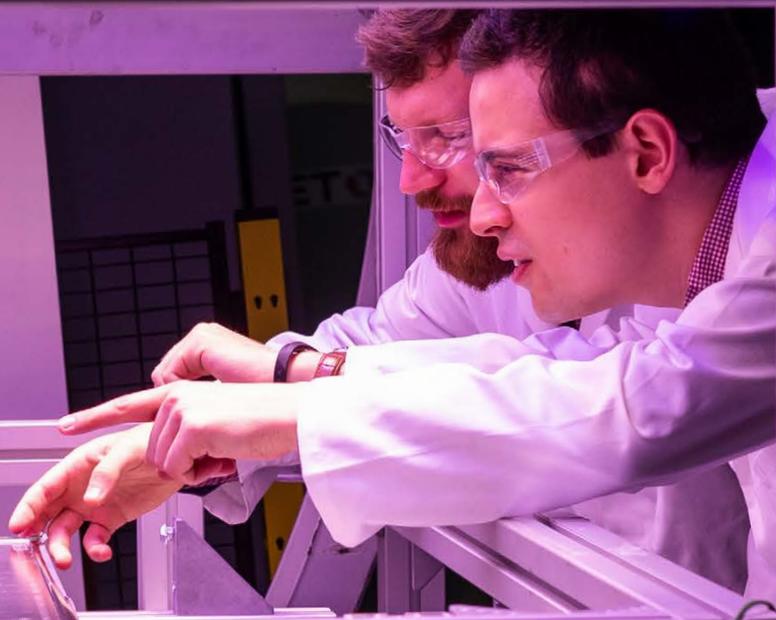


Invest in UK R&D

Universities and
zero carbon energy
in the Midlands



Prospectus



GREAT
BRITAIN & NORTHERN IRELAND

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Forge the future of zero carbon energy with universities in the Midlands

The Midlands is home to a great zero carbon energy cluster. For over a century, the Midlands has developed technologies, and pioneered new ways of generating energy for homes, businesses, schools and hospitals. One in four of all energy and low carbon jobs, in England, are in the Midlands.

Innovation has powered this extraordinary legacy of industrial impact; and it is innovation provided by the universities, companies and cities of the Midlands that will ensure our region continues to lead the way to a decarbonised energy sector.

Through their world-class facilities, research expertise, invention and talent, universities across the Midlands are a global driving force in the development of zero carbon technology and energy generation.

Together, they offer a unique opportunity for international companies to invest in research translation, innovation, co-location and integration into a world-class talent pool and extensive regional supply-chain across key zero carbon energy sectors. International businesses can also take advantage of the UK's extensive package of incentives and financial support for R&D investors.

Redefining how universities and industry work together.

Through co-location, joint research and technology demonstrator initiatives, Midlands universities are redefining how academia works in partnership with industry.

Midlands universities have long-standing relationships with global companies such as Rolls-Royce and Siemens. They have also provided hundreds of million of pounds in support, grants, and expertise to SMEs working in the Midlands' extensive zero carbon supply chain; and they have supported entrepreneurs developing new spin-out companies, products and concepts that will shape a zero carbon future.

Over 1,500 academics and researchers work in energy-related fields across Midlands universities. This spans four sectors:

- Biomass
- Hydrogen
- Nuclear
- Renewable

The Midlands region hosts national facilities developed in partnership with the UK Government, universities and industry. Its cross-cutting R&D enablers include:

- Battery technology and energy storage
- Smart grid technology

Our industrial heritage and track record of innovation and partnership between universities, government and businesses mean that we will be at the cutting edge of the net zero movement as well.

So, if you want to...

- invest in outstanding R&D-related **capital and regeneration opportunities**;
- **co-locate your business on a university science or technology park** to take advantage of the world-class zero carbon science, engineering and innovation eco-system in the Midlands;
- **undertake joint research, product-creation, development and testing** using globally distinctive research facilities and dedicated innovation and knowledge transfer support;
- invest in **equity and patient capital opportunities** across a burgeoning spin-out and scale-up portfolio of companies emerging from our region's universities;
- **attract outstanding talent** from some of the world's top engineering, technology and science graduates and academics to work for and with your business; and
- **benefit from the UK's package of generous financial support and tax incentives** for innovation, which has led to more than half of all UK-based R&D business expenditure being undertaken by foreign-owned companies...

