Appendix 2

DRAFT ENERGY STRATEGY OVERVIEW

Colin Blackburn

Assistant Director Housing, Infrastructure & Planning

Sheffield City Region

BACKGROUND & CONTEXT

Climate Change Act 2008

Legislating for a 80% reduction in GHGs by 2050.

Paris Agreement 2015
Limiting warming to 2°C above pre-industrial levels – but ambition to limit to 1.5°C

INDUSTRIAL STRATEGY

A Clean Growth Grand Challenge was included in the UK Industrial Strategy leading to the Clean Growth Strategy in 2017.

Climate Change Act 2008

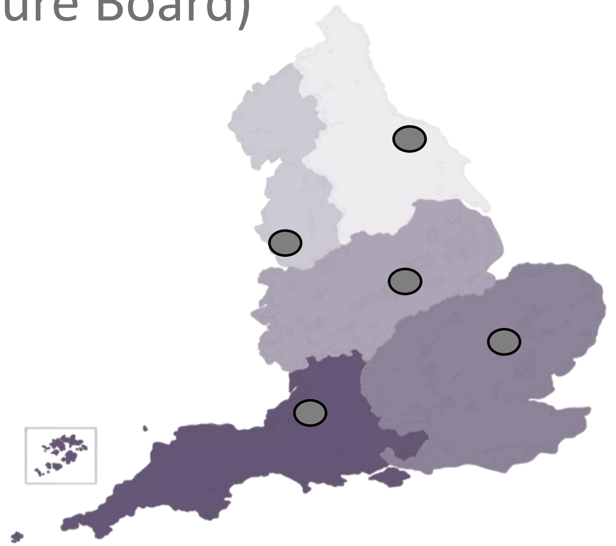
Amended to legislate for 'net-zero' emissions in 2019.

PREPARATION PROCESS

- Regional Econometrics Phase 1 – Energy Economic Baseline Report
- Carbon Trust Phase 2 – Technologies Options Appraisal
- Carbon Trust Phase 3 – Energy Strategy Development
- Post-Phase 3 – SEP alignment; re-structuring; evidence update; & LEP boundary change

- Overseen by SCR Infrastructure Board (& previously Housing & Infrastructure Board)
- Four Stakeholder Workshops (50+ attendees)
- University of Sheffield Provocation Report
- Carbon Targets and Future Scenarios

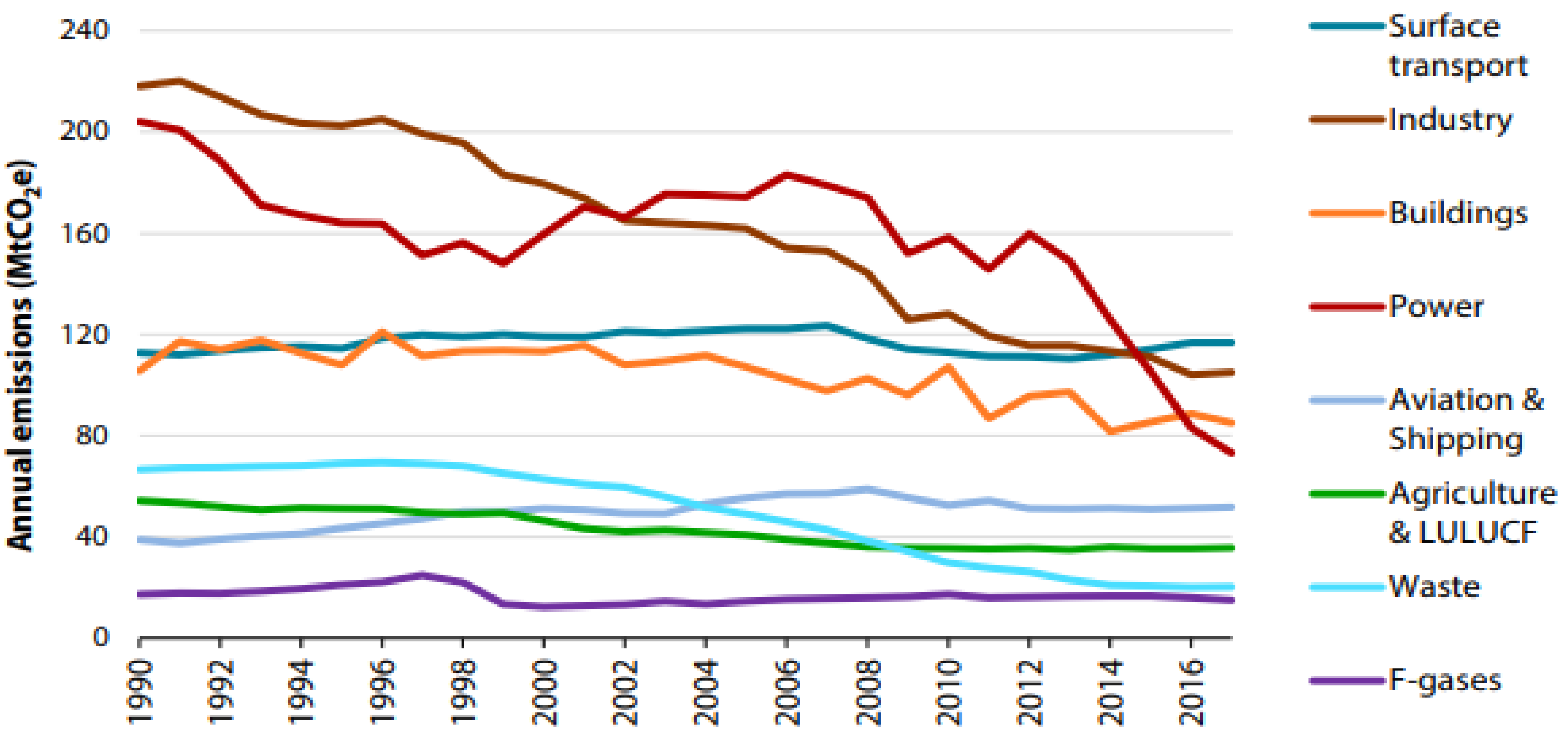
- Jointly funded with BEIS as part of 5 Regional Energy Hubs programme



