MIDLANDS ENGINE

NET ZERO
TRANSPORT TECHNOLOGIES
MIDLANDS CLUSTER SNAPSHOT 2023

Net Zero
Transport Technologies

Midlands New Economy Cluster

Cutting across the Advanced Manufacturing clusters is a focus on Net Zero Transport Technologies - a truly pan-regional cluster with regional networks and initiatives to drive innovation framed by the national Net Zero strategy. These include the Energy Research Accelerator, Coventry Very Light Rail, and internationally significant sites such as the MIRA Technology Park and UK Battery Industrialisation Centre. With a pipeline of some 25,000 relevant HE and FE graduates annually (including high levels of postgraduates) matched by strong graduate retention and employment outcomes, this specialised focus on net zero transport is particularly present through business, employee and company growth in the West Midlands Combined Authority area, as well as Rugby and near Nottingham. With such a base for R&D and innovation, this cluster competes with the Golden Triangle and has capacity to attract greater investment, especially with the exceptional growth in businesses across the region: 252% since 2013. Potentially significant developments such as the possible West Midlands Gigafactory could catalyse greater inward investment and talent pooling.

Cluster in context

- **Almost 4,000 jobs; 27% of national and largest region outside of London & SE.**
- **7% of Midlands university graduates studied relevant subjects to net zero transport technologies, including from 4 of top 25 UK universities for Engineering and Technology, and Natural Sciences.**
- **Over 200 businesses; 17% of UK total and 252% growth since 2013.**
- **17 high growth companies (59% of UK) and 4 £100m+ turnover companies (50% of UK).**
- **Over 28% of Innovate UK funding to net zero transport technologies businesses since 2005 has been awarded to those with a Midlands address.**
- **4% of cluster relevant UK Foreign Direct Investment Capex and 7% of cluster relevant UK Domestic Direct Investment Capex 2017-2021.**

Business Ecosystem

Total Cluster Business Count: 215
17% of UK; largest region outside of London / SE. 252% growth since 2013.[1]

£100m+ Turnover Companies: 4
50% of all in the UK have a Midlands location.[2]

High Growth Companies: 17
59% of all in the UK have a Midlands location.[3]

Incorporations 2017-22: 128
16% of UK net zero transport incorporations between 2017 and 2022 have a Midlands location.[4]

Foreign-owned enterprises: 4%
14 are known to be foreign-owned; Higher proportion of foreign-owned than national average (1%).[5]

