INVEST WEST MIDLANDS

LOW CARBON

West Midlands Growth Company

With low-carbon goods now representing the fastest growing sector in its £105bn economy, the West Midlands is poised to lead Britain's Green Industrial Revolution. Underscoring this, is the region's unique ability to take a whole-system approach to carbon reduction.

The region is simultaneously advancing several vital, interconnected infrastructure systems across energy, mobility, manufacturing, and housing, to deliver holistic and impactful low carbon solutions.

Unrivalled as the automotive capital of the UK (responsible for a third of all British made cars), the West Midlands is harnessing its transport heritage to pioneer cutting-edge new technologies in zero emission travel. From electric vehicle supply chain to Connected and Autonomous Vehicles (CAV) and Very Light Rail (VLR); major West Midlands-headquartered brands including Jaguar Land Rover, the London Electric Vehicle Company (LEVC) and Aston Martin are at the vanguard of the UK's Electric Vehicle revolution.

Beyond tailpipe emissions, local expertise in systemwide decarbonisation is redefining the future of energy generation, storage, and distribution, compounded by smart energy systems. The West Midlands is the only UK region with designated Energy Innovation Zones and sits at the heart of the UK's transmission and distribution infrastructure, with National Grid and Cadent Gas headquartered in the region.

The area's specialist talent is the key draw for utilities businesses, with 28 times the national average of energy distribution employment found in the West Midlands.

The region is also constructing a net-zero future for the built environment. The National Brownfield Institute (NBI) in Wolverhampton is set to become Europe's largest specialist construction and built environment campus, teaching, and deploying transformational Modern Methods of Construction (MMC) that significantly reduce carbon emissions.

Key Strengths

Country's largest specialist talent pool

The West Midlands' low carbon and environmental goods sector employs 97,000 people across 5,000 companies: a greater concentration of expertise than any other UK location. The region employs 28 times the national average in electricity transmission and 11 times more in mains gas network operation. This will only grow as the region expects to create 20,000 new jobs in the next five years, a growth of 9% in the sector.

Scale of innovation

The extensive base of R&D from the region's eight universities, makes the West Midlands an ideal location to trial new low carbon technologies at scale. The region's designation as the UK's first Future Mobility Zone is testament to the scale of innovation opportunities across powertrain and battery propulsion; power electronics, electronic machines; and CAV technologies, specifically.

Over 21% of all the UK's automotive parts and accessories manufacturers are situated in the West Midlands – the most of any UK region.

UK's energy supply chain

At the centre of the UK's power distribution networks and home to the headquarters of National Grid, Cadent Gas and Western Power Distribution, a net-zero-mission-critical supply chain of opportunities exists in smart grid solutions and UK grid modernisation.

Large-Scale Smart Energy System Demonstrators

Multiple UK-first Energy Innovation Zones, led by regional body Energy Capital, provide a powerful single point of entry for companies with ambitions to turn new technologies into fully commercially viable energy systems that function at 'city-scale'.

Battery production capability

Home to the UK Battery Industrialisation Centre (UKBIC) – part of the Faraday Battery Challenge – the West Midlands is Britain's leading location for businesses at varying stages in the value chain to test and scale next-generation battery production. The region has also entered a landmark Joint Venture Partnership with bold ambitions to build a Gigafactory in Coventry.

Policy Leadership – net zero by 2041

By prioritising the circular economy, the West Midlands is accelerating the transition towards a regenerative growth model that gives back to the planet and its people. From sustainable construction via a dedicated National Brownfield Institute, to Recovas - a ground-breaking project in electric vehicle battery afterlife – local momentum is backed by policy provision that includes a Circular Economy Route map.

Scaled Regional Governance

The West Midlands Combined Authority (WMCA) presents joined up governance over a population of around 4million people. The region has ambitious Net Zero Five Year Plan is targeting net zero carbon emissions by 2041 – nearly a decade earlier than those from the UK government. A number of priority policy interventions – from a Zero Carbon Homes Charter to a Circular Economy Routemap – are creating fertile ground for low-carbon focused companies to test and deploy new technologies in the region.