EVIDENCE BASE

Sheffield City Region

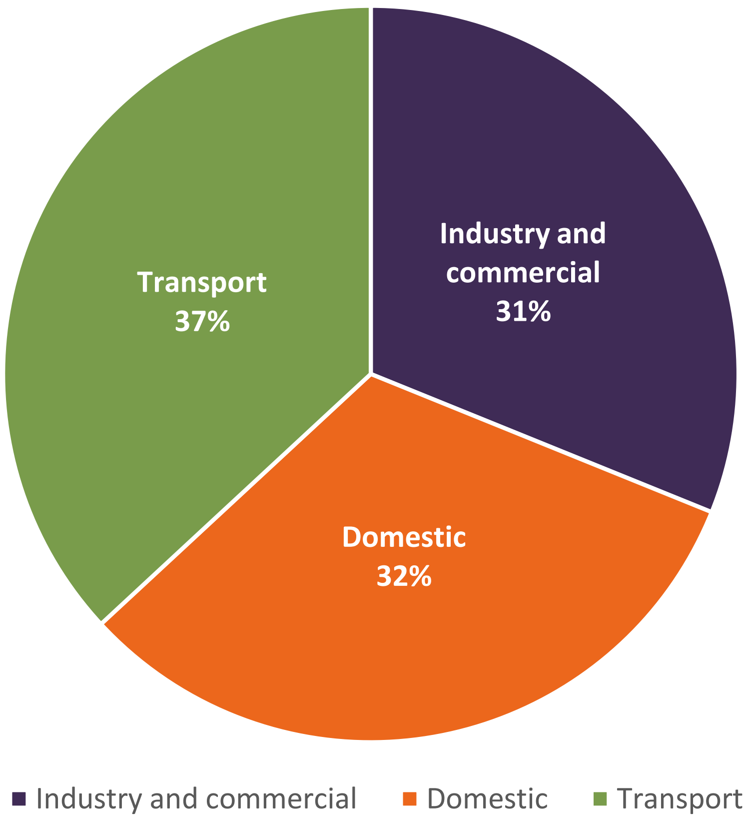
UK DECARBONISATION



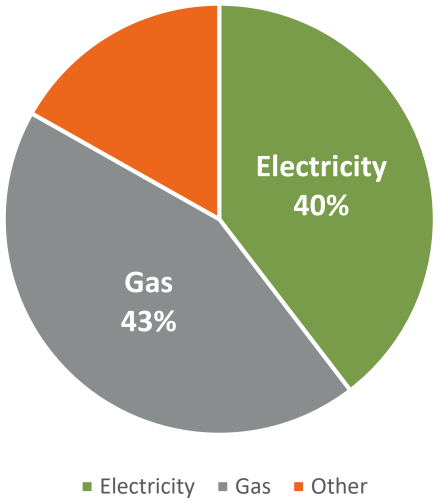
- Significant progress in the decarbonisation of the power sector.
- Decline of UK industry driving the decarbonisation.
- Transport has had limited success.

