Local Energy Oxfordshire

Users Technology Collaboration Programme Academy

11/05/22

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Scottish & Southern Electricity Networks · piclo · EDF Energy · NUVVE · Origami Power Over Energy

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Industrial Strategy · UK Research and Innovation

Agenda

Overview of Project LEO

Our Flexibility Market Trials

About the market trials

Benefits to participants

Smart and Fair Neighbourhoods

Integrating People into the energy system

Maximising participation

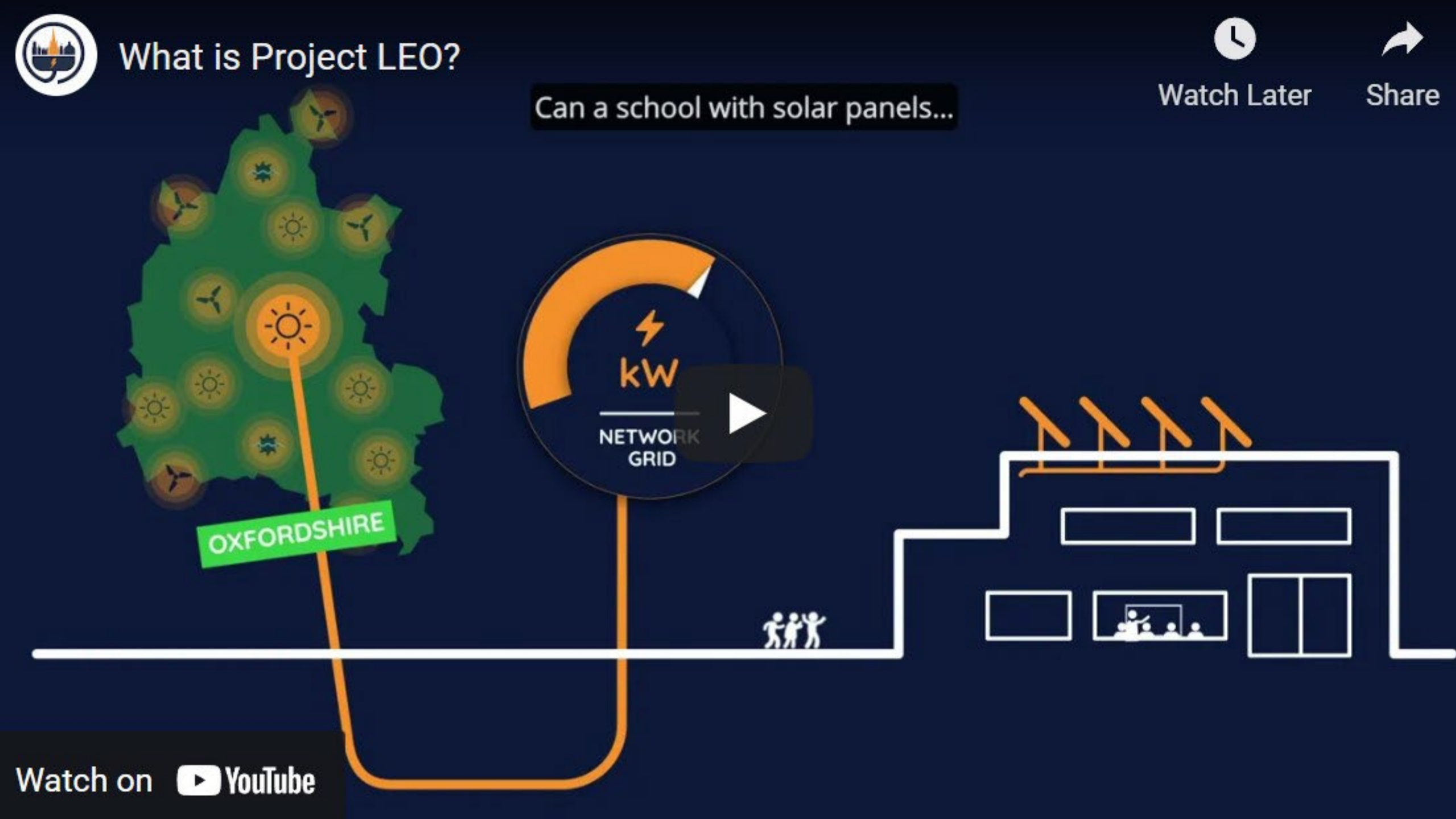
Benefits to participants

International Community of Local Smart Grids (ICLSG)

Questions

An overview of Project LEO

Charlotte Hewes


What is Project LEO?
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A unique collaboration in Oxfordshire

low carbon hub

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Project LEO: What, How, Why ?

