



Local Energy Accelerating Net Zero



How are Local Networks Enabling the Energy Transition?

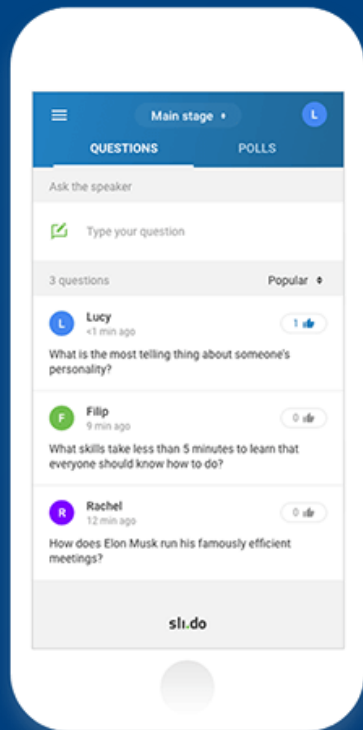


Melanie Bryce

Oxfordshire Programme Director

Scottish and Southern Electricity Networks

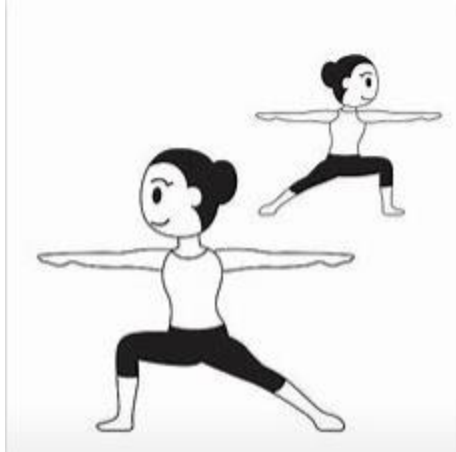
We are using a voting tool in today's session called **Slido**
Please use your smartphone or tablet and follow the instructions below:



Go to: www.slido.com

Enter code: **#LEOTeam**

Slido test – Can you name the yoga poses?



A



B



C

Q1. To which of the following 17 UN Sustainability Goals has SSE aligned its Strategy?



SSE 2030 Sustainability Goals



Cut our carbon intensity by 50%

Reduce the carbon intensity of electricity generated by 50% by 2030, compared to 2018 levels, to around 150gCO₂/kWh.

13 CLIMATE ACTION



Treble renewable energy output

Develop and build by 2030 enough renewable energy to treble renewable output to 30TWh a year.

7 AFFORDABLE AND CLEAN ENERGY



Help accommodate 10m electric vehicles

Build electricity network flexibility and infrastructure that helps accommodate 10 million electric vehicles in GB by 2030.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Champion Fair Tax and a real Living Wage

Be the leading company in the UK and Ireland championing Fair Tax and a real Living Wage.