Key opportunities

Future mobility

Once the cradle of the industrial revolution and now the epicentre of UK transport and mobility, the West Midlands' economy is undergoing profound technological transformation targeted at decarbonisation. This is opening up a wave of new commercial opportunities across the region's low carbon mobility sector, predominantly coalesced around four specialisms: electrification; autonomous driving; connected vehicles; and smart infrastructure, where the West Midlands is advancing UK-first R&D.

The region's prominent role in the UK's shift to emission-free transport stems from its unrivalled position as the country's automotive capital. A third of all British-made cars and one in four UK engines are developed in the region, powered by a 46,500-strong workforce. Jaguar Land Rover, BMW, Aston Martin Lagonda, LEVC (Geely) and Changan all have major operations in the region, while notable plants such as Oxford Mini and Toyota Burnaston are on the doorstep.

£13.7bn of cars and parts from the region were exported around the world in 2019, accounting for 36% of the UK's total for the sector.

Electrification

The rapid transformation of the automotive industry towards electrification is set to disrupt the entire supply chain, fuelling global market demand for battery technology components. The West Midlands is at the forefront of UK mass-market battery development, with the Coventry-based UK Battery Industrialisation Centre (UKBIC); the country's only facility dedicated to testing and prototyping batteries for large-scale production. A key part of the Faraday Battery Challenge, the £130m facility enables industry (via open access) to fast track the development of cost-effective, high-performance, durable, safe, low-weight and recyclable batteries. The region's role in developing the next generation of battery systems is further supported by its established base of OEMs specialising in critical components for electrification, such as high-performance power electronics (for inverters, converters and charging equipment) and electric machines (electromagnetic components). Notable investments include Jaguar Land Rover's Powertrain Centre in Coventry, Changan's Powertrain Division R&D Centre in Solihull, and Zhuzhou CRRC Times Electric's R&D innovation centre for electric vehicles, in Birmingham. LEVC – the manufacturer behind the iconic London black cab – has launched a new commercial electric van line from its headquarters in Coventry.

The University of Birmingham's RaRE (Rare-earth Recycling for E-machines) project aims to establish the first end-to-end supply chain of recycled rare earth magnets in the UK, revolutionising the future of electric and hybrid vehicles.

Supercharging the West Midlands commitment to advancing UK electrification is a landmark Joint Venture Partnership to build a Gigafactory in Coventry, just a stone's throw from JLR's global headquarters and UKBIC. Offering up to 5.7 million sq. ft of production space, the West Midlands Gigafactory has been designed with a maximum 60 GWh per annum of battery manufacturing output once at full capacity and will offer 'cradle to cradle' battery recycling services.

Connected and Automated Mobility (CAM)

The largest real-world connected and automated mobility (CAM) testbed in the UK – consisting of over 300 miles of roads – is based in the West Midlands and overseen by Midlands Future Mobility. The 5G-connected route offers a combination of campus (mini-city), urban, rural and highways roads on which CAM trials can be supported, and encompasses major city centres (Coventry and Birmingham) and key interchanges (rail, HS2 and Birmingham International Airport).

As the country's most extensive real-word trial environment for self-driving technology, the region boasts a series of facilities exclusively collaborating with industry to design, build, test, and validate CAV solutions – such as the Centre for Connected & Autonomous Automotive Research (CCAAR), jointly run by Coventry University and Horiba MIRA.

Coventry & Warwickshire is identified as a nationally strategic location for advancing CAV modelling and simulation, under the UK government's Department for International Trade's High Potential Opportunities programme to boost overseas investment in the sector.

Generation, Distribution and Storage

Mass-market electric vehicle adoption and wider sector coupling is contingent on successful, efficient, and cost-effective grid integration. Anchored by the region's expertise in future mobility solutions, the West Midlands has responded to both global market demand and local industry need by developing and deploying UK-first advancements in distributed power generation and storage systems. As such, the region has become the country's leading location for electricity systems talent, employing 28 times the UK average in this field.

Allied to the region's critical mass of energy-specialist talent is its position as the strategic centre of the UK's power distribution network. National Grid, Cadent Gas and Western Power Distribution are all headquartered in the West Midlands, powering a net-zero-mission-critical, growing supply chain of opportunities in smart grid solutions and UK grid modernisation. The growing roster of international heavyweights plugging intelligent services and products into the region's power distribution network include Kelvatek (Camlin), Burns & McDonnell, Enzen, SPS International and Quartzelec.

