



FUTURE MOBILITY WHY THE WEST MIDLANDS?

India Visit: 7th – 11th November 2022



Adam Titchen

Sector Lead – Advanced Manufacturing
West Midlands Growth Company

Agenda

- Welcome to the West Midlands Growth Company
- The West Midlands: Future Mobility Context
- India's Automotive Landscape and R&D Investment in the West Midlands
- West Midlands Global Growth Programme



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 the Hyatt to HSBC, with a shared interest in the growth of the region.



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.

PARTNERS AND SPONSORS



bruntwood



UNIVERSITY OF
BIRMINGHAM



AN INTERNATIONALLY SIGNIFICANT ECONOMY



A **£117bn**,
fast-growing economy



**UK's second biggest
city-region economy**
Equivalent to Slovakia



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



175,000 students
Eight world-class
higher education
establishments



2.9m workforce
4.7m population
190 countries



Full-service economy
178,000 businesses



100+ R&D assets
Commercial testbeds &
accelerators

UNRIVALLED CONNECTIVITY AT THE HEART OF THE UK

Train:

- Birmingham New Street – located at the heart of the UK network – is the busiest and most popular (*Transport Focus, 2018*) station outside of London.
- Just 1 hour, 20 minutes to Central London.
- £1.2bn investment in regional infrastructure for HS2 will **reduce Birmingham to London journey to 52 minutes.**

Car:

- **90% of the UK is within a 4-hour drive.**
- Excellent road connectivity via UK motorways.
- Central London is only a 2-hours, 30-minute drive.

Air:

- Birmingham Airport - UK's third largest regional airport.
- 133 direct flights (including US & Asia), and 424 further onward connections.
- **UK's most accessible airport 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**

