



From Australia to the UK: Growth Opportunities in the UK's leading manufacturing cluster

Geelong Manufacturing Council Roundtable
Friday 24 February 2023



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ONE REGION
MANY WORLDS
The West Midlands



WHY THE UK?

As the **5th largest economy in the world** and home to **67.1 million people**, the UK offers investors a **significant, globally connected market**.

Its **unique mix of world-class expertise and talent, flexible and liberal labour laws, and streamlined corporate governance systems** make the UK one of the easiest places in the world to set up and conduct business.



1st most attractive investment destination in Europe.



1st in G20 as a globally connected economy.



1st in Europe and 3rd globally for growing and scaling-up business.



4th in the global innovation index.



1st in G7 for research, impact and reach.



5th largest economy with a market of 67.1 million potential customers.



1st quality of green financial products in world's financial centres.

A GLOBALLY COMPETITIVE OFFER TO BUSINESS

The UK's tax, governance and regulatory regimes compare favourably with other mature international markets, and the UK government offer a number of incentives to promote R&D and venture capital investment.

Investing in the UK means a global business can benefit from:

- **The lowest corporation tax rate in the G7** - 19%
- **R&D incentives** - up to 186% deductions on R&D costs
- **Schemes offering Tax relief on VC investment** - EIS 30% up to £1m, SEIS 50% up to £100k
- **Globally-renowned legal and regulatory systems**
- **Mature B2B services market** - 2nd globally for services exports





THE WEST MIDLANDS: ECONOMIC OVERVIEW

AN INTERNATIONALLY SIGNIFICANT ECONOMY



AUD204bn, fast-growing economy



UK's second biggest city-region economy
Equivalent to Hungary



GVA increased
every year
2009-2019



UK's top Foreign Direct Investment (FDI)
location outside London & South East 2017-21



Birmingham - UK's **highest rate** of for **start-ups** outside of London for last five years



UK's biggest region for manufacturing output



185,000 students
Nine world-class higher education establishments



2.9m workforce
4.7m population
190 countries



Full-service
economy
200,000 businesses



100+ R&D assets
Commercial testbeds & accelerators

UNRIVALLED CONNECTIVITY AT THE HEART OF THE UK

Rail:

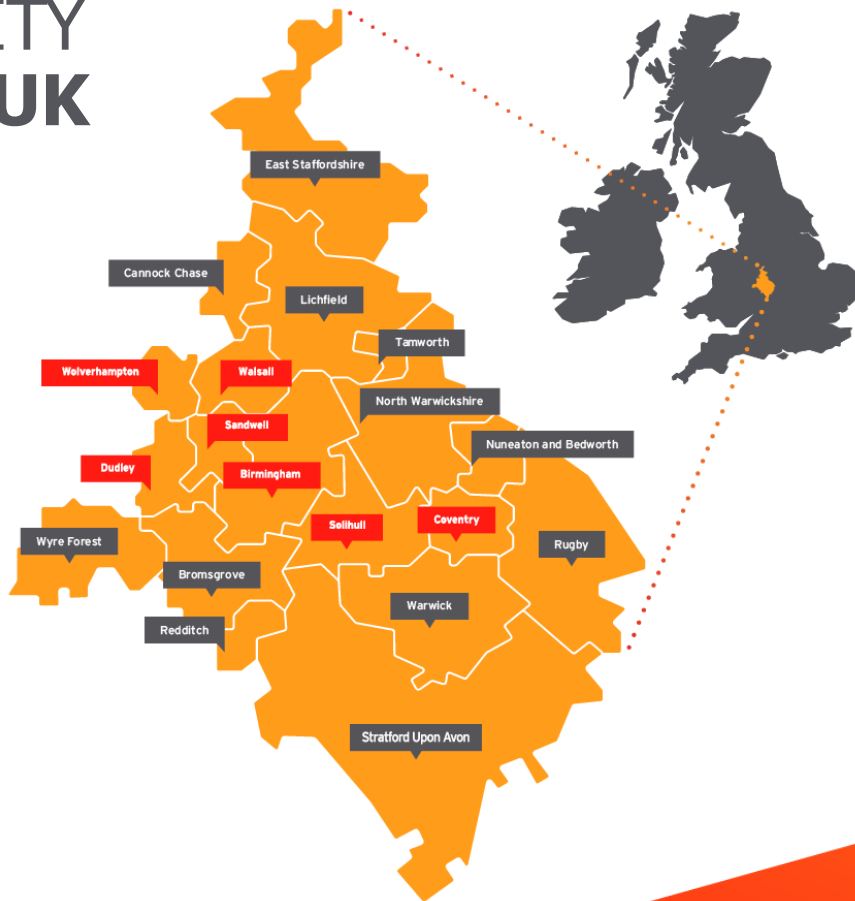
- At the heart of the UK's rail network – home to the busiest and most popular transport interchange in the UK outside of London.
- Currently less than 90 mins from London.
- HS2 to reduce West Midlands to London journey to 38 minutes by 2030.

