DRAFT ENERGY STRATEGY

OVERVIEW

Colin Blackburn
Assistant Director Housing, Infrastructure & Planning
Legislating for a 80% reduction in GHGs by 2050.

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

Amended to legislate for ‘net-zero’ emissions in 2019.

Paris Agreement 2015
Limiting warming to $2^\circ C$ above pre-industrial levels – but ambition to limit to $1.5^\circ C$
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
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 CO₂ Emissions
- Industry and commercial: 31%
- Transport: 37%
- Domestic: 32%

Industrial & Commercial CO₂ Emissions
- Electricity: 40%
- Gas: 43%
- Other: 6%

Transport CO₂ Emissions
- Road: 97%

Domestic CO₂ Emissions
- Gas: 62%
- 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.
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
• 28 Air Quality Management Areas in South Yorkshire.

• Poor air quality linked directly to emissions and energy (mainly petrol/diesel) use.
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

Transition from centralised to decentralised energy system.

Ensuring local businesses remain competitive

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

Maintaining energy resilience
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.

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<td></td>
<td>Utilise Current Infrastructure</td>
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<td>Enhance Energy Resilience</td>
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<td>Drive Investment in Heat Decarbonisation</td>
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HEATING AND COOLING FROM MINES

ONSHORE WIND GENERATION

Legend
- Abandoned Coal Mine
- South Yorkshire

The Coal Authority

UK coalfields

GLOBAL WIND ATLAS
GLOBAL WIND ATLAS - ENGLISH 2015
## GOALS & POLICIES

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

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<td>Improve the Efficiency of Existing Dwellings</td>
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<td>Increase the Standard of New Build Dwellings</td>
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<td>Enable Community Energy Schemes</td>
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GOALS & POLICIES

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

CHARGING INFRASTRUCTURE

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

ITM POWER
Energy Storage | Clean Fuel
NET-ZERO CARBON
Decarbonisation path roughly expected by the Paris Agreement shown in green.

Decarbonisation path given by the SCATTER tool in purple.

Both suggest a date of 2040-2042 is possible with high levels of decarbonisation ambition.
NET-ZERO CARBON – CARBON BUDGET & DATE

2040 - 2042

The Carbon Budget has been calculated to be 44.7 MtCO₂. 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

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

Around 1GW of additional solar PV capacity by 2040.

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

Around 1GW of additional onshore wind capacity by 2040.

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

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

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

At least 5 minewater energy schemes operational by 2040.
THANK YOU