A MAGNET FOR GLOBAL RELOCATIONS AND EXPANSIONS

Attracting **the world's biggest names** across a wide range of sectors:-

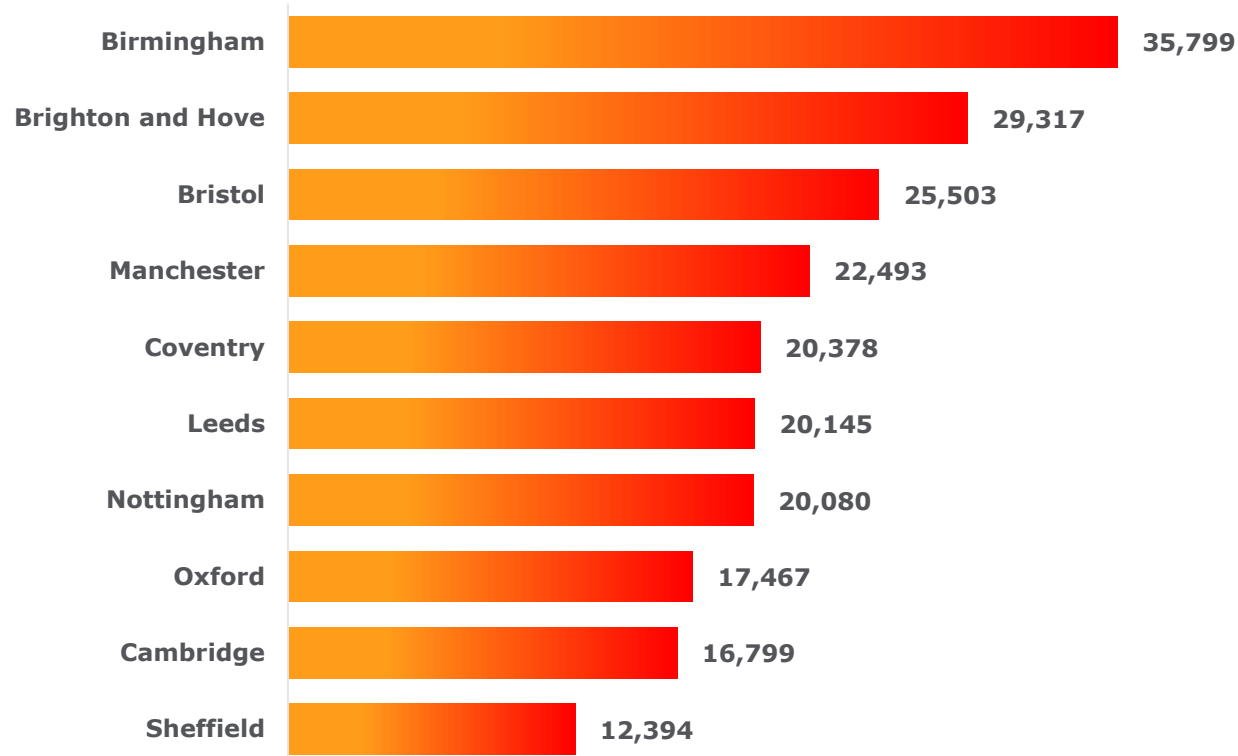


QUALITY OF LIFE A RICH OFFER AT AN AFFORDABLE PRICE



IT'S NOT JUST COMPANIES RELOCATING HERE

INTERNAL UK MIGRATION FROM LONDON, 2015-2020



	LONDON	BIRMINGHAM
Average House Price <small>(Zoopla, 2022)</small>	£704,138	£235,681
Affordability Index <small>(Zoopla, 2022)</small>	18.8	8.1
Average Monthly Rent - 1 bed flat <small>(Valuation Office Agency, 2022)</small>	£1,625 (central) £1,300 (outer)	£725
Disposable Income p.a. <small>(Yahoo Finance, 2019)</small>	£1,078	£9,692

INDIA TO THE WEST MIDLANDS: INNOVATING FUTURE MOBILITY



The West Midlands
One region, many worlds

OPPORTUNITIES FOR INDIAN AUTOMOTIVE COMPANIES IN THE WEST MIDLANDS

The West Midlands world-class business ecosystem has proved an **attractive value proposition to Indian investors**, outperforming all UK regions other than the South-East with **76 investments totalling £3.5bn** and creating **13,000 new jobs** over the past decade.

A wealth of investment opportunities for Indian tech companies in the West Midlands include:



A remarkable base of tier 1 to tier 4 automotive suppliers proficient in battery and powertrain propulsion (hybrid, electric and hydrogen).



The **density of work between university and industry**, is driving the speed of research and innovation to overcome challenges in **power electronics, battery tech, battery swapping and charging infrastructure**.

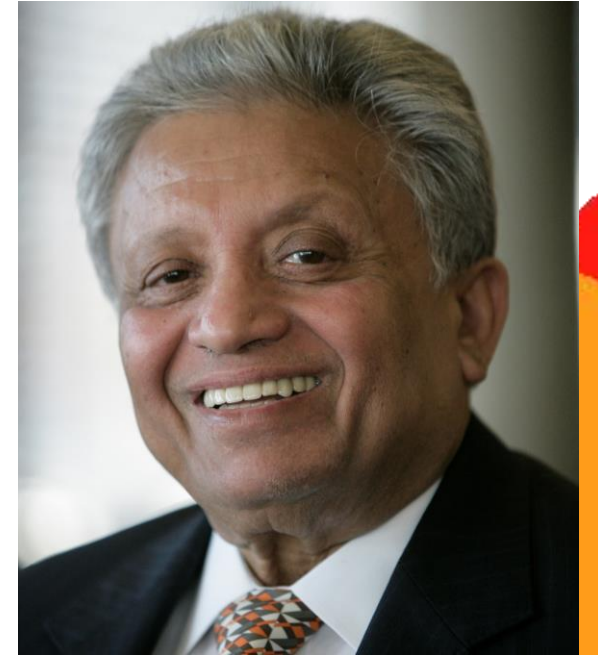


The **UK's only 5G multi-city testbed** and the **first Future Mobility Zone**, the region is one of the best for **prototyping, designing and trialling connected, autonomous cars**.



WARWICK MANUFACTURING GROUP (WMG) - PROFESSOR LORD KUMAR BHATTACHARYYA

- Career began with his studies in **Mechanical Engineering at the Indian Institute of Technology in Kharagpur.**
- **In 1961 he came to the UK** to serve a six-year graduate apprenticeship at Lucas Industries.
- Further studies and research at the University of Birmingham earned him a **Master of Science (MSc) degree in engineering production and management**, followed by a **PhD in engineering production** in 1970.
- **Founded WMG in 1980** combining academic excellence with industrial relevance.
- Played a leading role in **attracting Tata to invest in British manufacturing.**
- In 2016 Lord Bhattacharyya became **Britain's first ever Professor of Manufacturing (Engineering).**



The logo for HS2, consisting of the letters 'HS2' in a bold, blue, sans-serif font, centered within a white circle. The background of the entire image is a collage of orange and blue geometric shapes, with a blurred image of a white and blue train on the left side.