8 DECENT WORK AND ECONOMIC GROWTH

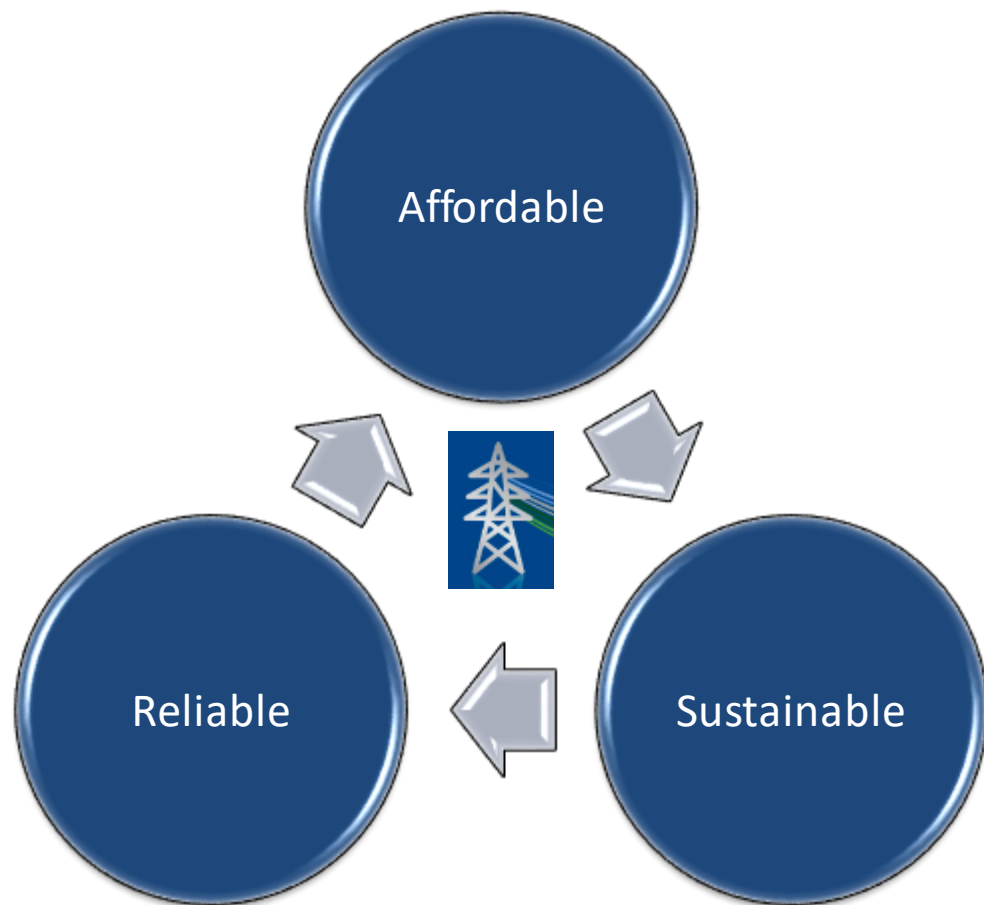


We own and operate the Electricity Transmission and Distribution Networks in the North of Scotland and the Distribution Network in Central Southern England.

- SSEN is regulated by Ofgem under RIIO; part of SSE plc (UK FTSE listed).
- We have 4,000 employees, 85 depots/offices across 7 regions
 - serving 3m customers in England and 0.75m customers in Scotland
 - 130,000 km of lines and cables and 106,000 substations
 - over 100 subsea cables, powering island communities
 - we take 550,000 calls from our customers p.a. (over 1,500 a day).
- Strong supporter of the 2050 Net Zero emissions target, and committed to investing in its network to support 10 million EVs in the UK by 2030.
- Accommodated the rapid rise in renewables with 28 GW of local generation capacity connected - enough to power 4 million homes.
- Supporters of the Living Wage and Fair Tax.



SSEN - Electricity System of the Future



The UK can end its contribution to global warming within 30 years by setting an ambitious new target to reduce its greenhouse gas emissions to zero by 2050, the Committee on Climate Change (CCC) - 2 May 2019

