

Climate Change for Local Councils: Innovations, Developments and Practical Actions APSE Policy Seminar 23rd January 2020

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 **@ClimateBex**

Energy Services supports organisations to switch to renewable and low carbon energy solutions

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- ❑ Carbon Neutrality and Energy/Sustainability Strategies
- ❑ New Technologies
- ❑ Midlands Energy Hub

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1. Carbon Neutrality and Energy Strategy

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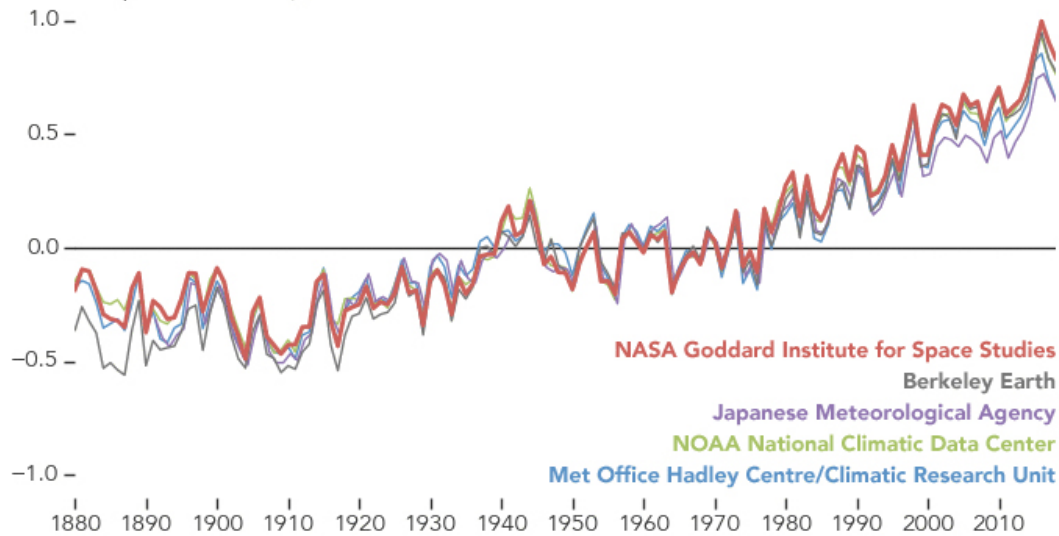
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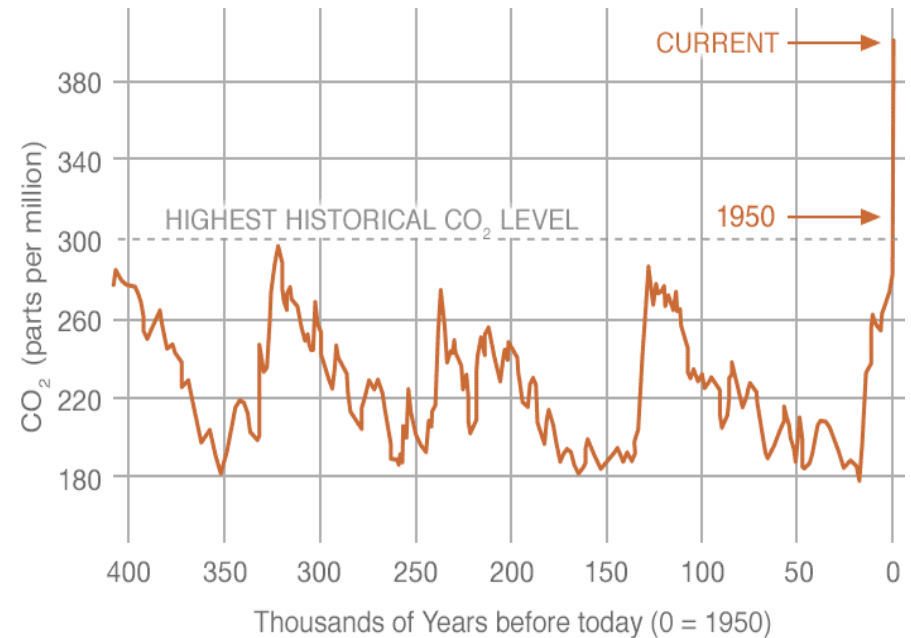
Climate change and sustainability

A World of Agreement: Temperatures are Rising

Global Temperature Anomaly (°C)



NASA global temperature trend using 5 different organisational methodologies
<https://climate.nasa.gov/scientific-consensus/>



NASA/NOAA proxy (Indirect) measurements of CO2 using reconstruction from ice-cores. <https://climate.nasa.gov/vital-signs/carbon-dioxide/>

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Carbon Neutrality

Nottingham is aiming to become a carbon neutral city by 2028, meeting this target by reducing all carbon dioxide emissions from direct and indirect energy use to net-zero.

