University of Nottingham
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Zero carbon innovation driving real-world solutions

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Net zero – an economic opportunity for the UK

A growing UK net zero economy

The net zero economy produces **£83.1 billion in GVA** for the UK economy.

951,000 full-time jobs supported in the supply chain and wider economy.

Jobs supported by **net zero businesses were 38% more productive** than the UK average.

10.1% growth in the total economic value generated by the net zero economy since 2023, worth £11.6 billion to the UK economy.

Total employment contributions have also grown significantly (15.2%), and the net zero economy now supports **125,700 more FTE jobs than in 2022.**

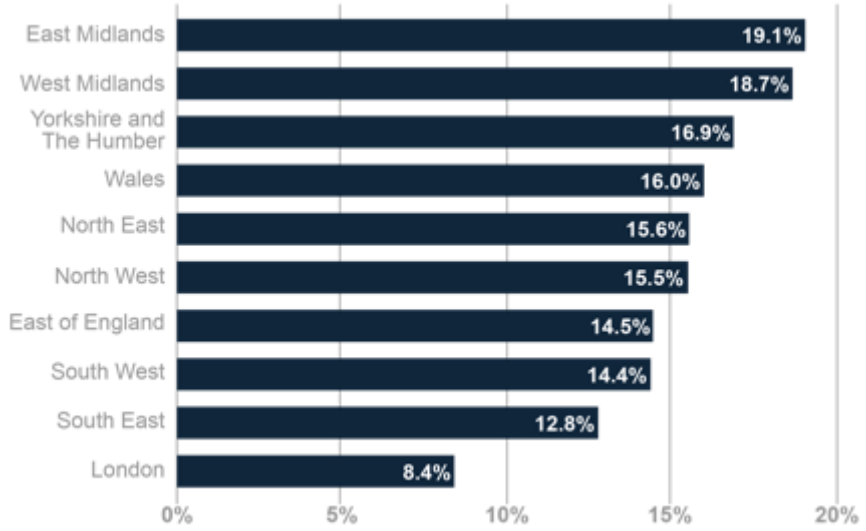
Source: ECIU & CBI Economics

Economic challenges for this region

Twenty percent of workers are impacted by net zero

1 in 5 Midlands workers were in high-emissions industries compared with 1 in 12 works in London

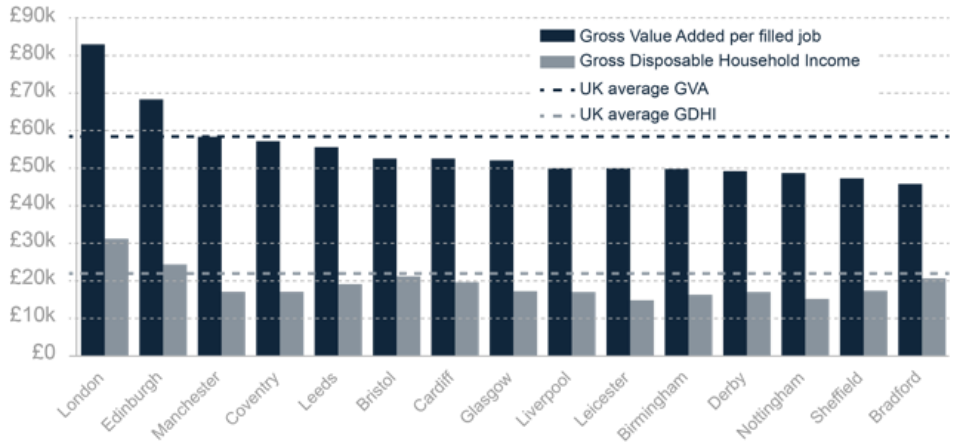
Percentage of workers in high-emissions industries by region or nation, England and Wales, 2021