...then come and forge the future of zero carbon energy with leading UK universities across the Midlands.

This prospectus has been developed by the Midlands' Universities as Drivers of Trade and Investment programme, a collaboration between the universities and growth organisations from across our region and is supported by the UK Government.

Our region

The Midlands is home to a thriving regional economy. More than 800,000 businesses are based in the region, generating 4.46 million jobs and £240 billion GVA per year. It is the second-biggest regional economy in the UK behind London, and is growing. The Midlands is home to 20 universities, and hosts more than 350,000 students and 100,000 graduates a year. The population is well-educated and young. All this contributes to a highly-skilled environment and a ready-and-accessible talent pipeline for potential projects.



Universities and Zero Carbon technologies in the Midlands – major R&D assets

Key:

- University
- Hydrogen
- Renewable energy
- Nuclear
- Biomass energy
- Battery technology and energy storage
- Electrics and grid technology

WOLVERHAMPTON
 University of Wolverhampton

BIRMINGHAM
 Energy Systems Catapult
 Energy Research Accelerator
 Midlands Nuclear
 University of Birmingham
 Tyseley Energy Park
 Birmingham Energy Institute
 Birmingham City University
 Birmingham Energy Innovation Centre
 Birmingham Centre for Energy Storage
 Reusing and Recycling Energy Technologies
 Birmingham Centre for Nuclear Education and Research
 Aston University
 Energy and bioproducts research Institute (EBRI)
 Supergen Bioenergy Hub

REGION WIDE INITIATIVES
 Nuclear Institute, Midlands Branch

STOKE-ON-TRENT
 Keele University
 HyDEX
 HyDeploy
 Smart Energy Network Demonstrator
 Staffordshire University

HEREFORD
 Harper Adams University

WORCESTER
 University of Worcester

DERBY
 High Value Manufacturing Catapult East Midlands (Nuclear AMRC)
 University of Derby

COVENTRY
 MIRA Technology Park and Institute
 UKBIC
 Advanced Propulsion Centre
 West Midlands Gigafactory
 Coventry University
 University of Warwick Wellesbourne Campus
 Driving the Electrification Revolution Centres
 Energy Innovation Centre

Sheffield
 Leeds
 North East
M1 MOTORWAY (NORTH)

NOTTINGHAM
 Ratcliffe-on-Soar Power station
 West Burton fusion reactor
 Trent Basin demonstrator (Community Energy demonstrator)
 British Geological Survey
 CDT in Sustainable Hydrogen
 CDT in Sustainable Electric Propulsion
 CDT in Biotechnology and Biological Sciences
 CDT in Resilient Decarbonised Fuel Energy Systems

Nottingham Trent University
 University of Nottingham
 Energy Technologies Building
 Power Electronics and Machines Centre
 Research Acceleration and Demonstration Building
 East Midlands Hydrogen Innovation Zone
 Electrical lab
 UK GeoEnergy Test Bed Platform

LINCOLN
 Spalding battery energy storage
 ABLE Humber Port – ABLE Marine Energy Park
 University of Lincoln

EMA

BHX

LEICESTER
 De Montfort University
 Institute for Environmental Futures
 University of Leicester
 Institute of Energy and Sustainable Development

CRANFIELD
 Cranfield University
 HyPER (bulk hydrogen production)
 Centre for Renewable and Low Carbon Energy

LOUGHBOROUGH
 Loughborough University
 National Facility for High Resolution Cathodoluminescence Analysis
 Centre for Postdoctoral Development in Infrastructure Cities and Energy
 National Centre for Combustion and Aerothermal Technology
 Caterpillar Innovation and Research Centre
 Supergen Solar Network
 Centre for Renewable Energy Systems Technology
 CDT in Future Propulsion and Power
 CDT in Energy Demand