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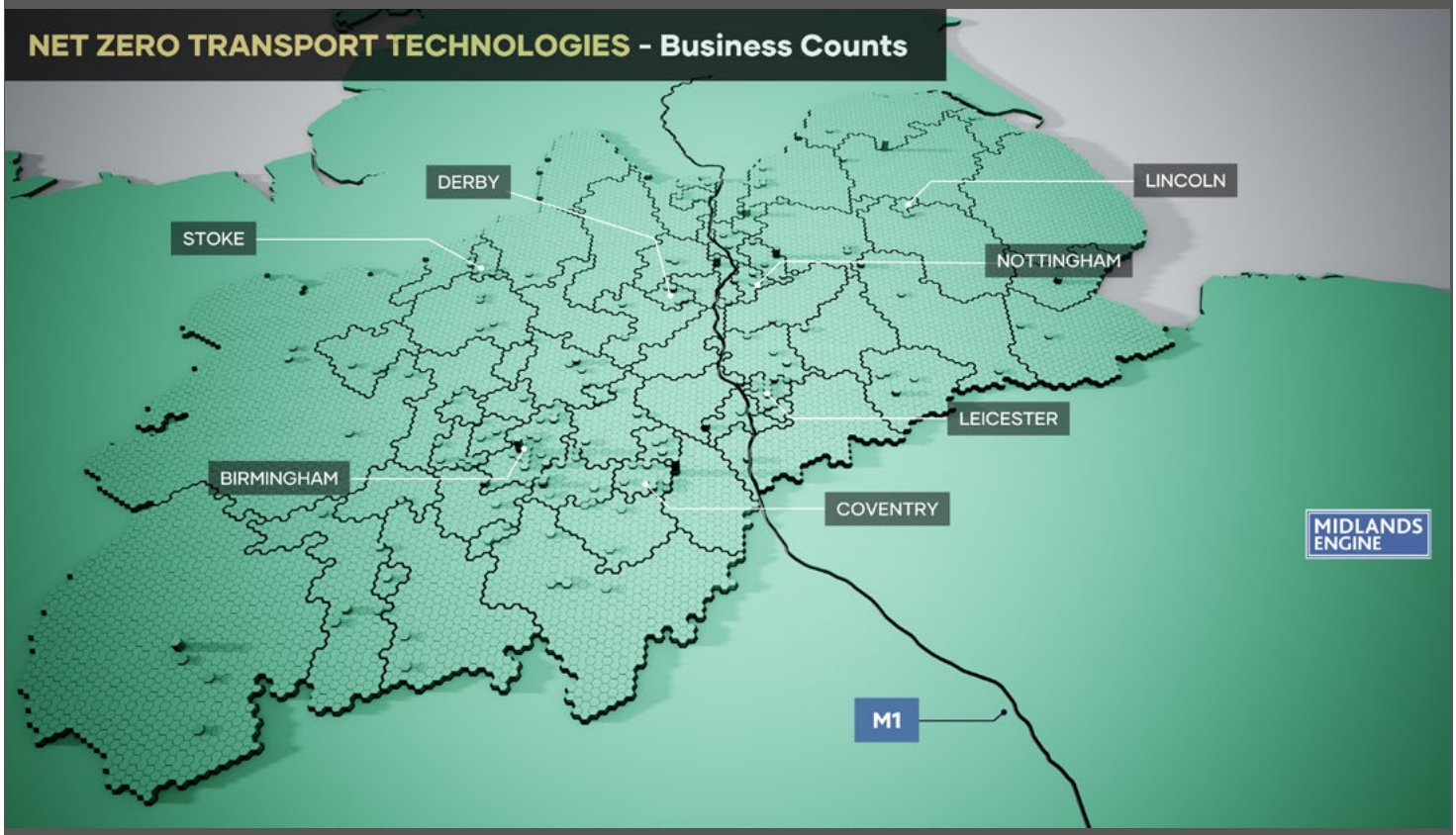
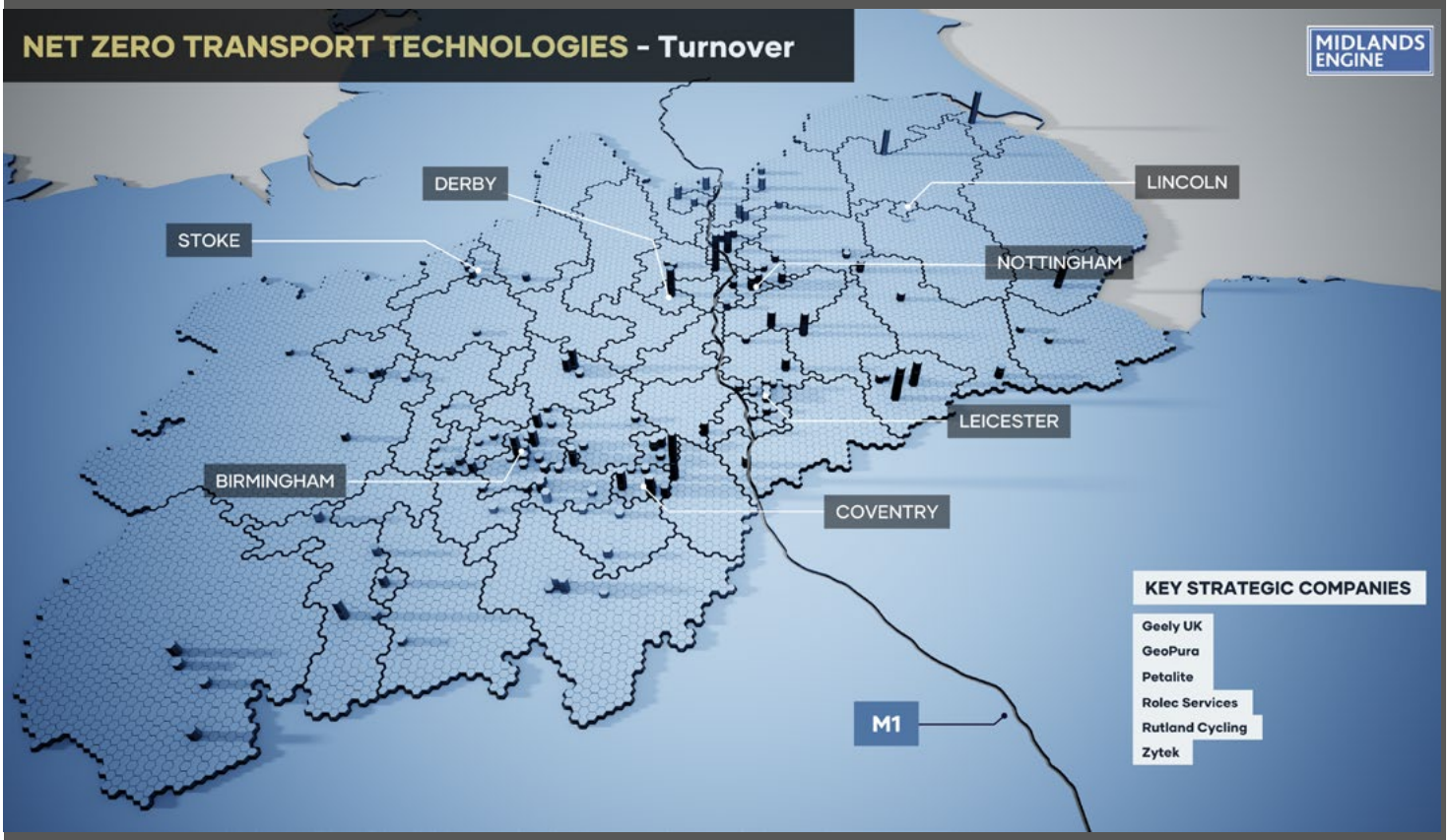
Net zero transport is a relatively nascent and undefined industry which cross-cuts several other more traditional and some emerging sectors. It is also a cluster with relatively few studies or data attached to it, thus the data presented should be taken with caution and in full knowledge of limitations previously outlined.