Source: Office for National Statistics

The region faces urgent productivity and inequality challenges

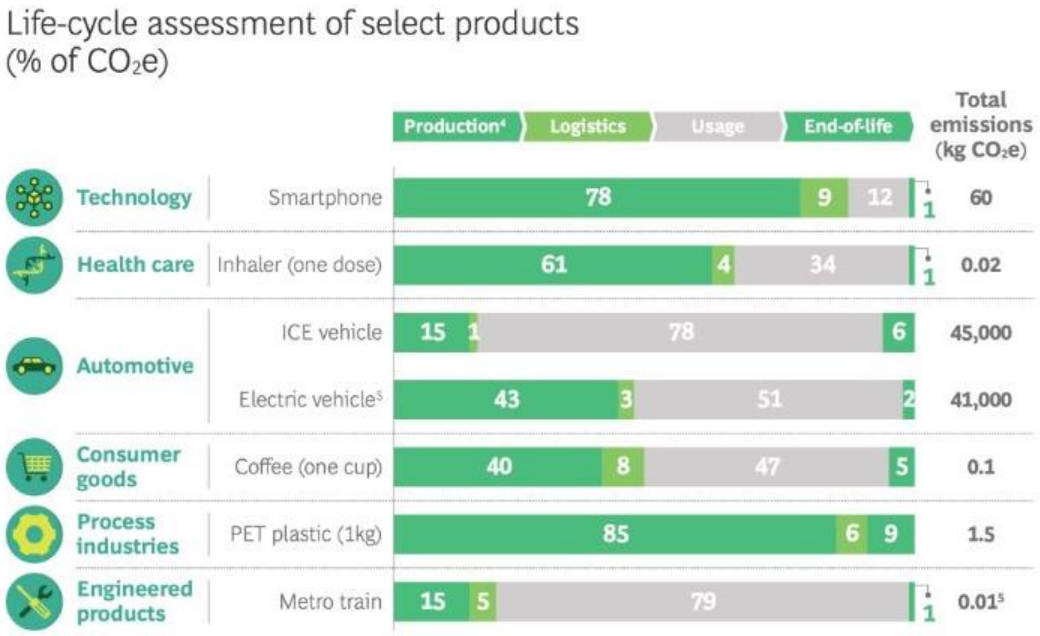
Gross Value Added (GVA) per filled job and Gross Disposable Household Income per person, 2021: selected UK cities



