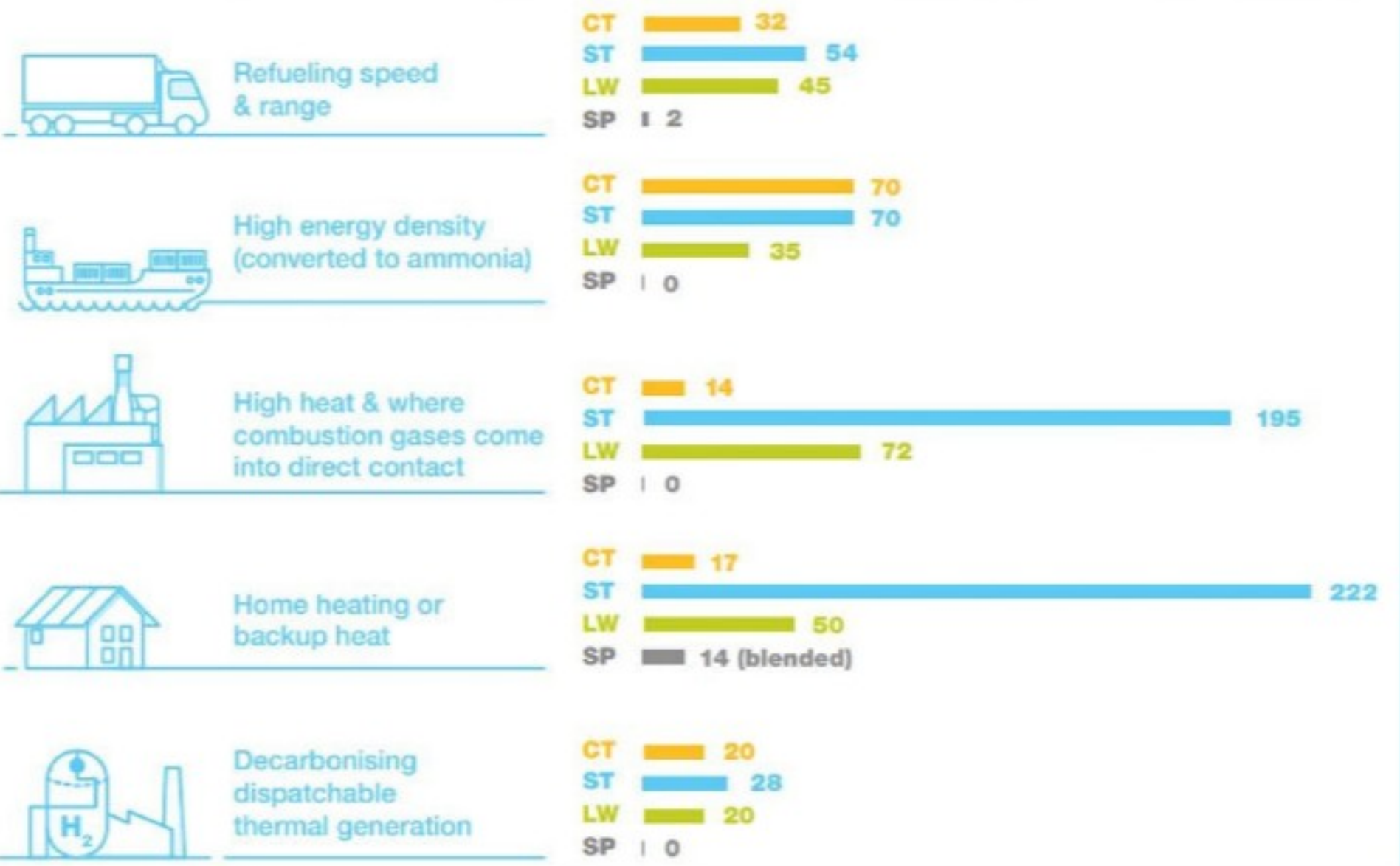
Scottish & Southern  
Electricity Networks



# Hydrogen in the Southern licence area

- Future use cases for hydrogen
- Electrolysis

2050 Hydrogen demand (TWh)



Significant range in the volume of hydrogen in the UK across the 4 x scenarios by 2050

Source & credit: National Grid ESO, Future Energy Scenarios 2020 document, July 2020

# How would you rank these potential uses of hydrogen in Southern licence area in the future?

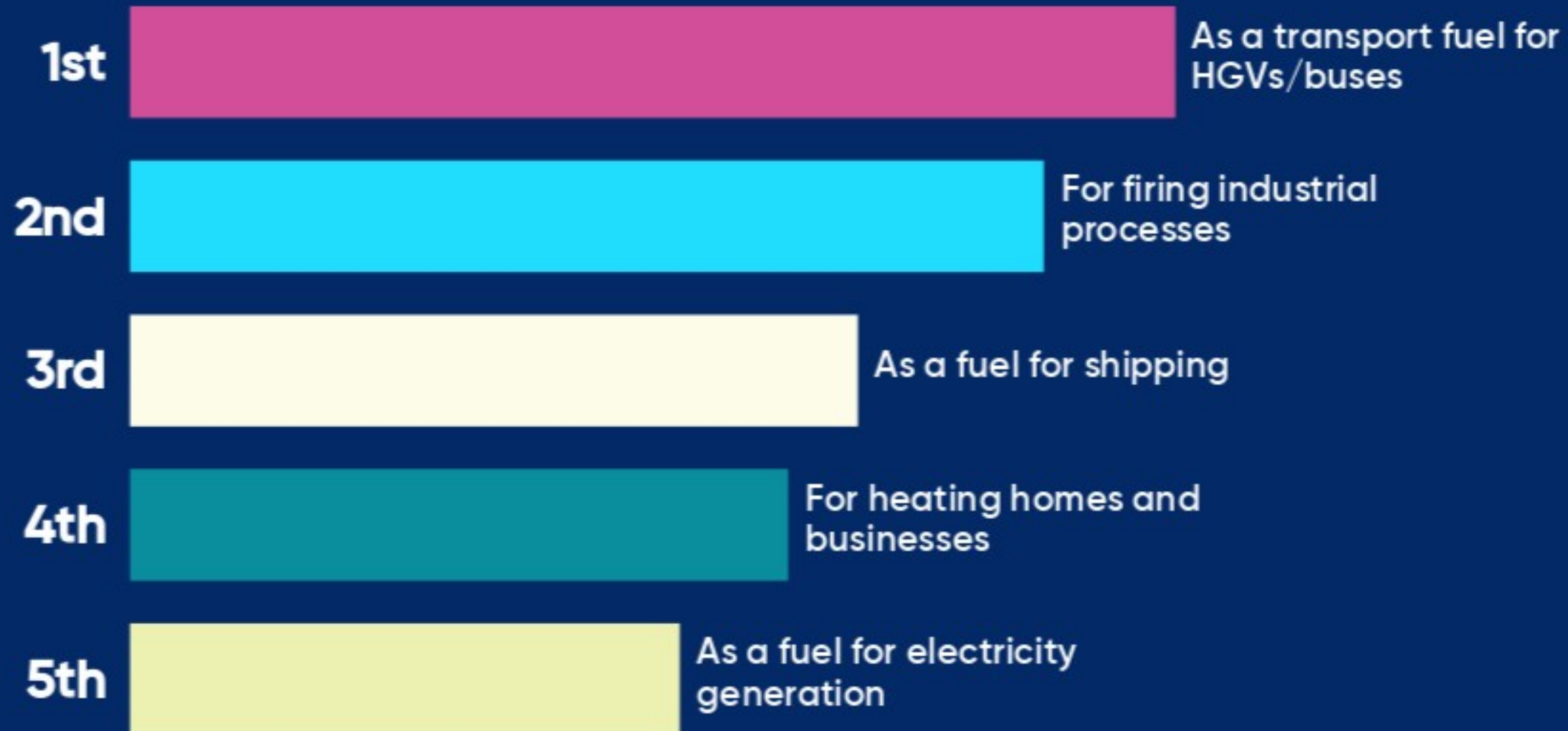
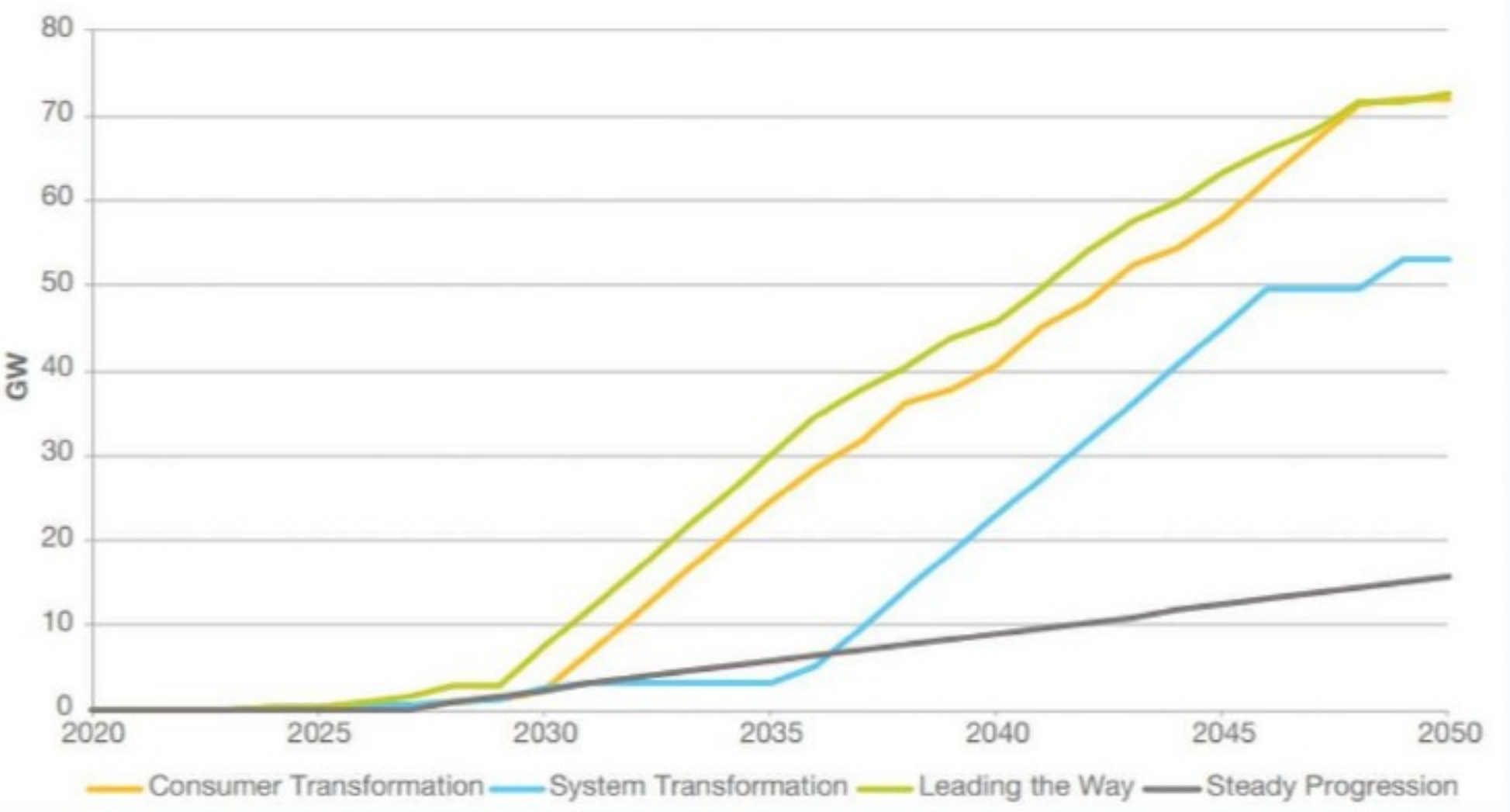