M1 / M6 MOTORWAY (SOUTH)
 Cranfield University
 Northampton
 London



Science and innovation pedigree

At the heart of the Midlands' science and innovation landscape are its world-class universities. **Midlands Innovation (MI)** is a partnership of eight research-intensive universities in the Midlands region of England: Aston University, University of Birmingham, Cranfield University, Keele University, University of Leicester, Loughborough University, University of Nottingham, and University of Warwick. These universities, and the **British Geological Survey**, work together in energy research through a focused partnership, the **Energy Research Accelerator (ERA)**. It is the largest UK research network dedicated to solving and accelerating energy solutions to tackle today's real-world challenges. The ERA provides opportunities for businesses to undertake small or large scale testing, product development, modelling, and work with researchers to develop large scale demonstrators to prove concepts in real world environments.

The partnership leverages the research expertise of its members to address the challenges facing society, and to support the development of new technologies, products, and services. Key areas of focus include advanced manufacturing, digital innovation, energy and sustainability, and health and life sciences. The organisation collaborates with industry, government, and other partners to ensure that its research is relevant and useful.

Midlands Enterprise Universities (MEU) is a group of universities with a common mission to support economic growth and innovation in the region. These are Birmingham City University, Coventry University, De Montfort University, Nottingham Trent University, Staffordshire University, University of Derby, University of Lincoln, and University of Wolverhampton. MEU offers a wide range of programs and initiatives to support students, researchers, and entrepreneurs in the Midlands. MEU also supports collaborative research and development projects that focus on regional priorities, such as advanced manufacturing, digital innovation, and healthcare.

In addition to these leading universities, the Midlands is home to a network of renowned research centres and innovation hubs.

The Midlands is home to a number of the **UK Catapult Centres**, covering **Energy Systems** (Birmingham and Derby), **Satellite Applications** (Leicester), and two focused on high-value manufacturing: the **Manufacturing Technology Centre** near Coventry, and **WMG** at the University of Warwick. Catapults help turn ideas into commercial applications by addressing the gap between technology concept and commercialisation.

The **British Geological Survey (BGS)** is a world-leading geological survey and global geoscience organisation, focused on public-good science for government and research to understand earth and environmental processes. Located in the Midlands, BGS has substantial interests in energy and environmental fields.

The Midlands' science and innovation pedigree extends beyond academia to encompass various zero carbon energy sectors. Biomass, hydrogen, nuclear and renewables have flourished in this region, benefiting from cutting-edge research and development activities.

Siemens, together with **Tyseley Energy Park** and the **Birmingham Energy Institute**, have demonstrated how current and future energy generation sources can be harnessed to help Birmingham reach net zero by 2030.

JCB has developed a 20-tonne 220X excavator powered by a hydrogen fuel cell – a world first for the region. **Rolls Royce**, drawing on its nuclear business in the Midlands, has designed a factory built nuclear power plant that could offer clean, affordable energy for all. **Hornsea 1**, operated by **Orsted**, was the world's first offshore wind farm to exceed 1 GW in capacity and produces enough green energy to power well over one million homes.

Loughborough University has partnered **Rolls-Royce** to achieve a new world industry first for hydrogen combustion jet engines. **Loughborough University** is working in partnership with Perkins and Equipmake on an £11.1 million **Advanced Propulsion Centre** funded project to develop and produce an advanced multi-fuel 'drop-in' hybrid integrated power unit for the off-highway sector.



Aerial view of Birmingham.



World-leading zero carbon energy strengths in the Midlands



A researcher using the new HP-XPS machine at the RAD building, University of Nottingham.

Biomass

Bioenergy, or biomass, is currently the second largest source of renewable energy in the UK, generating 12.9% of UK electricity supply in 2021 – roughly the equivalent of four Sizewell B nuclear plants. When combined with carbon capture and storage, biomass has the potential to deliver negative emissions; the Midlands can be pivotal in the UK's goal to reach net zero carbon emissions by 2050.