HS2

THE WEST MIDLANDS FUTURE MOBILITY



The West Midlands
the region, every word.



FUTURE MOBILITY

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.

60%
UK's automotive R&D

46.5k
automotive employees – **biggest talent pool** in UK

Our Strengths

Scale, breadth & talent:
UK's leading automotive cluster. **30% of UK cars**. UK's largest cluster employing **211,000**; 32,500 **STEM** students



UK's Electrification Heartland
Home to **UK Battery Industrialisation Centre** Gigafactory, Coventry UK.



Manufacturing 4.0
5G test-bed. Enabling **IoT** and private networks. Manufacturing Tech/Automation cluster.

Mobility innovation
WMG, MTC, HORIBA
MIRA

Rail/Light Rail/Very Light Rail expertise & home to HS2



Our Opportunities

- Decarbonisation**
- Electrification
 - Light-weighting
 - Digitalisation in Rail



Connected & Automated Mobility

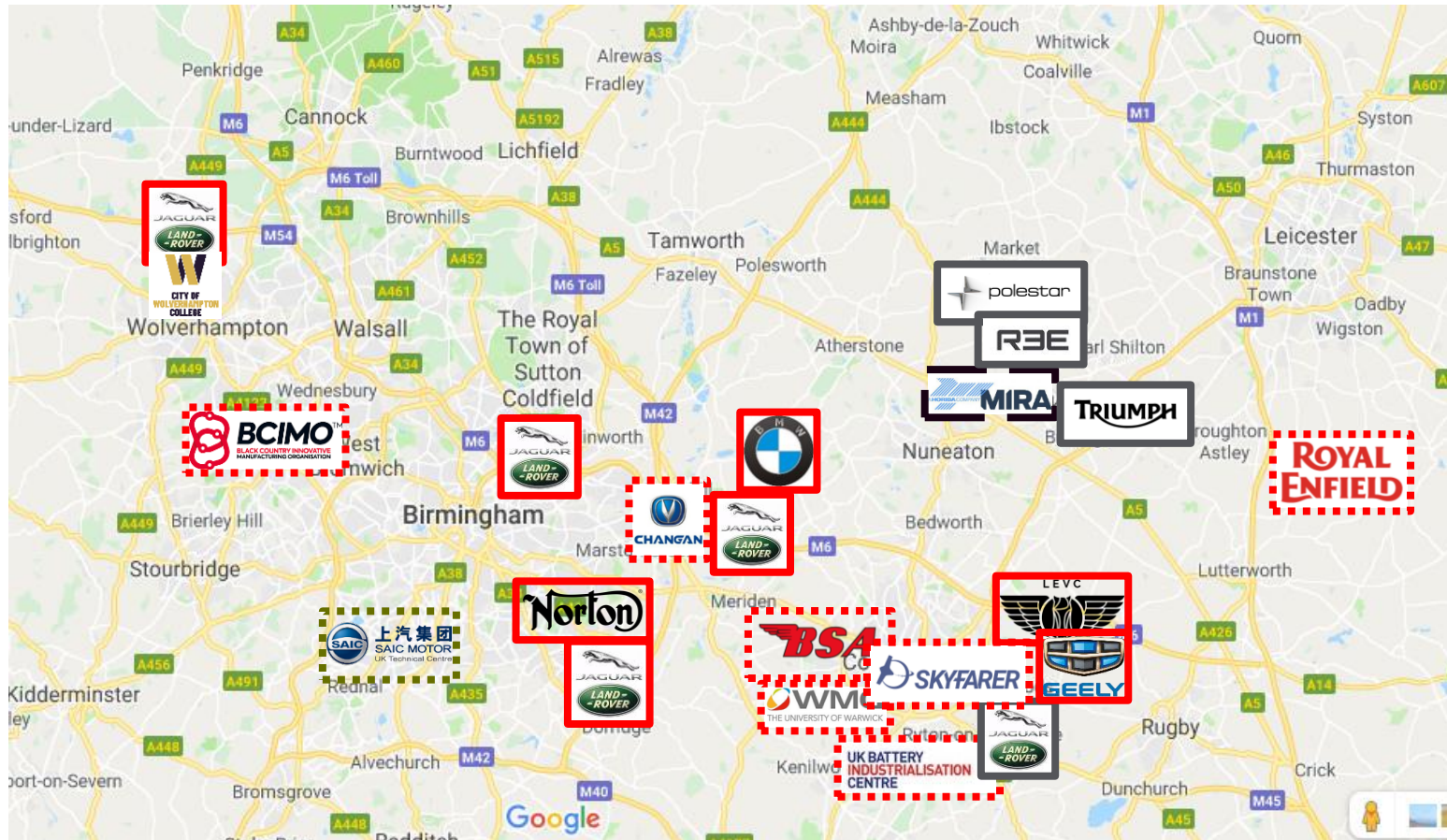
Who is here?