What?

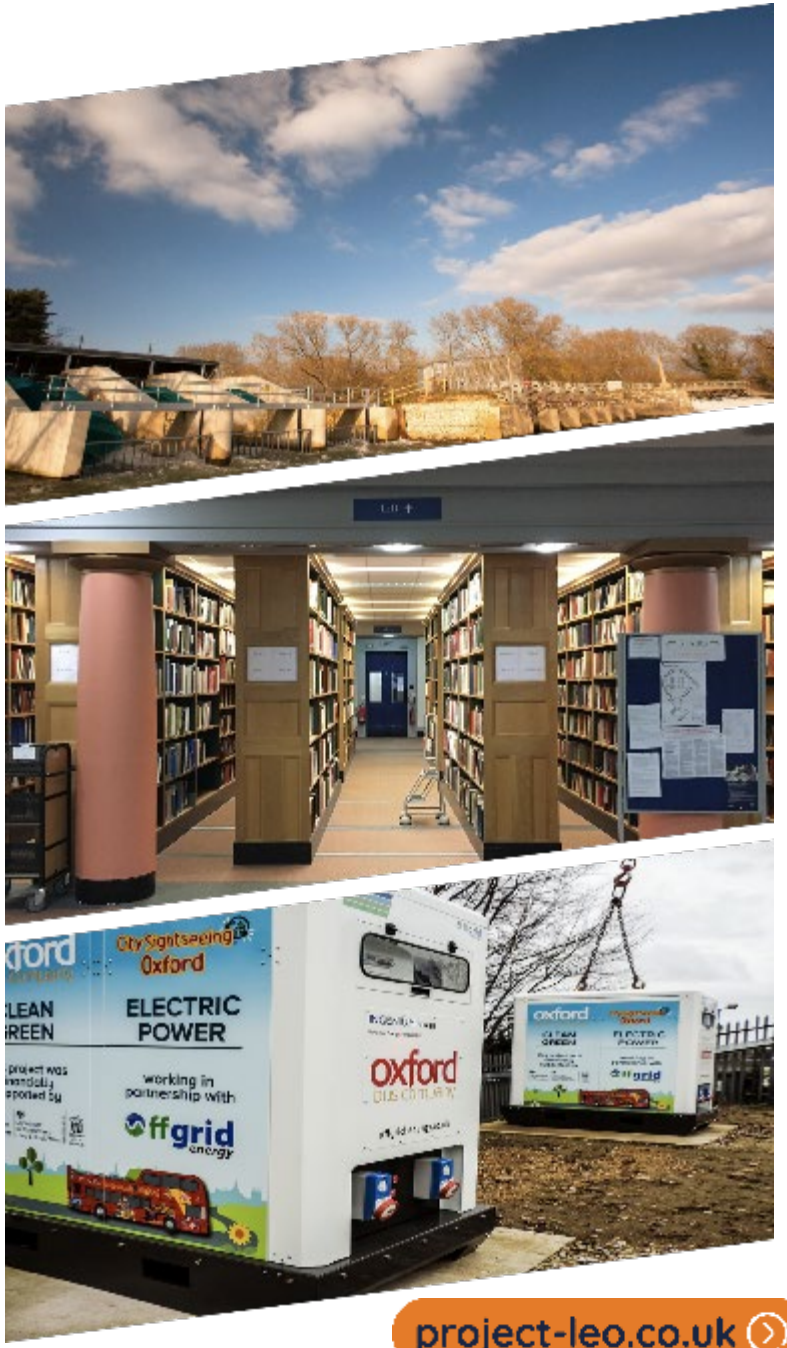
One of the UK's most ambitious, wide-ranging and innovative energy system projects that will help the Government achieve its legally binding commitment to achieve net zero emissions by 2050.

How?

By running pilot projects, advancing capabilities and facilitating active participation in the creation of a smart, local balanced energy system to bring social, economic and environmental benefits for all.

Why?

