



Nottingham
City Council

Councillor Sally Longford

Deputy Leader of Nottingham City Council
Portfolio Holder Energy, Environment and
Democratic Services

Nottingham Partners Event
13th November 2020

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

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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

Nottingham 2028 Action Plan



Key Themes:

- Transport
- The Built Environment
- Energy Generation
- Waste and Water
- Consumption
- Carbon Removal
- Resilience and Adaptation
- Ecology and Biodiversity

Available here: www.nottinghamcity.gov.uk/CN2028

Transport

Opportunities and Benefits

- Improving air quality.
- Reducing congestion.
- Creating more vehicle free public spaces to enjoy.
- Making cycling safer and active healthier lifestyles easier.
- Making it cheaper and quicker for everyone to get around.

Built Environment

Opportunities and Benefits

- Reducing energy bills for residents and local businesses.
- Upgrading the quality of housing stock, making homes healthier and creating new sustainable homes.
- Improving the quality of commercial premises, helping make more productive and better working environments.
- Improving air quality by reducing emissions of NOx from gas boilers.
- Creating new skilled employment and commercial opportunities within the sustainable construction sector.

Energy

Opportunities and Benefits

- Increased energy security through local low carbon generation
- Creating a global reputation as a leader in low carbon energy research and development
- Attracting investment into the City's sustainable infrastructure
- Reducing the cost of energy to local businesses and communities.

Waste and Water

Opportunities and Benefits

- Keeping the City clean and free from waste
- Creating new business opportunities and sustainable employment in the circular economy
- Reducing the cost of more sustainable waste disposal options to businesses and tax payers
- Make household savings, especially on food bills
- Maintaining stability and security of water supply to the City..

Consumption

Opportunities and Benefits

- Developing a vibrant and diverse sustainable food economy
- Build community knowledge, sharing, skills and resources
- Tackling food poverty and improve access to health affordable food
- Improving diet-related ill-health.
- Reduce the financial strain of consumption

Resilience and Adaptation

Current Activities, Actions and Programmes

- Creating new green and blue infrastructure projects to help defend properties from local flood events.
- Work to protect 1,000 more properties from the risk of flooding

Carbon Removal

Current Activities, Actions and Programmes

- Planting up to 50,000 trees
- Diversifying amenity grass areas to create wildflower meadows, creating Bee Friendly Habitats in every Ward
- Introducing an integrated weed management and planting plan to reduce pesticide use



Ecology and Biodiversity

Opportunities and Benefits

- Enhance biodiversity
- Increase trees for shade and lower the heat of urban areas
- Increase carbon storage by providing habitats
- Sustain, increase and enhance a network to build resilience of species and habitats
- Reduce flooding
- Build on research and knowledge of how Nottingham's open space network can contribute towards

Engagement

- Extensive consultation, using local networks and shifting conversations
- Action plan builds in partnership and engagement
- Establish brand and momentum
- Significant co-benefits to be realised
- Gain expertise, reach wider audiences
- Crowd-funding and sourcing

 **@nttmenergycity**
@CN2028

Listening to and involving citizens

- Tailoring messages, benefits of action
- Diversity in voice and representation
- Moving from consultation to co-creation
- Improving carbon literacy & awareness
- Empowering and enabling change



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Wayne Bexton Head of Energy Services & Chair of D2N2 Energy Board