长安汽车
CHANGAN



FUTURE MOBILITY: CONTEXT



KEY

- Testing
- R&D
- Manufacturing
- Engineering

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FUTURE MOBILITY ZONE

The West Midlands is home to the UK's first Future Mobility Zone and only 5G multi-city testbed.

- Modal shift trials in areas like the University of Warwick.
- Midlands Future Mobility - extensive network of 200+ miles of highly connected roads to improve autonomous and other testing capability.



WMG - UNIVERSITY OF WARWICK

The University of Warwick hosts the National Automotive Innovation Centre – the largest automotive research facility in Europe.

- Situated at University of Warwick campus (along with Advanced Propulsion Centre).
- Part of the High Value Manufacturing Catapult network.
- Expertise in lightweight materials and battery technology:
 - Power electronics, machines & drives
 - Vehicle propulsion systems
 - Cell engineering
 - Demonstrating scalability to full-sized cell, including developing electrode mixtures, deposition processes and cell formats.
- Leading the development of Very Light Rail.
- Members of the Faraday Institution.



MANUFACTURING TECHNOLOGY CENTRE (MTC)

The MTC is developing the 'Factory in a Box' concept to increase automation and productivity in UK manufacturing.

- Leading Technology Research Organisation with specialism in industrial automation, digitalisation and advanced materials.
- Supports businesses of all sizes to manufacture products at lower cost, better quality and in higher volume, based on product and process improvement.
- Hosts the National Centre for Additive Manufacturing, with state-of-the-art 3D printing equipment for automotive applications.
- Installed purpose-built private 5G network testbed, enabling manufacturers to explore benefits from multi-edge computing and wireless connectivity in digital manufacturing and robotics.



UK BATTERY INDUSTRIALISATION CENTRE (UKBIC)

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

- £127m, 200,000 sq. ft. research facility located close to Coventry Airport.
- Will help companies bring battery technologies to large scale production, through:
 - New manufacturing processes
 - New materials
 - New cell formats
 - New module structures
 - New pack structures.
- Reduces risk for high volume manufacturing investments.



HORIBA MIRA

Horiba Mira has an extensive record in the development of Connected & Autonomous Vehicles (CAV) for over 15 years.

- Leading automotive innovation centre and proving ground, encompassing 100km of test track.
- Used for testing by a wide variety of businesses, with a variety of applications: traditional vehicle testing; autonomous systems; brakes; EV batteries and fuel cells.
- The **Centre for Connected & Autonomous Automotive Research (CCAAR)** is a partnership between HORIBA MIRA and Coventry University, dedicated to developing intelligent, connected vehicles.



WEST MIDLANDS GIGAFACTORY ACCELERATES THE UK'S TRANSITION TO AN ELECTRIFIED FUTURE



WEST MIDLANDS
G I G A F A C T O R Y





WHY INDIA?

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2, 3 & 4-WHEELER MARKET

Indian car ownership is low (approx. 22 cars per 1000 people).

- Ownership rates for two-wheelers and three-wheelers (2W and 3W) are among the highest in the world.
- Expensive battery-powered cars are likely to be out of reach of many consumers in India, leading 2W and 3W to continue to dominate sales.
- Use case scenarios across the country for small-format mobility vary, with 2W deemed ideal for last mile delivery for ecommerce & groceries while 3W are favoured for goods and passenger mobility.