<https://www.nottinghamcity.gov.uk/cn2028>

Nottingham
2028



A SUSTAINABLE APPROACH FOR A CARBON NEUTRAL NOTTINGHAM



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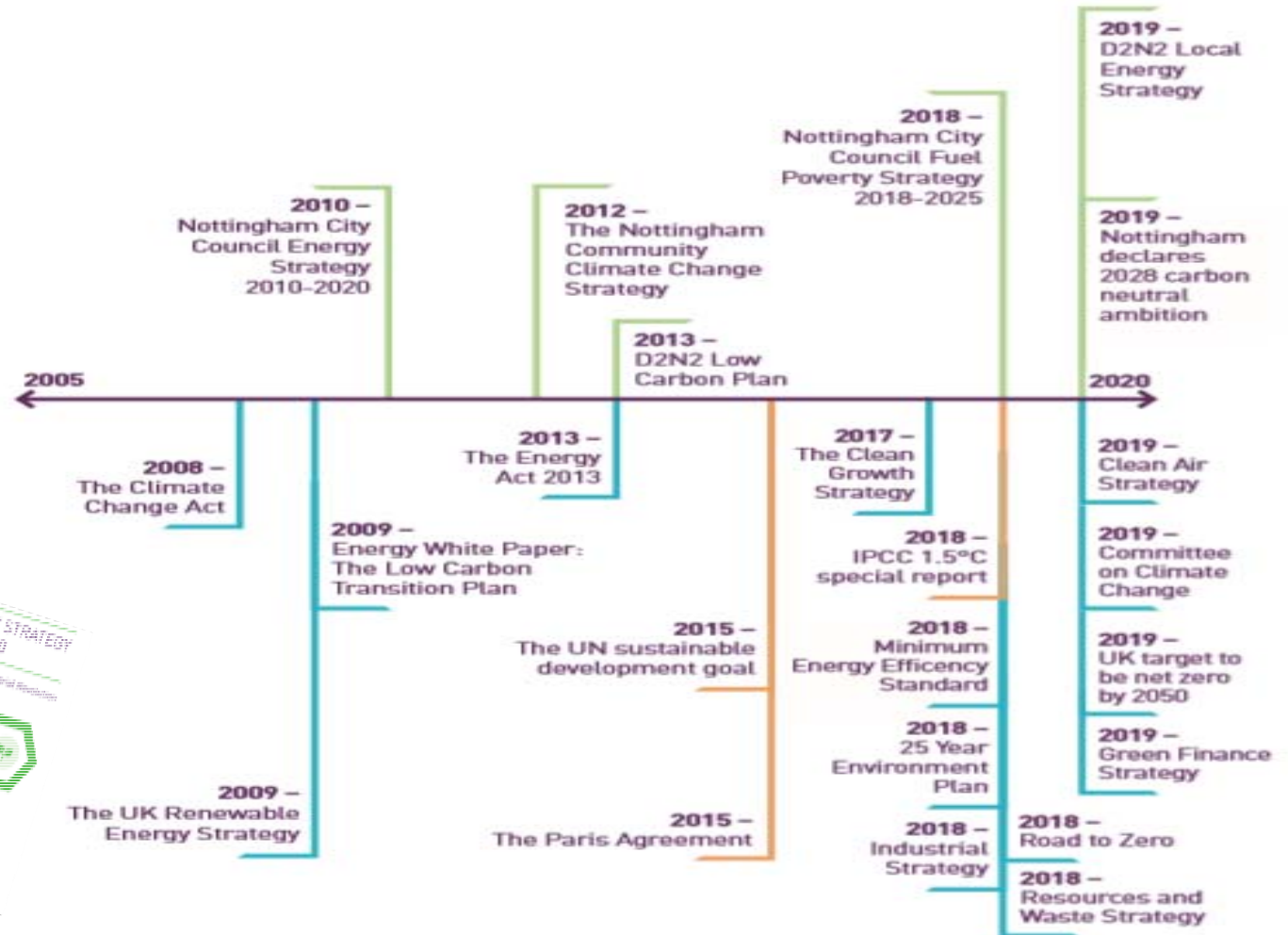


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Policy and Strategy

- KEY**
- Regional and local policies
 - National policies
 - International policies