Headquartered in Warwick, National Grid is investing £7.1bn over the next five years to decarbonise an electricity network that serves 7.9 million customers in the Midlands, the South-West of England and Wales.

Intensifying the growing pipeline of energy innovators locating in the region is the £130m UK Battery Industrialisation Centre (UKBIC); the UK's most exciting centre of breakthrough science for next-generation battery production. Located in Coventry, companies and researchers at varying stages of the value chain have open access to the UK's only facility to scale technologies that will form the core products of the UK's emergent Gigafactories. The facility provides advanced manufacturing capability that can enable the development of the next generation of battery systems across electrode, cell, module, and pack levels to allow companies to move to full-scale, high-volume battery manufacturing.

UKBIC's Module and Pack assembly line currently enables customers to test and produce low volumes of Cylindrical and Pouch cell battery technology. In addition, it has the capacity to produce 50 modules and 2.5 packs over every 8-hour shift.

In addition to battery technology, the region is accelerating the adoption of hydrogen fuel cells as a viable zero-emission fuel through world-first transport activations. The Birmingham Centre for Railway Research and Education (BCRRE) at the University of Birmingham has launched the UK's first Hydrogen train, HydroFLEX, meanwhile the world's first zero-emission hydrogen fuel cell double decker buses are being piloted by National Express West Midlands in partnership with Wrightbus.

Smart Energy Systems & Built Environment

Energising innovation in clean energy tech, the region's UK-first Energy Innovation Zones programme across Birmingham, the Black Country; Coventry and Solihull bring together its key academic institutions, infrastructure providers and private sector expertise, offering investment opportunities for businesses interested in large-scale energy system transformation.

Led by Energy Capital, the programme is implementing replicable micro economic models that effectively integrate energy innovation projects across smart homes, energy efficiency, retrofit and combined heat and power solutions; microgeneration, storage, and flexibility services; smart charging, fuel cells and vehicle to grid technologies, as well as identifying ways to achieve industrial decarbonisation through the Government's industrial cluster mission in the Black Country.

Birmingham: Tyseley Energy Park (TEP)

Set to become the energy and waste nexus for the region, Tyseley Energy Park is designed to provide integrated solutions that connect resource/waste streams to the production of energy and low carbon transport fuels. The Park features two energy from waste (Efw) plants that will generate a combined 60 MW of electricity and additional heat. Partners include the University of Birmingham, Western Power Distribution; Suez; Veolia; Certas; Cogen; Engie; ITM Power; Fraunhofer; RentE; Energy Capital; OTS Fuel; Siemens; Catapult Energy; alongside regional public sector bodies.

Black Country: Repowering the Black Country

The project aims to create up to 50 mini-clusters of zero carbon industry across the region in multiple industrial sectors, which together comprise 3,000 energy intensive manufacturing businesses. The project is led by the Black Country Consortium in collaboration with a range of public and private businesses that include Kew Technology, Pro Enviro, CR Plus, University of Birmingham and Warwick Manufacturing Group.

Coventry: 'Regional Energy System Operator' (RESO)

The West Midlands Regional Energy System Operator (RESO) project looks to explore next-generation energy system operating at a city scale, integrating low carbon energy generation, storage and management and mobility assets. The nature of this collaborative project opens up exciting investment opportunities across numerous supply chains – from planning and construction, to design and operations.

The UK Central Hub

An unrivalled investment site in the UK, UK Central Hub includes the significant infrastructure of Birmingham International Airport, the National Exhibition Centre, Jaguar Land Rover, Birmingham International Station and Birmingham Business Park. From 2029 it will also include the HS2 rail station and the vast mixed-use Arden Cross development. The site epitomises the energy challenges of a modern multi-modal transport hub and offers a number of opportunities for private sector investment.