[1,2,4,5] Data City 2023, [3]20%+ company growth percentage per year.


NET ZERO TRANSPORT TECHNOLOGIES - Business Counts
DERBY
LINCOLN
STOKE
NOTTINGHAM
LEICESTER
BIRMINGHAM
COVENTRY
MIDLANDS ENGINE
M1


NET ZERO TRANSPORT TECHNOLOGIES - Turnover
MIDLANDS ENGINE
DERBY
LINCOLN
STOKE
NOTTINGHAM
LEICESTER
BIRMINGHAM
COVENTRY
KEY STRATEGIC COMPANIES
Geely UK
GeoPura
Petalite
Rolec Services
Rutland Cycling
Zytek
M1

Net Zero
Transport Technologies

Innovation Ecosystem

Accelerator Engagement:[1] **38**

Relevant Cluster Organisations:
MakeUK; Society of Motor Manufacturers and Traders; Midlands Aerospace Alliance; Energy Research Accelerator; Innovation Alliance for the West Midlands

Relevant spinouts:[2] **17**

Relevant high performing HEI research:
Universities of Keele; Loughborough; Nottingham Trent; Birmingham; Leicester; Nottingham; Warwick
7 Midlands universities with high research ranking in relevant subjects.[3]

Significant Innovation Hubs:
MIRA Technology Park; Manufacturing Technology Centre; Warwick Manufacturing Group; UK Battery Industrialisation Centre; Loughborough University Science & Enterprise Park; Energy Research Accelerator, H2GVMids; Advanced Propulsion Centre; National Transport Design Centre (NTDC); Power Electronic and Machines Centre Nottingham University

