



**MIDLANDS  
ENGINE**

**ADVANCED MANUFACTURING**  
**CERAMICS, MATERIALS & METALS**  
MIDLANDS CLUSTER SNAPSHOT 2023

# Advanced Manufacturing Ceramics, Materials & Metals



From metals in the Black Country to ceramics around Stoke-on-Trent and Staffordshire, and composites in Lincolnshire, this pan-regional specialism has a number of distinct but related clusters across the Midlands Engine.

Businesses in the ceramics, materials and metals industry are critical inputs and supply chains to wider industries and have a plethora of opportunities into the future to help drive net zero and digitisation in the modern economy.

There are a high number of spin-outs in this area reflecting

research and innovation strengths at a number of the region's universities and cluster accelerators, such as the Warwick Manufacturing Group and Ceramics Enterprise Zone, supported by multiple trade bodies such as UK Metals Council, the British Ceramics Confederation, and the British Plastics Federation.

However, fundraising in early stages is reportedly low and largely domestic in source. With strong domestic investment and a forecast of \$600m FDI to the UK in this sector by 2025, the Midlands has an opportunity to attract a larger market share.

## Cluster in context

- Almost 28,000 jobs; 30% of UK total and the most of any region outside of London and the South East.
- 47 high growth companies (36% of UK) and 10 £100m+ turnover companies (42% of UK).
- 7% of Midlands university graduates studied subjects relevant to ceramics, materials and metals, including from 4 of top 25 UK universities for Engineering & Technology
- 52% of Innovate UK funding to ceramics, materials and metals businesses since 2005 has been awarded to those with a Midlands address.
- Over 850 businesses; 32% of UK total and most of all regions. 24% growth in business numbers since 2013.
- 12% of UK ceramics, materials and metals Foreign Direct Investment Capex and 30% of UK ceramics, materials and metals Domestic Direct Investment Capex 2017-2021.

## Business Ecosystem



<b>Total Cluster Business Count:</b>	<b>853</b>
32% of UK; the most of any region. 24% growth since 2013. <sup>1</sup>	
<b>£100m+ Turnover Companies:</b>	<b>10</b>
42% of all in the UK have a Midlands location. <sup>2</sup>	
<b>High Growth Companies:</b>	<b>47</b>
36% of all in the UK have a Midlands location. <sup>3</sup>	
<b>Incorporations 2017-22:</b>	<b>91</b>
27% of UK ceramics, materials and metals incorporations between 2017 and 2022 have a Midlands location. <sup>4</sup>	
<b>Foreign-owned enterprises:</b>	<b>8%</b>
67 known to be foreign owned; Higher proportion of foreign-owned than national average (5%). <sup>5</sup>	