Advanced Methods of Construction (AMC) and Modern Methods of Construction (MMC)

With construction accounting for more than 35% of total EU waste, economies across the globe are facing a construction epidemic. The region's large-scale system and built environment expertise is rapidly building momentum against this backdrop of global demand for Modern Methods of Construction (MMC) solutions. The National Brownfield Institute (NBI) (part of the University of Wolverhampton) seeks to offer an urgent solution to the market and is set to become Europe's largest specialist construction and built environment campus. The NBI is positioning the West Midlands as the UK centre of MMC and brownfield land remediation and regeneration, creating a supply chain of opportunities for businesses focusing on low-carbon construction.

Centres of excellence

With extensive academic, research and consultancy expertise in the West Midlands, there is the unique ability to collaborate in research in almost every aspect of the low carbon economy. The extensive reach and experience of the region's eight universities, and their focus on real-world zero carbon implementation, makes the West Midlands an ideal location to explore solutions in lowering carbon impacts.

Advanced Propulsion Centre

Headquartered at the University of Warwick, the £1bn Advanced Propulsion Centre (APC) specialises in low carbon propulsion technologies – such as battery production, hydrogen fuels, motors, and drives – for cars, buses, and HGVs. The Centre also advises industry-academic project consortia across all tiers of the supply chain, with JLR, the London Electric Vehicle Company (LEVC), Ford Technologies and Hofer Powertrain among the current roster of clients.

UK Battery Industrialisation Centre

The £130m UKBIC in Coventry is the UK's leading facility for battery development from prototype scale to mass production. UKBIC is a key 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.

HORIBA MIRA

The Nuneaton (Warwickshire) based HORIBA MIRA and Mira Technology Park leads engineering, research, and test services for the automotive, defence, aerospace, and rail industries. Electrification and energy; powertrain and emissions; vehicle resilience (cybersecurity); and CAV are among its leading expertise. The Park hosts a number of UK-first, real-world testing facilities specialising in battery abuse; climactic vibration; electric cycling; and self-driving technologies.

Warwick Manufacturing Group

Part of the University of Warwick – WMG is a HVM Catapult member pioneering research in hand with industry across the energy; materials & manufacturing; digital technologies; and intelligent vehicles markets.

Energy Systems Catapult

The catapult provides technical, commercial and policy expertise to drive innovation across the whole energy system. Providing a range of capabilities, tools, and labs – from world class Net Zero modelling and cutting-edge systems engineering – through to digital and data science and real-world innovation trials that drive start-ups to success, the team support companies to navigate net zero in a commercial environment.

The National Brownfield Institute

Part of the University of Wolverhampton, the £17.5m National Brownfield Institute (NBI) will offer revolutionary new solutions to regeneration, remediation and repurposing of brownfield land to unlock former industrial sites for greener, safer, and more affordable housebuilding.

Birmingham Energy Institute

(at the University of Birmingham) is directly working with

industry to develop and apply low carbon technologies and techniques to create sustainable energy solutions and support the regional, national, and global transition to a zero-carbon energy system.

Manufacturing Technology Centre

Coventry's MTC is part of the High Value Manufacturing Catapult (HVM Catapult) established by Innovate UK – the UK's innovation agency – and supports research commercialisation with real-world testing facilities in additive manufacturing; digital manufacturing; and robotics and autonomous systems.

Talent

The West Midlands is bursting with talent, offering access to a deep pool of skilled professionals and up-and-coming industry talent. Eight universities produce over 57,000 graduates, over half of which choose to stay and kickstart their careers in the region. A further 127,000 graduates from 20 universities within a one hours' drive boost the region's pipeline. Specifically in the fields of engineering and technology, 32,570 students enrol in the region each year.

In the low carbon and environmental goods sector, 97,000 are employed across the region, with 'renewable energy' representing the most significant sub-sector in employment terms (employing 37,000). The West Midlands stands out as the UK epicentre of low carbon specialist talent. In the Coventry and Warwickshire area, 28 times the national average are employed in electricity transmission and 10 times the national average in gas transmission. Meanwhile, in the Black Country – home to the National Brownfield Institute, which will specialise in sustainable construction methods – six times the national average is employed in hazardous waste management.

Contact InvestWM to speak to our team of sector specialists, who offer a free support service to businesses investing in the West Midlands.