SSEN – Electricity System of the Future

Smart Solutions Flexible Connections

- Time of day
- Shared use



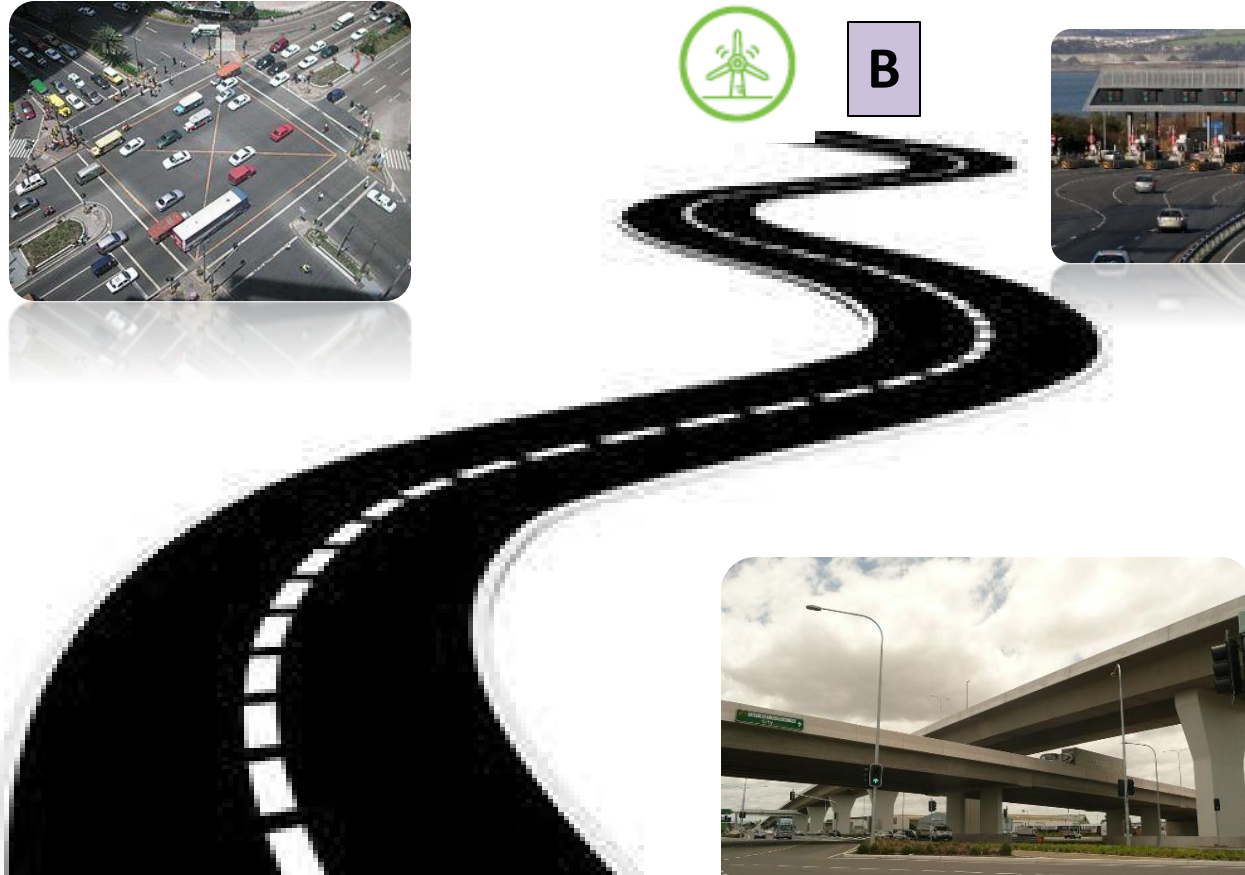
Congestion



B



Price Signals



A



Network Investment



Active
Management

Q2 How Many km of Overhead Line and Underground Cable do SSEN own in Oxfordshire?

- A – 11,156 km
- B – 1,763 km
- C – 580 km
- D – 25,628 km

SSEN's Assets in Oxfordshire - facts and figures

Cable type	Kilometres
132 KV	176
33 KV	516
High Voltage Underground Cable	2271
High Voltage Overhead Line	2578
Low Voltage Overhead Line	1770
Low Voltage Underground Cable and Service	3845
TOTAL	11156



Substation Type	Number
Distribution Transformer	5917
Primary Transformer	50
Bulk Supply Point	7
Grid Supply Point (Cowley)	1

Q3. What sort of organisations needs to be represented to complete the energy supply chain?

Data Platforms

DNO

TO

ESO

Supplier

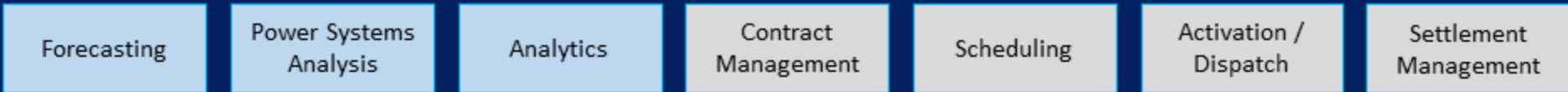
Local Energy

Council

WP4



Grid Management Platform(s)