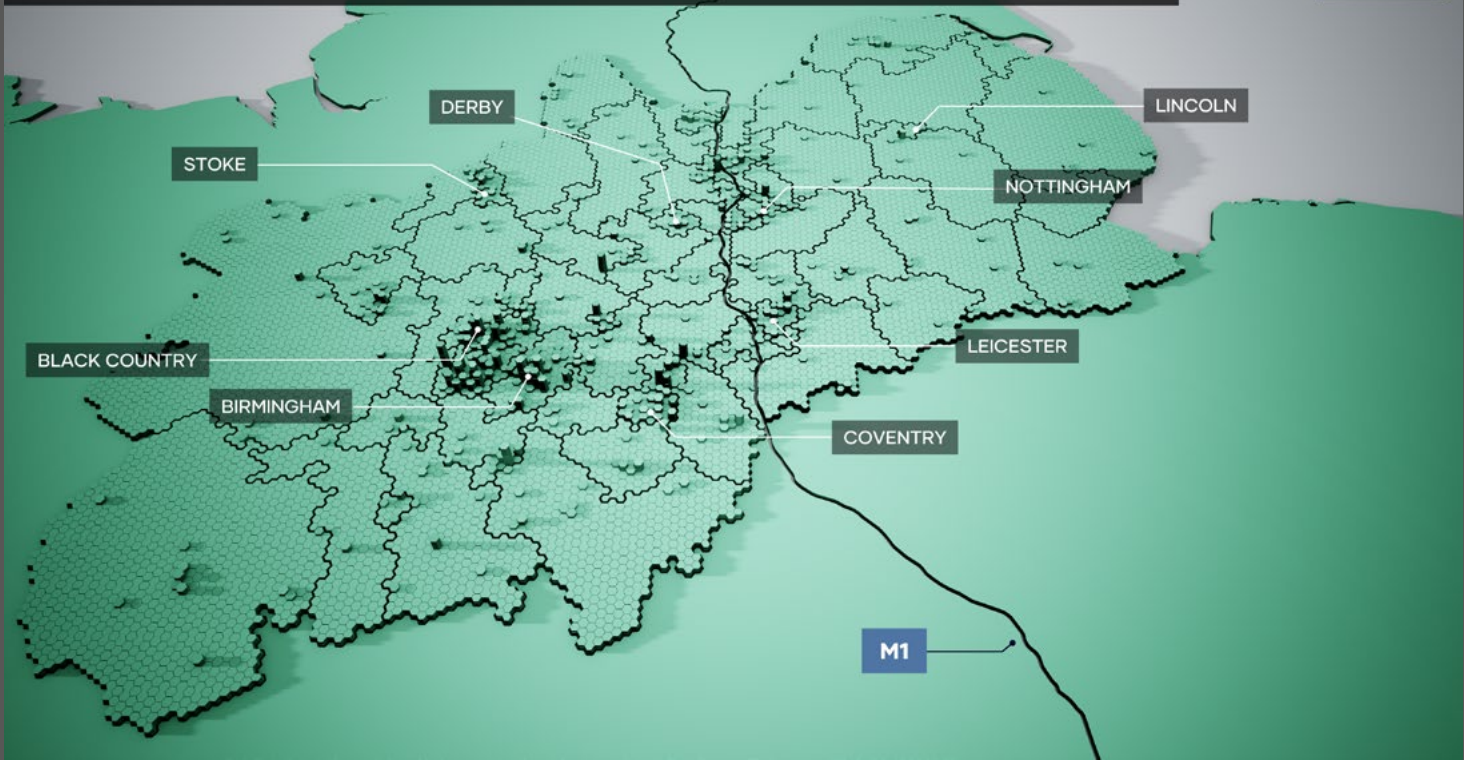


Ceramics, Metals and Materials here is defined as a cluster of strength within the established manufacturing sector in the Midlands. It is acknowledged that data (for example on the number of businesses and jobs) presented in this project is lower than what you would find in raw ONS SIC code data for ceramics, metals and materials (e.g. SIC 22 – SIC 25), but the reason for this is definitional. Using Data City, filtering was applied in order to capture the truly “advanced” manufacturing companies within this sector cohort, which is what the data aims to reflect.

<sup>1,2,4,5</sup> Data City 2023, <sup>3</sup>20%+ company growth percentage per year.