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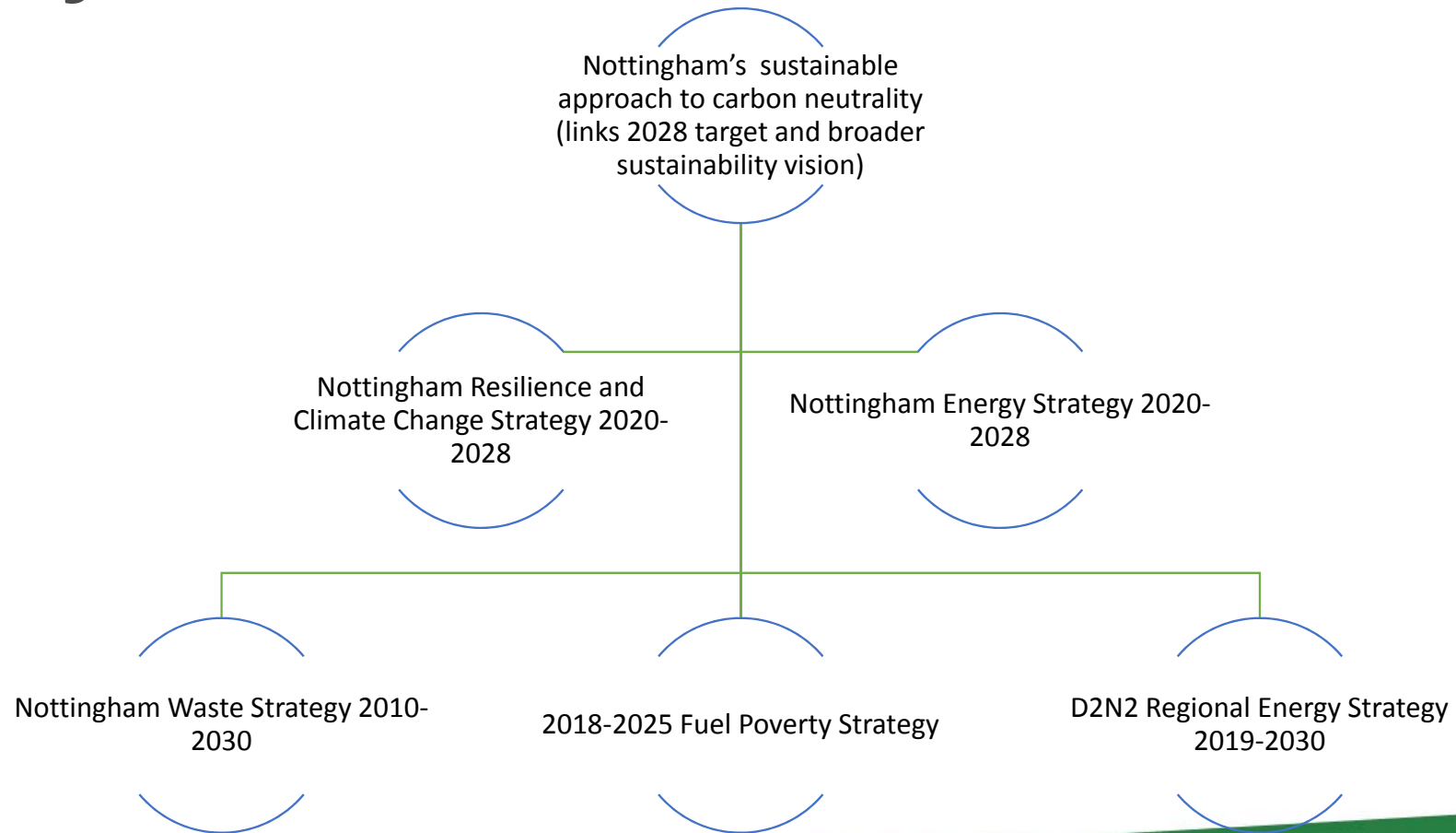
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Policy Overview



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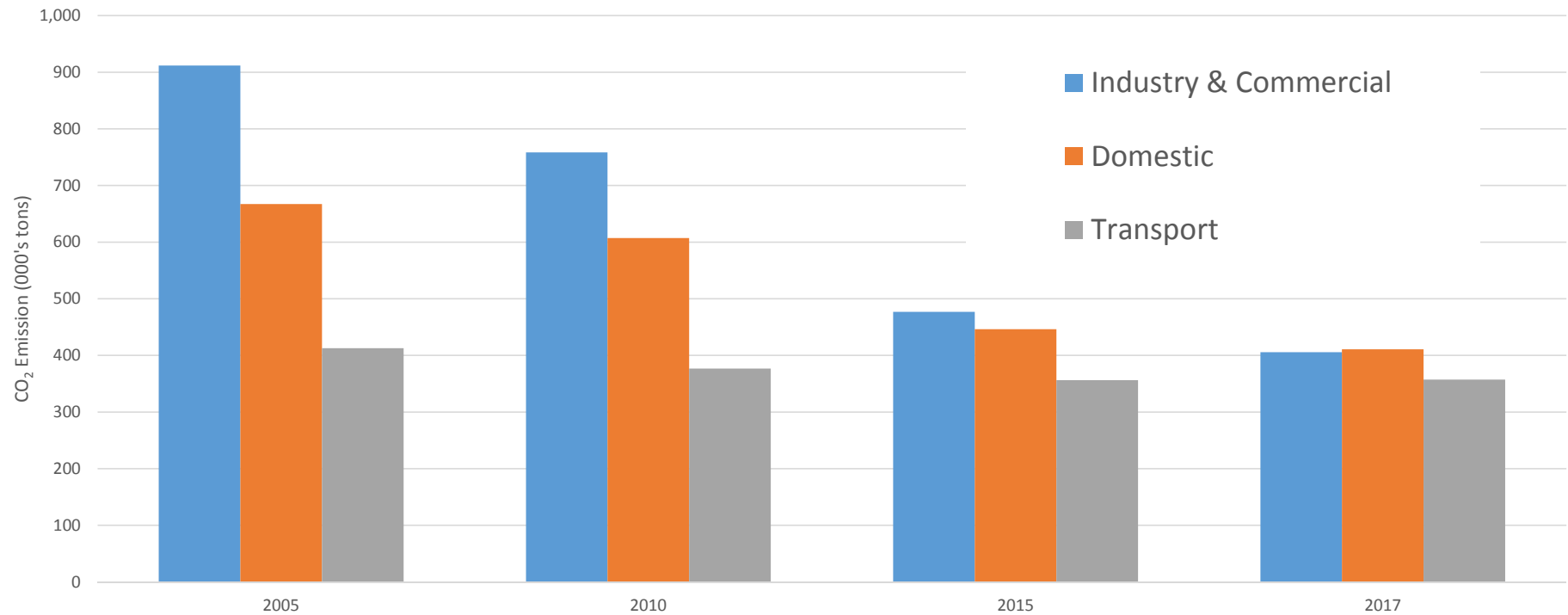
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Nottingham Carbon Emissions Breakdown