High Growth Company Grants[4]**:** **86**

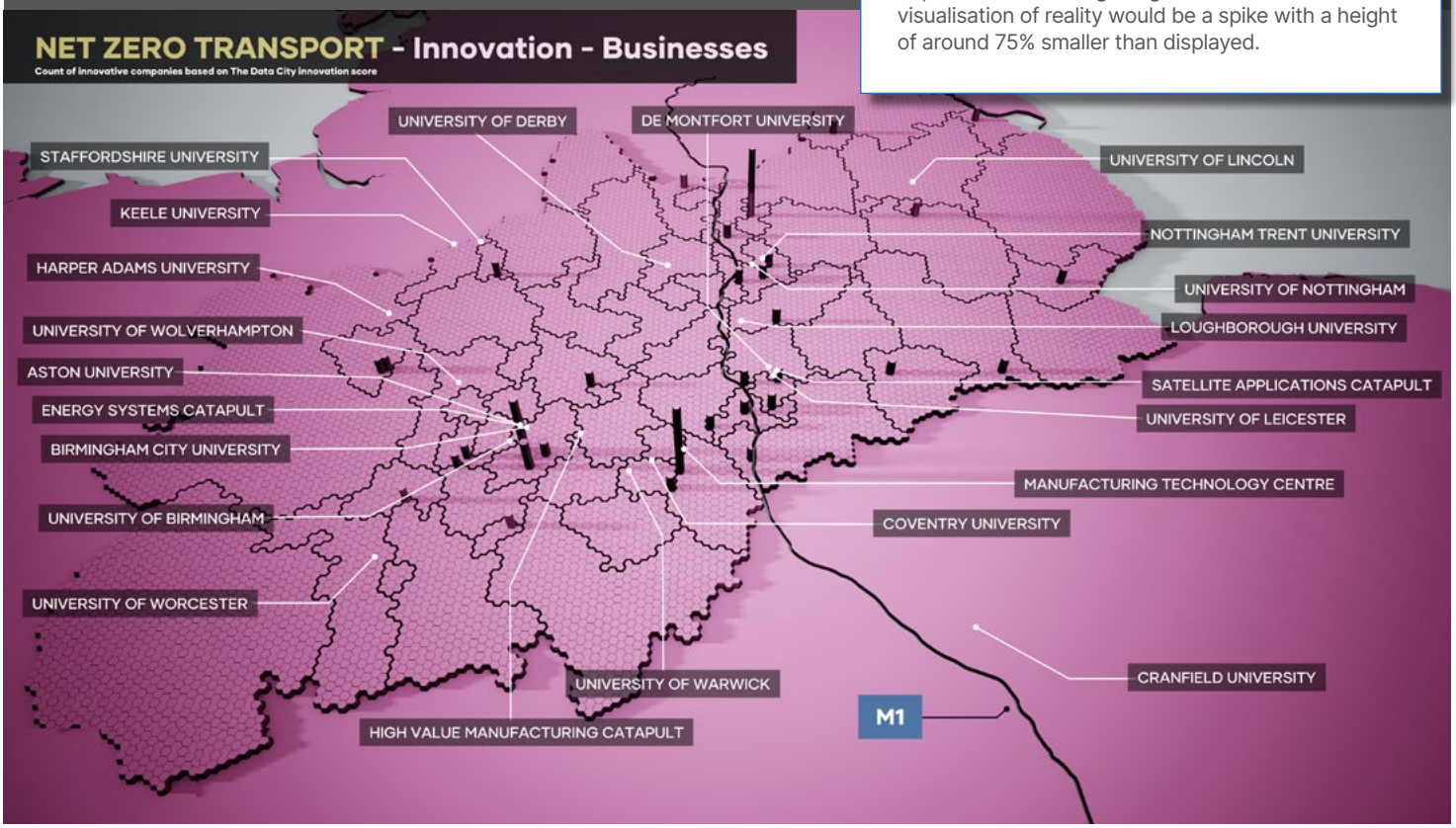
Innovate UK funding: **£27m** since 2005

28% of Innovate UK funding to net zero transport had a Midlands location.[5]

[1]Beauhurst 2022: High growth companies utilised accelerators, [2] Beauhurst, 2022, [3]REF 2021 GPA >3.0 in Physics; Engineering, [4]Beauhurst, 2022, [5]Data City, 2023.

MIDLANDS ENGINE OBSERVATORY

The height of the graph in a single postcode within Mansfield is exaggerated by company duplicates from a single organisation. A more realistic visualisation of reality would be a spike with a height of around 75% smaller than displayed.