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13th November 2020

 @ClimateBex

 @nttmenergycity



CN28
Carbon Neutral Nottingham 2028

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



1. Carbon Neutrality and Energy Strategy

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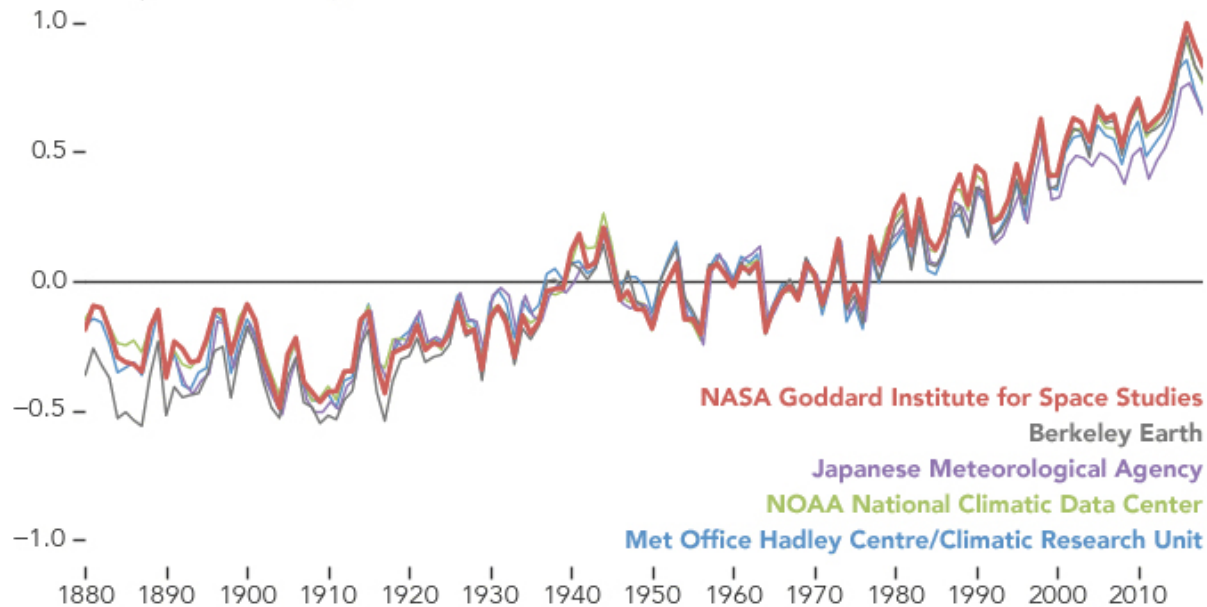
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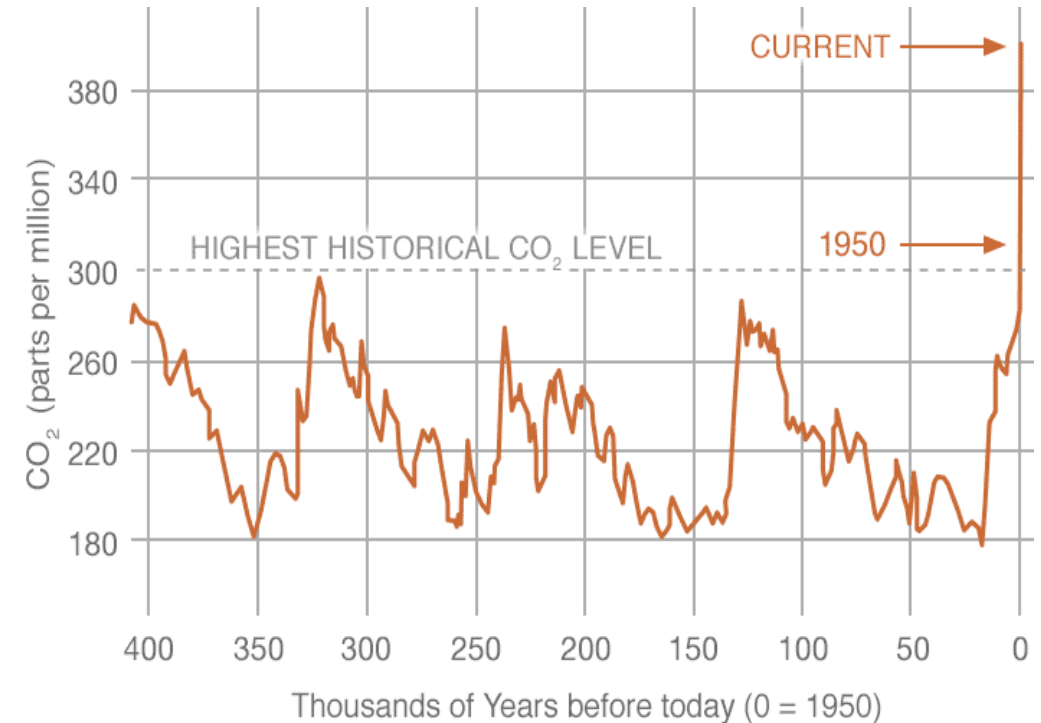
Climate change and sustainability

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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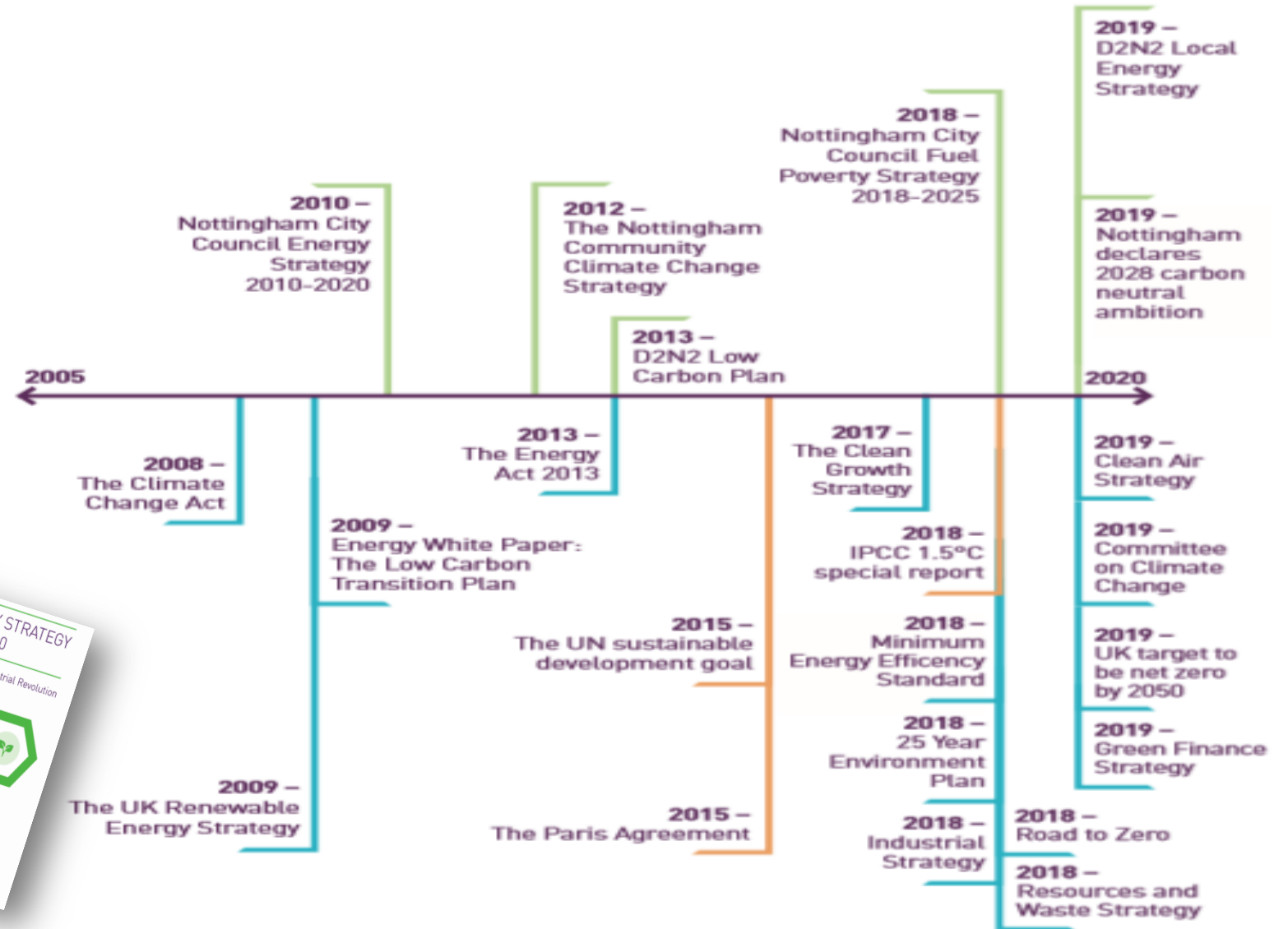
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Policy and Strategy