WPS



Whole System Coordinator

WPS



Market Facilitation

WPS



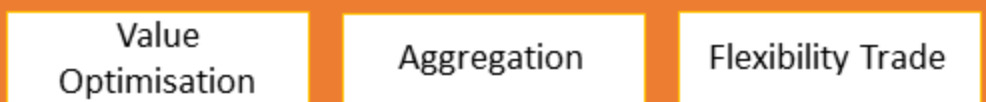
Flexibility Exchange(s)



WP2



Technology Platform(s)

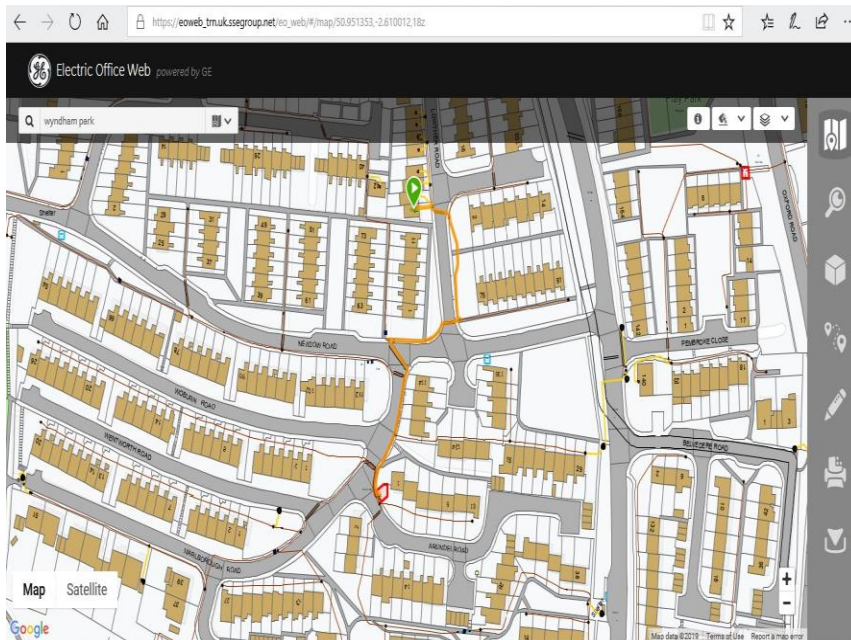


WP2

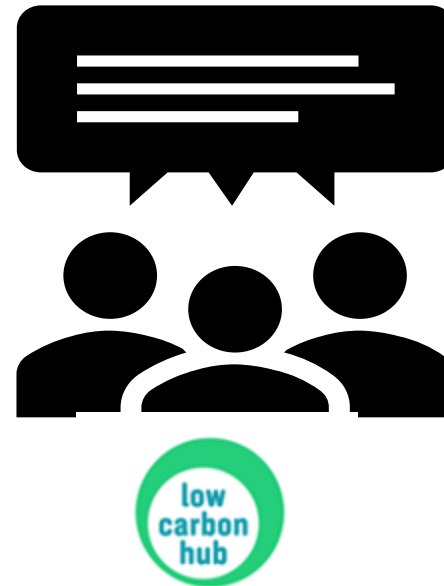


Q4 Can you name four sorts of 'networks' that are a vital part of the county's journey to Net Zero?