Net Zero
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Talent Ecosystem

Estimated Employees: **3,882**

22% of national; largest region outside of London & SE.[1]

Earnings: Average salary **£41,986**

National average £43,556 (2% higher in Midlands).[2]

Further Education Leavers: **15,230**

More FE leavers (including higher level) in relevant subjects than all other regions.[3]

Relevant HEI High-Ranking Department:

Universities of Nottingham; Birmingham; Warwick; Loughborough

4 universities high ranked: international presence and expertise.[4]

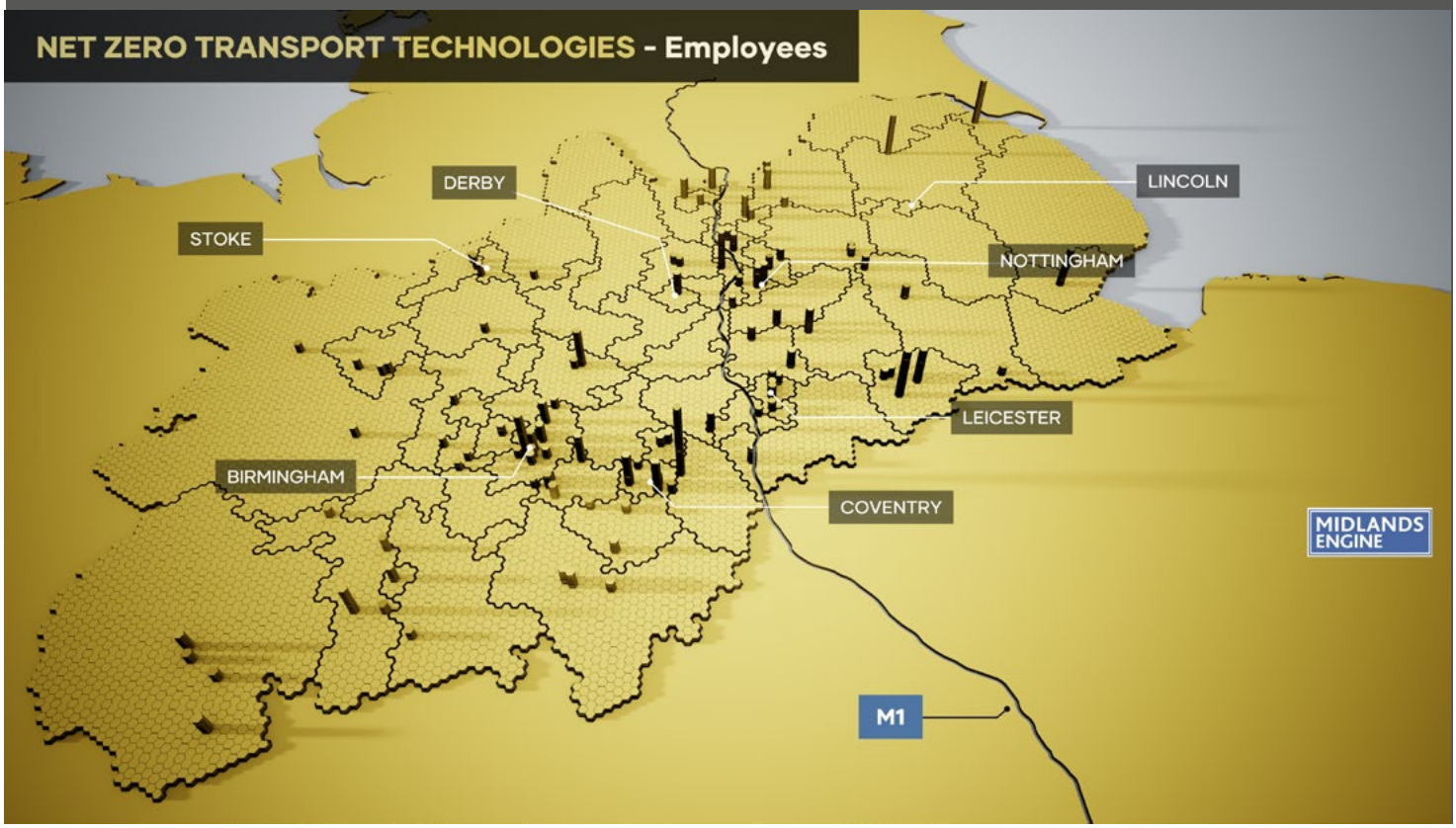
University Graduates: **9,530**

7% of ME graduates studied relevant subjects to net zero transport.[5]