Figure SV.43: Installed onshore network-connected electrolysis capacity by scenario

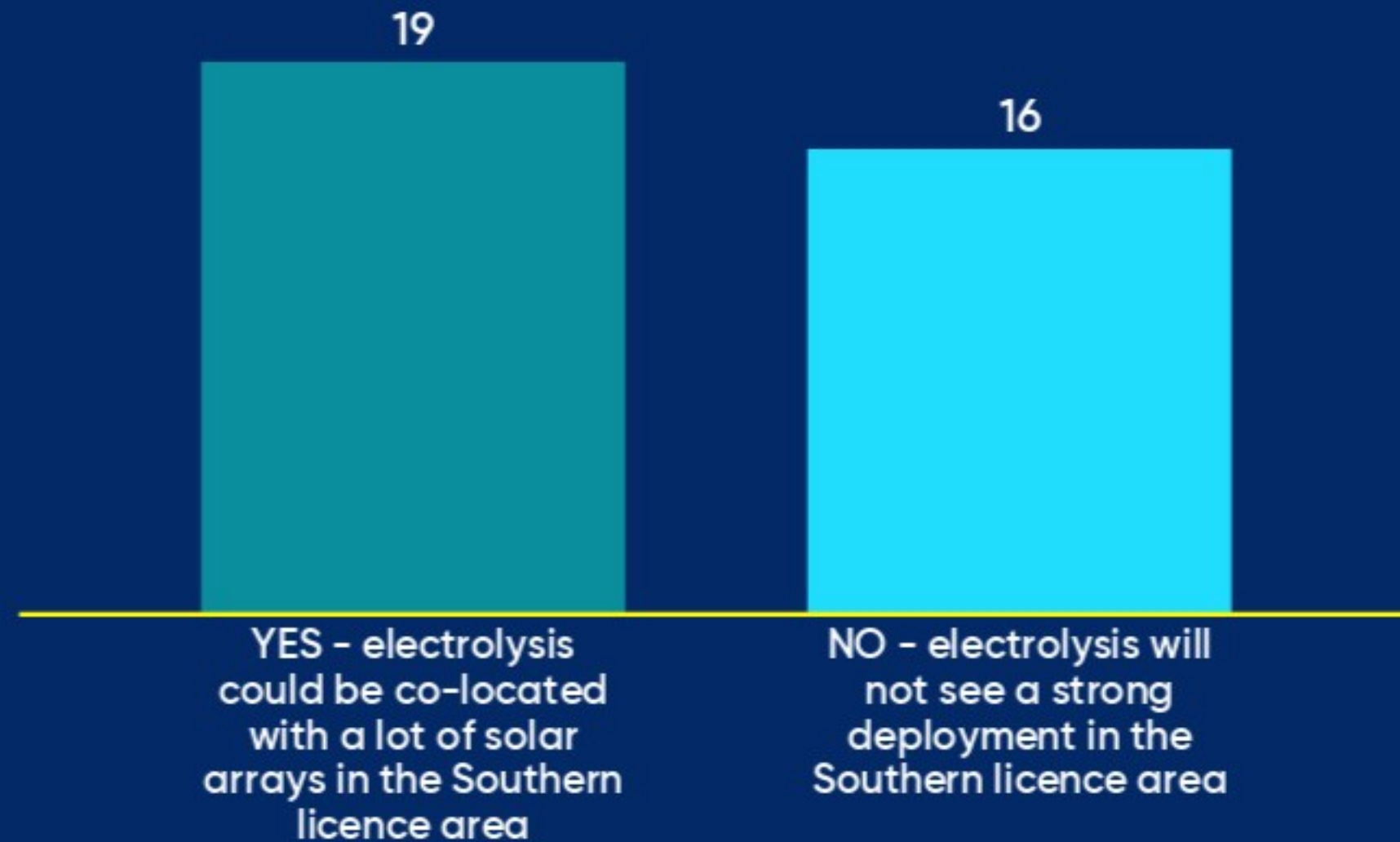


Hydrogen electrolysis could be a key flexibility technology to achieve net zero by 2050

In some scenarios, total UK electrolyser capacity could reach c.72GW by 2050

Source and credit: National Grid ESO, *Future Energy Scenarios 2020*

# With a strong solar deployment history and pipeline, will electrolysis be a significant opportunity in the Southern licence area?





# Transport

- EV uptake
- EV charger infrastructure

## EV and EV charger uptake in SSEN's licence areas

Region	Public EV chargers per 1,000 households	EVs per 1,000 households	EV chargers per 1,000 EVs in region
SSEN Scotland	1.1	6	202
SSEN South	0.7	13	49
GB	0.7	10	70



High granularity projections for low carbon technology uptake - electric vehicle, heat pumps and solar PV  
SSEN, June 2020



# When might the Southern licence area's EV uptake align with the rest of the UK?



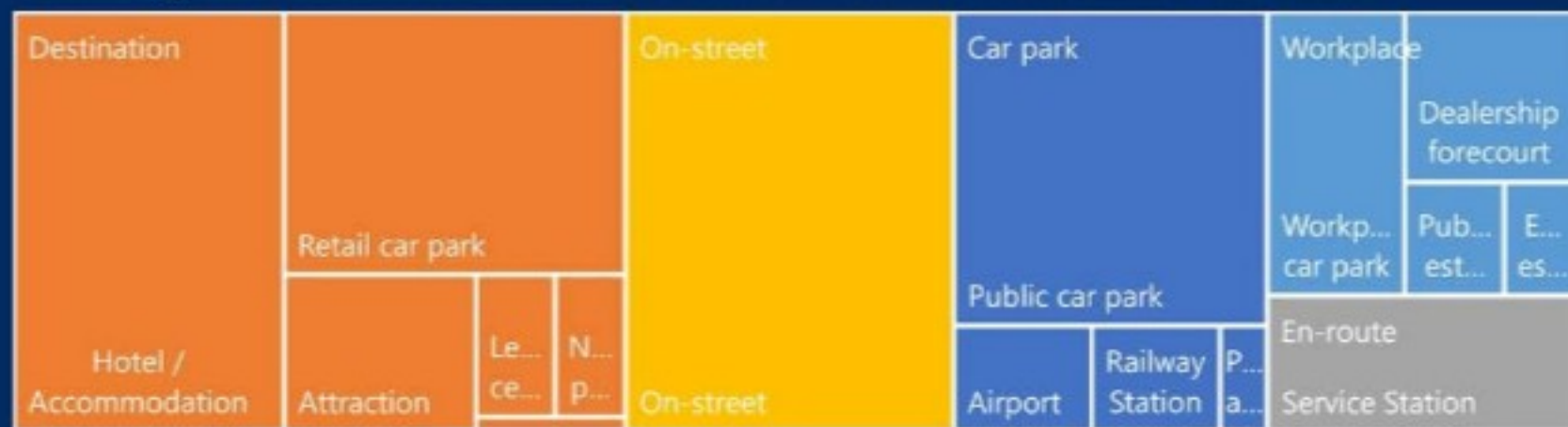
# Existing EV charging infrastructure in SSEN's licence areas