Car:

- 90% of the UK's population being within a four-hour drive.
- Excellent road connectivity via UK motorways.
- Central London is only just over a two-hour drive.

Air:

- Birmingham Airport - 9 mins from the city-centre by rail.
- UK's third largest regional airport.
- 133 direct flights (including US & Asia), and 424 further onward connections (including Brisbane)
- Birmingham Airport is undergoing a £500million (AUD872m) upgrade to boost capacity.
- East Midlands (UK's largest freight airport under 60 mins away by road and rail)



FIVE KEY SECTORS

Reflecting the world-class industry and innovation strengths of the West Midlands region:



**Future
Mobility &
Advanced
Manufacturing**



**Creative &
Digital
Technologies**



**Modern
Business
Services**



**Data Driven
Healthcare
& Life
Sciences**



**Low
Carbon**



THE WEST MIDLANDS: THE UK'S LARGEST MANUFACTURING CLUSTER

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THE UK'S LARGEST MANUFACTURING CLUSTER

Establishing **a legacy for invention at the height of the first Industrial Revolution**, today **the region remains a powerhouse of productivity and innovation.**



The UK's largest manufacturing cluster generating £10.4bn GVA (AUD18.1bn) per annum.



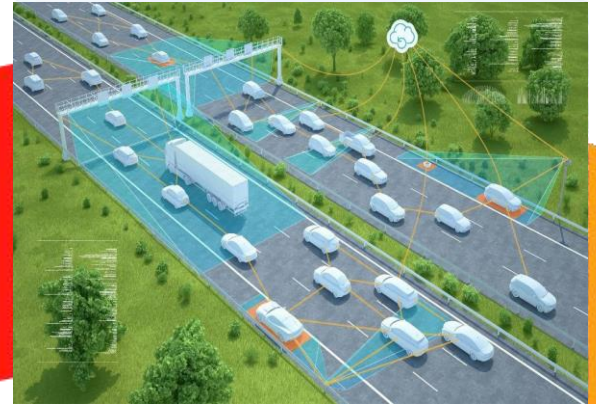
A 211,000-strong manufacturing workforce accounts for 10.6% of all local employment – above the national average of 7.8%.



At the centre of the UK's largest automotive, rail and aerospace clusters, the West Midlands is at the vanguard of solving many of the key global future mobility challenges.



A network of global heavyweights call the West Midlands home, with Jaguar Land Rover (JLR), Aston Martin, Rolls-Royce Control Systems and Collins Aerospace among the leading local players.



THE UK'S LARGEST MANUFACTURING CLUSTER

A young and diverse region, the West Midlands continues to build a strong pipeline of talent, providing the skills and expertise for the future of the manufacturing sector, cementing its continued position as the sector's leading cluster.



An established local employment base is fueled by over 24,860 STEM students at the region's nine universities each year.



On-the-job training provisions, with a network of further education and technology colleges offering apprenticeships in partnership with esteemed manufacturing firms such as The Manufacturing Technology Centre and MAKE UK's apprenticeship centre in the local area.