Graduate Retention: change over 3 years: **97.3%**

West Midlands has the strongest manufacturing retention outside of London and the East regions.[6]

[1]Data City, 2023, [2]ONS ASHE, 2021, [3]QS 'Engineering and Technology' & 'Natural Sciences' world subject ranking 2022 - institutions appearing in UK top 25, [4]Graduates from relevant subjects 2021 (HESA), [5]Graduates from relevant subjects 2021 (HESA), [6]2,015/2,070 first degree graduates trained in region remain in 'Manufacturing' 3 years of graduating in 2019. First degree only. DfE Graduate Outcomes by Industry).



Net Zero
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Investment Ecosystem

Investment/Venture Capital Firms:
Funds HQ'd in Midlands Engine area **200**
313 Funds have offices in region.[1]

FDI into High Growth Companies: **48%**
15 of 36 investments in High Growth Companies.[2]

FDI Capex 2017-21: **$2.67bn**
7% of UK total.[3]

DDI Capex 2017-21: **$710.25m**
49% of UK total.[4]

Fundraising Volumes:

Mean av. £1.4m fundraising investment
£333.5m in 235 investments (inc. £69.6m across 116 seed investments; £96.6m across 73 venture investments).[5]

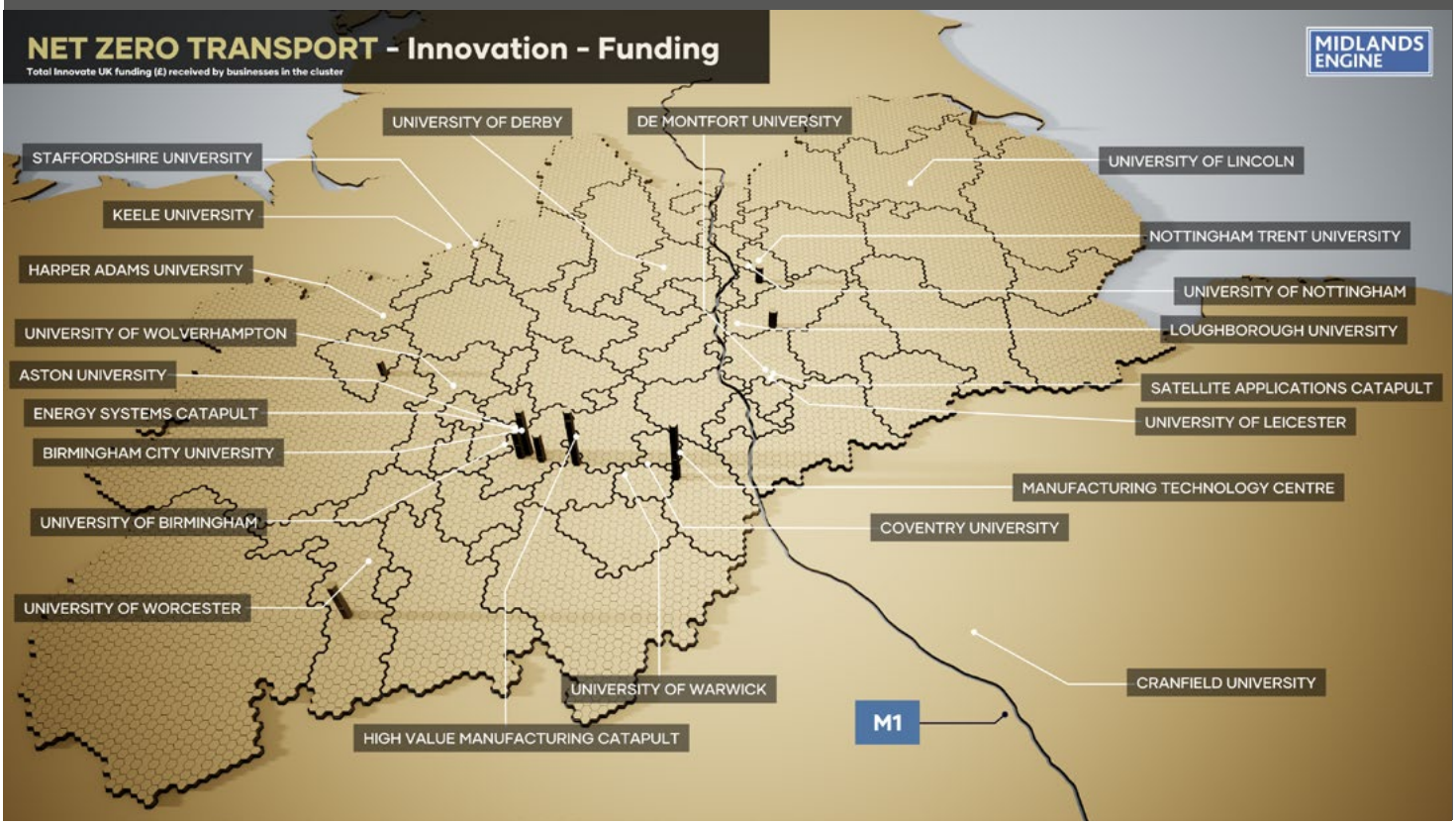
FDI Jobs 2017-2021: **651 jobs**
6% of UK total.[6]