Source: Resolution Foundation

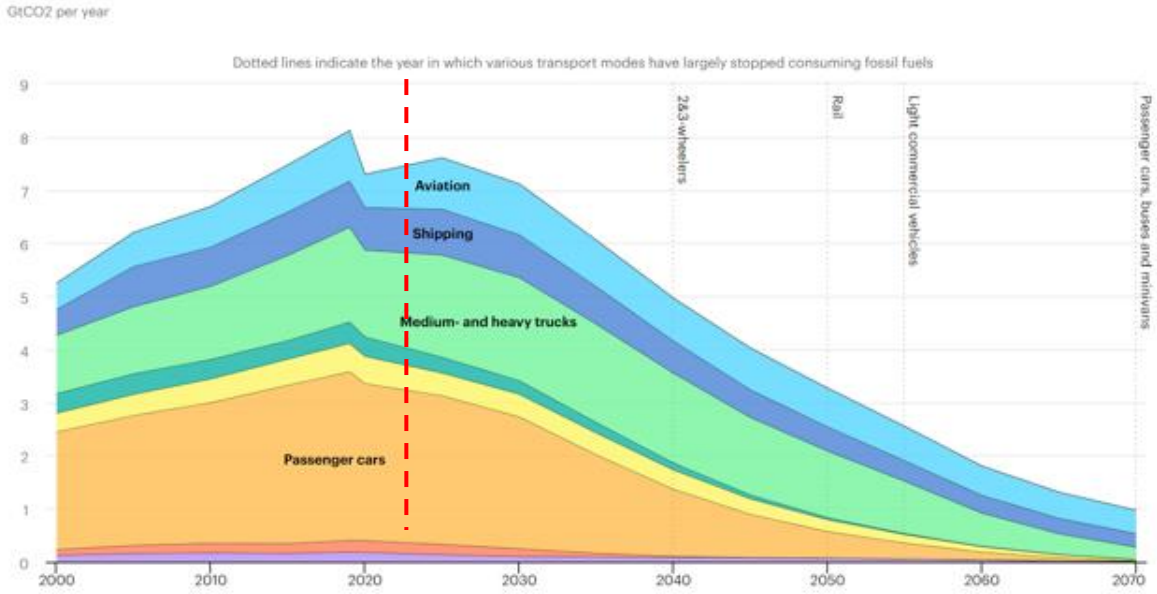
Decarbonisation needs innovation

Decarbonising products and their production



Source: International Energy Agency

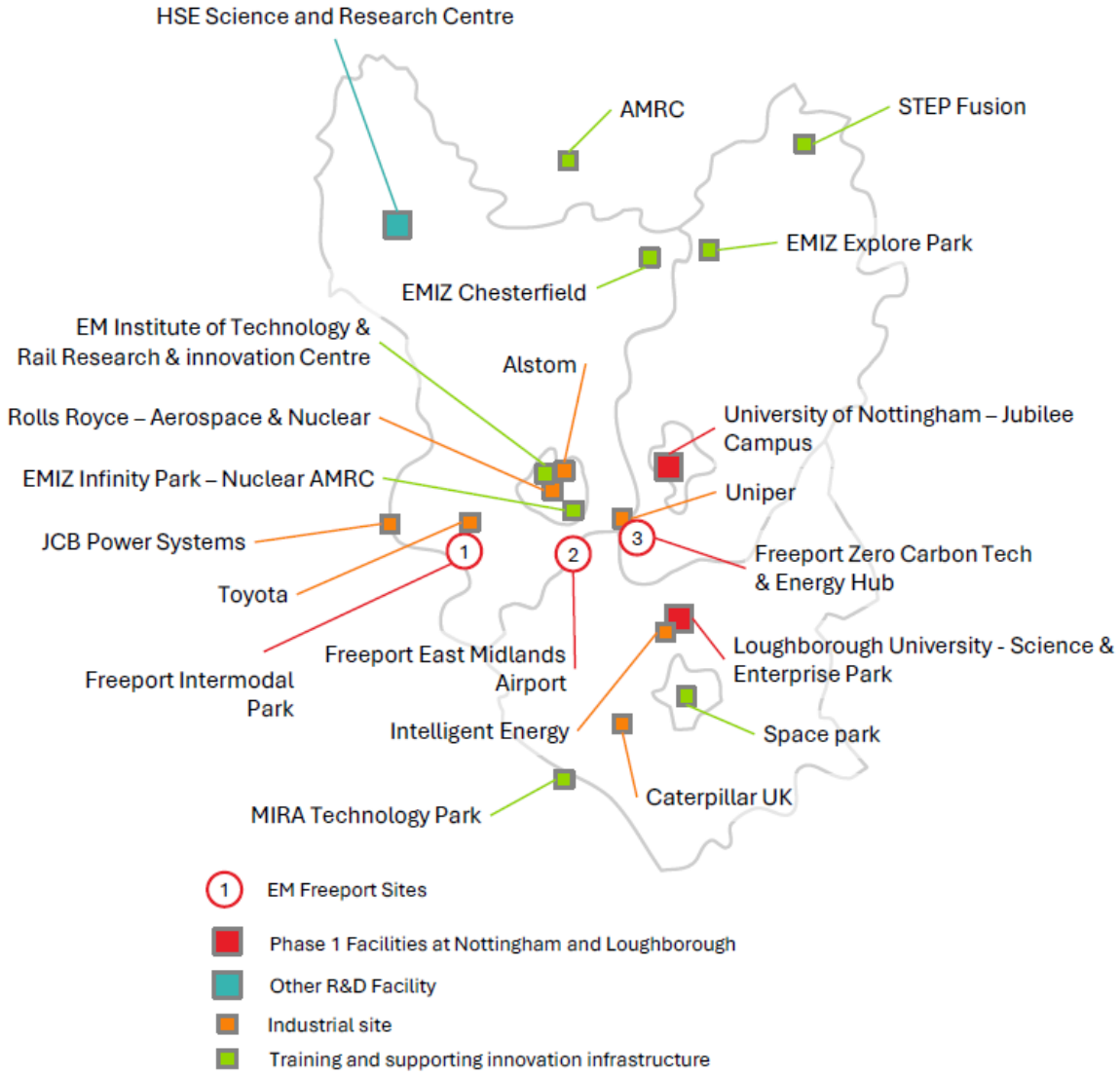
Increasing contribution from heavy transport aviation, trucks etc.



Source: International Energy Agency

Opportunities for the region

- We have **key universities**, **major businesses**, and the **industrial heritage** in manufacturing and transport.
- That's why we can achieve **export-related growth**, by harnessing the strengths of the region, combined with East Midlands Freeport and the Investment Zone.



Commercial approach for impact

The Zero Carbon Cluster vision

This is the place that translates zero carbon research into real-world solutions.

Our vision is to accelerate the translation of zero carbon research into high-impact commercial and policy solutions – in partnership with industry and government.

Advanced infrastructure capabilities

Proposed Jubilee campus infrastructure expansion to include Zero Carbon Propulsion

UNIP - Ingenuity Centre
start-up, incubator space

PEMC Electrification Centre
ISCF Driving Electric Revolution Facilities, UK Aerospace Propulsion Facilities

Research Acceleration & Demonstration Building
Energy research facilities

Zero Carbon Innovation Centre
Industry collaboration/co-location

GSK Carbon Neutral Laboratory
Centre for Sustainable Chemistry

Hydrogen Propulsion Lab
Megawatt-scale hydrogen propulsion testing

Advanced Manufacturing Building
(Centre for Additive Manufacturing, Composites Research Group, Institute for Advanced Manufacturing)

£75+ million in external funding

Including major industry co-investment for capital, infrastructure and programmes

Multi-million funding injection for University of Nottingham facility brings net zero one step closer to reality

Thursday 30 November 2023

The University of Nottingham, in collaboration with Loughborough University, has been selected to receive a significant funding boost from East Midlands Freeport to accelerate the translation of zero carbon research into high-impact commercial and policy solutions.

Over £70 million investment will allow the University of Nottingham to power future transport to net zero

Thursday 26 March 2024

The university of Nottingham has secured more than £70 million to establish ne world-leading and open-access research facilities and programmes that will decarbonise future transport.