EV chargers in the North Scotland SSEN licence area are more centralised



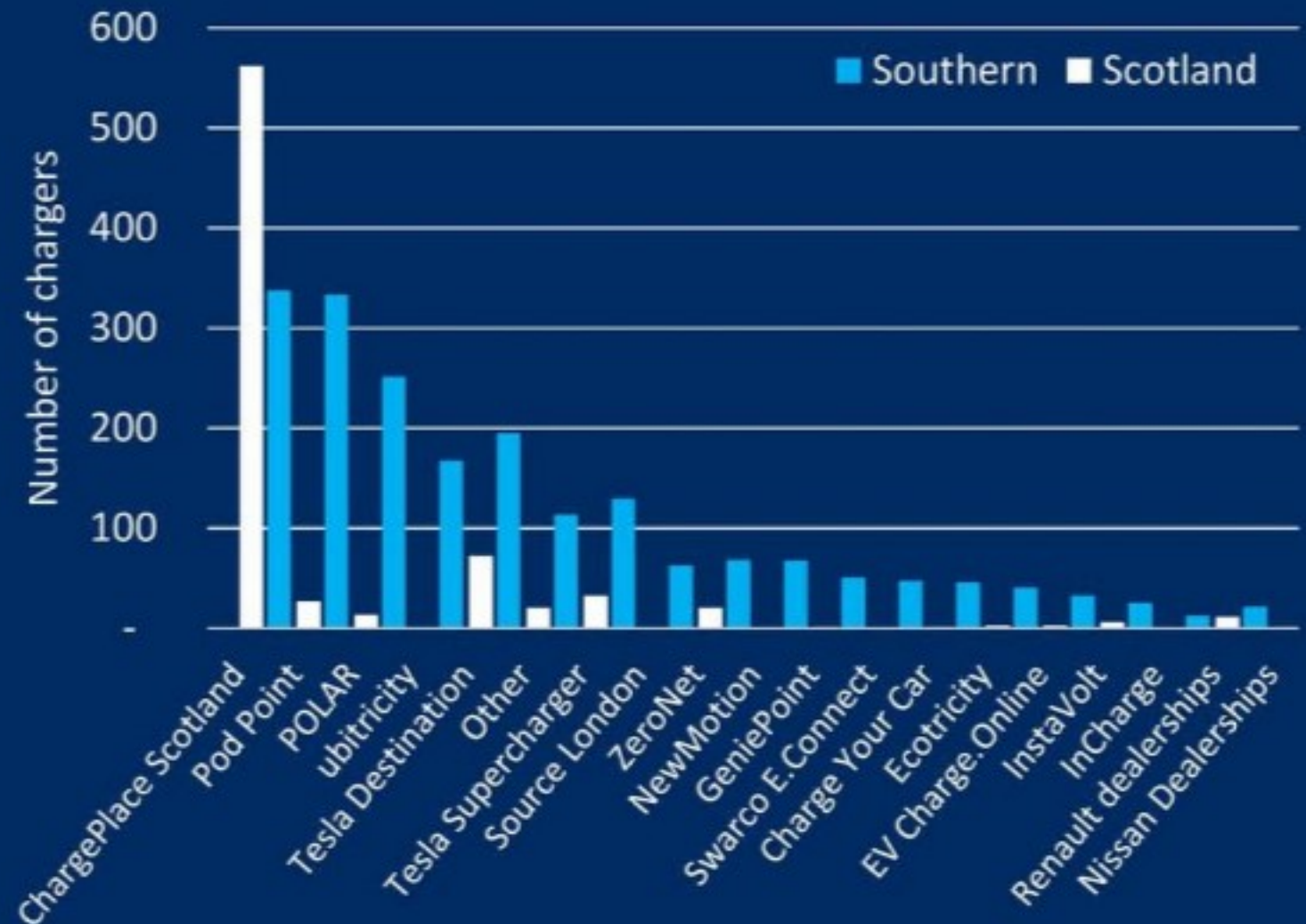
Legend: Car park (blue), Destination (orange), En-route (grey), On-street (yellow), Workplace (light blue)

EV chargers in the Southern SSEN licence area are more decentralised



Legend: Car park (blue), Destination (orange), En-route (grey), On-street (yellow), Workplace (light blue)

50% of existing chargers in the Scottish SSEN licence area are operated by just three private installers



Data source: ZapMap

# What is the future of on-street EV charging infrastructure in the Southern licence area?



Continued widely distributed residential on-street charging



Neighbourhood EV charging hubs



Shift towards centralised charging infrastructure

# Heating technologies

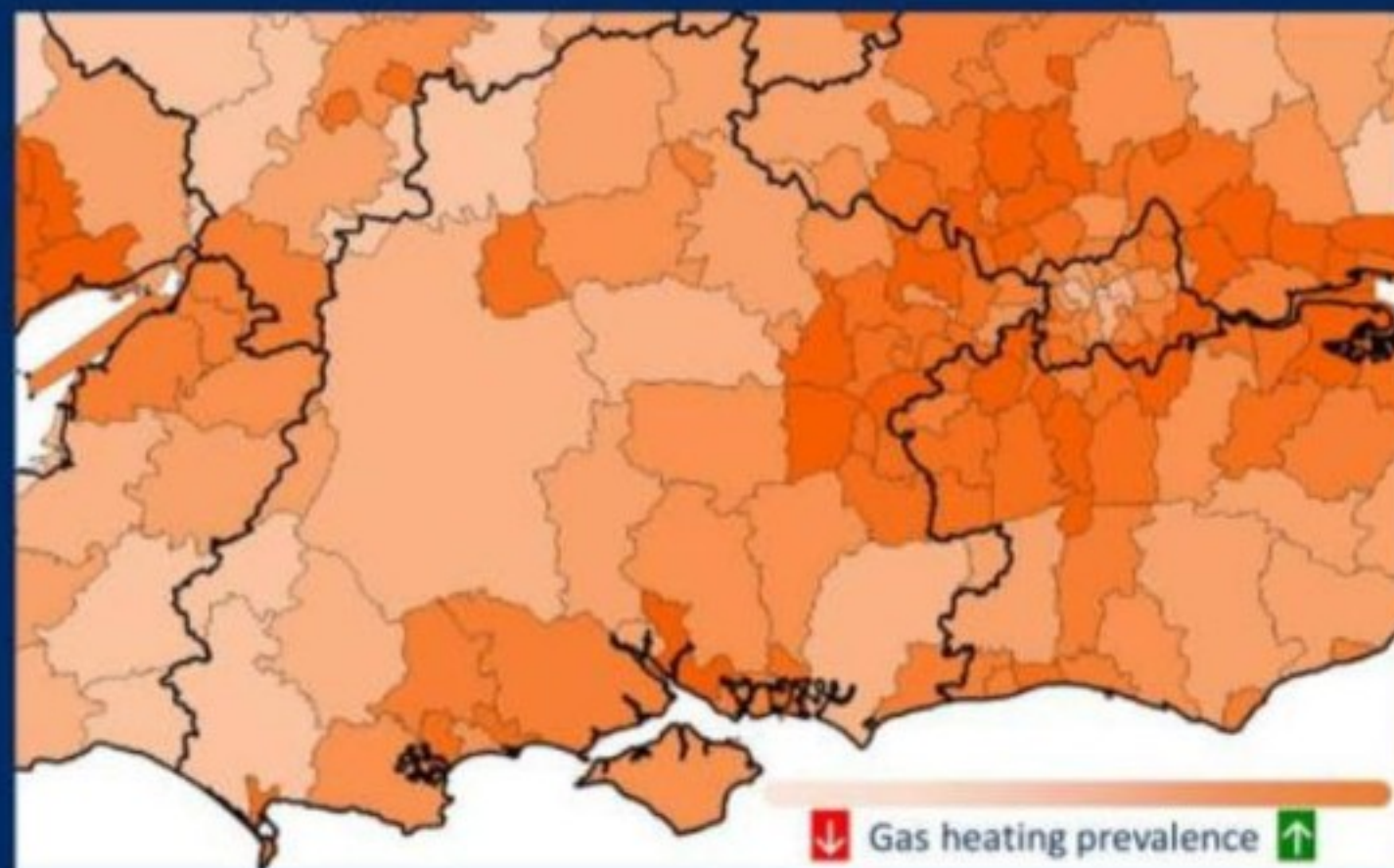
- Current baseline (boilers and electric heaters)
- Future heating technology adoption
- Hybrid heating systems

## Domestic heating in the Southern licence area

The Southern licence area has slightly below average proportion of gas heated homes compared to GB

Gas heating is concentrated in local authorities that are predominantly urban, or in the east or south of the licence area

Percentage of homes heated by different fuels/ technologies					
	Gas boilers	Direct and storage electric heating	Oil, LPG and solid fuel	Other	Heat pumps
SSEN Scotland	57%	20%	20%	2%	1%
SSEN South	79%	11%	8%	2%	1%
GB	85%	7%	5%	2%	1%



# Example spatial divide in hybrid gas and electric heat pump uptake

## Example spatial divide in hybrid gas and electric heat pump uptake

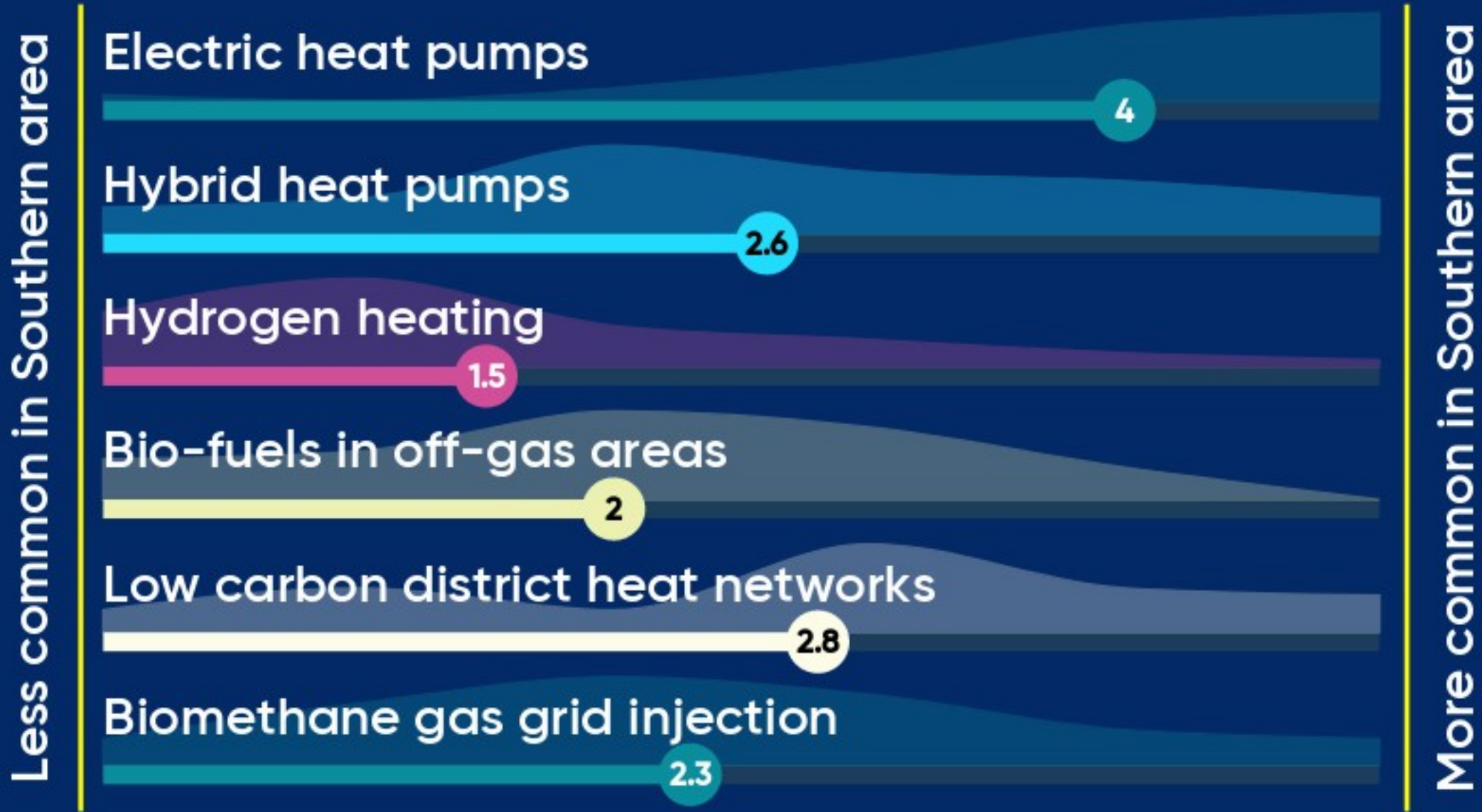
Type of heat pump connected at an individual feeder level, by 2030 under a Two Degrees scenario  
Shown below for two settlements in Wiltshire

Homes in Barford St Martin, to the west, use oil burners, electric storage heating and other non-gas heating, those in Wilton to the east are more likely to have gas connections and gas boilers, and see higher uptake of **hybrid gas heat pumps**. However by 2030, Wilton also sees high **electric heat pump** uptake, as well as hybrids.