The West Midlands is recognised as the UK's fastest growing tech sector and was recently valued at £15.3bn (AUD26.7bn) – an increase of £3.8bn (AUD6.6bn) since 2021. Considered a UK leader in emerging technologies, the West Midlands has the highest number of companies operating in emerging tech sectors (2,946) outside of London.



OUR COMPANIES

The West Midlands is home to an innovative ecosystem of **leading global brands** **pioneering exciting, next-generation technologies.**

KUKA



SIEMENS

HS2

FANUC



MOOG

MEGGITT



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The West Midlands: Automotive



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THE ENGINE OF THE UK'S AUTOMOTIVE SECTOR

A third of all British-made cars and one in four UK engines roll off the West Midlands production lines, powered by a 46,500-strong workforce - almost 5 times higher than the proportion for England as a whole.



Jaguar Land Rover, BMW, Aston Martin Lagonda, Geely (LEVC and Polestar) and Changan all have major operations in the region.



The significant cluster of Original Equipment Manufacturers (OEMs) has established a deep-rooted Tier 1 supply chain which includes **Lear, ZF, AVL, Unipart and Gestamp**, and enhanced a base of Tier 2, 3 & 4 engineering and tech suppliers.



Over 14.5% of all the UK's automotive parts and accessories manufacturers are situated in the West Midlands – the most of any UK region.



60% of UK automotive R&D happens in the West Midlands. University and industry collaboration is driving the speed of research and innovation at our nationally acclaimed facilities including **HORIBA MIRA, Warwick Manufacturing Group (WVG)** and the **Manufacturing Technology Centre (MTC)**.



THE UK'S FIRST FUTURE MOBILITY ZONE

The UK's leading centre for automotive innovation, the West Midlands is at the vanguard of next generation vehicle technologies, delivering transformational innovation in Connected and Autonomous Vehicles (CAV).



Home to the UK's first 5G multi-city testbed and with **200 miles of viable, 5G-connected road for CAM technology,** the West Midlands is an ideal location for exciting collaborations between tech companies and automotive manufacturers.



The Centre for Connected & Autonomous Automotive Research (CCAAR), jointly run by Coventry University and Horiba MIRA, provides unrivalled access to design, build, test and validate CAV solutions for end-to-end connectivity solutions such as vehicle-to-vehicle (V2V) or vehicle-to-everything (V2X).



Locally based companies are developing autonomous systems. RDM's Aurigo 'AUTO-POD®' is a four-seat autonomous pod designed for first and last mile transportation in urban areas.



CAV trials have already taken place locally. A self-driving Jaguar Land Rover Sport successfully maneuvered the busy Coventry Ring Road, changing lanes and merging with traffic.



CHAMPIONING THE UK'S ELECTRIFICATION AMBITIONS

With 1.7 million electric vehicles (EV) estimated in the Midlands by 2030 (or one in four cars), the West Midlands is leading next-generation developments across EV supply chains to meet demand.



Home to the UK Battery Industrialisation Centre (UKBIC) in Coventry; the UK's leading open-research facility for battery development from prototype scale to mass production.



The University of Birmingham's Energy Institute's research project with Bentley Motors will deliver a sustainable source of rare earth magnets for electric and hybrid vehicles.



Ola Electric Mobility is investing £100m (AUD174m) into its Futurefoundry design and engineering centre in Coventry, partnering the regions universities and research institutions for research into battery cell technologies for the India 2-wheeler market.



The West Midlands: Rail



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ON TRACK WITH **DIGITALISATION AND DECARBONISATION**

A world-renowned collaborative ecosystem of commercial testbeds, accelerators and collaboration facilities, the West Midlands is unlocking new opportunities across Light Rail (LR), Very Light Rail (VLR), 5G-Connected trams and hydrogen fueled trains **for the wider transport network.**



40,000+ rail professionals - the highest of any other regional authority area, and home to HS2, Siemens Mobility, Wabtec CAF, AM Rail Group, Vivarail and Porterbrook.