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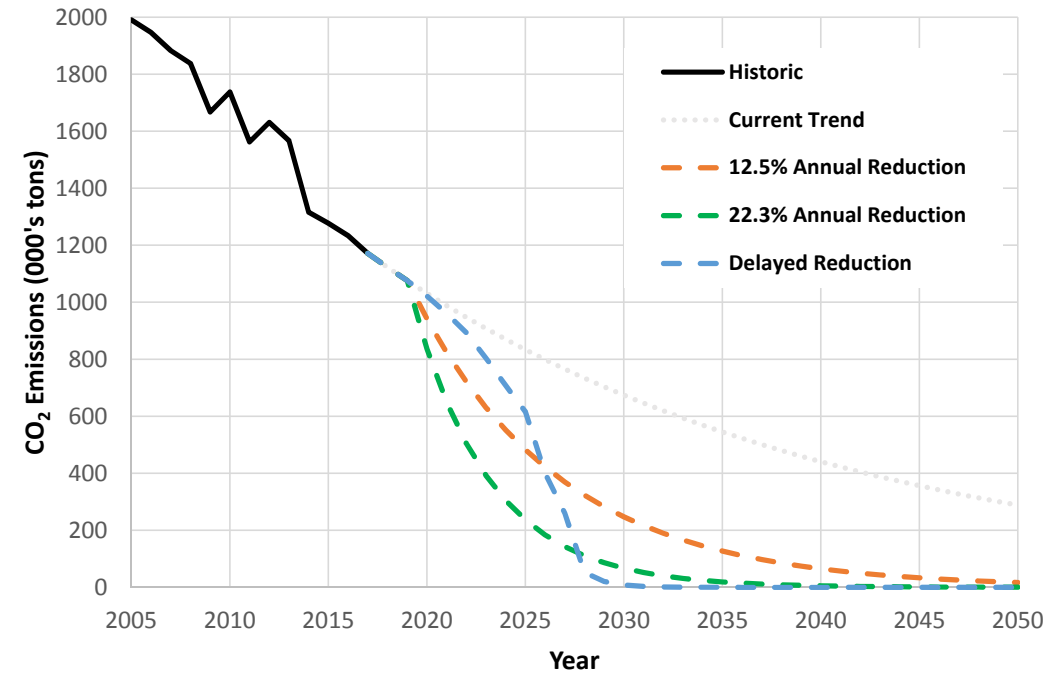
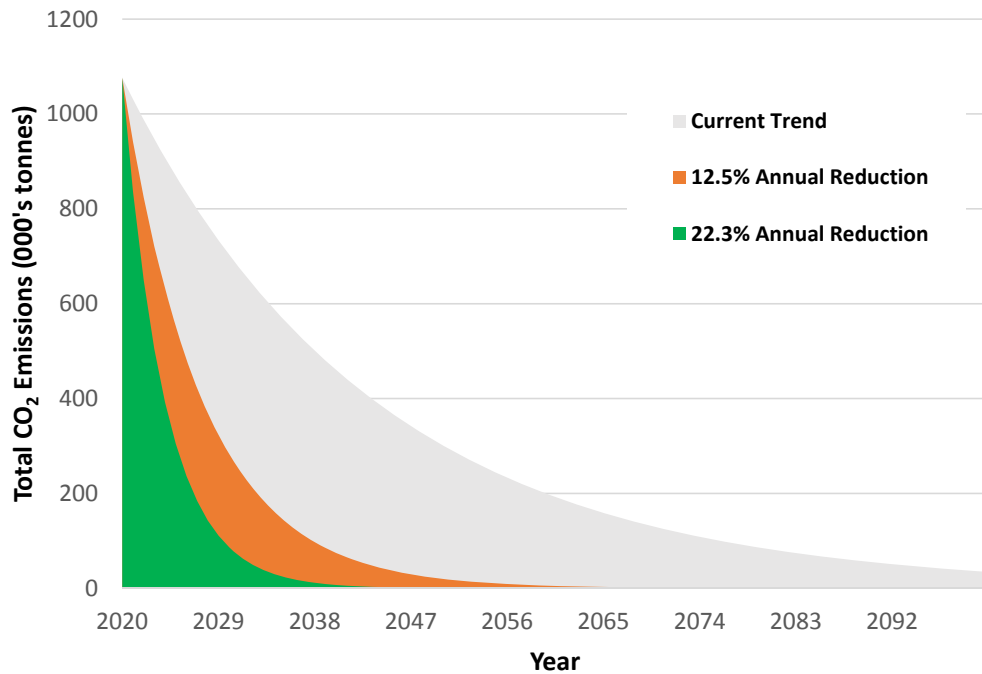
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Nottingham's Carbon Reduction Trajectory



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2. Technology Case Studies

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Solar Carports

Utilise Car
Parking

Steel
Structure

Price Per
kWp (£900)

Harvey Hadden

- ❑ Total kWp: 67
- ❑ Number of panels: 448
- ❑ Area: 400 m²
- ❑ Estimated generation: 51,000 kWh
- ❑ Carbon savings (tonnes): 29
- ❑ Percentage reduction in imported electricity: up to 30%