High granularity projections for low carbon technology uptake - electric vehicle, heat pumps and solar PV  
SSEN, June 2020

# In the Southern licence area, how would you rate the opportunity for deployment relative to the UK?





# Distribution Future Energy Scenarios

- Ray Arrell - Head of Technical Development
- Joel Venn - Head Analyst





# Local Network Plans

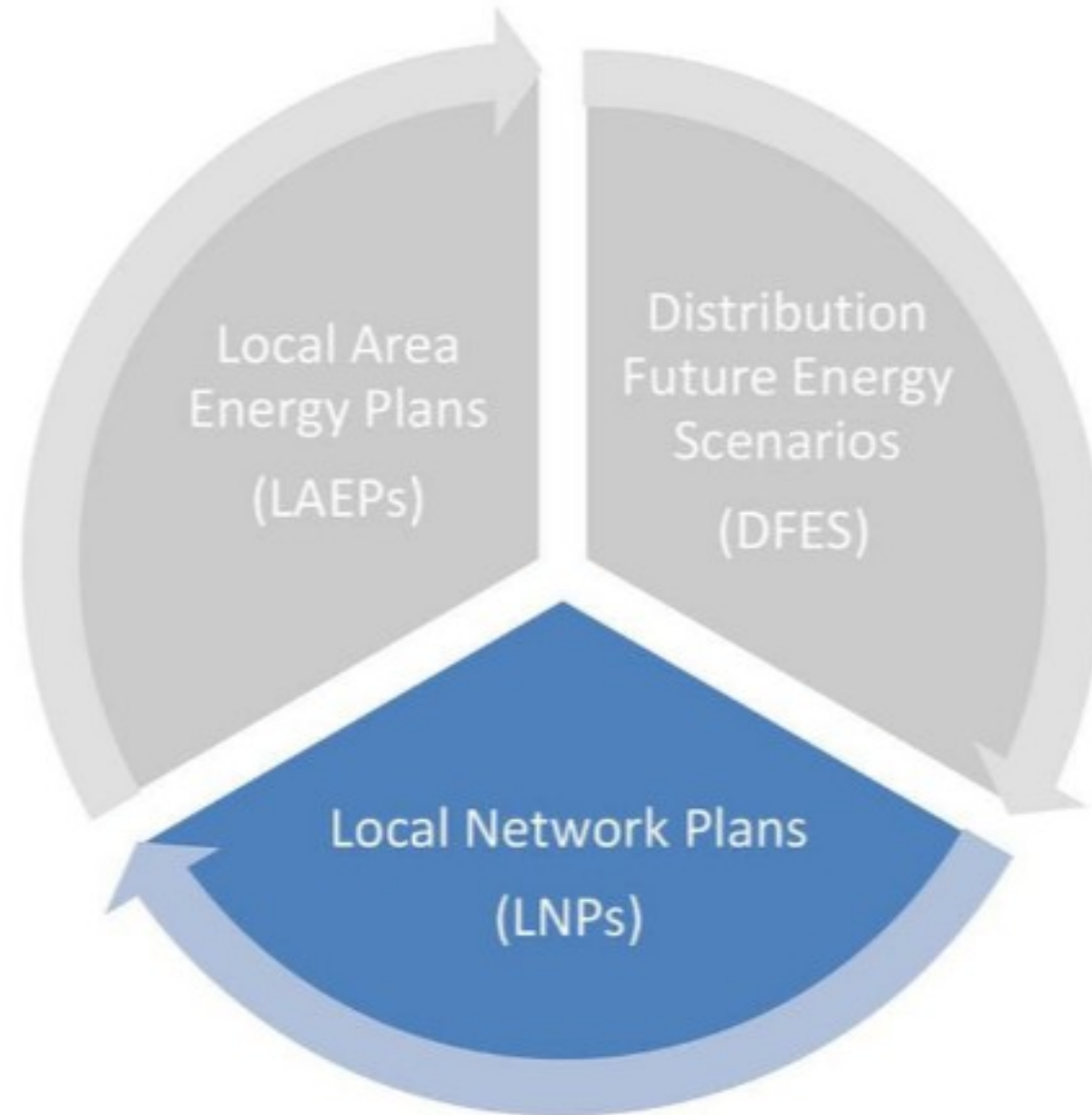
→ Trung Tran - ED2 Network Strategy Lead, SSEN

# How do the pieces fit together?



**CATAPULT**  
Energy Systems

Network capacity and investment



**regen**  
transforming energy

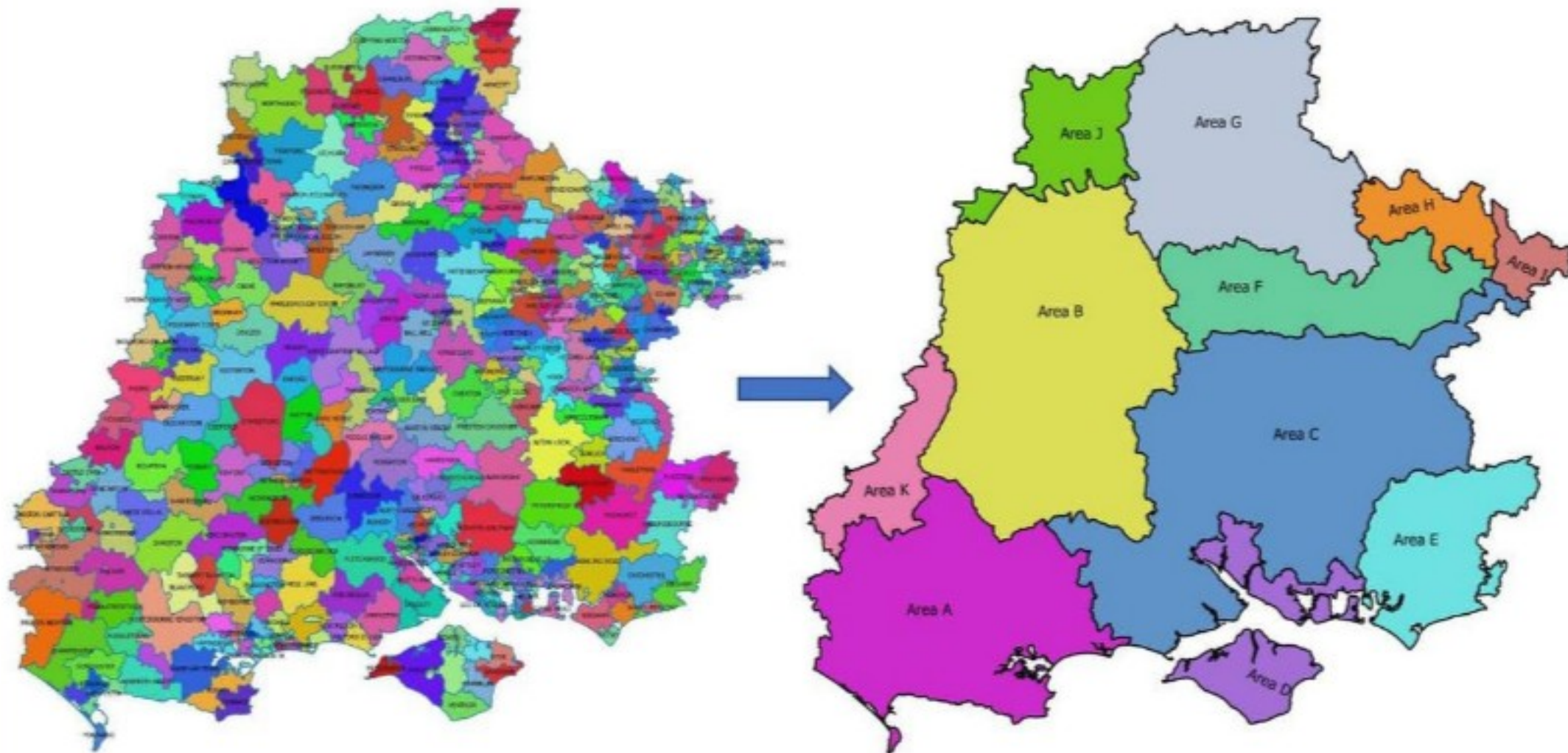
Demand and generation forecasts

 **Scottish & Southern**  
Electricity Networks

# Local Network Plans - SEPD



The proposed Areas in the South are formed on the basis of the Local Enterprise Partnership (LEP) regions. These are the groupings of adjacent Local Authorities supported by the Energy Hubs.