KEY

- Regional and local policies
- National policies
- International policies



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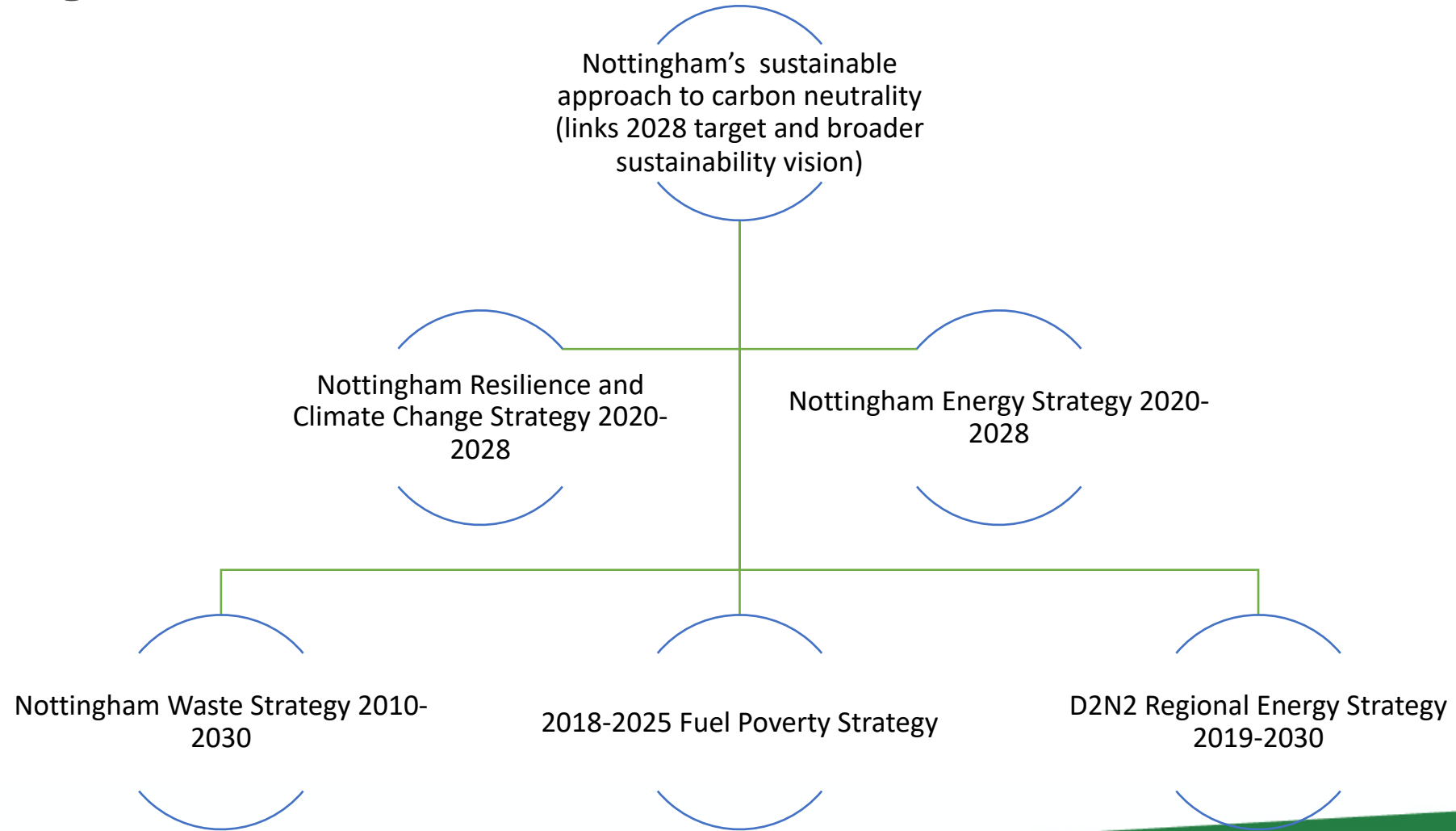
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Policy Overview