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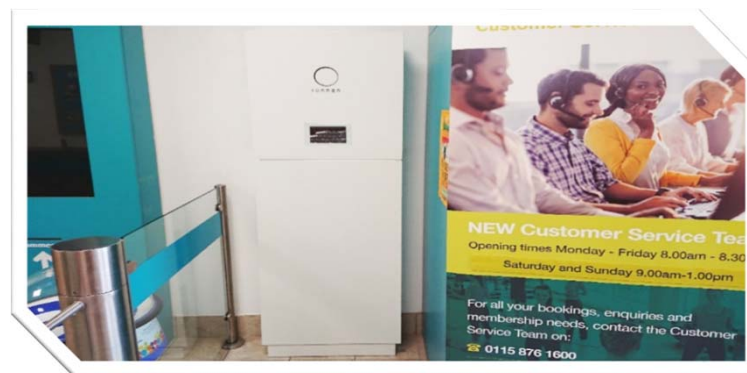


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Battery Storage

- ❑ Sonnen Battery Storage Trial
- ❑ Software
- ❑ Grid trading
- ❑ V2G Pilot – Clean Mobil Energy



Ken Martin Leisure Centre

- ❑ Total kWp: 88.5
- ❑ Number of panels: 354
- ❑ Area: 400 m² coverage: 520
- ❑ Estimated generation: 710,000 kWh
- ❑ Carbon savings (tonnes): 376
- ❑ Percentage reduction in imported electricity: up to 35%



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Fuel Cell Programme

- ❑ Replacing gas boiler systems
- ❑ Improved air quality
- ❑ Lower energy consumption
- ❑ Annual generation (heat and power): 20,000kWh
- ❑ Annual carbon savings (tonnes): 5.7
- ❑ Decreases carbon emissions
- ❑ New innovative technology
- ❑ Funded by DEFRA (Department for Environment, Food and Rural Affairs)



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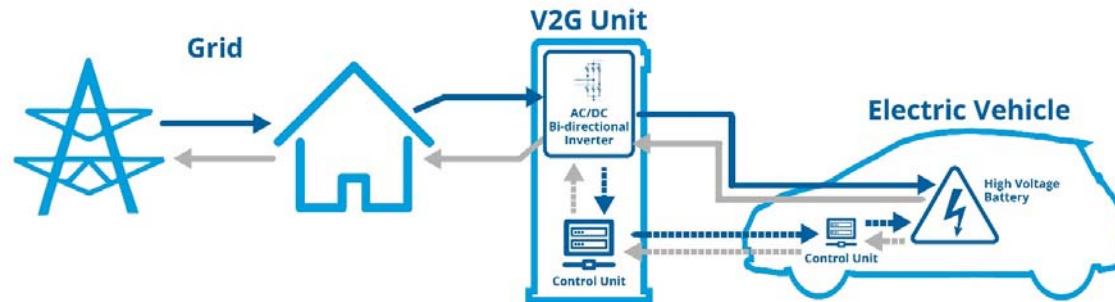
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Vehicle 2 Grid

Clean Mobil Energy

- ❑ 9 Partners in 6 Countries
- ❑ Led by Arnhem, Netherlands
- ❑ Transport/Energy Relationship
- ❑ 678kWh Lithium Ion Battery
- ❑ Solar PV
- ❑ 40 V2G Chargers



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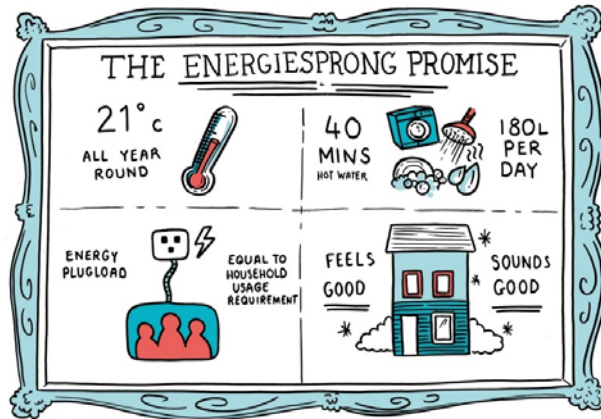
Energiesprong

Working in partnership



Desirable, warm, affordable homes for life.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 646511



Net Zero Energy – Homes fit for 2050 carbon standards.

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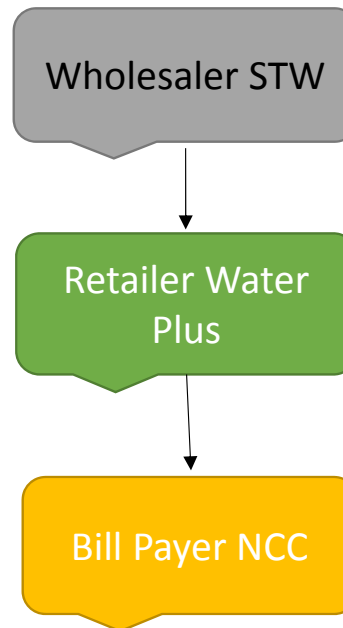
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Water Self Supply

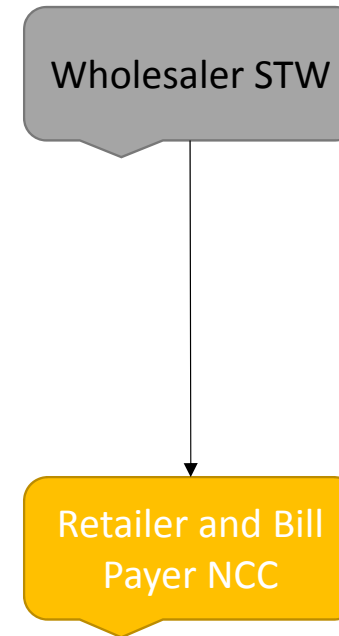
What's the opportunity?