EMISSIONS

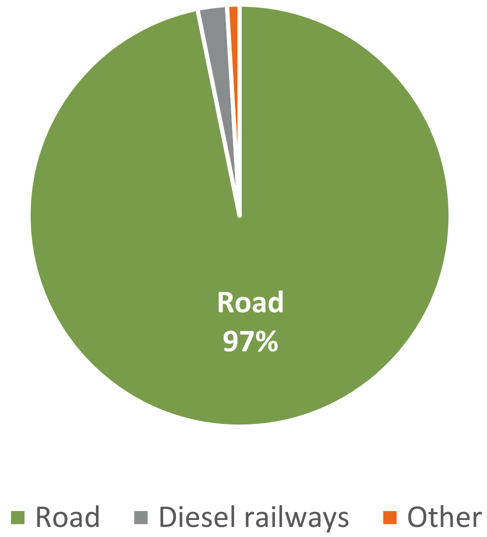
Total CO_2 Emissions



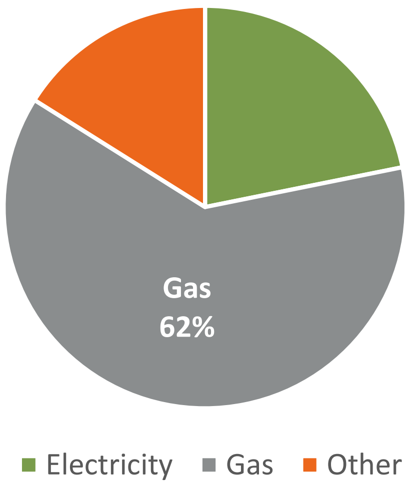
Industrial & Commercial CO_2 Emissions



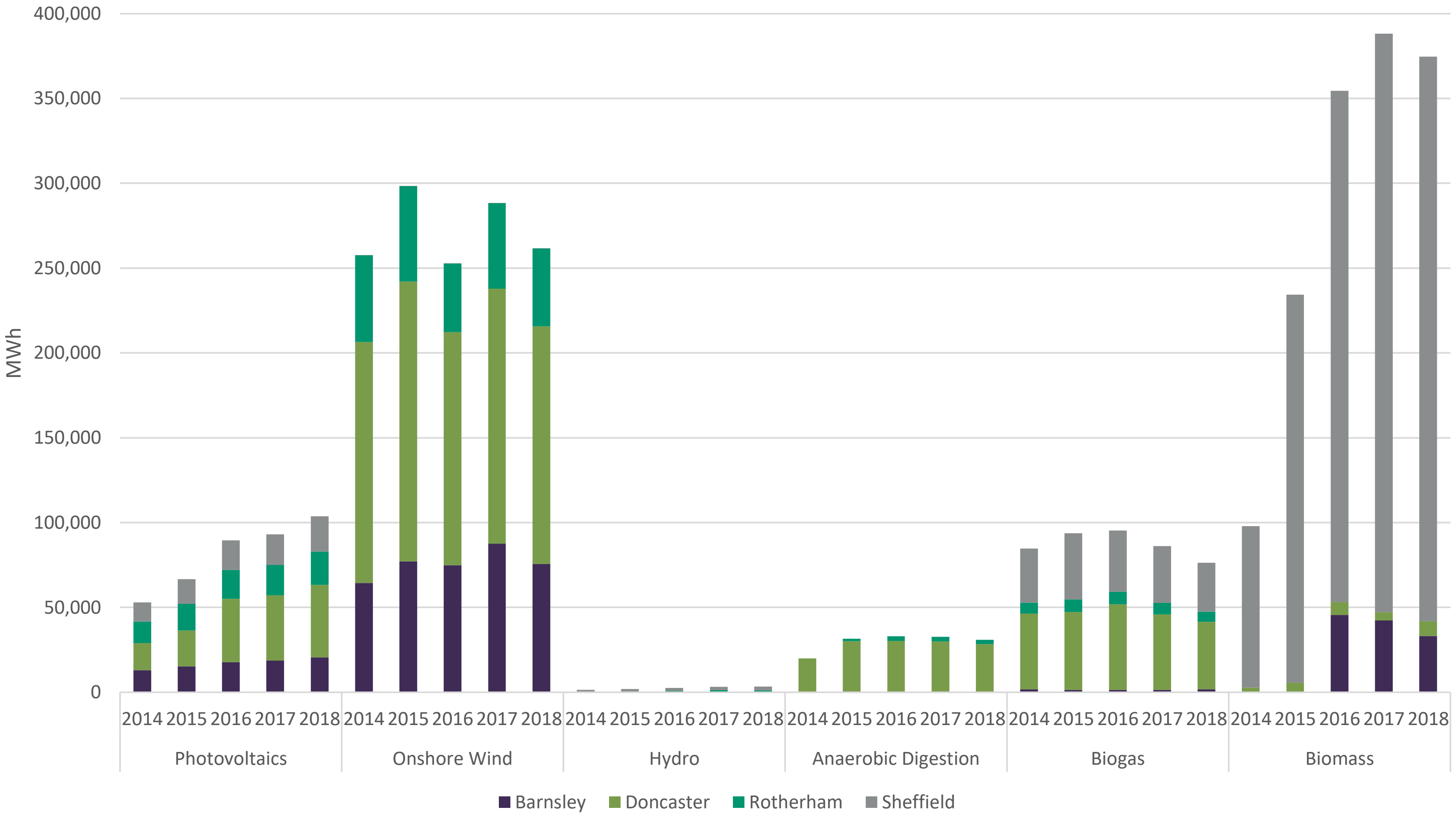
Transport CO_2 Emissions



Domestic CO_2 Emissions



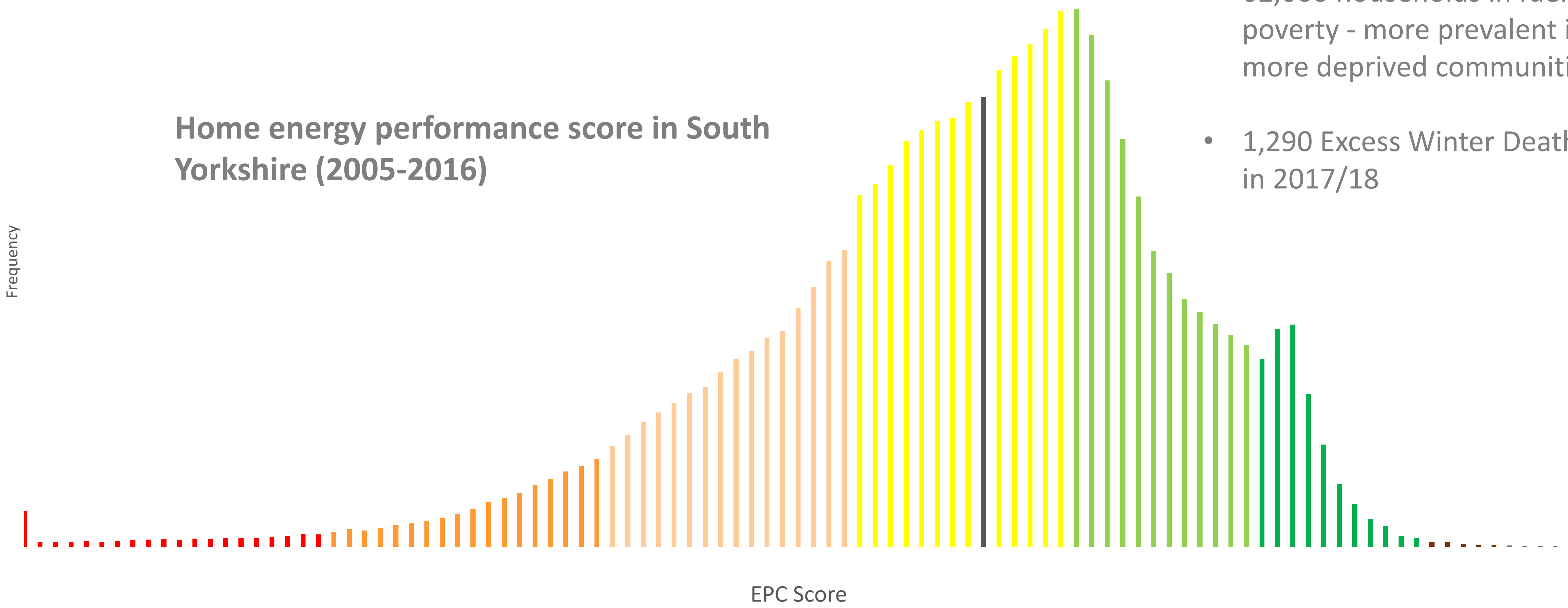
ELECTRICITY GENERATION



- No ‘traditional’ electricity generation in South Yorkshire.
- Biomass and onshore wind are the largest generators.
- Less than 20% of electricity requirement is generated in the region.

BUILT ENVIRONMENT

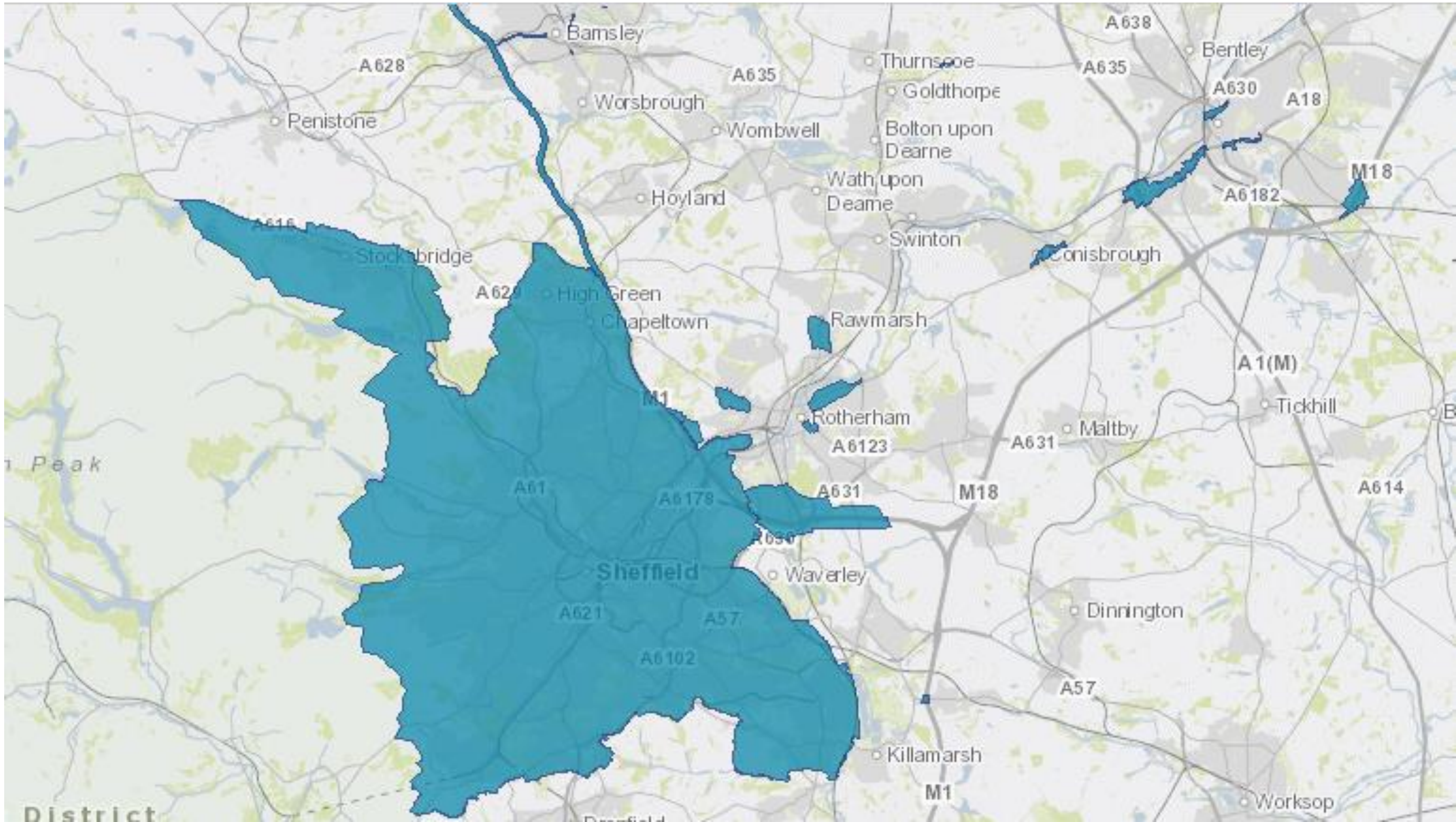
Home energy performance score in South Yorkshire (2005-2016)



- 62,000 households in fuel poverty - more prevalent in more deprived communities.
- 1,290 Excess Winter Deaths in 2017/18

AIR QUALITY

- 28 Air Quality Management Areas in South Yorkshire.
- Poor air quality linked directly to emissions and energy (mainly petrol/diesel) use.