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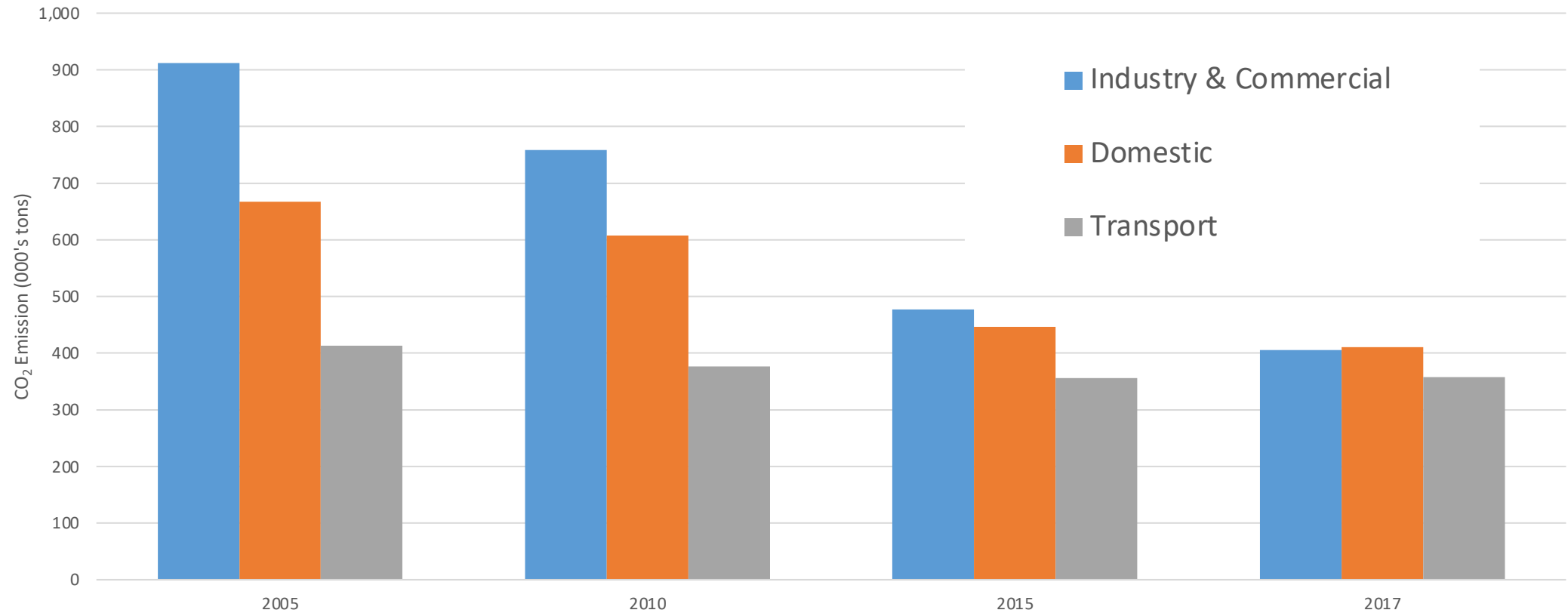
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Nottingham Carbon Emissions Breakdown



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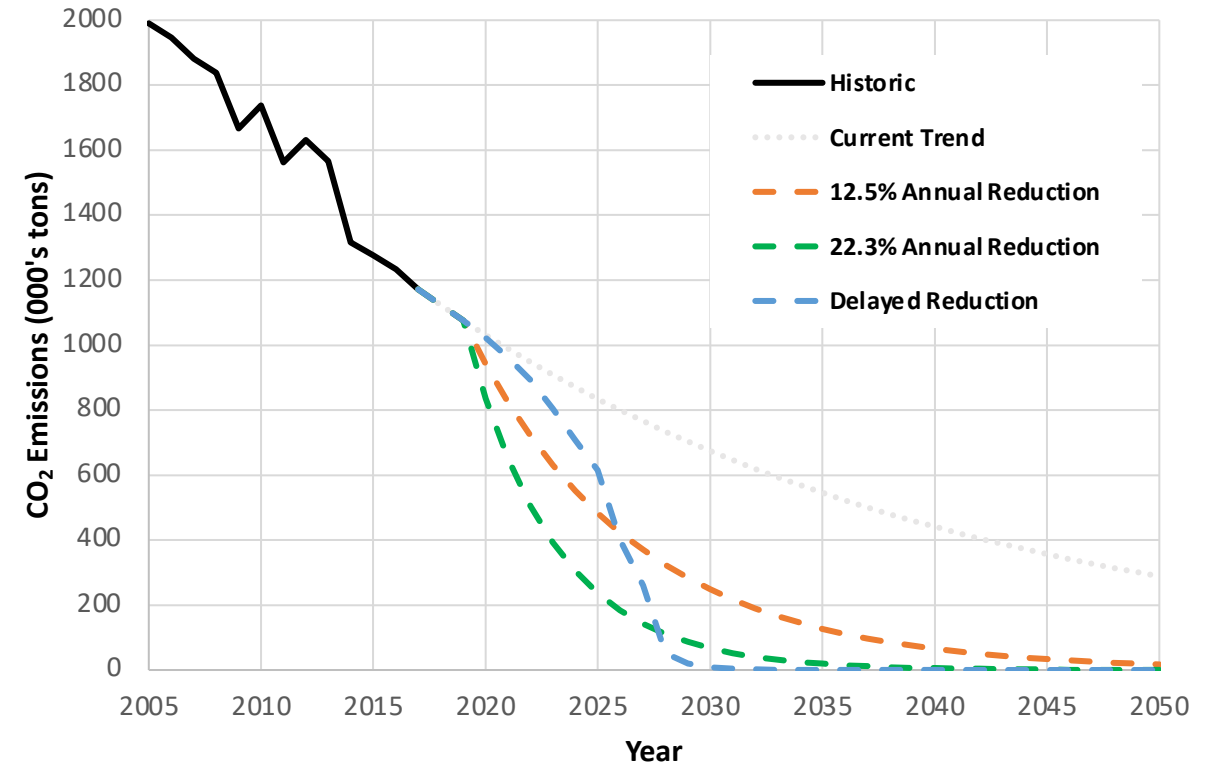
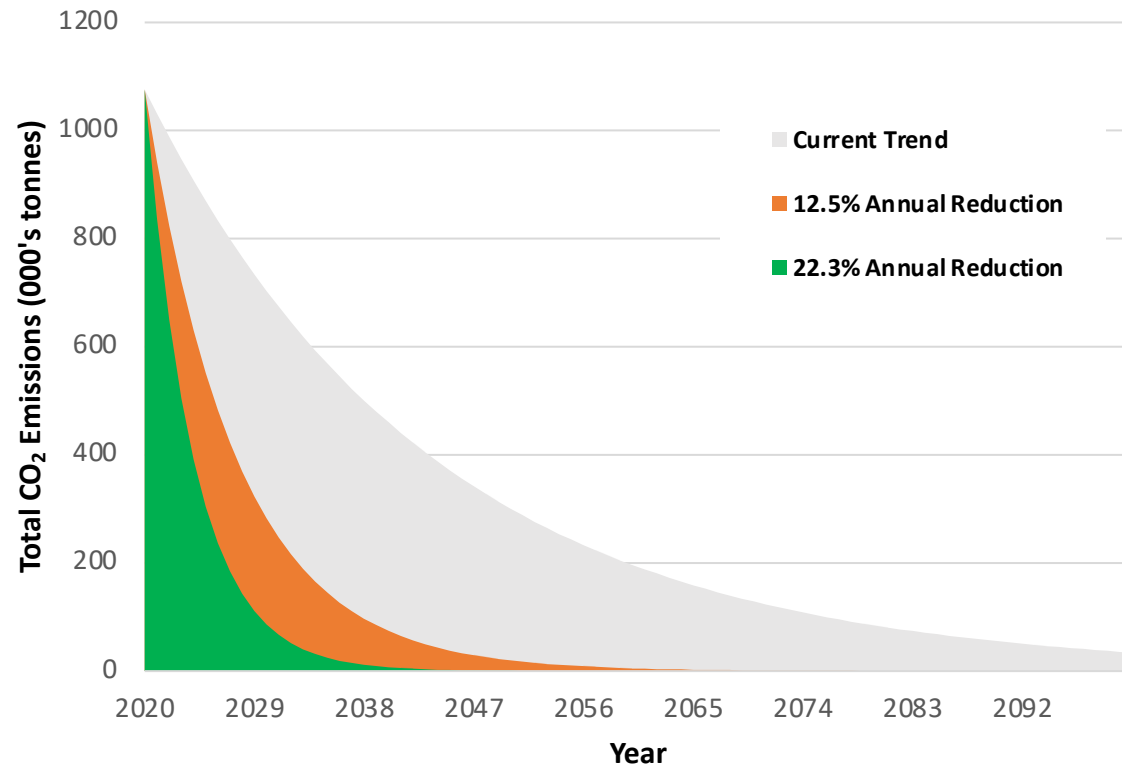
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Nottingham's Carbon Reduction Trajectory