DDI Jobs 2017-2021: **915 jobs**
51% of UK total.[7]

FDI Projects 2017-2021: **4 projects**
11% of UK total.[8]

DDI projects 2017-2021: **15 projects**
22% of UK total.[9]

[1]Beauhurst 2022, [2]Beauhurst 2022, [3]Wavteq 2022, [4]Wavteq 2022, [5]Beauhurst 2022, [6]Wavteq 2022, [7]Wavteq 2022, [8]Wavteq 2022, [9]Wavteq 2022.



CLUSTER SNAPSHOT – MIDLANDS ENGINE

COMMENTARY

- The Midlands saw a large spike in DDI marketshare in this cluster post-Covid-19.
- Wavteq forecast a UK FDI Capex of $15.71bn in this sector (renewable energy) in 2025.
- Midlands-based clean technology companies received just 2.39% of the total equity received in the UK from 2017 to 2021 by high-growth companies in this sector, despite making up 14.5% of the sector's population. They also received 13.4% of all grant money received by companies in this sector. The limited equity funding received by these companies may be an indication of the increasing draw of those companies located within innovation hubs in other regions (such as those situated in the Golden Triangle) and their associated research benefits.

Roundtable: cluster-specific challenges & recommendations

Businesses feel that a clear vision and long-term strategy for sustainable transport, both nationally and regionally, is a key gap. This is coupled with a fragmented funding and support environment, and no clear access routes into local government around key issues surrounding infrastructure, taxi licences, or support with access to finance.

Businesses also point to a lack of strategic direction at the national level, with no clear vision or dedicated funding to unlock the roll-out of new technologies. The sector wanted local government, mayors, and MPs to persuade central government and investors of the opportunities available in the region, set a strategic direction, and work to remove barriers.

Recommendations for Midlands Engine Partnership:

1. **Infrastructure:** Work with businesses to address the logistical barriers to rolling out battery technology across all modes of transport, including at key transport gateways such as railway stations

Recommendations for UK policy:

1. **Investment:** Support the establishment of West Midland's Gigafactory production unit and develop new engineering and technology skills to support growth in the electrical vehicle production market.

MIDLANDS ENGINE OBSERVATORY

datacity

wavteq

Beauhurst

This data has been compiled from multiple sources, using classifications based on clusters as proposed by Midlands Engine Partners. Where necessary wider sector data has been used as a 'best proxy'. Unless otherwise stated, all data is contemporary as of May 2023, and is an aggregation of all known counts/data within the Midlands Engine's 65 Local Authorities. Unless otherwise stated, business, employee and turnover figures have been calculated via DataCity based on trading addresses within the Midlands Engine.