DRAFT ENERGY STRATEGY

VISION

Sheffield City Region to be recognised as the **“Green Heart of Great Britain”** with:

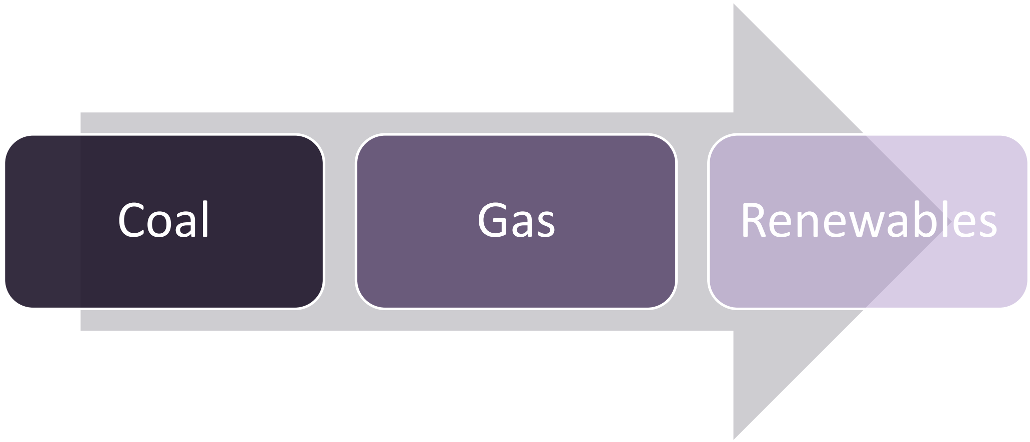
A clean, efficient and resilient energy system, which supports a healthier environment for people to live, work and visit, and which drives our transition to a low carbon economy.

KEY PRINCIPLES

Transition from high carbon to low carbon electricity supply

Transition from high demand to low and flexible demand

Maintaining energy resilience



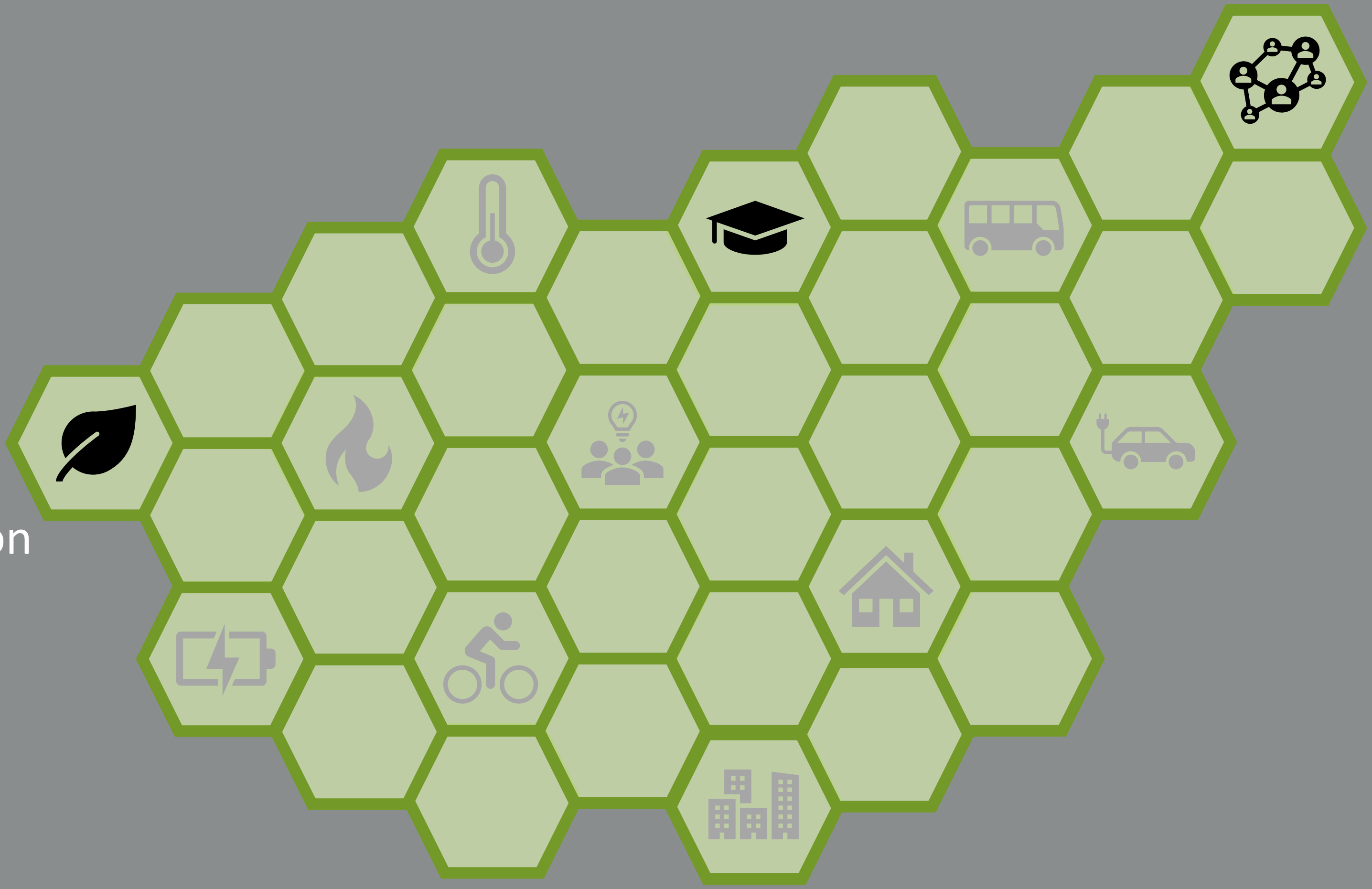
Ensuring local businesses remain competitive

Transition from centralised to decentralised energy system.

Transition from fossil fuel heating to electric/hydrogen/heat networks.

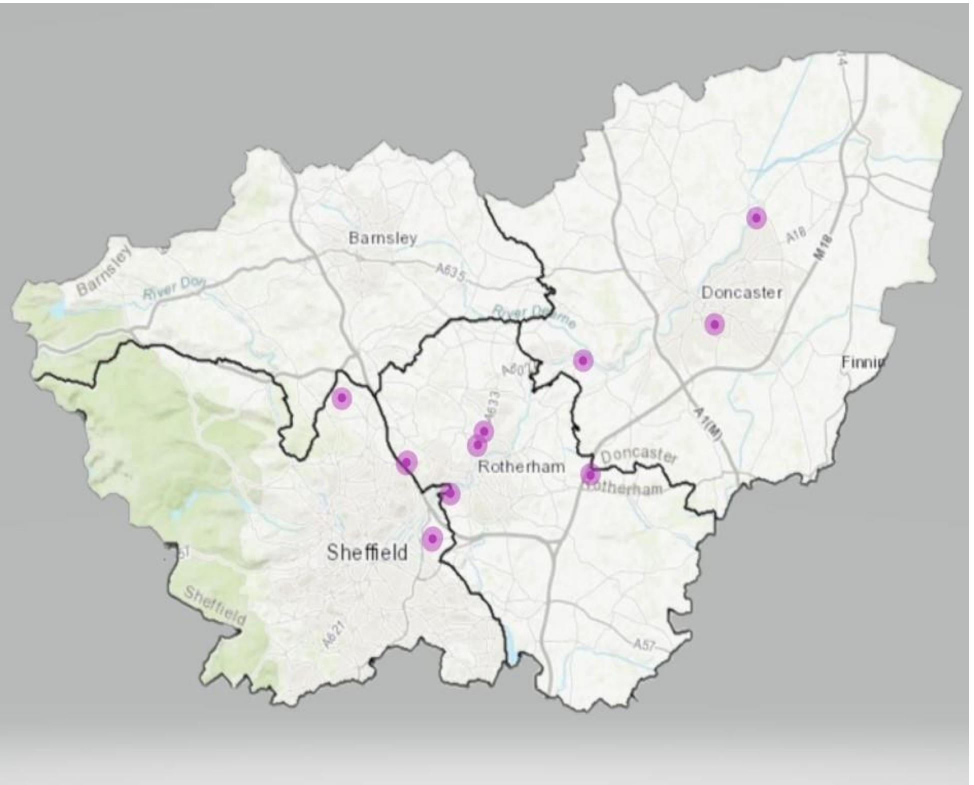
GOALS & POLICIES

- **Goal 1:**
  - Drive clean growth and decarbonisation in our local businesses and industry whilst maintaining their competitiveness.