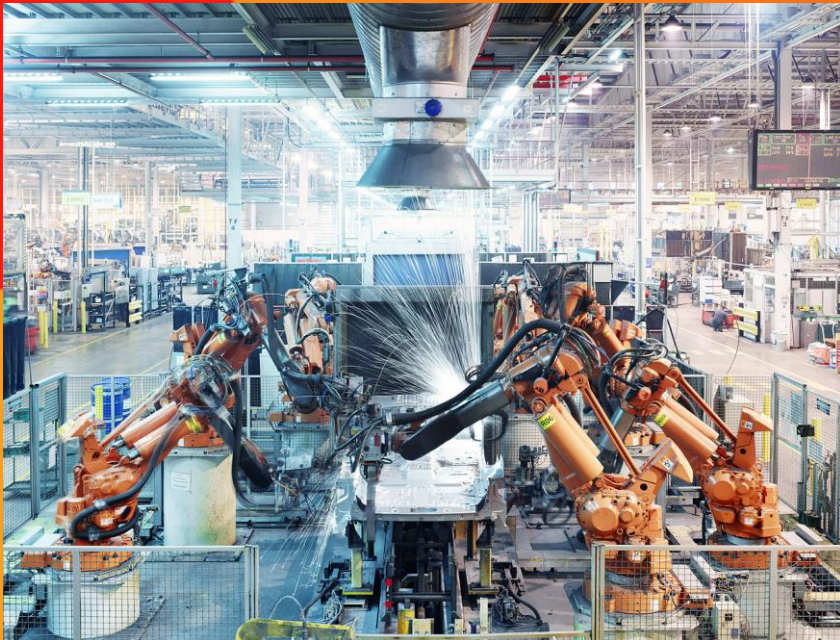


FAME II: FASTER ADOPTION AND MANUFACTURING OF HYBRID AND ELECTRIC VEHICLES

India is already a world-leader in mass manufacturing of 2W and 3W vehicles.

- FAME II aims to encourage greater uptake of electric vehicles. However, there is a range of criteria that needs to be fulfilled.
- In a joint report between Deloitte and the Confederation for Indian Industry (CII), 25% of respondents cited a lack of charging infrastructure, while 11% expressed concern about time to charge and 14% were worried about driving range.
- Closer collaboration with manufacturing specialists in the West Midlands, Indian manufacturing firms could improve processes for mass production, and benefit from FAME II subsidies.





CASE STUDIES

TVS MOTOR GROUP: NORTON MOTORCYCLES NEW SOLIHULL FACILITY

The newly built facility is a clear commitment to Norton by TVS Motor Company

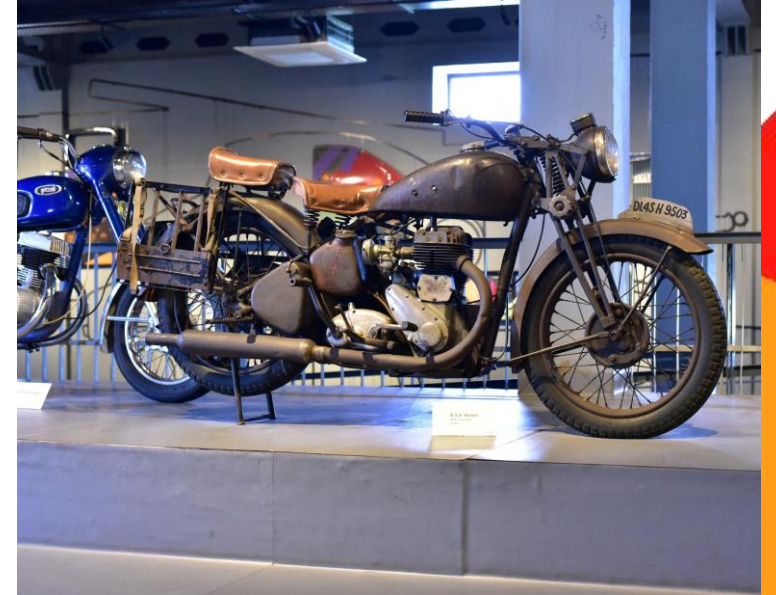
- Norton's new global headquarters has a state-of-the-art manufacturing facility, forming a critical part of the marque's strategic growth and performance.
- The Solihull site will also house Norton's global design and R&D hub, customer showroom, service workshops and offices, and has been designed to optimise sustainability and reduce waste to landfill.
- The new production line will be capable of delivering around 8,000 motorcycles a year and create over a hundred new highly-skilled jobs (and more in upcoming years).
- Producing the current range with world-class quality standards and developing exciting and innovative future products.