The West Midlands' 5G testbed is offering businesses **exclusive access to trial and test applications** of connected devices, operations, infrastructure and passenger services.



Home to Birmingham Centre for Railway Research and Education (BCRRE), Europe's largest school of rail engineering and UK Rail Research and Innovation Network (UKRRIN), providing a network of Centres of Excellence in Digital Systems, Rolling Stock, Infrastructure and Testing.



The UK's first hydrogen fuel train, HydroFLEX, was developed in the West Midlands by BCRRE with rolling stock owner and asset manager Porterbrook.



EUROPE'S LARGEST INFRASTRUCTURE PROJECT

Signaling change in the UK's rail network, **the West Midlands is the centre point of the country's new High-Speed 2 line (HS2) - enabling access to Central London within a 38-minute travel time.**



Rail supply and systems are the region's largest sub-sectors, which **HS2 has catalysed further investment in, establishing a 350-strong dedicated supply chain of businesses engaged in project works.**



£1.2billion (AUD2.1bn) HS2 transport connectivity investment to be delivered by 2028, which will improve the wider transport network, expand the economic area and increase productivity.



Groundworks construction is already underway at Curzon Street Station, the first new rail terminus to be built in the UK since the Victorian era.



The West Midlands: Aerospace



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NATIONALLY SIGNIFICANT AEROSPACE CLUSTER

With leading expertise and innovation in control systems, the region's aerospace cluster features global names such as Rolls-Royce Control Systems, Moog, Collins Aerospace and Meggitt.



The Midlands Aerospace Alliance represents the largest aerospace cluster in Europe, covering 25% of the UK industry, with over 300 members.



A diverse supplier network of specialist metals, castings, tools and precision manufacturers can serve a vast spectrum of highly regulated industries, such as Defence, Marine and Nuclear.



The High Temperature Research Centre, a joint collaboration between the University of Birmingham and Rolls-Royce, provides a unique casting, design, simulation and advanced manufacturing research facility.





HS2



THE WEST MIDLANDS FUTURE MOBILITY



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The West Midlands: Industrial Automation and Industry 4.0



KICKSTARTING A DIGITAL REVOLUTION IN MANUFACTURING

The West Midlands industrial heritage presents a market opportunity for modernisation, by fostering a robust landing ground for businesses exploring industrial automation and industry 4.0.



The Manufacturing Technology Centre, alongside WM5G and other partners, offers a purpose-built private 5G network testbed enabling manufacturers to explore the benefits of multi-edge computing and wireless connectivity in digital manufacturing and robotics.



The presence of KUKA Systems, FANUC and Wolf Automation has grown the regional portfolio of systems specialisms from sensors, SCADA and telemetry to predictive maintenance and embedded systems, offering a cross-cutting spectrum of local expertise.



Warwick Manufacturing Group's Shadow Robot Dexterous Hand research project has size, shape, and movement capabilities similar to those of a human hand using artificial intelligence algorithms - making it ideal for applications in hazardous environments.



The West Midlands: Research and Development



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RESEARCH & DEVELOPMENT: WARWICK MANUFACTURING GROUP (WMG)

WMG hosts the National Automotive Innovation Centre – the largest automotive research facility in Europe, driven by a partnership between WMG, Jaguar Land Rover and Tata Motors European Technical Centre.



A High Value Manufacturing (HVM) Catapult member pioneering research across industries including automotive, rail, aerospace and defence industries in energy, materials & manufacturing, digital technologies and intelligent vehicles markets.



The Energy Innovation Centre, The Automotive Composites Research Centre and The Lightweight Technologies Centre of Excellence offer **Battery technology and lightweighting research facilities.**



High-Dynamic-Range (HDR) technology available to enable the creation of complex virtual environments including visual, aural, smell, touch and even taste to achieve a level of perceptual realism.