	Encourage Clean & Efficient Business Growth
	Train and Upskill the Energy Workforce
	Promote Industrial Decarbonisation

EFFICIENT BUSINESS GROWTH

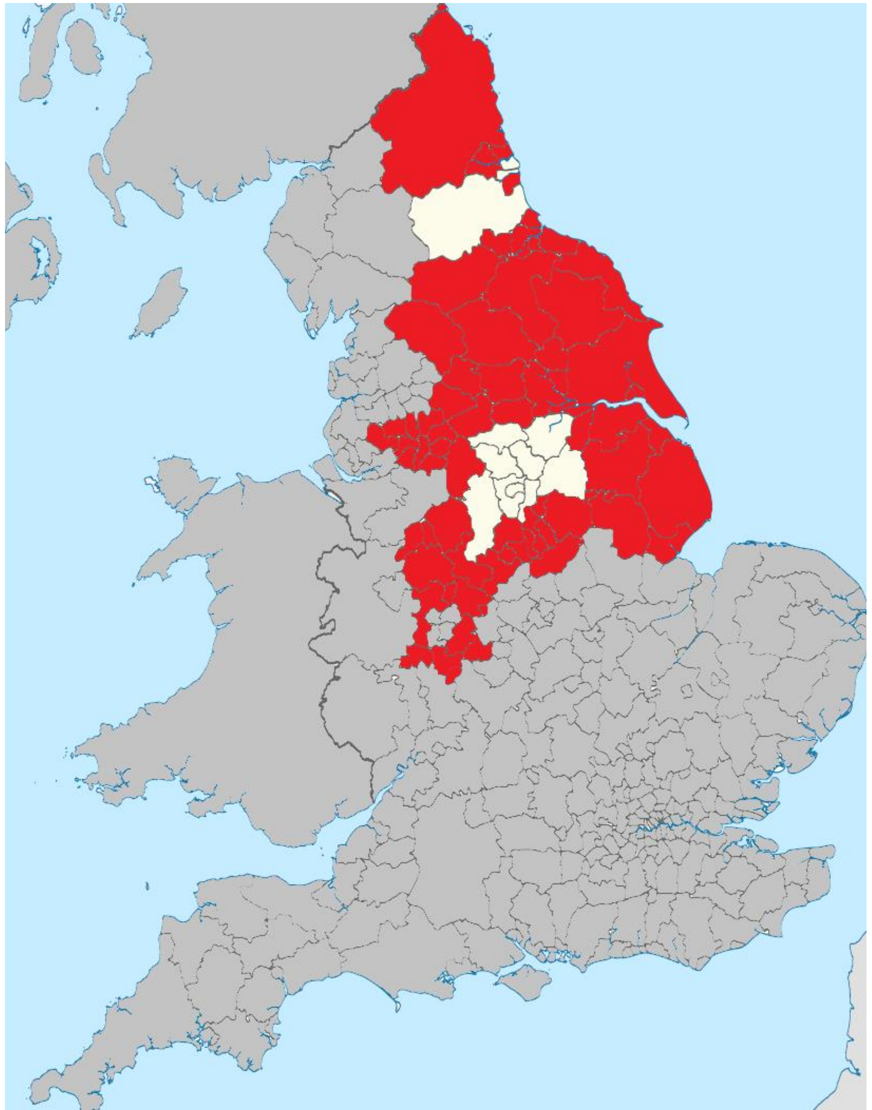


←Provide Energy Resilience

Inward/further investment opportunities restricted by energy constraints.

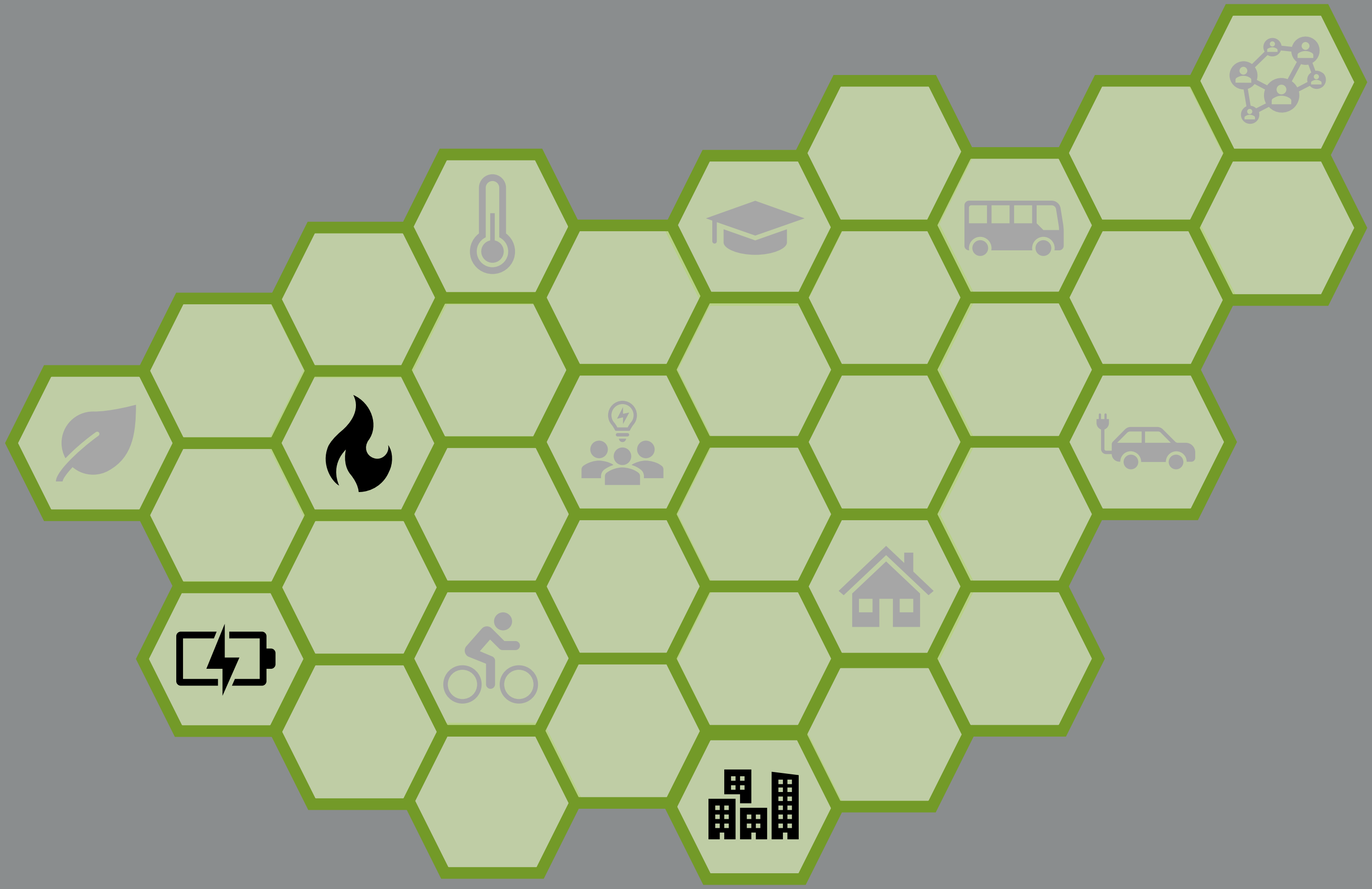
Provide Business Support→

Areas (in red) that offer SMEs energy efficiency support.