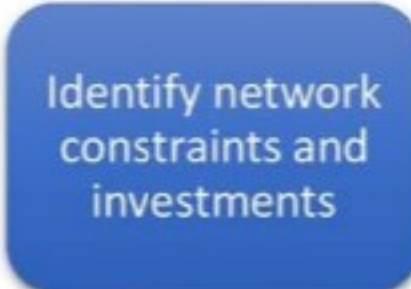
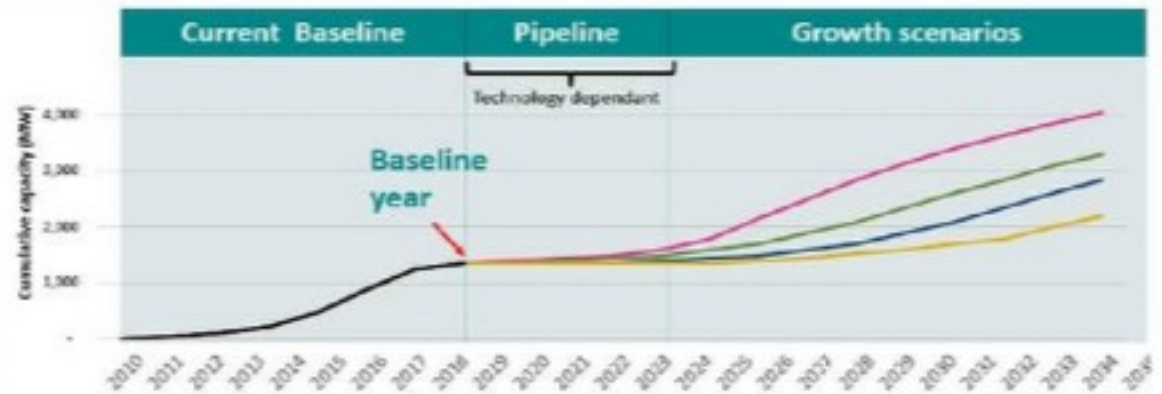


LNPs	LEP naming	Local Authorities
Area A	Dorset (10)	Weymouth and Portland, West Dorset, Purbeck, North Dorset, East Dorset, Poole, Bournemouth, Christchurch
Area B	Swindon and Wiltshire (32)	Swindon, Wiltshire
Area C	Enterprise M3 (11)	New Forest, Test Valley, Winchester, Basingstoke and Deane, East Hampshire, Hart, Waverley, Rushmoor, Guildford, Surrey Heath, Runnymede, Spelthorne, Hampshire
Area D	Solent (28)	Isle of Wight, Southampton, Eastleigh, Fareham, Gosport, Portsmouth, Havant
Area E	Coast to Capital (5)	Chichester, Arun, Horsham, Mole Valley, West Sussex
Area F	Thames Valley Berkshire (34)	West Berkshire, Reading, Wokingham, Bracknell Forest, Windsor and Maidenhead, Slough
Area G	Oxfordshire (26)	Vale of White Horse, West Oxfordshire, Cherwell, Oxford, South Oxfordshire, South Northamptonshire, Aylesbury Vale
Area H	Buckinghamshire (2)	Wycombe, Chiltern, South Bucks
Area I	London (23)	Richmond upon Thames, Hounslow, Hillingdon, Three Rivers, Harrow, Ealing, Hammersmith and Fulham, Brent
Area J	Gloucestershire (12)	Cotswold, Cheltenham, Gloucestershire
Area K	Heart of the SW (16)	Mendip, South Somerset, Bath and North East Somerset

# Stakeholder Engagement Process for LNPs



**Step 1:** takes account of specific local/geographical attributes



- High level investment costs
- All four scenarios



**Step 2:** co-create the baseline investment scenario.



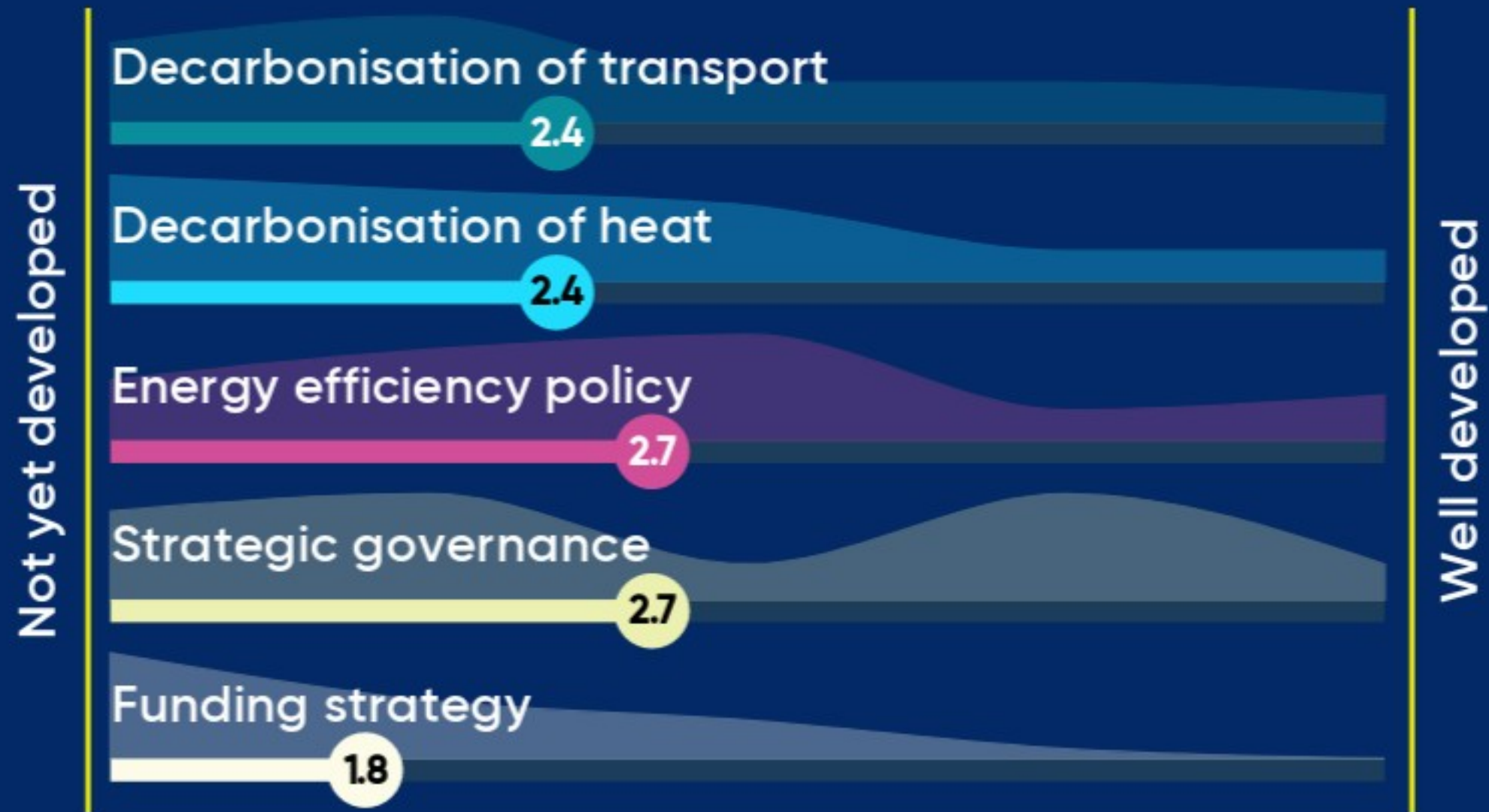
- Create LNPs for all four scenarios
- Determine the best view investment scenario



- Best view investment scenario informed by stakeholders



# How established are your future local energy strategies?



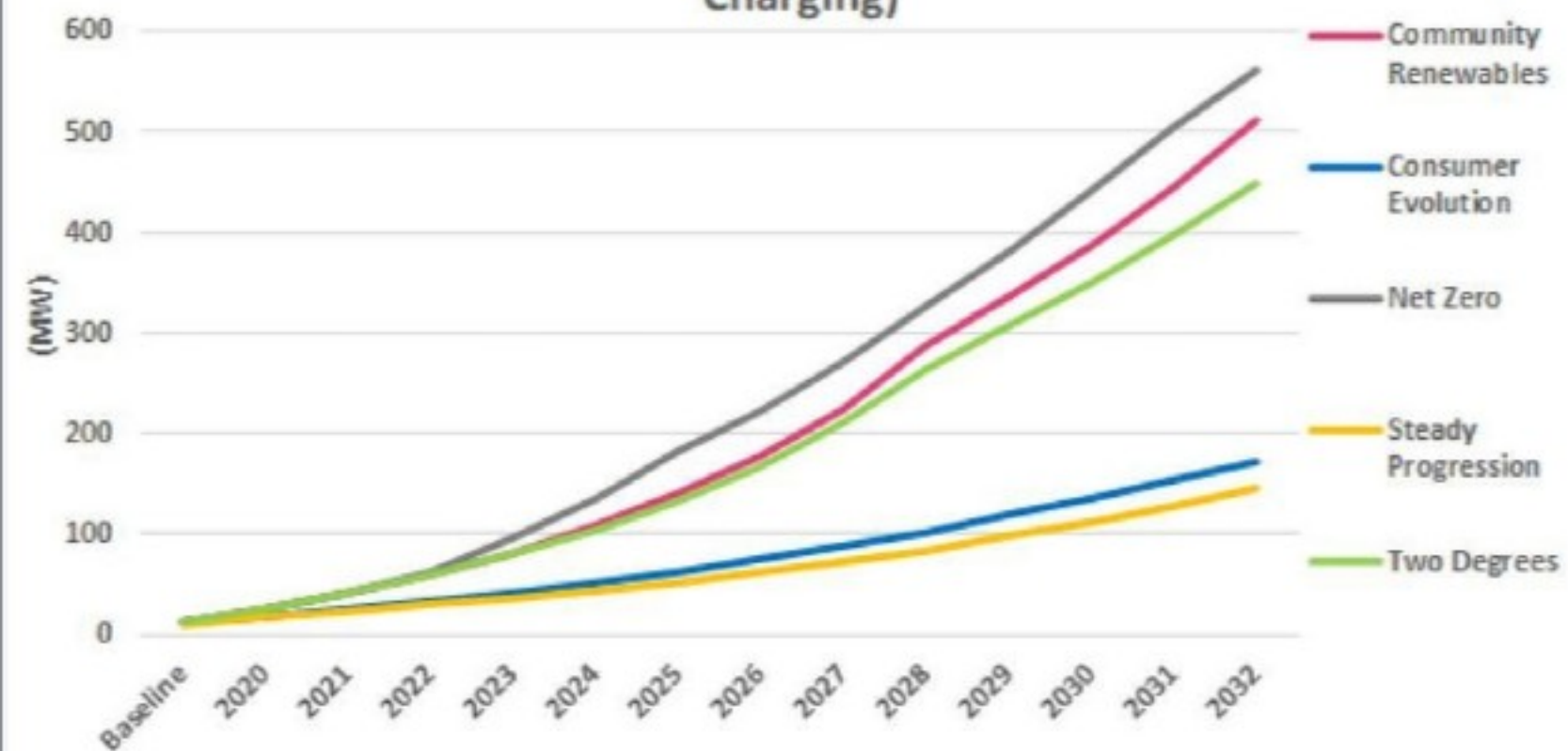
# What is your local area's Net Zero target year?