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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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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%



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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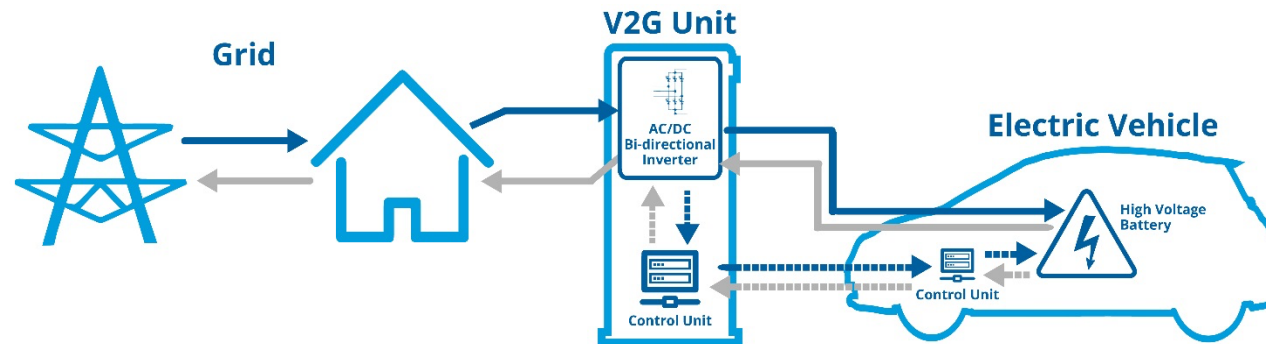
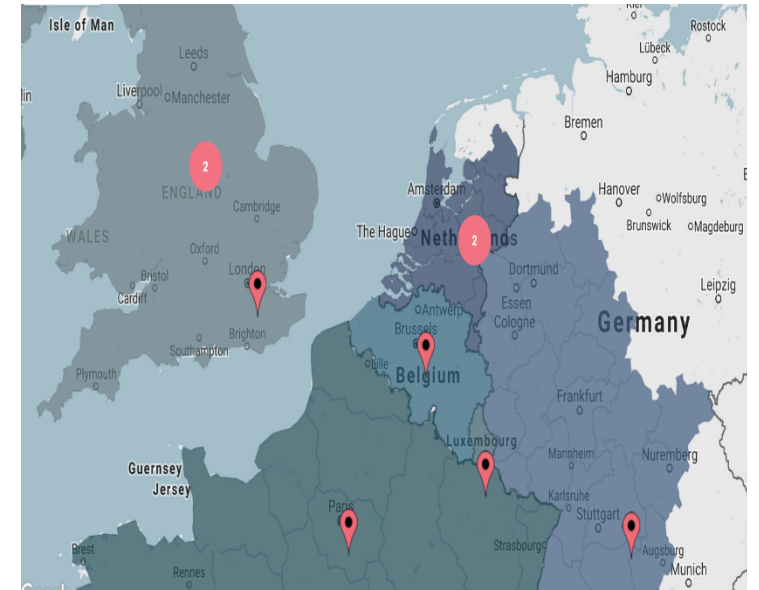
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Vehicle 2 Grid