Local Networks



Local Low Voltage Electricity Network

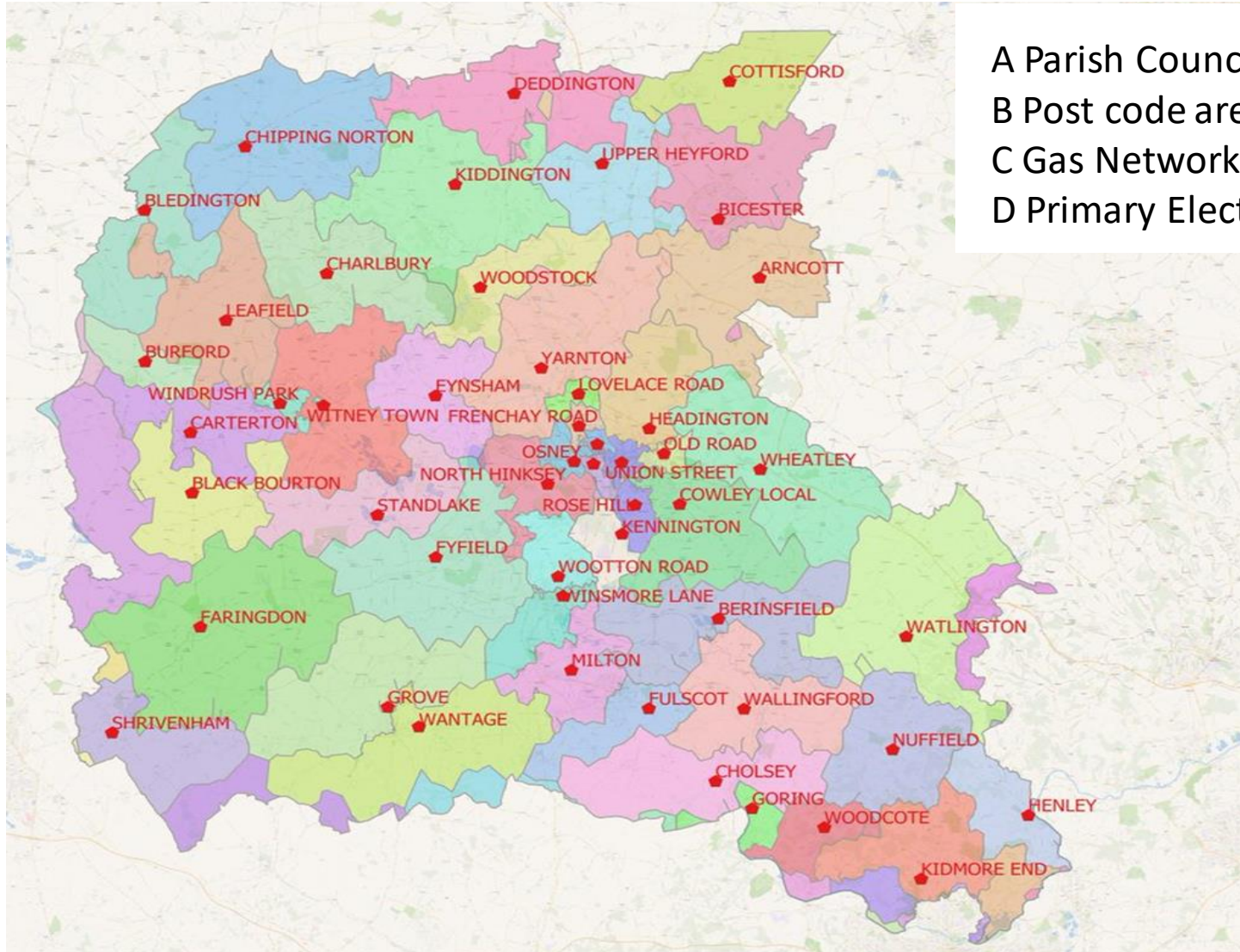


Local People Network



Generic Network

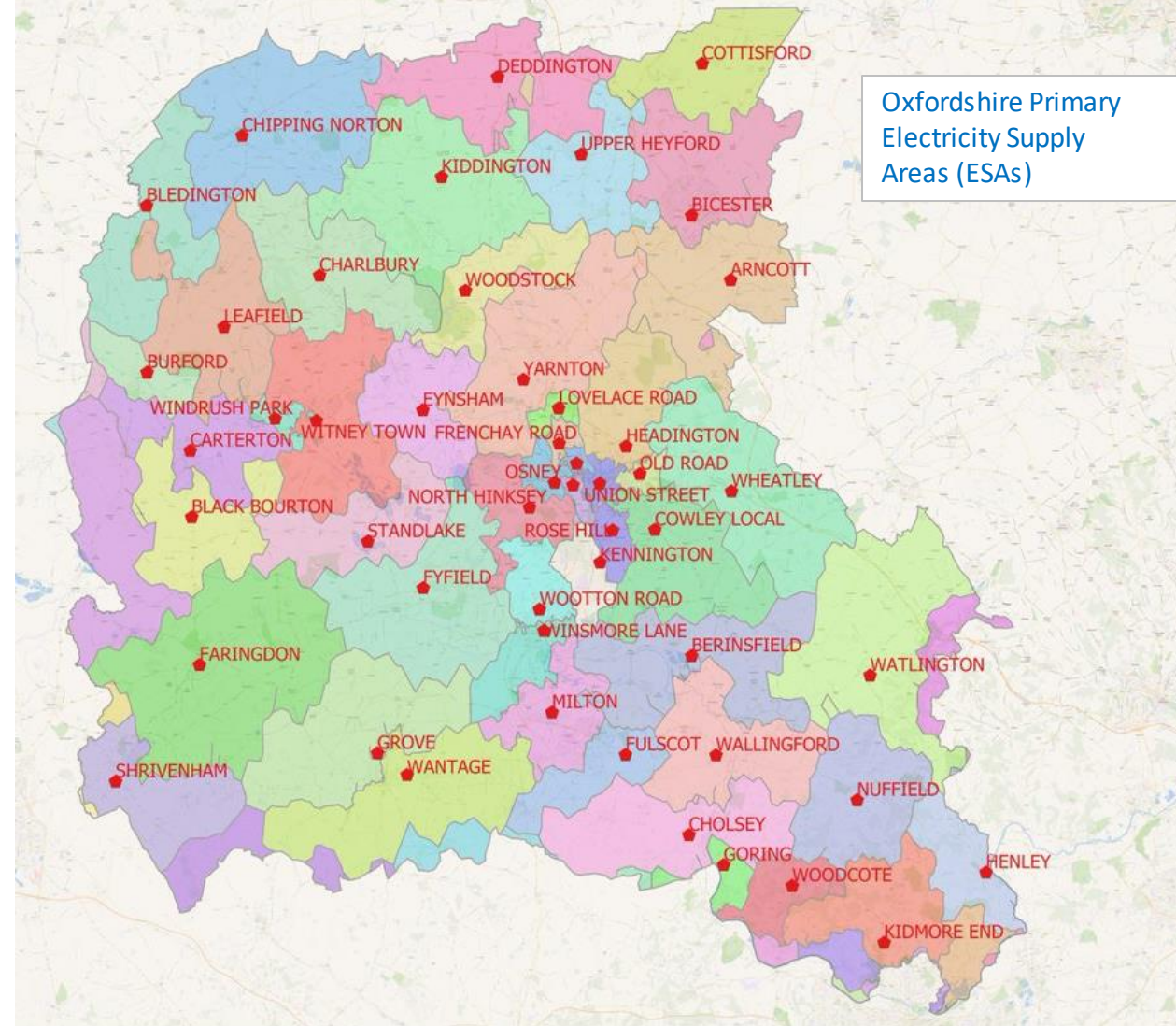
Q5 What do you think the areas on this map represent?



- A Parish Councils
- B Post code areas
- C Gas Network Localities
- D Primary Electricity Substations

12 Primary Substations

- Key Assets
- Consortium Assets
- Consortium Recruited Assets
- Technology Diversity
- Urban/Rural
- LCT uptake potential
- Smart and Fair Neighbourhoods



Q6 Can you name the following Distributed Energy Resource?



Minimum Viable Systems



Oxford Bus Co. Batteries (Storage)



Sackler Library, University of Oxford (DSR)



Nuvve 'Vehicle to Grid'
chargers (Aggregation)



Sandford Hydro (Generation)