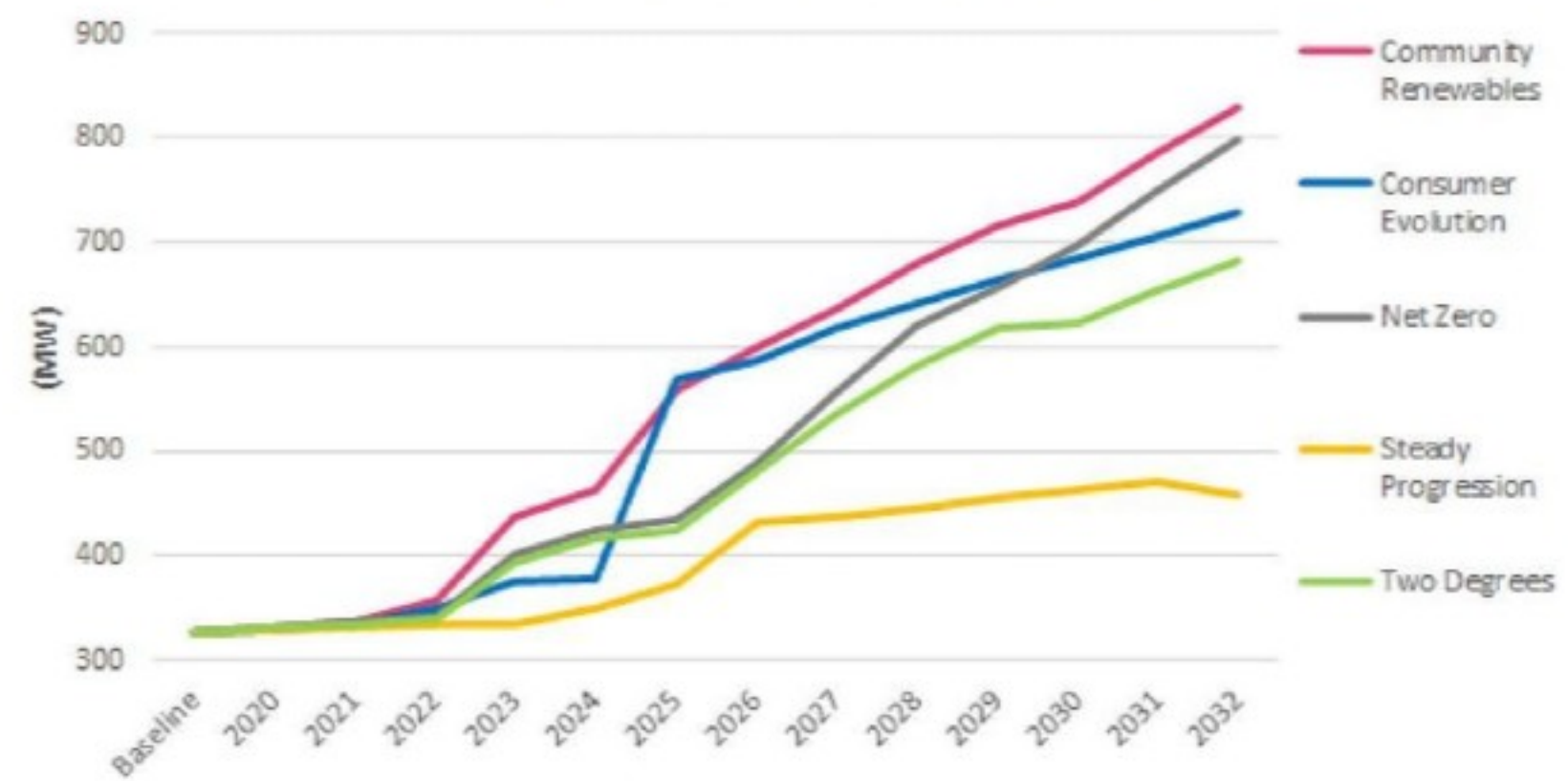
# Example - Demand and Generation Forecast for Thames Valley



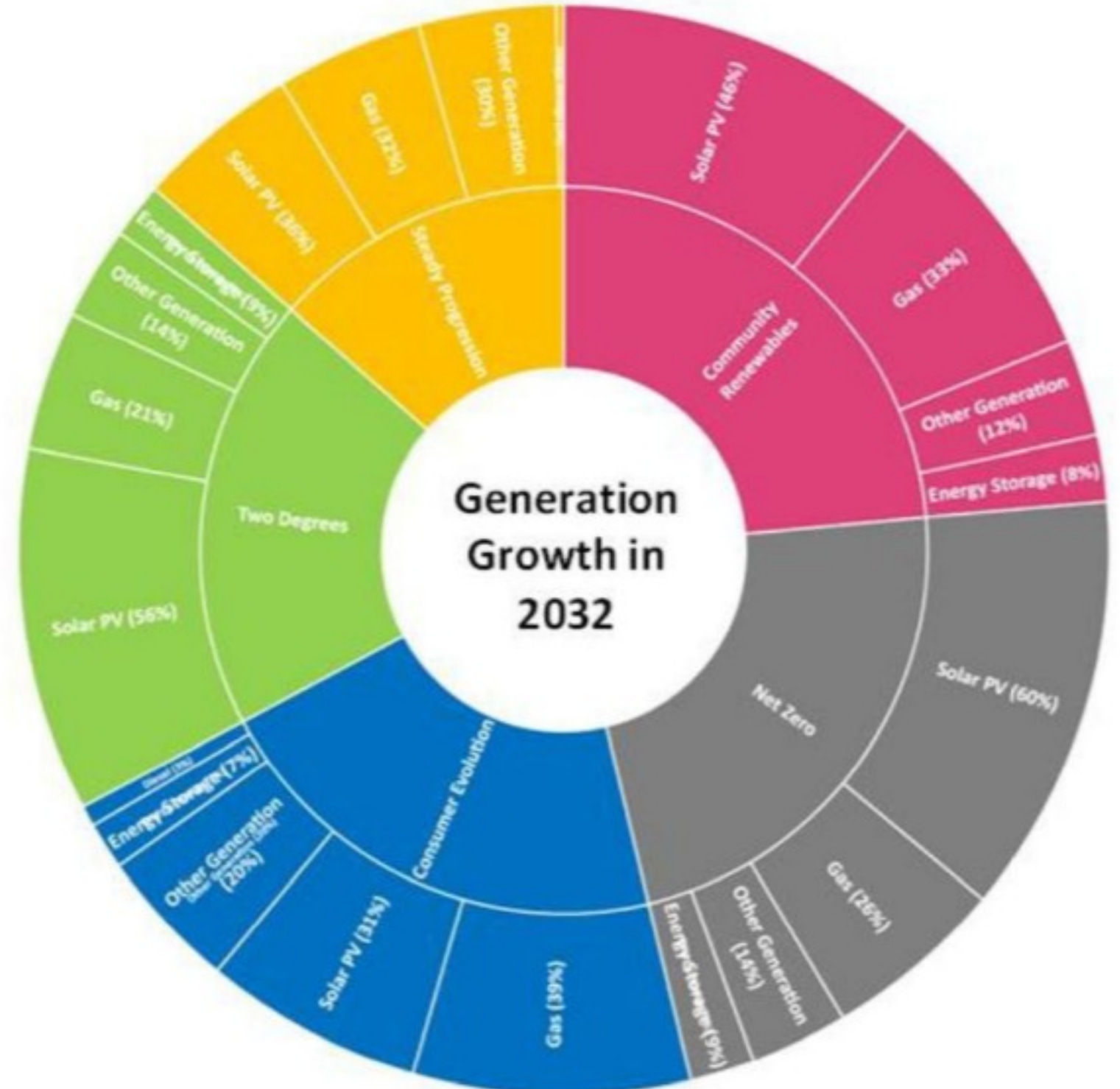
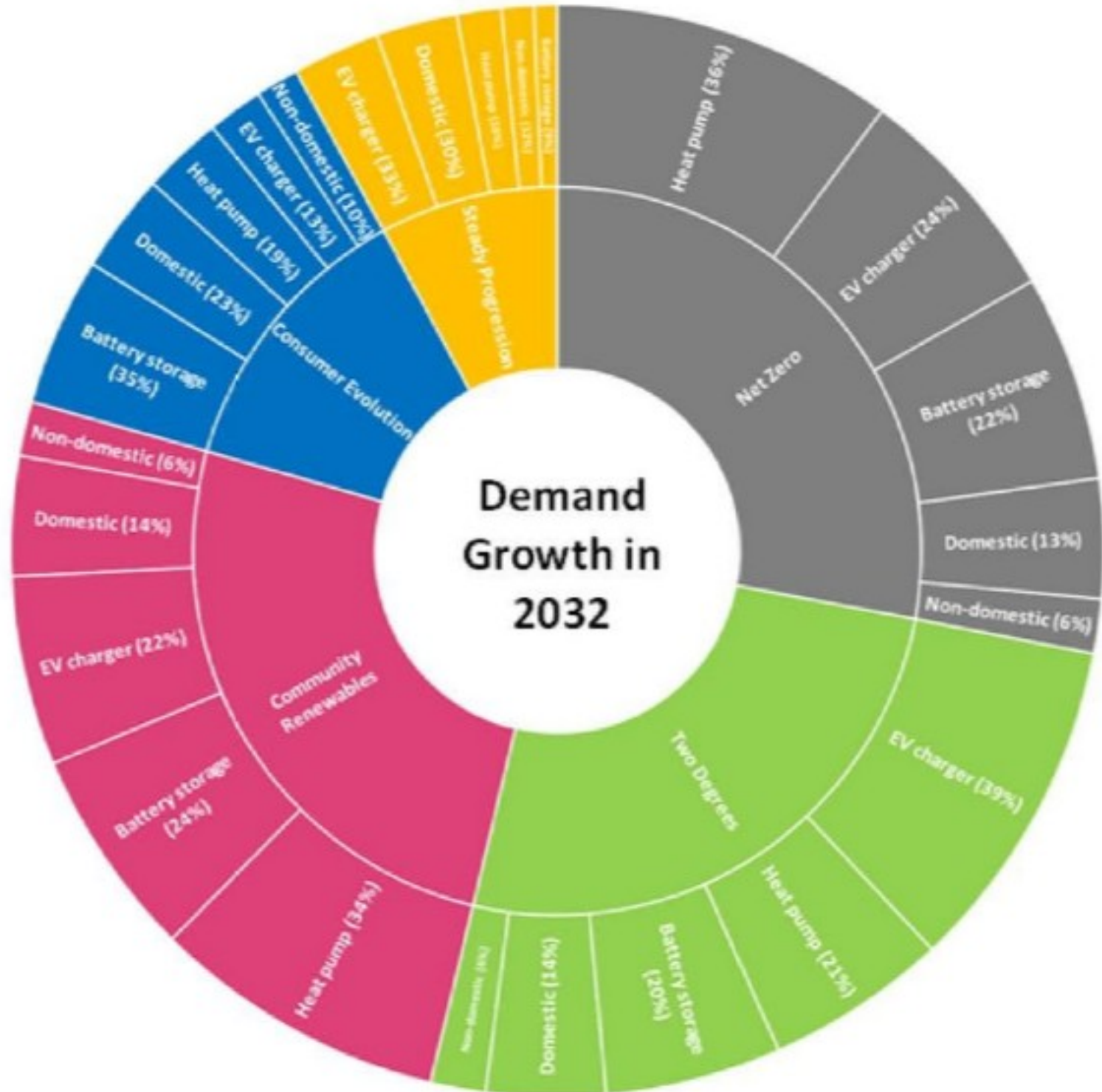
### Zone F | Total Peak Demand Growth (without EV Smart Charging)