A broad range of reliable evidence is required to support policies and investments that will create the technological, market and social conditions for successful systemic change.



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Smart

Tech

Learning from Battery Configuration to Building Management Systems. Automation for scheduling flexibility and LV monitoring

Smart

Markets

Learning on baselining, and pricing. Market Stimuli package requirements for fledgling markets. DSO Services and Peer to Peer innovation. ESO/DSO Coordination, unintended consequences

Smart

People

Focused on not just the energy system but the people and communities who use it. Harnessing the power of communities

transition
Moving to a smart future

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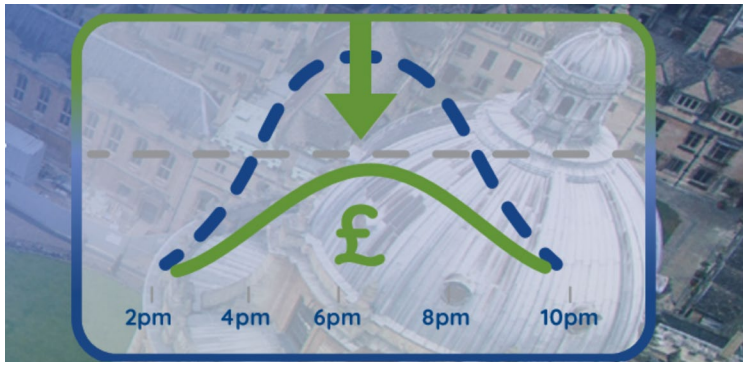
Our Flexibility Market Trials

Who can take part?

Participant needs to be able to provide flexibility – by making temporary changes to the way they either consume, generate, or store electricity when requested by the network operator. Changing what they would otherwise have been consuming, generating, or in the case of batteries, storing, if they weren't supplying that service.



Not open to individual domestic customers – however these will be taking part via third party aggregators

Any businesses in our trial areas in Oxfordshire – focused on 6 Bulk Supply Point areas

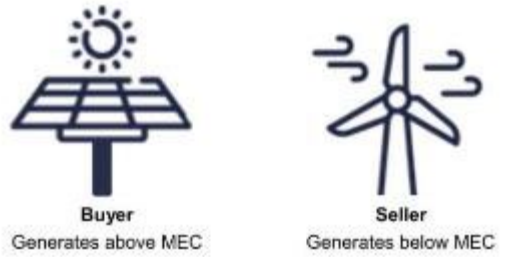
Originally 50kW cut off to participate - removed in response to feedback

To take part they need to sign the *Flexibility Services Agreement* and provide data and info on their assets

What flexibility services are we testing?

Service names	*Notice*	*Max. Payment £/MWh*
Sustain Peak Management Demand down Generation up	12hrs	**£600**
Sustain Export Peak Management Demand up Generation down	12hrs	**£850**
Secure DSO Constraint Management (pre fault) Demand down Generation up	4hrs	**£800**
Dynamic DSO Constraint Management (post fault) Demand down Generation up	30mins	**£1,200**

Peer to Peer Services – Capacity Trading



a) Exceeding your maximum export capacity

If a generator (or energy storage operator) wants to exceed the amount of electricity they can export onto the network (specified in their connection agreement), they can do this by buying a service from another generator who agrees to export less than their agreed capacity. This is an Exceeding MEC service.

b) Exceeding your maximum import capacity

If a consumer wants to exceed the amount of electricity, they import i.e. their demand on the network (specified in their connection agreement), they can do this by buying a service from another energy user who agrees to import less than their agreed capacity This is an Exceeding MIC service.

What's the benefit to these participants?

Opportunities to **influence** the development of these emerging markets

Being able to test their ability to provide flexibility in a **'safe space'**

Markets can take a **more asset/participant focused** approach than in a business as usual environment

New revenue opportunities from the sale of Flex **£££££**

What's the benefit to these participants?