- De-regulation of commercial water market
- Becoming self-supply licensee
- Billing our own sites
- Financial saving
- No change to domestic properties

Previous Process



New Process



THE INNOVATION GATEWAY

An alliance of organisations
working in partnership

to reduce the cost and risk
of adopting high-impact innovation



3. Midlands Energy Hub

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**Stoke-on-Trent
& Staffordshire**
Enterprise Partnership

**Greater
Lincolnshire**
Local Enterprise Partnership

 **Worcestershire**
Local Enterprise Partnership

D2N2
Derby
Derbyshire
Nottingham
Nottinghamshire

Marches
Local Enterprise Partnership
Herefordshire - Shropshire - Telford & Wrekin

llep
Leicester & Leicestershire
Enterprise Partnership

CWLEP Coventry & Warwickshire
Local Enterprise Partnership

Black Country LEP

**Greater Birmingham
& Solihull**
Local Enterprise Partnership

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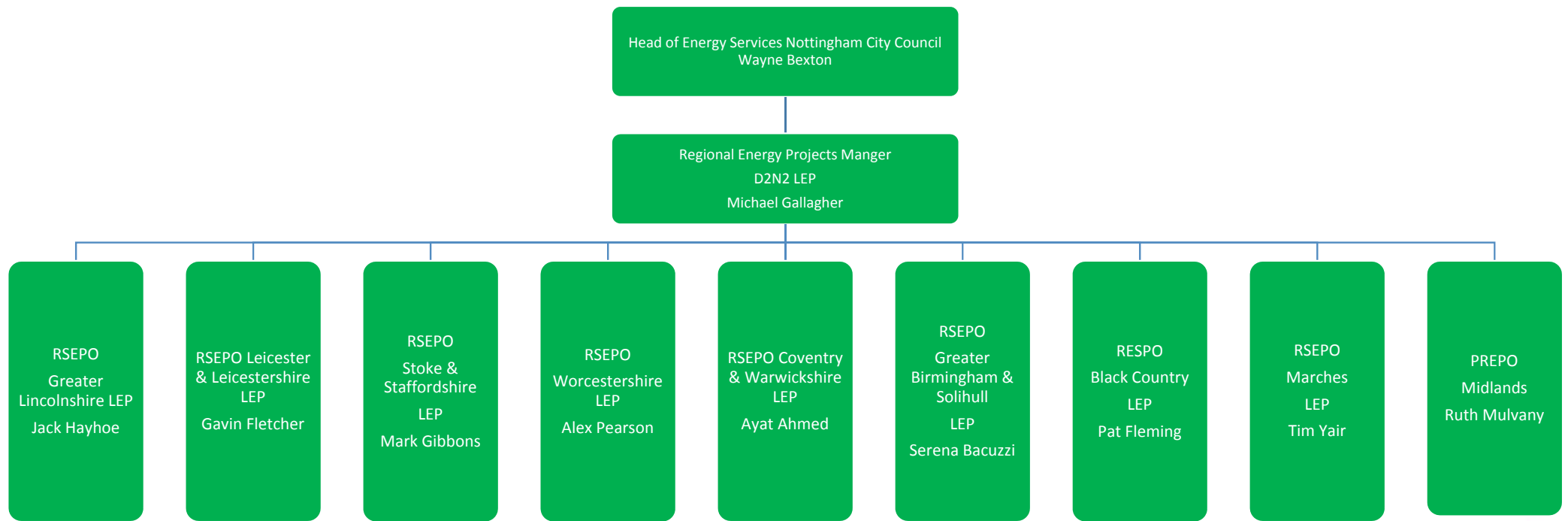


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The Midlands Energy Hub Regional Energy Team



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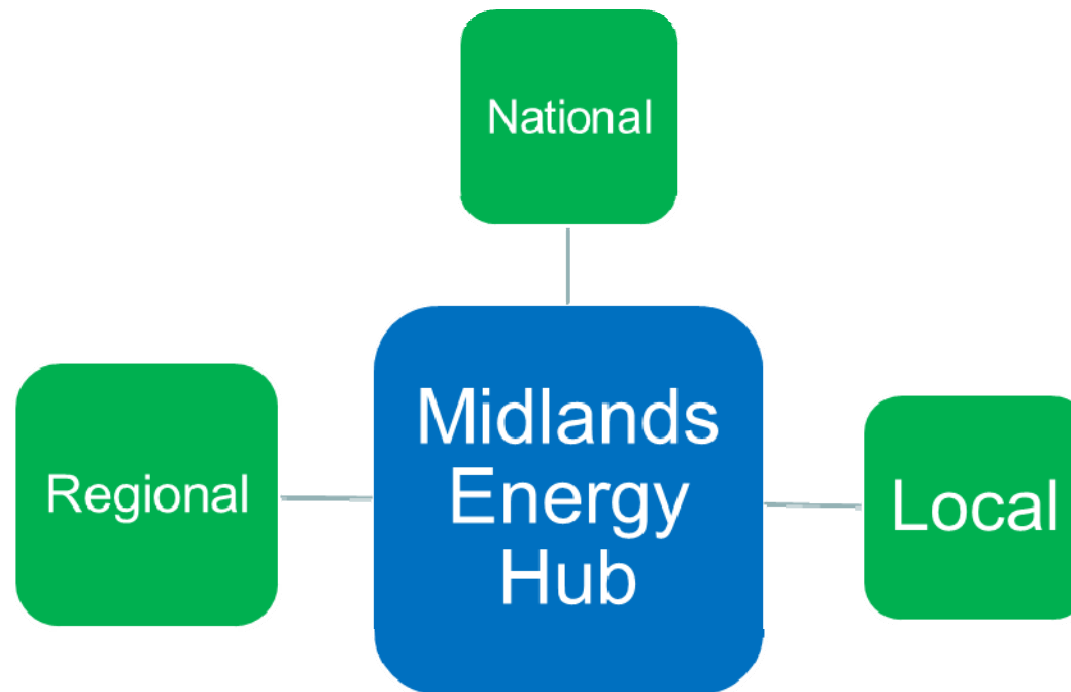
Midlands LEPs Energy Strategies