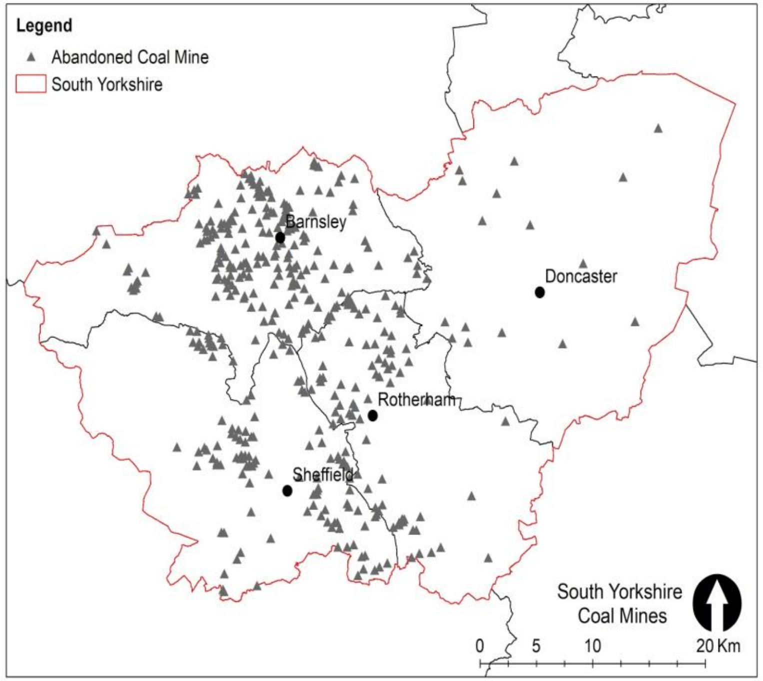
GOALS & POLICIES

- **Goal 2:**
  - Promote investment and innovation in low carbon energy generation, distribution and storage.



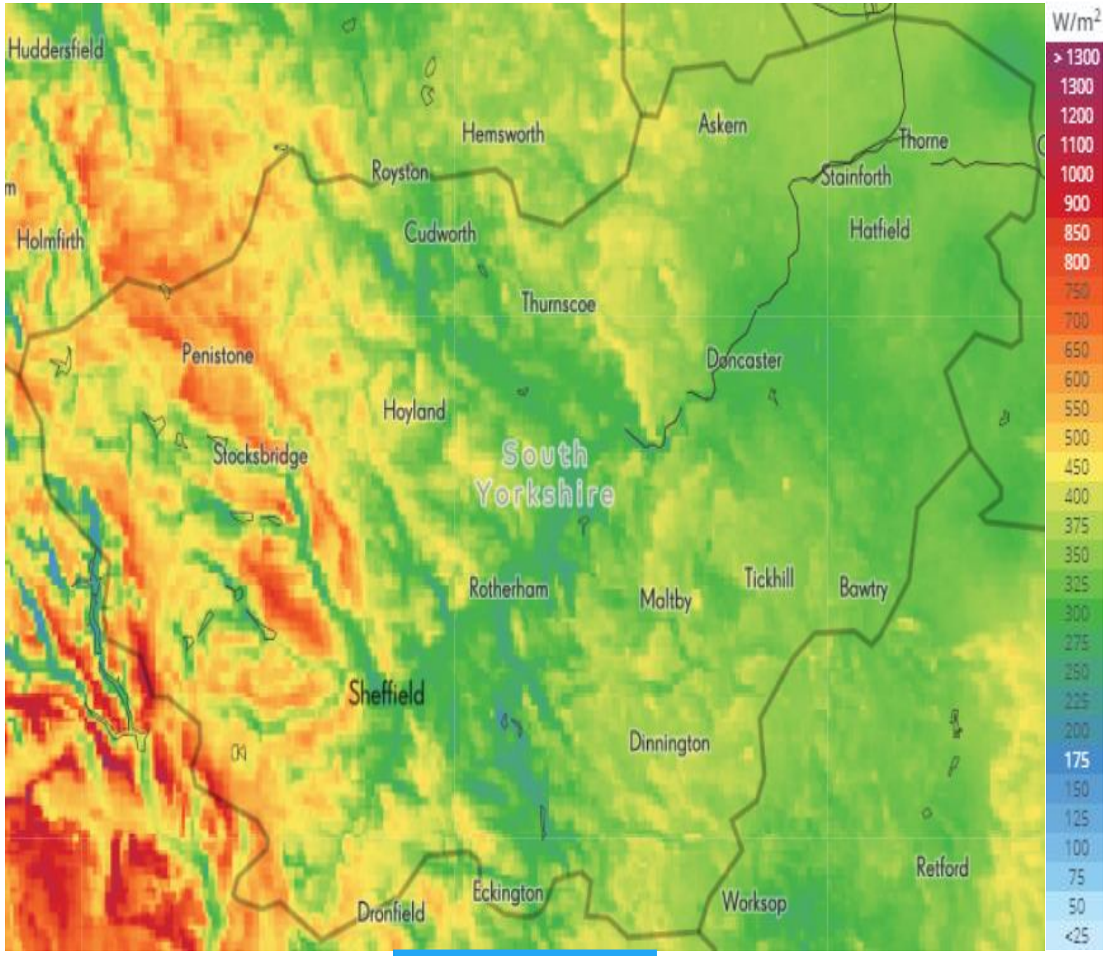
	Utilise Current Infrastructure
	Enhance Energy Resilience
	Drive Investment in Heat Decarbonisation