Delivering more with what they have

Enhances the **case for investment** in their ability to deliver flex

Deeper learning about their assets and how they behave and interact

Supporting the UK's journey to a **zero carbon** energy system

Smart and Fair Neighbourhoods

Saskya Huggins
Social Impact Director

Integration

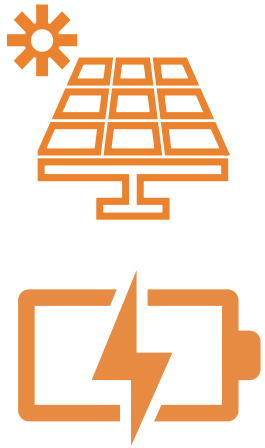
‘the act of bringing together smaller components into a single system that functions as one’

Starting with the individual

Balancing behind your meter

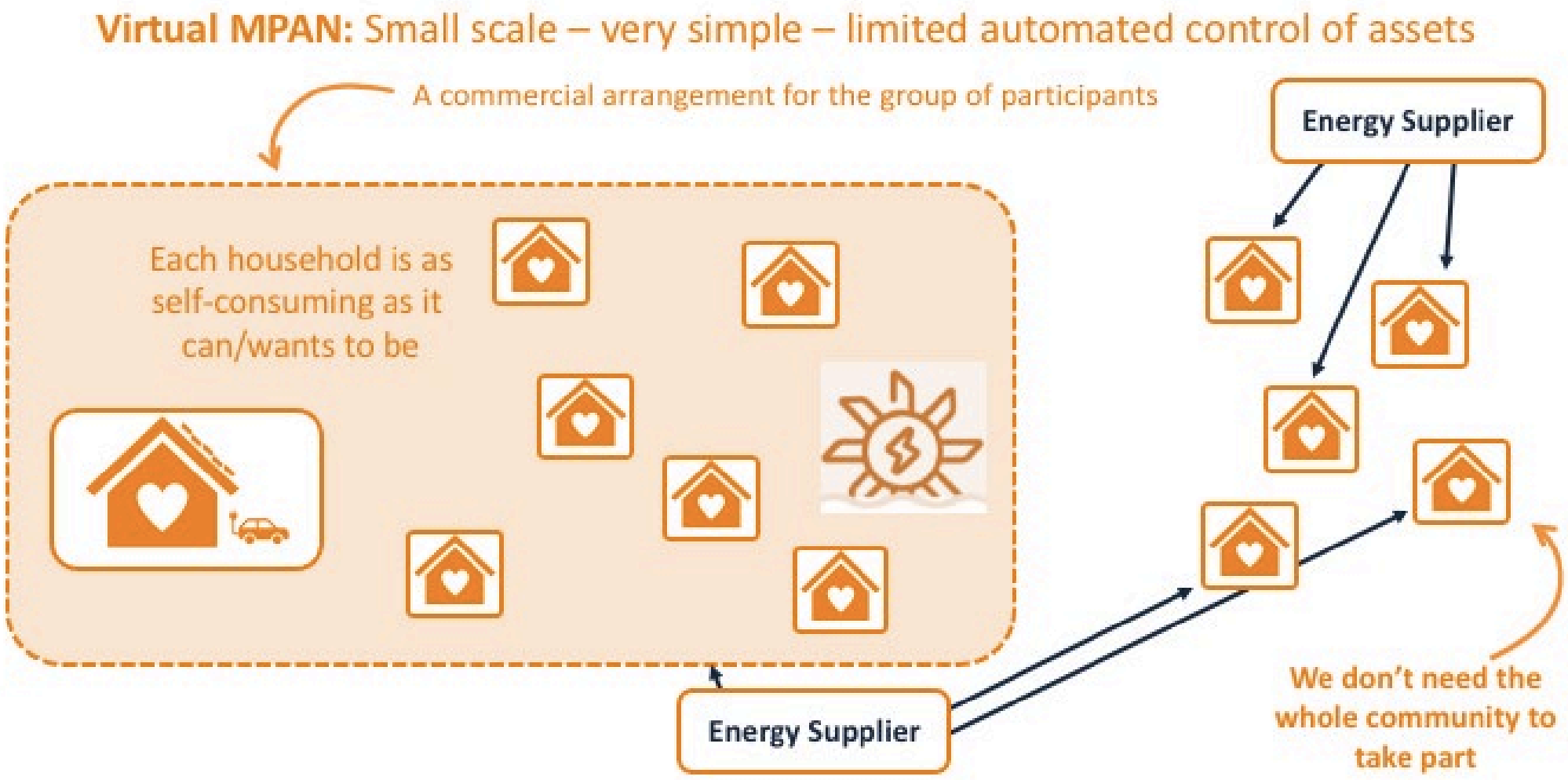
How much can you reduce your energy demand?