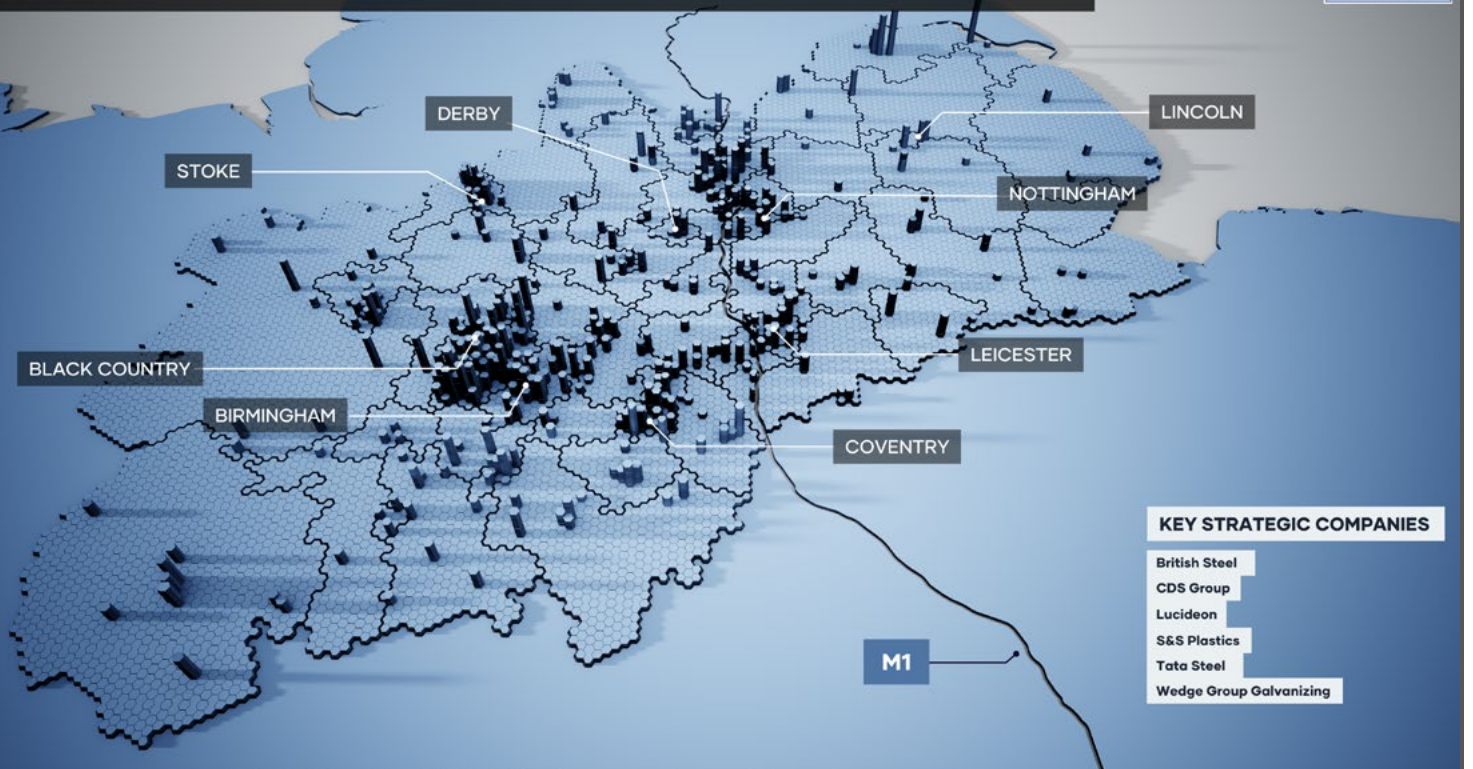
### ADVANCED MANUFACTURING - CERAMICS, MATERIALS AND METALS - Business Counts

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### ADVANCED MANUFACTURING - CERAMICS, MATERIALS AND METALS - Turnover

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# Advanced Manufacturing Ceramics, Materials & Metals



## Innovation Ecosystem



Accelerator Engagement:<sup>1</sup>

2

Relevant Cluster Organisations:

Ceramic Valley Enterprise Zone; UK Metals Council; British Ceramic Confederation; MakeUK; Midlands Industrial Ceramics Group; Innovation Alliance for the West Midlands; Composites UK; British Plastics Federation; Confederation of British Metalforming; Cast Metals Federation

Relevant Spinouts:<sup>2</sup>

30

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.<sup>3</sup>

Significant Innovation Hubs:

Manufacturing Technology Centre; Warwick Manufacturing Group; Ceramic Valley Enterprise Zone; Advanced Steel Research Hub

High Growth Company Grants:

18

Innovate UK funding:

£18m since 2005

52% of Innovate UK funding awards to ceramics, materials & metals businesses had a Midlands location.<sup>5</sup>

<sup>1</sup>Beauhurst 2022: High growth companies utilised accelerators,

<sup>2</sup>Beauhurst, 2022, <sup>3</sup>REF 2021 GPA >3.0 in Physics; Engineering,

<sup>4</sup>Beauhurst 2022, <sup>5</sup>Data City 2023.