➤ These Energy Strategies:

- Identify energy opportunities and challenges across each LEP area, for:
 - **Power**
 - **Heat**
 - **Transport**
- Set out energy demand and carbon emissions trajectories
- Provide a focus for low carbon energy projects
- Assess the economic potential associated with this transformation, and inform the Local Industrial Strategy – important for future funding.



The Midlands Energy Hub Approach



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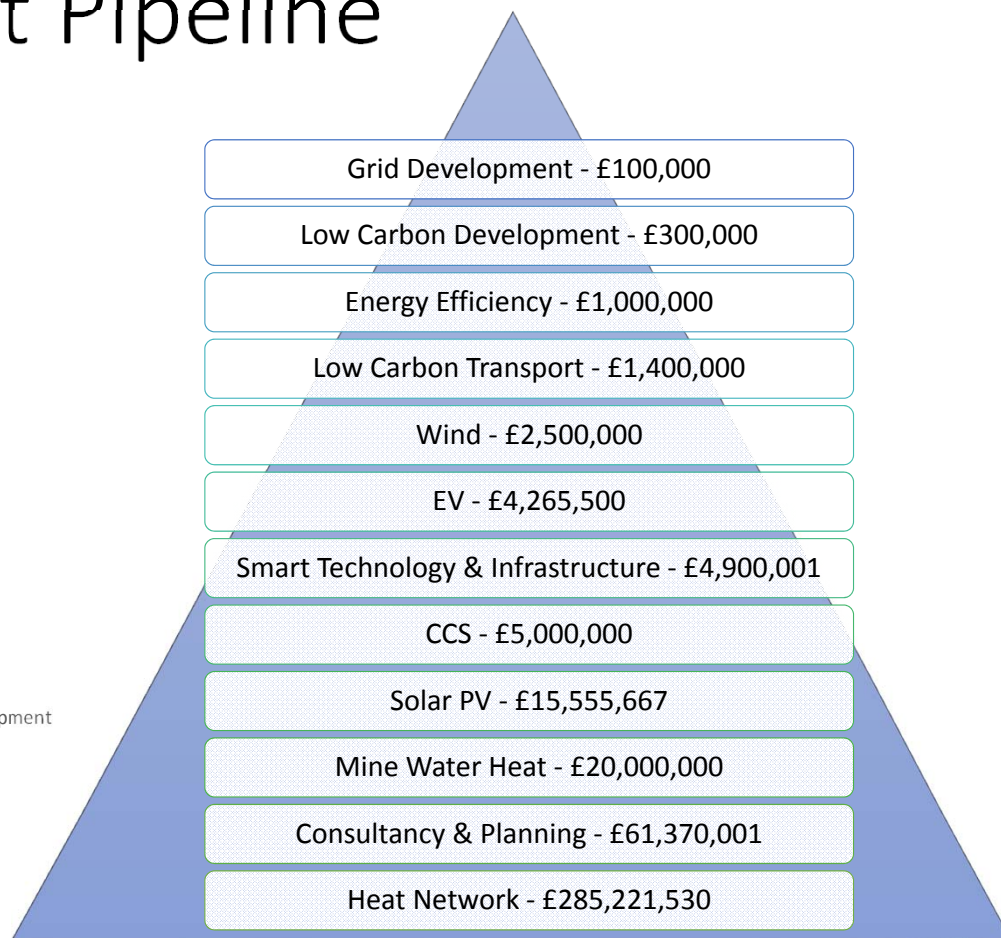
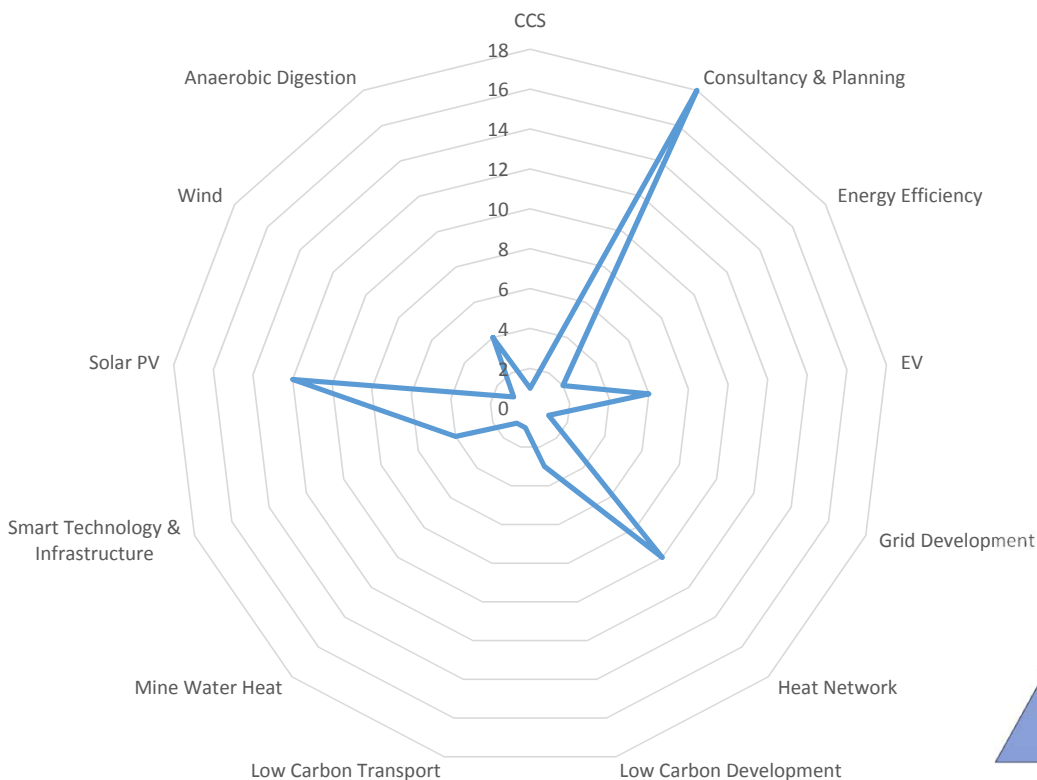
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Project Pipeline