How much of your energy can you produce yourself?



Then we can work out how we all change to EVs and heat pumps

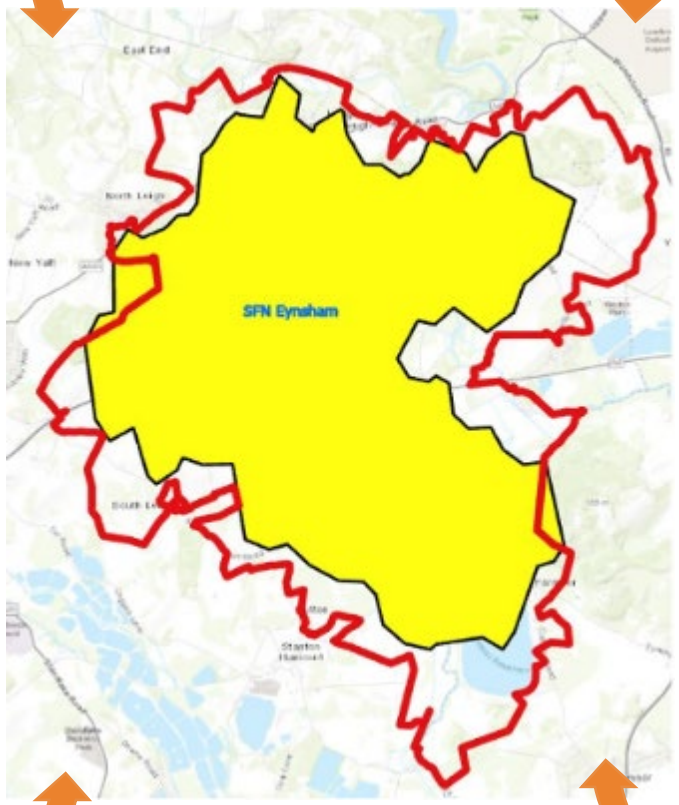
Becoming a system



Actual Places and People

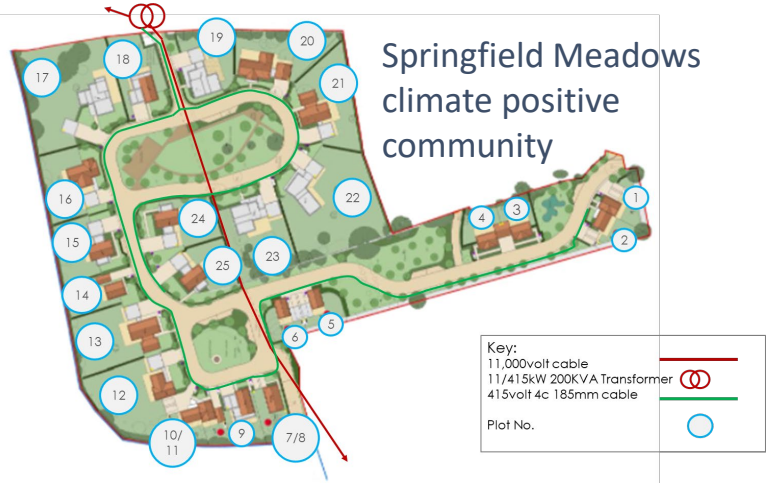
Deddington Smart heat pumps

Osney Supercharge Virtual MPAN



Eynsham Primary Substation
Local Area Energy Plan

Rose Hill ‘time of use tariff’



Springfield Meadows climate positive community

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Integration… not Segregation

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Maximising participation

Fair: who benefits, who pays and who decides?

Understandable: simple jargon free language

Relatable: importance of imagery, place and use cases

Easy: clear call to action and simple to deliver

Accessible: appropriate services, support, technology and data

Trusted: **role for a trusted convenor**

Supported: By DSOs, policies and regulations

Worth it: benefits outweigh cost of participation

What's the benefit to these participants?

Income from sale of flex – individually or collectively

Savings from avoided costs eg Time of Use Tariffs or improved energy efficiency

Increased usability, control and upgraded heating and technology

More efficient use of local networks means more space for heat pumps, EVs & PV

Tailored solutions to community issues - from air pollution to parking

Supporting the UK's journey to a zero carbon energy system

Taking Project LEO global

The International Community for Local Smart Grids (ICLSG) is a knowledge-sharing partnership of electricity network operators and community organisations.

