STEPPING UP TO THE NATIONAL ENERGY CHALLENGE

we want energy to be clean, secure and affordable

The energy trilemma



Energy sustainability

responding to climate change by meeting customer demand with energy from low carbon sources. As well as the impact on our planet from climate change millions of people globally experience major respiratory problems due to air particulates from burning fossil fuels.



Energy equity ensuring that low carbon energy is affordable and available to all consumers



Energy security meeting current and future demand by building a robust infrastructure to generate and supply energy

Which means we need to deploy new technologies to generate renewable energy. BUT generating renewable energy is different from traditional generation in two important ways:





Opportunities

There are thousands of renewable energy generators, of all shapes and sizes, distributed throughout the country with electricity often generated close to where it is needed.



🔇 Challenges

Energy generation from weather is unreliable. This means that ensuring that the energy available from solar panels or wind turbines equals the national energy requirement is more difficult than turning on or off traditional power stations.

Smart Local Energy Systems (SLES)

Meet Smarthubs

One of the four government co-funded large-scale Smart Local Energy systems demonstration projects intended to help the UK learn more about how to create and support the growth of SLES. They will also discover what the full extent of their benefits may be.

It brings together innovative technology and business models to show how energy can be generated, stored and shared differently and in a way that can be scaled up to the national level.

The SmartHubs demonstrator project will include:

Local renewable energy generation



Low carbon heat solutions for homes and industrial sites



Energy storage at domestic, commercial and even larger scale

Aggregating energy generated and stored locally and providing a service to the National Grid in responding to customer demand



Optimised

electric vehicle

Operation as a system will provide: better control, reduced costs and emissions, improved resilience and efficiency

Who is involved?















Outcomes of the project





Net Zero Goals The UK has committed to reducing greenhouse gas emissions to net zero by 2050, SmartHubs will help scenario planning across the country.



Replicability develop innovative business models and data and modelling work to give guidance on how other SLES can be replicated on a UKwide scale.



Skills boost Uncover how new combinations of technologies willgenerate demand for new skills and products in the UK.



Demonstrate

show how low carbon heat and transport can successfully interact with a smart local energy system.







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