HEATING AND COOLING FROM MINES



The Coal Authority

ONSHORE WIND GENERATION



GLOBAL WIND ATLAS
GLOBAL SOLAR ATLAS | ENERGYDATA.INFO

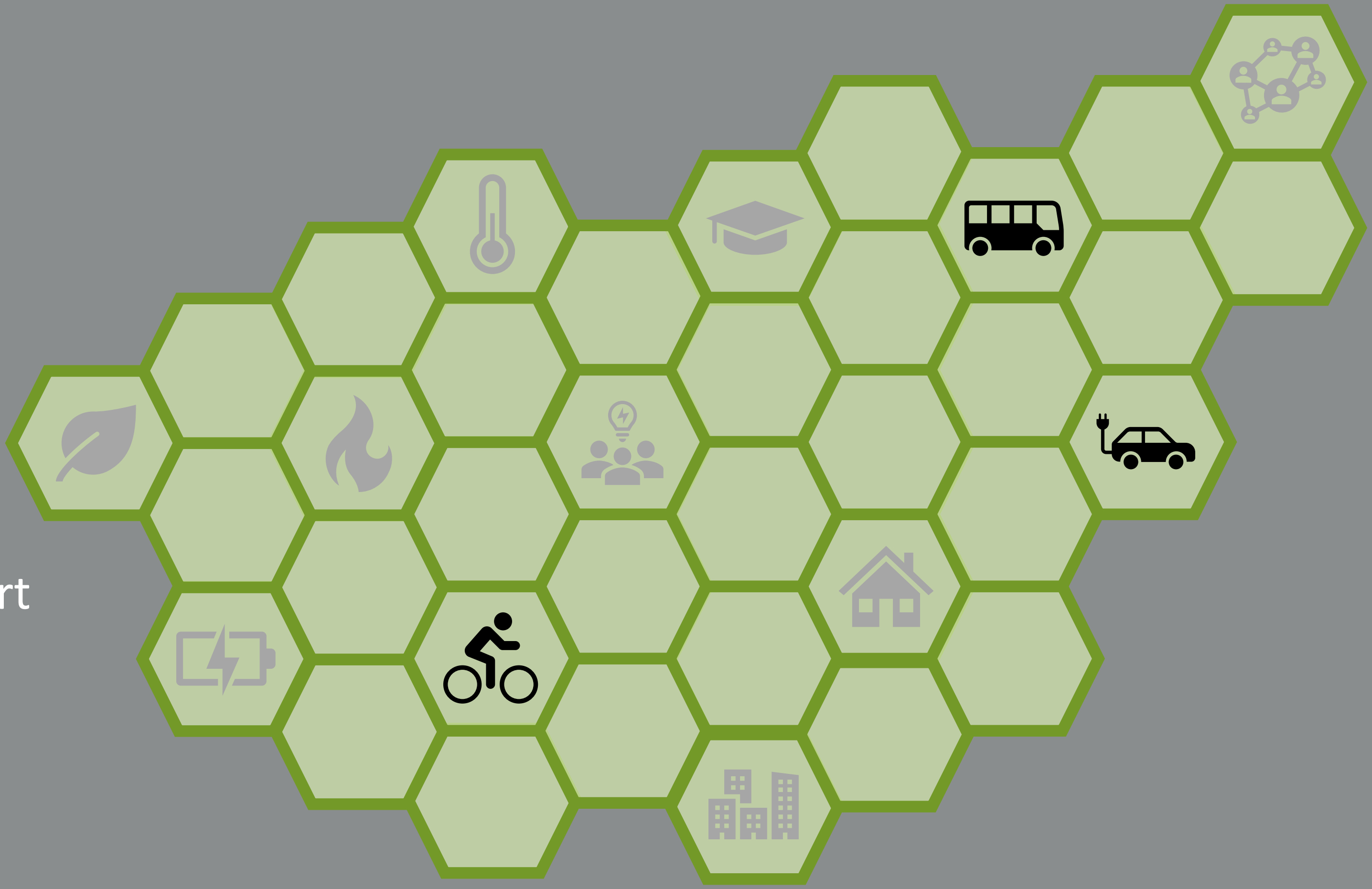
GOALS & POLICIES

- **Goal 3:**
  - Improve the energy efficiency and sustainability of our built environment, and encourage communities to be part of the transition.

	Improve the Efficiency of Existing Dwellings
	Increase the Standard of New Build Dwellings
	Enable Community Energy Schemes

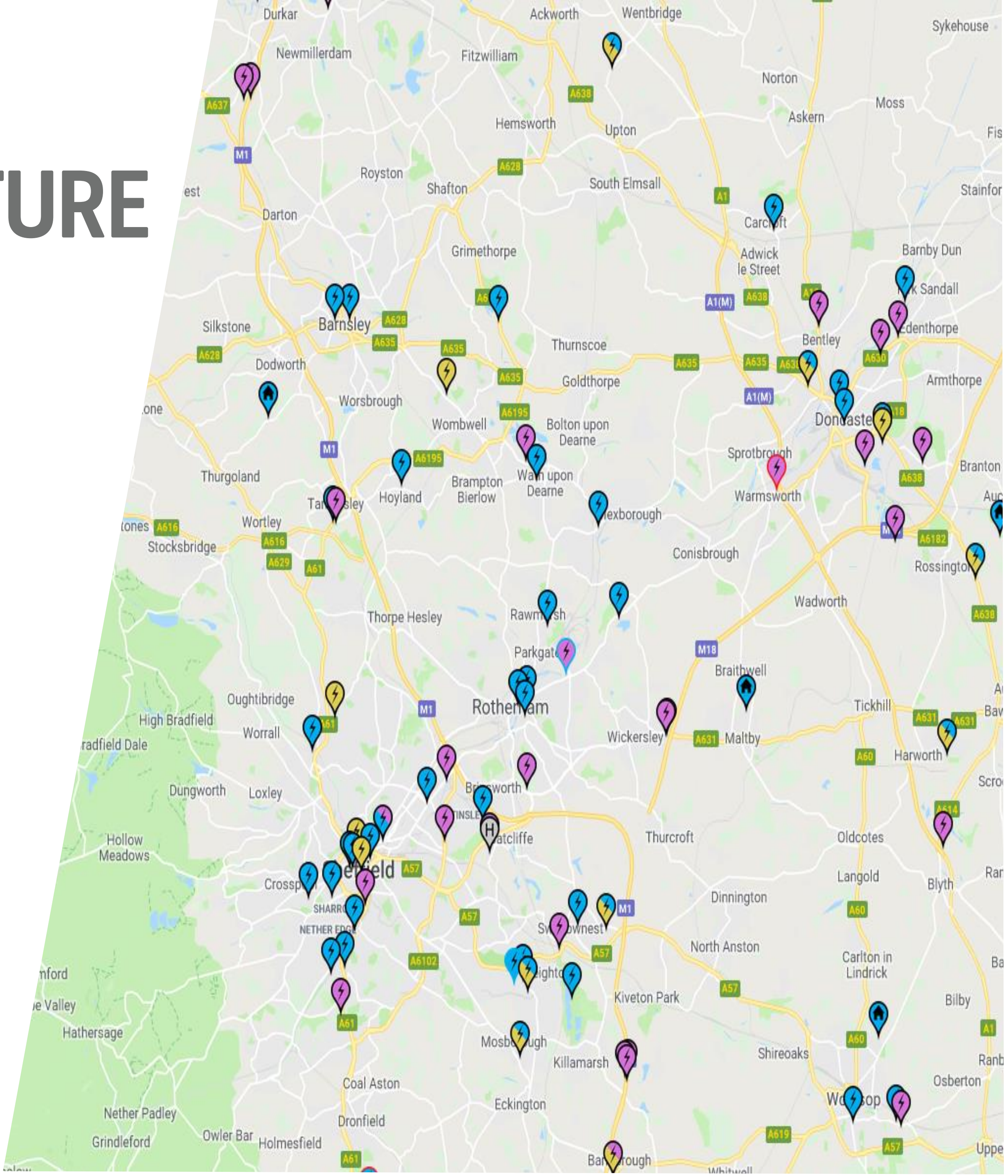
GOALS & POLICIES

- **Goal 4:**
  - Accelerate the transition to ultra-low emission vehicles (ULEVs) and transport systems through modal shift and supporting infrastructure.



	Inspire Modal Shift Towards Active Travel
	Deliver a Clean Transport Network
	Accelerate the Uptake of ULEVs