- Led by Research Partners, the University of Oxford and Enel Foundation
- Combining ground-breaking research and solutions from partners' local smart grid projects
- Enabling a local net zero solution

- Network and community partners are being recruited.
  To learn more visit communitysmartgrids.org

TEPCO Power Grid

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INTERNATIONAL COMMUNITY FOR LOCAL SMART GRIDS

Any Questions?

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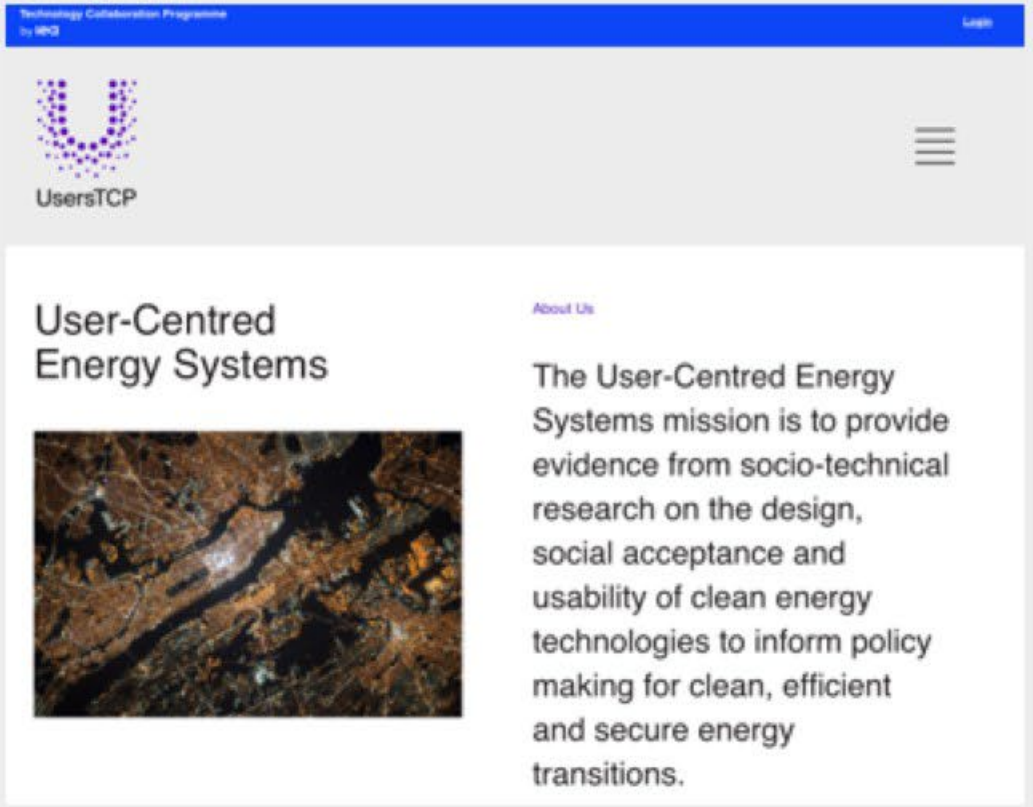
UsersTCP

userstcp.org



s.thomas@userstcp.org

Webinars

User-Centred Energy Systems Academy

Annexes

UsersTCP | Business Models and Systems

UsersTCP | Peer-to-Peer Energy Trading

UsersTCP | Social License to Automate

UsersTCP | Hard-to-Reach Energy Users

UsersTCP | Behavioural Insights Platform

UsersTCP | Gender and Energy

UsersTCP and the International Energy Agency (IEA)

- The **International Energy Agency (IEA)** is an intergovernmental organisation that works to shape a secure and sustainable future for all, through a focus on all fuels and all technologies, and analysis and policy advice to governments and industry around the world.
- To facilitate global cooperation on energy technology, the IEA created the **Technology Collaboration Programme (TCP)**. Today, the **UsersTCP** is one of 38 TCPs each focused on a different topic. Together, they connect thousands of experts across government, academia and industry in 55 countries dedicated to advancing energy technology research and application.
- The UsersTCP is **functionally and legally autonomous** from the IEA. Views and findings of the UsersTCP do not necessarily reflect those of the IEA.