# Advanced Manufacturing Ceramics, Materials & Metals



## Talent Ecosystem



### Estimated Employees:

**27,650**

30% of UK total; the most of any region outside London and the South East.<sup>1</sup>

### Earnings:

Average salary **£33,197**

National average £36,217 (8.3% lower in Midlands).<sup>2</sup>

### Further Education Leavers:

**11,220**

More FE leavers (including higher level) in relevant subjects than in any other region.<sup>3</sup>

### Relevant HEI High-Ranking Department:

**Universities of Nottingham; Birmingham; Warwick and Loughborough**

4 universities high ranked: international presence and expertise.<sup>4</sup>

### University Graduates:

**9,035**

7% of Midlands graduates in 2021 studied relevant subjects to ceramics, materials & metals.<sup>5</sup>

### Graduate Retention: change over 3 years:

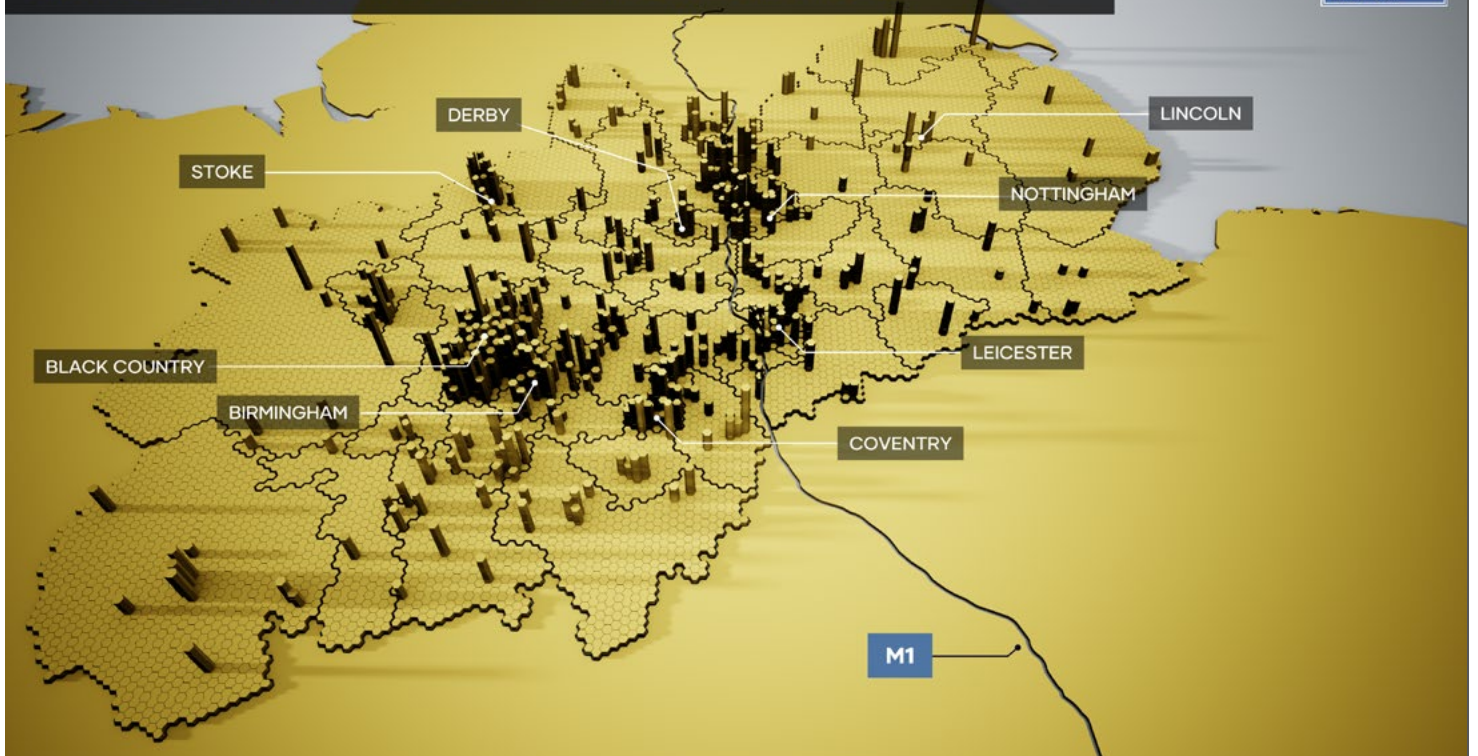
**97.3%**

West Midlands has the highest rate of manufacturing graduate retention outside London and the East region.<sup>6</sup>