CHARGING INFRASTRUCTURE



ITM POWER
Energy Storage | Clean Fuel

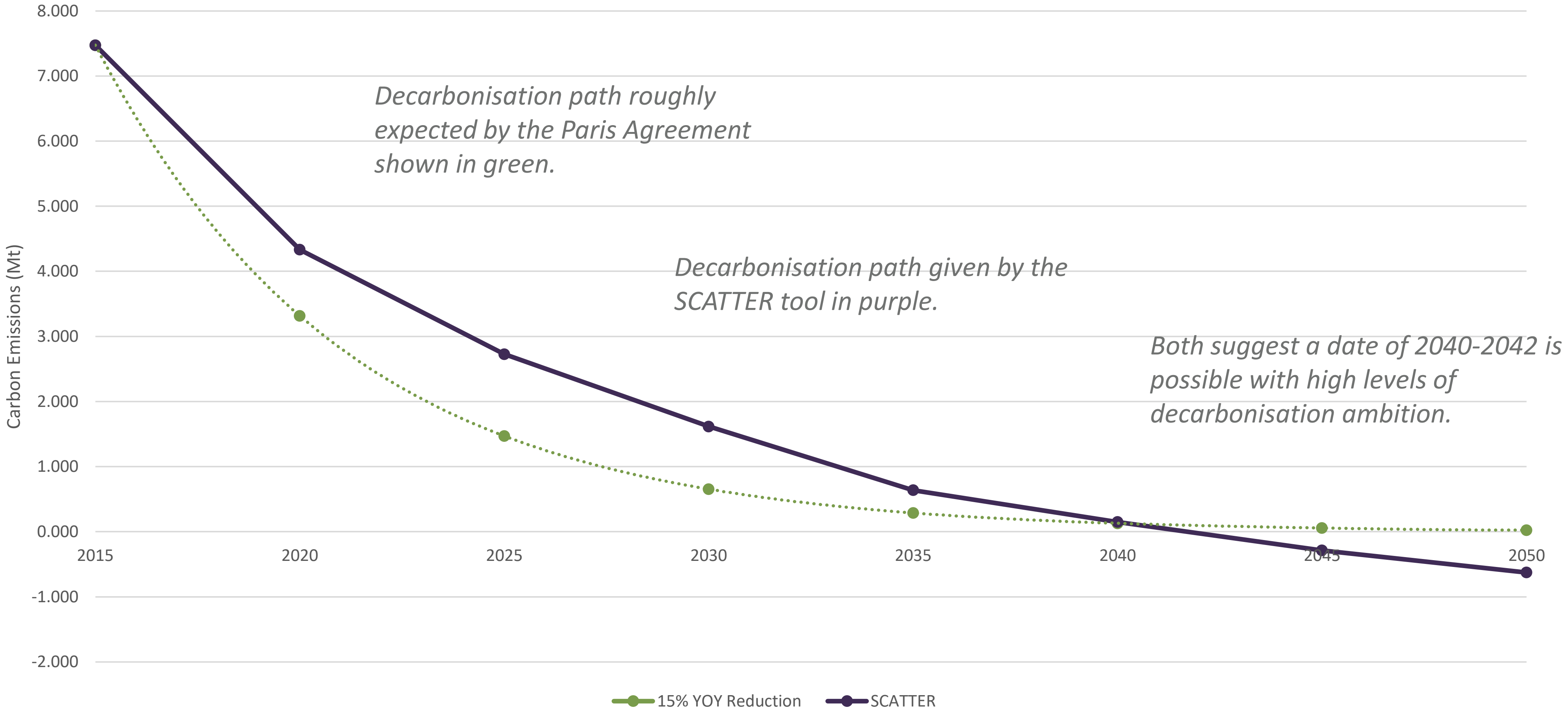
Buses | Trucks | Trains | Ferries

- Buses: 30kg/day
- Trucks: 75 – 400kg/day
- Trains: 180kg/day
- Ferries: 500kg/day

HYDROGEN FROM ELECTROLYSIS

NET-ZERO CARBON

NET-ZERO CARBON – PROPOSAL

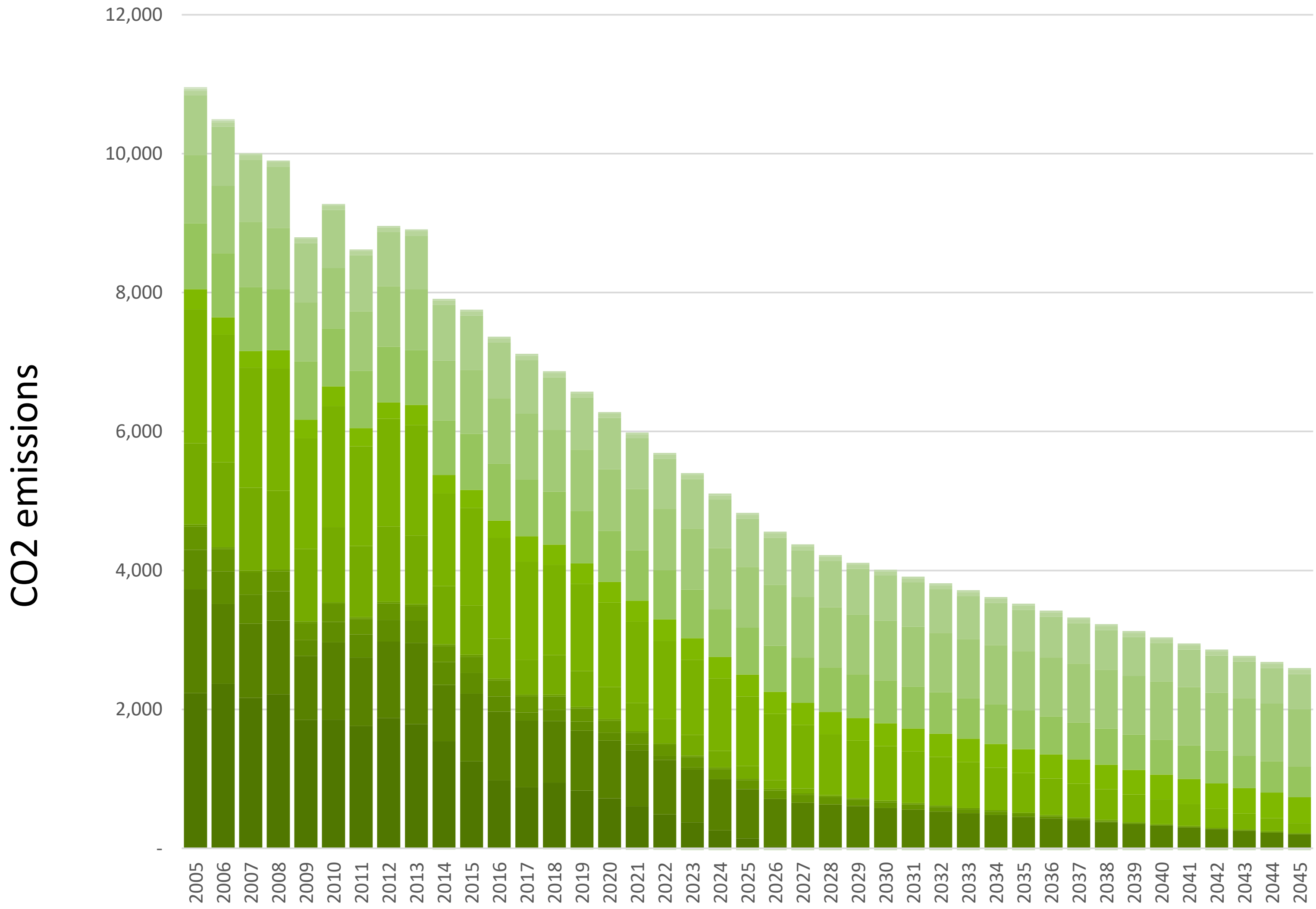


NET-ZERO CARBON – CARBON BUDGET & DATE

2040 - 2042

The **Carbon Budget** has been calculated to be 44.7 $MtCO_2$.
This is the equivalent of c7 years of emissions at 2017 levels – 13.2% annual emissions reduction to 2040.

NET-ZERO CARBON – 'MARKET' BENCHMARK



- Significant interventions and support will be needed to achieve net zero.

NET-ZERO CARBON – ACTIONS

No fossil fuel heating in new homes from 2025 & aim for PassivHaus standard.

Around 1GW of additional solar PV capacity by 2040.

1,500 jobs created in the low carbon and renewable energy sector by 2040.

Energy efficiency improvements to at least 250,000-300,000 existing homes by 2040.

Around 1GW of additional onshore wind capacity by 2040.

All vehicles using our roads including public transport to be 100% zero emissions by 2035.

At least 5 minewater energy schemes operational by 2040.

90% of existing homes and 80%+ of businesses with low carbon heating (or hydrogen-ready) by 2040.

THANK YOU

Sheffield City Region