### Zone F | Total Distributed Generation



# Example - Demand and Generation Forecast Breakdown in Thames Valley

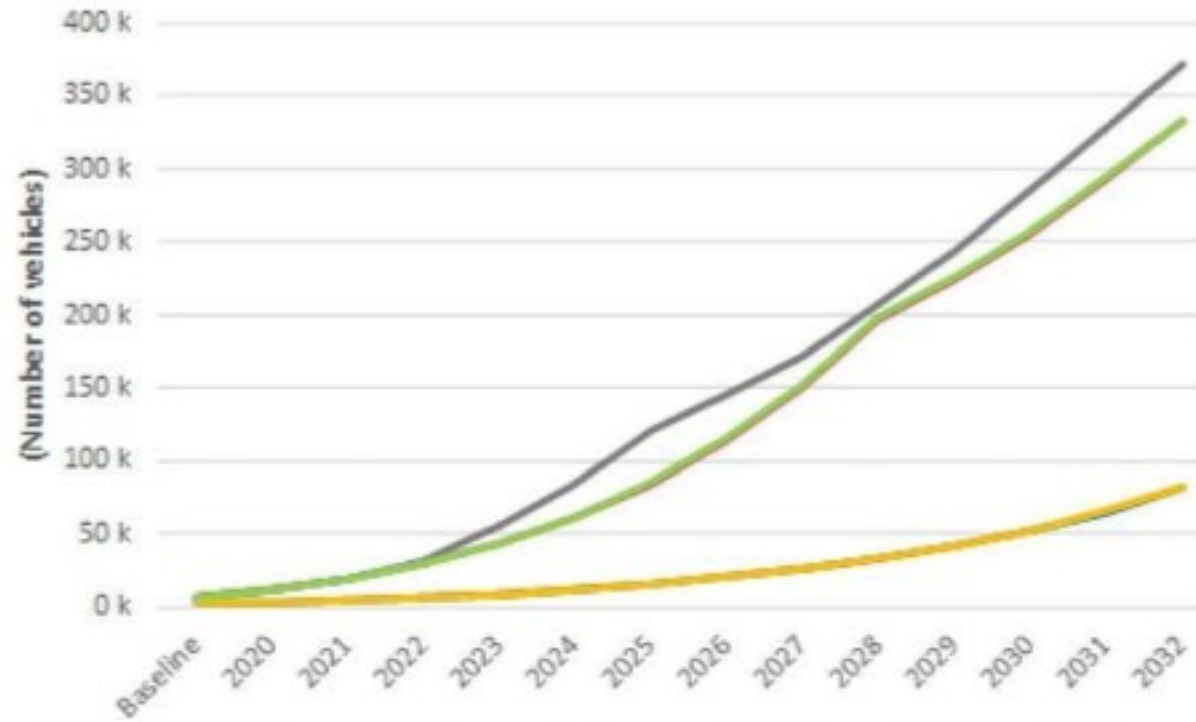




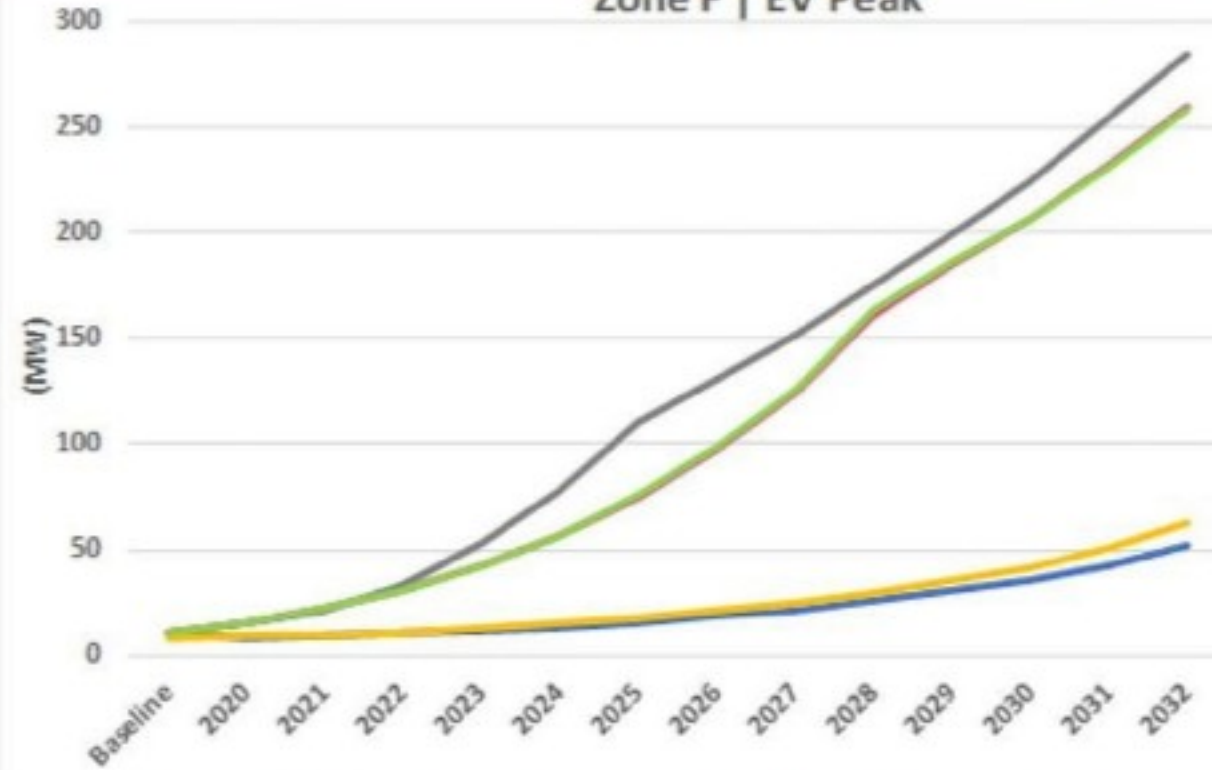
# Example - Low Carbon Technologies Forecast for Thames Valley