Energy Projects Spread



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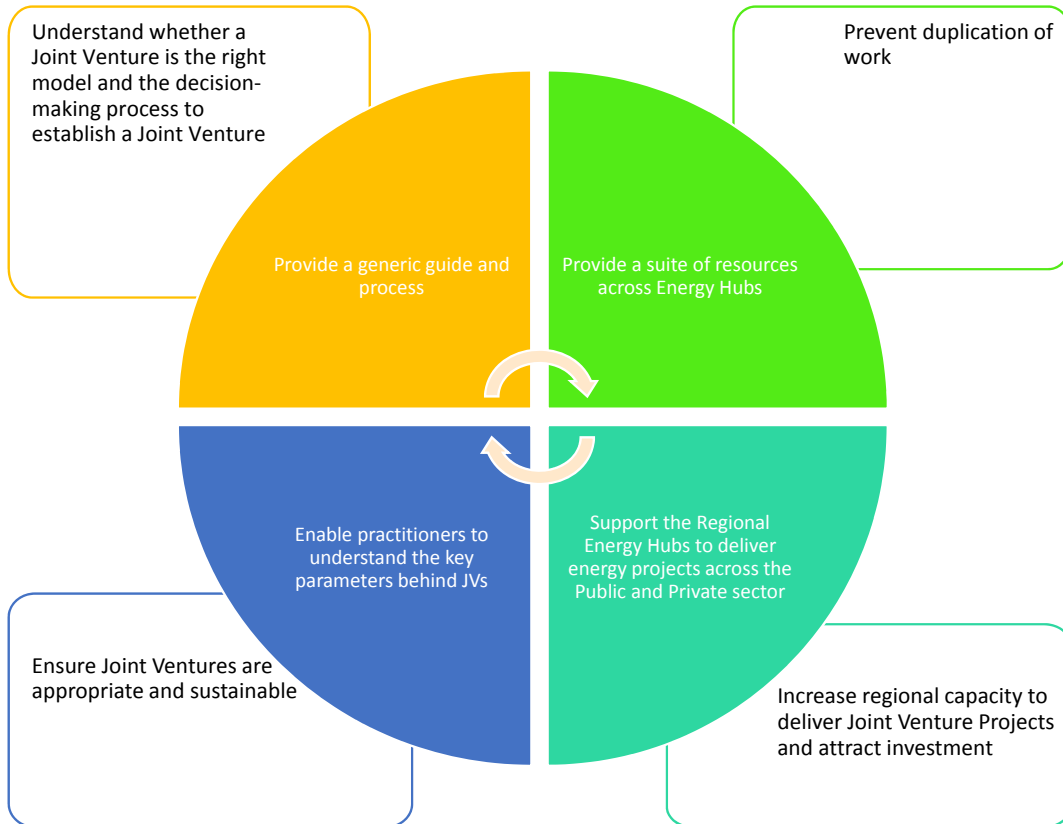


Rural Community Energy Fund

- Midlands Energy Hub administer £1.8 million RCEF fund for the Midlands.
 - Grants available for rural, community lead projects
 - Stage 1 feasibility grants < £40,000
 - Stage 2 grants < £100,000 for business development and planning of feasible schemes.
- RCEF available to communities in England that represent:
 - A rural community of fewer than 10,000 residents; or
 - A community with more than 10,000 residents, but are within a local authority area which is classified by the Office of National Statistics as predominantly rural



Joint Venture - Overview



Provides a guide to:

- Securing project investment
- Enabling project development
- Enhancing and accelerating delivery of wide range of energy infrastructure projects
- Integration of energy projects (generation, grid constraints, mobility, heat and in particular, digital solutions)

Considerations & Questions?

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