Clean Mobil Energy

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

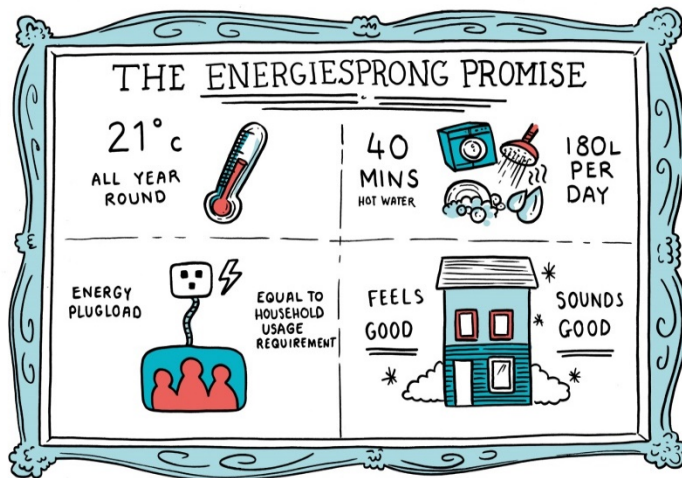


Energiesprong

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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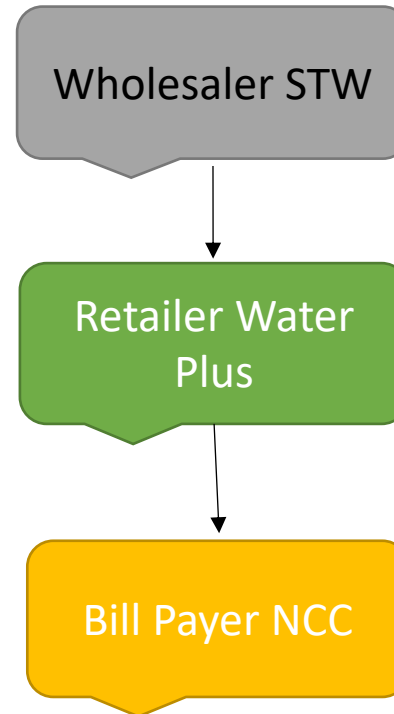
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Water Self Supply

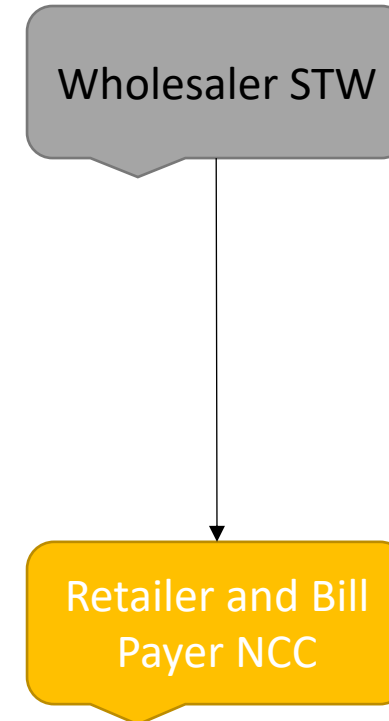
What's the opportunity?