<sup>1</sup>Data City, 2023, <sup>2</sup>ONS ASHE, 2021 - relevant sectors, <sup>3</sup>DfE Unit for Future Skills: Further Education leavers 18/19 in relevant fields, <sup>4</sup>QS 'Engineering and Technology' world subject ranking 2022 - institutions appearing in UK top 25, <sup>5</sup>Graduates from relevant subjects 2021 (HESA), <sup>6</sup>2,015/2,070 graduates trained in region remain in 'Manufacturing' 3 years of graduating in 2019. First degree only.

## ADVANCED MANUFACTURING - CERAMICS, MATERIALS AND METALS - Employees



# Advanced Manufacturing Ceramics, Materials & Metals



## Investment Ecosystem



### Investment/Venture Capital Firms:

**Funds HQ'd in Midlands Engine area**

**200**

313 Funds have offices in region.<sup>1</sup>

### FDI into High Growth Companies:

**37%**

417 of 1120 UK investments in High Growth Companies.<sup>2</sup>

### FDI Capex 2017-21:

**\$315m**

12% of UK total.<sup>3</sup>

### DDI Capex 2017-21:

**\$505.71m**

30% of UK total.<sup>4</sup>

### Fundraising Volumes:

**Mean av. £836k fundraising investment**

£15.8m in 19 investments (inc. £1.1m across 7 seed investments; £10.3m across 5 venture investments).<sup>5</sup>

### FDI Jobs 2017-2021:

**1,236 jobs**

15% of UK total.<sup>6</sup>

### DDI Jobs 2017-2021:

**2,990 jobs**

22% of UK total.<sup>7</sup>

### FDI Projects 2017-2021:

**39 projects**

22% of UK total.<sup>8</sup>

### DDI projects 2017-2021:

**116 projects**

21% of UK total.<sup>9</sup>

<sup>1</sup>Beauhurst 2022, <sup>2</sup>Beauhurst 2022, <sup>3</sup>Wavteq 2022, <sup>4</sup>Wavteq 2022, <sup>5</sup>Beauhurst 2022, <sup>6</sup>Wavteq 2022, <sup>7</sup>Wavteq 2022, <sup>8</sup>Wavteq 2022, <sup>9</sup>Wavteq 2022.





## COMMENTARY

- 2021 saw the highest job creation between the 2017-21 timespan, with DDI projects in the Midlands in this cluster peaking in 2020 and remaining at elevated levels.
- 18% of all high growth ceramics companies being tracked by Beauhurst are in Stoke-on-Trent.
- Wavteq forecast \$601mn FDI capex in this sector in the UK in 2025.

### Roundtable: cluster-specific challenges & recommendations

The sector has highlighted challenges in exporting to Europe post-Brexit, with new red tape and higher costs hindering exports. Businesses highlighted ambitions to support the transition to net-zero by switching to cleaner and renewable inputs; however, these changes are being constrained by supply chain pressures. Supply chains are stretched more generally, and skills shortages affect them and their suppliers. As a result of these supply challenges, businesses in the sector are reluctant to invest.

#### Recommendations for UK policy:

1. **Investment:** Extend capital allowances to support investment, particularly for SMEs.
2. **Trade:** Establish trade deals and enhance support to reduce the costs of exporting to key markets, particularly Europe, and better engage with industry on material supply such as through easing import quotas or boosting investment in British production
3. **Energy:** Provide support and incentives to help reduce the cost of investment in energy efficiency and increase return on investment.



*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.*