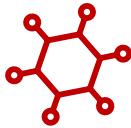


RESEARCH & DEVELOPMENT: THE UK BATTERY INDUSTRIALISATION CENTRE (UKBIC)

The £130m (AUD227m) facility in Coventry is the UK's leading facility for battery development from **prototype scale to mass production**. The open access facility supports academia and industry collaborations, as well as company-specific research projects.



Part of the Faraday Battery Challenge, a UK Government programme, to fast track the development of cost-effective, high-performance, durable, safe, low-weight and recyclable batteries.



The 200,000 sq. ft facility helps companies bring battery technologies to large scale production through new materials, cell formats, module structures and pack structures.



The facility has a Module and Pack assembly line to enable customers to test and produce low volumes of Cylindrical and Pouch cell batteries and provides cutting-edge processes that would be found in a high throughput battery assembly plant.



RESEARCH & DEVELOPMENT: HORIBA MIRA AND MIRA TECHNOLOGY PARK

HORIBA MIRA, headquartered in Nuneaton, is a transport systems integrator, providing a wide range of services and expertise; from individual product tests to turnkey engineering design, software engineering, development and build programmes.



Focused on supporting and collaborating with industry to develop the most efficient electric and hybrid vehicles, powertrain and battery systems - the site provides 40 major test facilities and 100km of specialised proving ground used by Polestar, Tevva, REE Automotive amongst others.



State-of-the-art facilities includes a new £1.5m (AUD1.7m) battery development facility, featuring a large climatic vibration laboratory and the UK's first battery abuse facility. This is the UK's first facility to offer electrical cycling – enabling battery charging and discharging whilst in use.

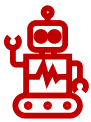


The Centre for Connected & Autonomous Automotive Research (CCAAR) is a partnership between HORIBA MIRA and Coventry University, dedicated to developing intelligent, connected vehicles and to nurture a pipeline of future talent to bridge the skills gaps in the industry.



RESEARCH & DEVELOPMENT: THE MANUFACTURING TECHNOLOGY CENTRE (MTC)

The MTC was established to prove innovative manufacturing processes and technologies in an agile environment in partnership with industry, academia and other institutions. Employing over 700 people, the MTC houses some of the most advanced manufacturing equipment in the world.



In early 2021, **MTC's robotics experts developed an industrial robot with the decision-making capability of a human operator.** Using machine learning and visual recognition, the robot was taught to make assembly decisions based on the components put in front of it.



The MTC has joined forces with hydrogen technology pioneer Adelan in a project aiming at significantly ramping up fuel cell manufacturing capacity in the UK for the automotive sector - helping the UK drive to net zero.



The MTC is working on a significant project, Daedalus, funded by UK Research & Innovation **to transform the use of additive manufacturing in highly regulated industries such as aerospace, space and medical devices** by developing standards for part quality, reliability, traceability and process repeatability.



The West Midlands: The Future of Manufacturing



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THE WEST MIDLANDS: ADAPTING TO THE FUTURE

The sheer scale of the region's manufacturing sector, including the agility of its SME-led supply chain, means it holds an unrivalled position in its ability to transition, diversify and serve new, innovative sub-sectors.



In 2020/21, low-carbon goods were the fastest growing sub-sector in the West Midlands employing nearly **100,000 people across 5,000 companies** - a greater concentration of expertise than any other UK location.



Strong, ambitious policy on net-zero and industrial decarbonisation is supporting business transition and creating significant market opportunity in the West Midlands.



With significant investment in modernisation and digitisation, initiatives such as the UK's Made Smarter programme will help to grow manufacturing through digital technologies, innovation and skills.



THE WEST MIDLANDS: DRIVING THE LOW CARBON ECONOMY

Supported by vast skills and R&D infrastructure, the West Midlands manufacturing sector is exploring opportunities across the low carbon sector:



Future Mobility - Unrivalled as the automotive capital of the UK, harnessing its transport heritage for new cutting-edge technologies across EV, CAV and 5G-enabled mobility.



Future of Energy - The geographic and strategic centre of the UK's energy market, leading in the development of next-generation smart grids, static energy storage and smart, local energy systems.