- 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

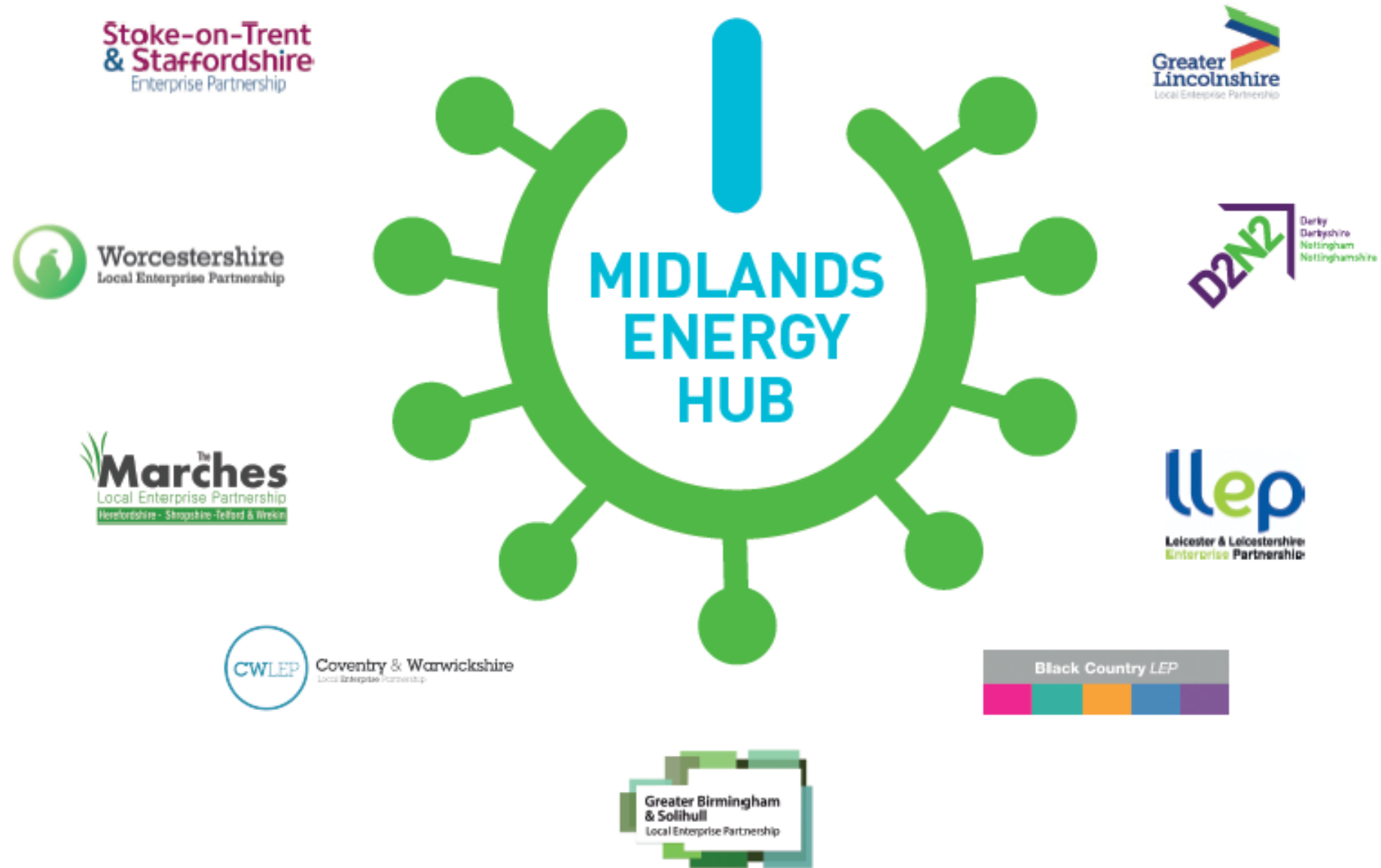
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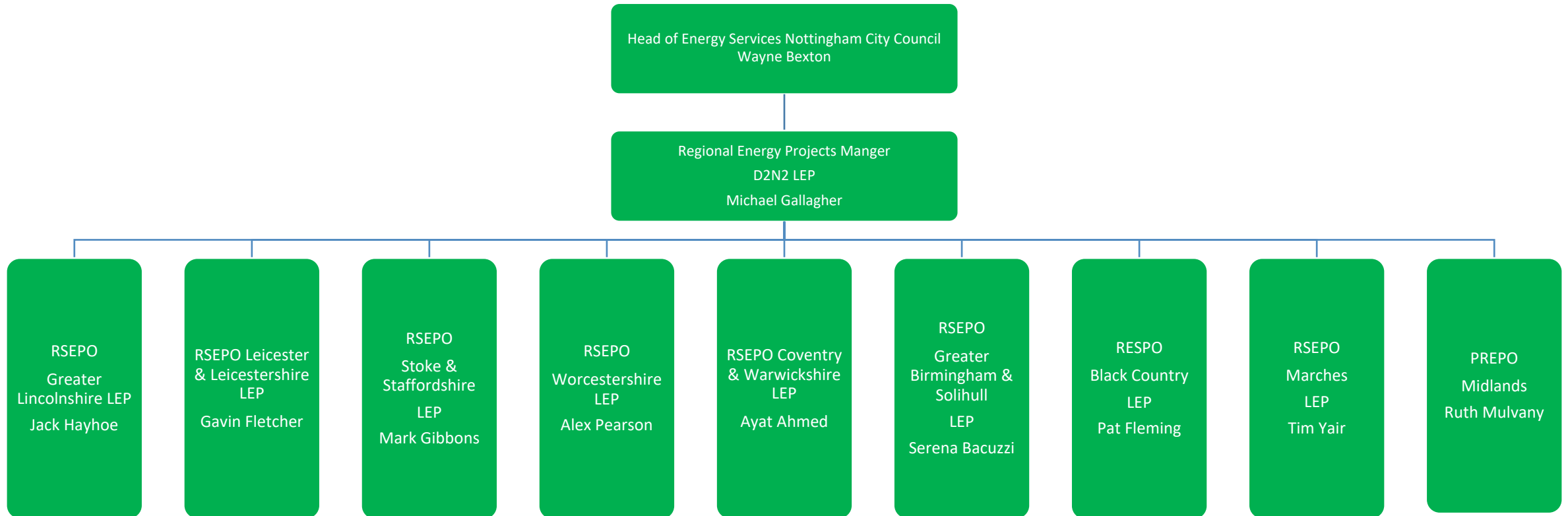


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The Midlands Energy Hub Regional Energy Team