MAHINDRA: BSA ELECTRIC MOTORCYCLE

The Electric BSA Project Highlights:

- Creation of a modern retro, authentic, best-in-class, electric-motorcycle that is unmistakably British.
- Powered by green-fuel and refined with state-of-the-art technology.
- Project to include a bespoke battery, with a specially designed motor that creates the right retro-torque with an authentic sound.
- Prototypes, control features and power management to be developed efficiently to get the maximum out of the battery.
- Motorcycle to be developed with advanced levels of telematics to enhance the ownership/riding experience.



OLA ELECTRIC: 'OLA FUTURE FOUNDRY' NEW COVENTRY FACILITY

A £100 million UK investment over the next 5 years to open a R&D facility.

- Creating approximately 200 jobs in design and engineering with research into battery cell technologies.
- A world-class UK design and R&D team to work closely with headquarters in Bangalore to help build the future of mobility across two-wheeler, four-wheeler and other form factors.
- A multi-disciplinary team that is agile, flexible and responsive to Ola's consumer needs.
- The Centre will also partner with the West Midlands' universities and research institutions.





THE WEST MIDLANDS GLOBAL GROWTH PROGRAMME 2022

FUNDED MARKET ENTRY SUPPORT TO HELP FDI's ESTABLISH AND SCALE QUICKLY

Designed to overcome barriers new international investors face when setting up in the UK, to help them thrive at the heart of the UK's fastest growing technology cluster.

In addition to WMGC's **Investor Catalyst 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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BIRMINGHAM 2022 international games

THE CENTRE OF THE UK'S FASTEST GROWING TECHNOLOGY SECTOR

GLOBAL GROWTH PROGRAMME

Helping you to establish and scale your business in the UK

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25% of UK gaming output produced in West Midlands

1st and 4th fastest growing in the UK (Open Tech)

95 global partners

£10m in strategic business partnerships

A SPRINGBOARD TO SUCCESS

Develop Key Strategic Business Partnerships

State-of-the-Art Office Facilities

Tailored Business Support

A Vibrant Events Programme

500+ events

ACCELERATE YOUR INVESTMENT IN THE UK

The West Midlands Global Growth Programme is now open to companies who are/have:



A wholly-owned subsidiary or branch of a non-UK company, or with more than 10% of shareholding held by a non-UK organisation.



Technology-led or operating within the Future Mobility; Healthcare & Lifesciences; Business, Financial & Professional Services or Creative & Digital Technology sectors.

10

A qualified ambition to create 10 or more jobs within the West Midlands within three years of market entry.



The company must not have a pre-existing trading address within the West Midlands.

Discover more at investwm.co.uk/globalgrowth.

Email invest@wmgrowth.com today to register an expression of interest.



THE GLOBAL SCALE-UP GAMES



2022 Scale Up Games finalists with Andy Street, Mayor of the West Midlands

A transformational opportunity for high-growth businesses with aspirations of entering the UK market to compete for a unique programme of funded support, helping them realise their international ambitions.

- Open to scale-up companies with a proven business model in their own market, who are able to demonstrate innovative products/solutions. The programme is run by **Midlands Engine**, working **in partnership with West Midlands Growth Company, DIT and the Global Entrepreneur Programme**.
- Open to applicants **from November 2022**, with pitching events taking place during December and January 2023 for successful applicants.
- Winners of these pitching events will receive financial support to travel to the UK for finals week in the Midlands in March 2023.
- During this week, finalists will:
 - receive a **programme of internationalisation support** delivered by the UK's Department for International Trade and its Global Entrepreneurs Programme and will be invited to pitch to a panel of carefully curated UK-based investors.
 - benefit from a **tailored familiarisation programme** to help them **explore business opportunities in the UK**, including meetings with potential buyers, suppliers and commercial partners and sector specialists.
 - Have the opportunity **to network with other like-minded international companies and key stakeholders** from the Midlands business community at several hosted dinners and other hospitality opportunities.

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Department for
International Trade

THANK YOU

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