Zero Carbon Innovation Centre

World-class facilities and research to accelerate industry collaboration

Electrical Machines Manufacturing

- Flexible reconfiguration for low volume, high value production
- End-to-end manufacturing process capability
- State of the art performance & power

Digital Twin

- Developing monitoring, prognostics & health management of entire propulsion powertrain
- Providing unique platform enabling system integration, validation & verification

- Support for industry to develop validate and test novel decarbonised products
- Prototype manufacturing lines for scale up and industrialisation
- Contracted testing and engineering consultancy
- Industry co-location and incubation
- Focused programmes to support supply chain development and FDI

Hydrogen Propulsion Systems Lab

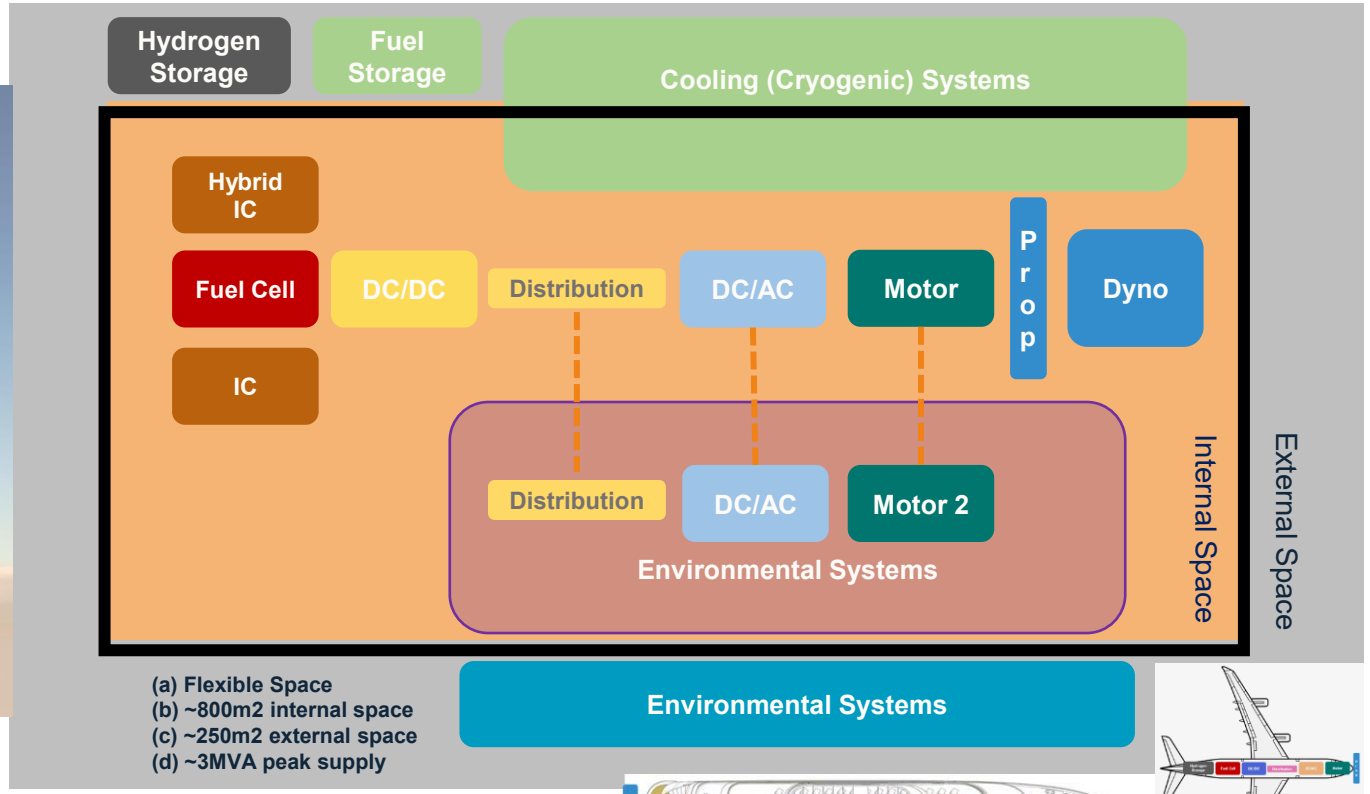
800m² laboratory housing MW scale hydrogen propulsion systems testing

Research England

Engineering and Physical Sciences Research Council

EAST MIDLANDS FREEPORT

- Test cells to ‘plug-and-play’ transport components & systems
- Dynamometers up to 5 megawatts
- Cryogenic test capability for high power machines
- Environmental chambers for altitude testing
- Gaseous hydrogen, ammonia & other green fuels
- Operational by mid-2026



Get in touch

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Thank you