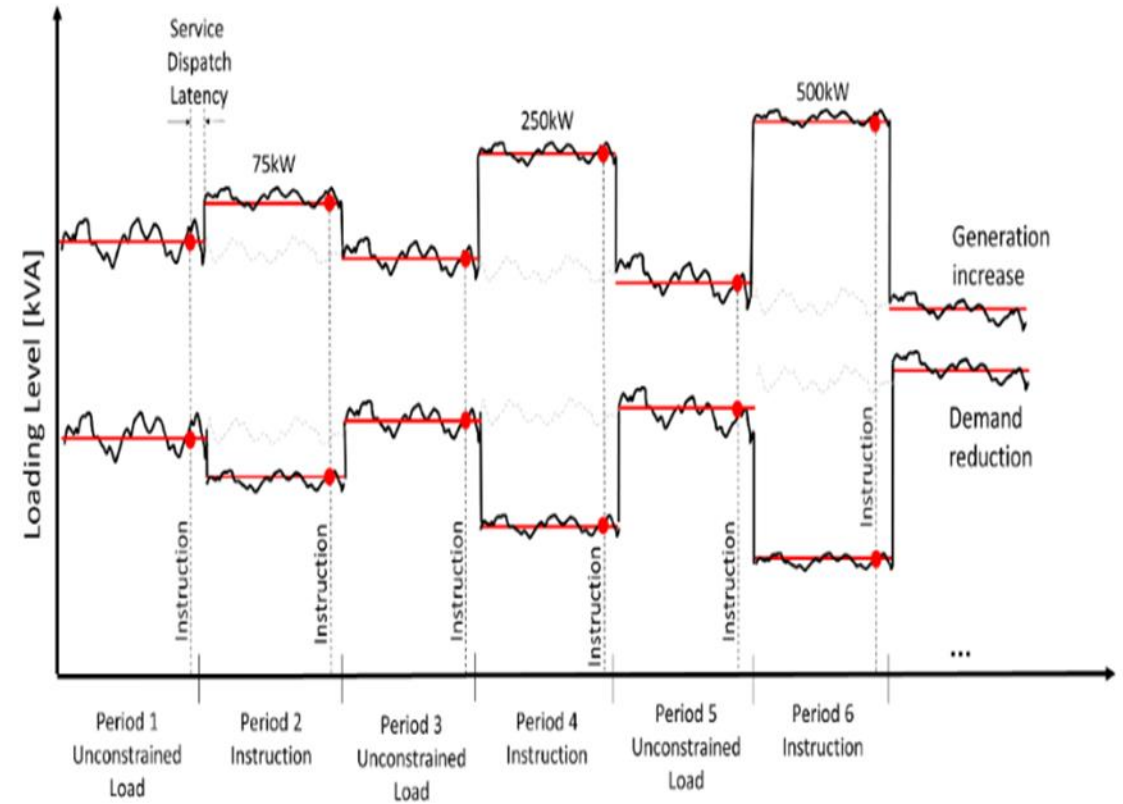
Learning

- Battery Configuration
- Metering Data
- Water Levels
- Building Control Systems
- Contingency

Q7 Which of the following are potential DSO services?

- A - Constraint Management
- B - Peak Management
- C - Capacity Exchange
- D - Offsetting
- E – STOR (Short Term Operating Reserve)

Flexibility Services and Market Rules



Q8 What 4 things must we take into consideration to ensure nobody 'gets left behind' in energy transition.

- Equitable Energy Transition
 - Essential Service with social licence to operate
 - Focus on Domestic Households
 - Pace of Change
- Ethical Framework
 - Smart and Fair
 - Communities, employers, government
- No one gets left behind – Example Electrification of Heat