The Built Environment - Home to Europe's largest built environment campus, becoming the national centre for sustainable construction and leading in the manufacture of modular housing.



Circular Economy & Resource Management - Renowned for a strong history in the recycling and metals industry, the region is leading in innovation across reuse, remanufacturing and new, sustainable products and materials.



CASE STUDY: DECARBONISATION OF HEAT

It is estimated that 29 million existing homes in the UK will need to be upgraded to low carbon heating systems by 2050 to meet net-zero goals. The UK has a target to deliver 600,000 heat pumps a year by 2028, which poses significant commercial challenges.

Proposed by the University of Birmingham & other partners, the West Midlands-based National Centre for Decarbonisation of Heat will enable the rapid scaling up of manufacturing, skills and deployment of heat solutions - all necessary to meet carbon reduction targets.

The MTC and Energy Research Accelerator have developed a rapidly deployable, Industry 4.0 manufacturing process operated by robots and controlled remotely - **making it possible to produce components efficiently and close to market.**

This has been demonstrated through the flexible production of pipe assemblies, which are ubiquitous in heating systems and have been designed around thermal storage systems.



THE WEST MIDLANDS: THE BLACK CONTRY INDUSTRIAL CLUSTER

The Black Country Industrial Cluster **is one of only seven UK Industrial Clusters** funded through BEIS and UK Research & Innovation's Industrial Cluster Decarbonisation Programme. **It is the only inland cluster and is focused on zero carbon manufacturing and strategic UK supply chains.**



The 'cluster' status provides access to ongoing funding and supportive local powers. Investors have access to dedicated, specialist local engineering and planning support.



Established local networks of suppliers and business institutions are focused on decarbonised manufacturing: the products, skills and services are there to support investors.



The cluster has explored specific 'net-zero manufacturing hubs' with clean energy infrastructure for occupiers.





THE WEST MIDLANDS INVESTOR SUPPORT

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THE WEST MIDLANDS GROWTH COMPANY

The **strategic economic development vehicle** for the West Midlands.

Remit: Inward Investment, Capital Investment, Visitor Attraction (Business & Tourism); Internationalisation; Business Intelligence and Regional Business Engagement.

Shareholders: West Midlands Combined Authority (WMCA), seven West Midlands Metropolitan Councils and six of the region's major universities.

WMGC Partners: c.100 paying private sector partners. From IHG to HSBC.

CWG 2022: Delivering Business and Tourism Programme (BATP) for 2022 Commonwealth Games.

Birmingham Tech Week: Proud to be Headline Partner for Birmingham Tech Week 2022.



WEST MIDLANDS GROWTH COMPANY INVESTOR SUPPORT

The **West Midlands Growth Company** promotes inward investment into the West Midlands, driving business growth, new job creation and exciting opportunities across the region.

WMGC delivers complimentary support to prospective and new investors through its **Investor Catalyst** programme:



In-depth research, tailored insights and benchmarking against other locations



Facilitated access to world-leading universities, to explore R&D and graduate talent



Consultative support throughout business case creation



Signposting & support when accessing public and private finance



Comprehensive, impartial property searches



Networking and intros to over 100+ WMGC partners (ranging from global MNCs to local service providers)



Tailored launch communications and PR consultancy support



Bespoke familiarisation and visit programmes.

FUNDED MARKET ENTRY SUPPORT TO HELP ESTABLISH AND SCALE QUICKLY

Designed to overcome barriers new international investors face when setting up in the UK, the Global Growth Programme is designed to help companies thrive at the heart of the UK's fastest growing technology cluster.

In addition to WMGC's **investor support**, successful applicants will benefit from:



Nine month's funded, high-quality commercial **workspace**



UK company set-up, market entry & innovation services support



Extensive **calendar of industry integration** and **networking opportunities**



Tailored professional service offerings

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THE WEST MIDLANDS GLOBAL GROWTH PROGRAMME

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THANK YOU

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