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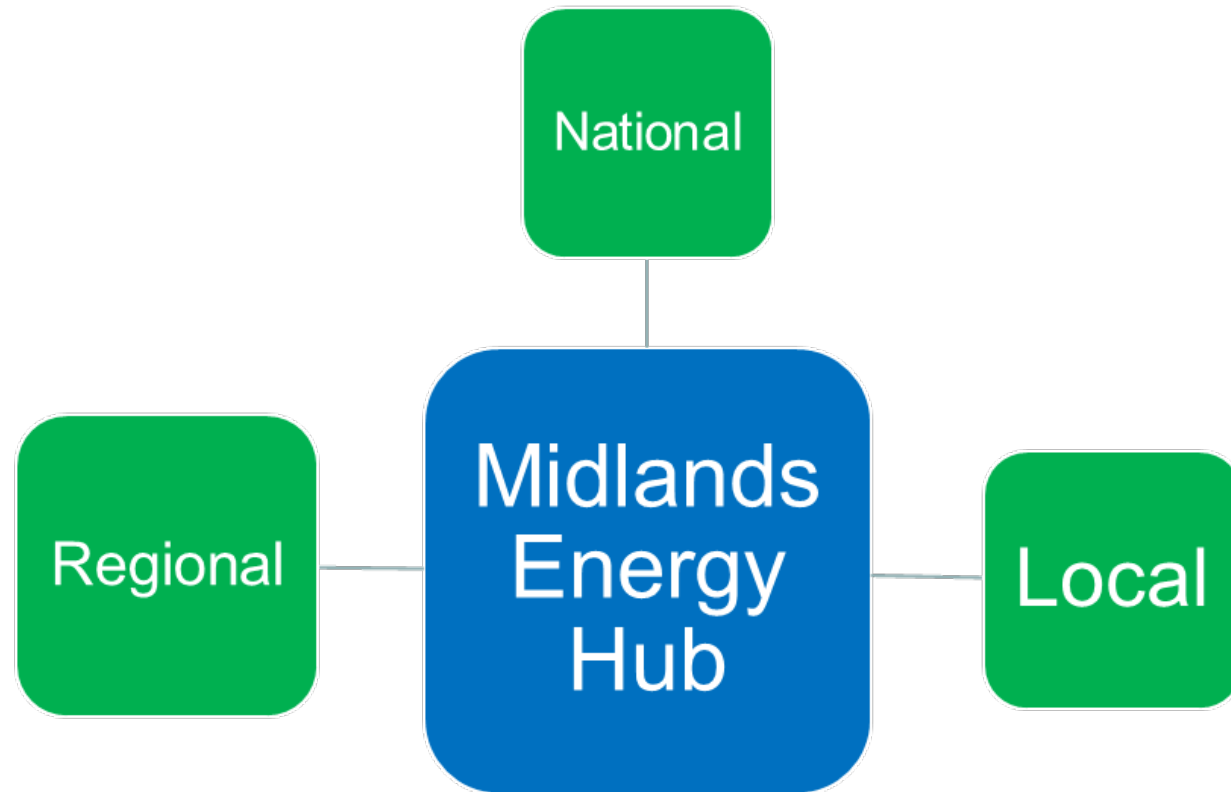
Midlands LEPs Energy Strategies

➤ 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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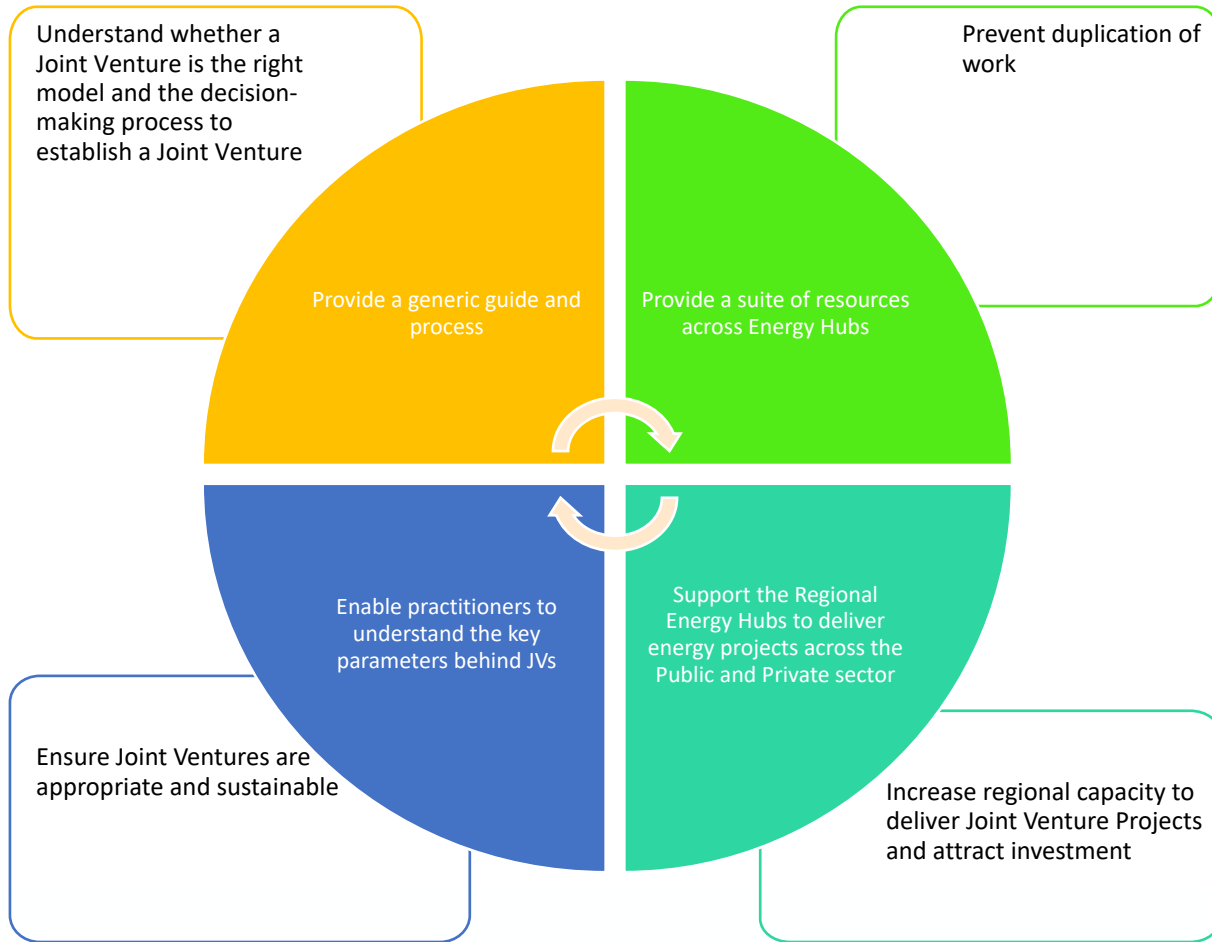


Rural Community Energy Fund

- 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?

Wayne Bexton – Head of Energy Services

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