Financial

Tech Readiness

Personal and Social

Energy & Tech Usage

Dwelling and Local Area

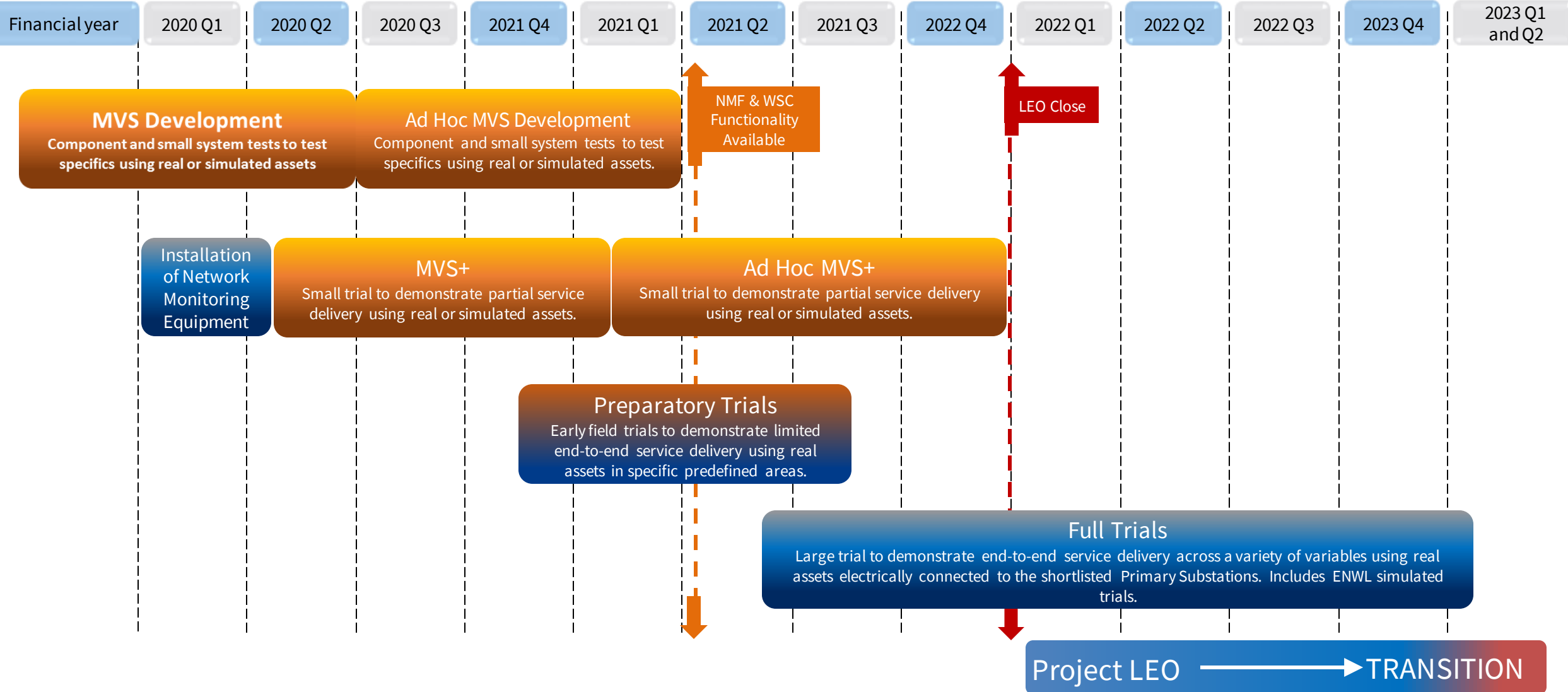
Capability Lens



Q10 What is the timeframe for LEO?

- A – 3 years
- B – 5 years
- C – 10 years
- D – until 2050

MVS & Trial Phasing









Q11 Which of the following have been identified as possible 'fast followers' for LEO?

- A Dundee
- B Manchester
- C Warrington
- D Birmingham

Potential Fast Followers



If you can answer YES to any of the following.....

- If you would like a presentation to your community or workplace 
- If you are working on policy that will be impacted by the energy transition 
- If the replication of this model would suit your local area 
- If you would like to know more about community energy and social enterprise 
- If you would like to understand more about the Grid Edge 
- If you want to learn more about the ethical framework of LEO 



For more information

<https://project-leo.co.uk/>



Local Energy **Oxfordshire**

- Community
- Markets
- Technology



Project LEO's smart-grid trials in Oxfordshire (so far)

with Dr Scot Wheeler

Date: Tuesday 23 June 2020 **Time:** 6pm

Ground mount solar in Oxfordshire

with Tom Heel, Business Development Director of the Low Carbon Hub

Date: Thursday 25 June 2020 **Time:** 6pm

Register by visiting <https://www.lowcarbonhub.org/>





Any Questions?



Local Energy Oxfordshire

Local Energy Accelerating Net Zero

Funding was provided through the Government's modern industrial strategy by Innovate UK, part of UK Research and Innovation.