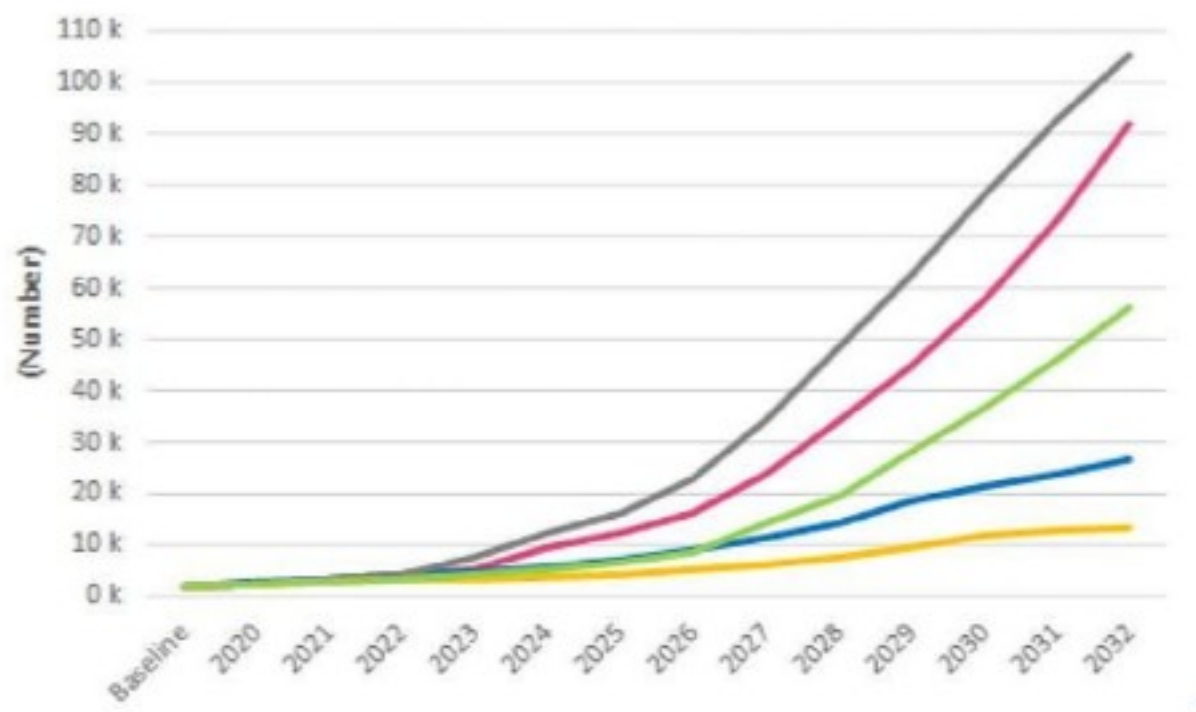
Zone F | Electric vehicles



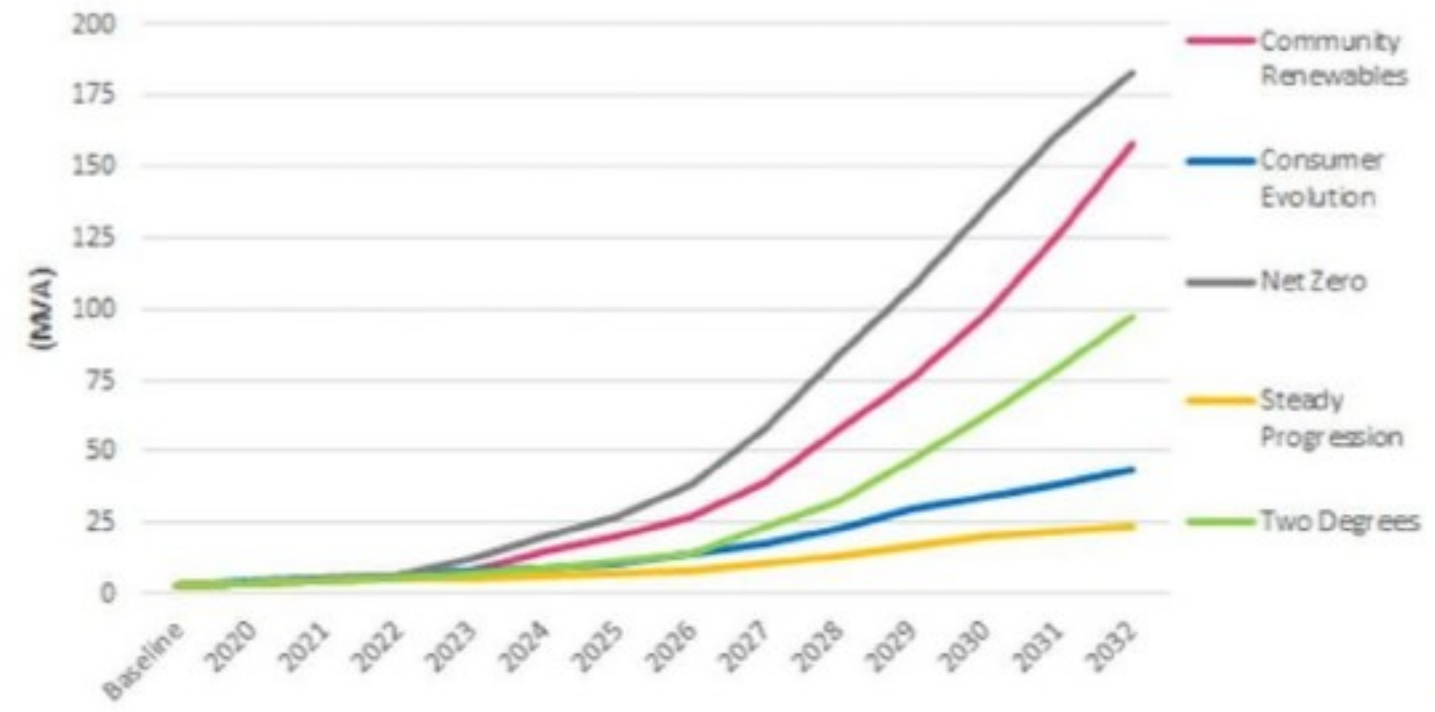
Zone F | EV Peak



Zone F | Number of Heat Pumps (inc non-domestic)



Zone F | Heat Pump Peak Growth (not inc. non-domestic)



# Example – Thames Valley Local Network Constraints by 2027/28



Zone F - BSP Capacity 2027/28

- Overloads
- Network capacity available



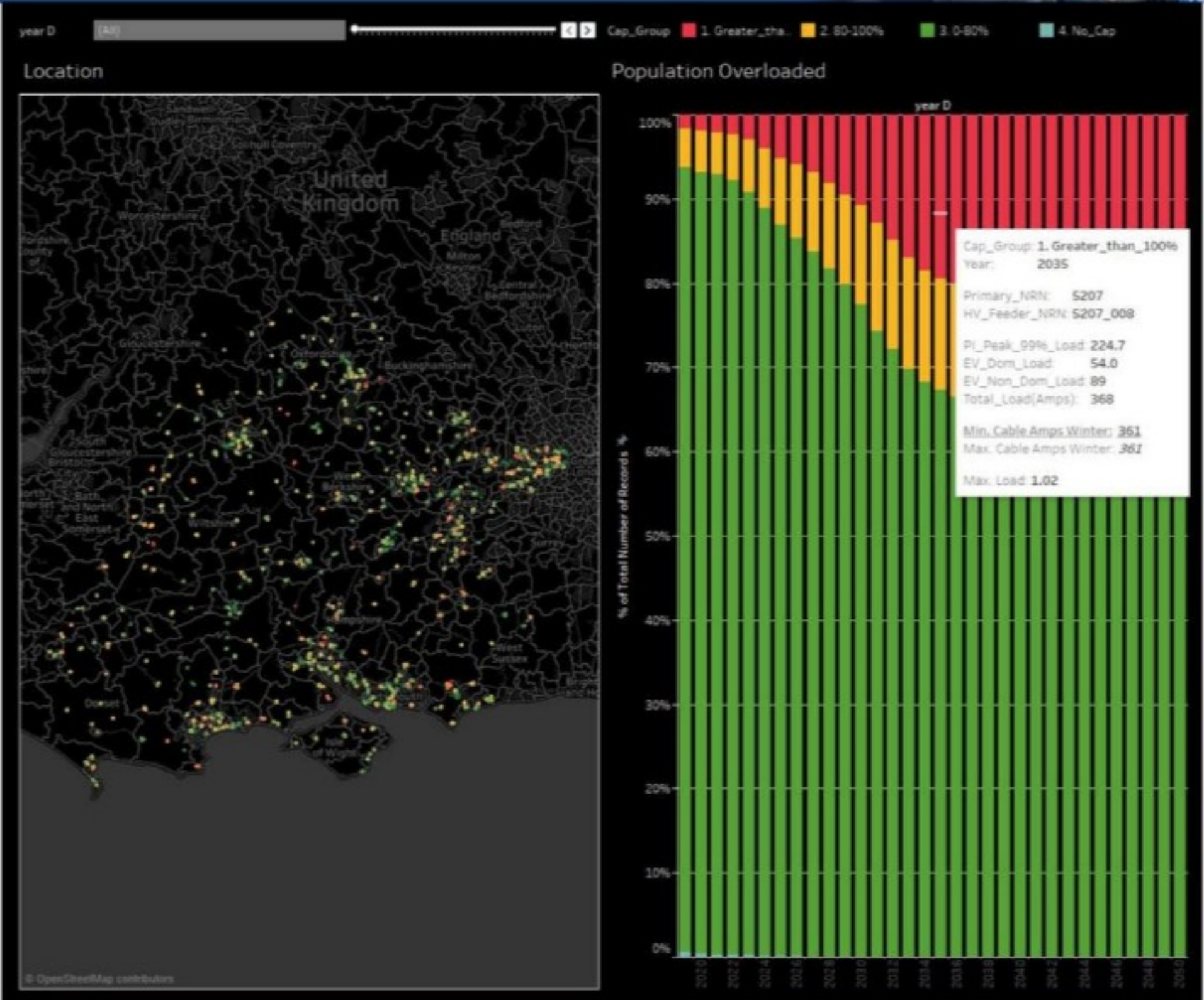
Zone F - Primary Capacity 2027/28

- Overloads
- Network capacity available



Network Constraint	Primary	BSP	Voltage of Constraint	Asset Details	Scenarios			
					Community Renewables	Consumer Evolution	Steady Progression	TWO Degrees
Circuit	BURGHFIELD	BURGHFIELD	33 kV	3.83 km	✓			✓
Circuit	CAMBERLEY	CAMBERLEY	33 kV	7.98 km	✓			
Circuit	CAMBERLEY	CAMBERLEY	33 kV	3.38 km	✓			
Substation	CROWTHORNE	CAMBERLEY	33/11 kV	15/15/15 MVA	✓			✓
Circuit	WYCOMBE MARSH	LOUDWATER	33 kV	2.47 km	✓			✓
Circuit	WYCOMBE MARSH	LOUDWATER	33 kV	2.42 km	✓			✓
Circuit		MAIDENHEAD	132 kV	5.25 km	✓			✓
Circuit		MAIDENHEAD	132 kV	5.06 km				✓
Circuit	STAINES	STAINES	33 kV	4.53 km			✓	
Circuit	STAINES	STAINES	33 kV	4.56 km			✓	
Substation		THATCHAM	132/33 kV	117/103.5/90 MVA	✓			
Circuit	THATCHAM	THATCHAM	33 kV	15.97 km	✓			✓

# Low Carbon Technology Hotspots



<https://www.ssen.co.uk/WorkArea/DownloadAsset.aspx?id=19141>

# Summary



- Local Network Plans (LNPs) is our way of communicating the distribution network information for your developing of LAEPs.
  - Understanding your Net Zero ambitions/strategies/plans is key to building the baseline of our RIIO-ED2 strategic investment.
  - Follow-up 'bilateral' sessions with the local decision makers in October 2020 will help us drill down the detail.
  - In these sessions, we would like to hear from you how best to share data.
-



# Q&A panel session

Graeme Keddie

Director of Corporate Affairs, Regulation  
& Stakeholder Engagement



**Thank you for joining us today**