Located in East Birmingham, **Tyseley Energy Park (TEP)** is on a mission to transform clean energy innovation in Birmingham and the West Midlands by stimulating and demonstrating new technologies and turning them into commercially viable energy systems that will contribute to Birmingham's commitments to reduce CO₂ emissions by 2030. Developed alongside **Webster and Horsfall's** 300 year old manufacturing business, TEP is working with the University of Birmingham and partners from across the region to create an energy and waste nexus for the city of Birmingham. The first phase of Tyseley Energy Park has seen £47 million invested into a 10MW waste wood biomass power plant. This plant supplies Webster and Horsfall's manufacturing operation and tenants across the sixteen acre site with renewable electricity. The biomass power plant has diverted 72,000 tonnes of waste wood from going to landfill. The sustainable power generated is equivalent to the amount required to power 17,000 local homes.

Also based at Tyseley Energy Park is the £8.5 million **Birmingham Energy Innovation Centre (BEIC)**. The BEIC promotes innovation in waste, energy and low carbon vehicle systems across the West Midlands. Working with existing energy and transportation system stakeholders, the BEIC is stimulating collaborative research and development projects to overcome local energy and low carbon transport challenges, demonstrating new and emerging technologies.

The **Energy and Bioproducts Research Institute (EBRI)**, at Aston University, combines expertise in thermochemical, biological and catalytic conversion of biomass to develop sustainable energy systems that can deliver solutions for energy and bioproducts from sustainable resources in a regional and global context. EBRI develops and provides practical bioenergy, energy-from-waste, bioproducts and energy systems solutions for companies and local authorities in the UK and beyond. Aston University leads the **Supergen Bioenergy Hub** a prestigious national bioenergy research programme to develop sustainable bioenergy systems that support the UK's transition to an affordable, resilient, low-carbon energy future. The hub recently received a further £5 million to continue its work on bioenergy.

Supporting a pipeline of biomass skills and technical expertise is critical to delivering net zero carbon solutions. The **Centre for Doctoral Training (CDT) in Resilient Decarbonised Fuel Energy Systems**, based at the University of Nottingham, aims to grow the next generation of research leaders and innovators. The CDT aims to develop and implement techniques to allow carbon neutral fuels such as biomass and hydrogen to be used in systems designed for fossil fuels; and, using biomass as a feedstock for chemical processes as a replacement for fossil fuels.

Researchers have access to University of Nottingham facilities including a hydrothermal carbonisation facility and a sorbent capture looping facility. Further to this, a second CDT in Biotechnology and Biological Sciences at the University of Nottingham in partnership with Nottingham Trent University has a focus on bioenergy.

Biomass generates the same amount of electricity each year as four Sizewell B nuclear powerplants – over 12% of UK generating capacity.

- Biomass generating capacity at the Tyseley Energy Park generates sustainable power equivalent to the needs of 17,000 local homes.
- The Supergen Bioenergy Hub recently received £5m to further its pioneering research into sustainable bioenergy systems that support the UK's transition to an affordable, resilient, low-carbon energy future.

Hydrogen

Hydrogen is essential to delivering a carbon free energy sector. As the manufacturing heartland of the UK, the Midlands has the experience and capacity to address the necessary inputs for hydrogen production and delivering net zero. The [Hydrogen Technologies Strategy](#), published by the Midlands Engine, and supported by the UK government's [Energy Security Strategy](#), sets out the vision for an ecosystem linking hydrogen production with end users, to industrialise hydrogen technologies at scale through academic and supply chain development support. It aims to deliver 167,000 new or safeguarded jobs, £10bn additional Gross Value Added (GVA) and a 29% reduction in CO₂ (17m tonnes).

The UK's hydrogen economy is led by Midlands businesses with international reach. They include Worcester-Bosch, Baxi and Vaillant (hydrogen boilers and heating solutions), Cadent (gas distribution network), Intelligent Energy, Ballard and Adelan (fuel cells), Porterbrook and Alstom (hydrogen trains), Toyota (hydrogen vehicles), Caterpillar, Faun Zoeller and JCB (heavy vehicles), Luxfer Gas Cylinders (hydrogen storage) and ITM (hydrogen generation).

The universities who make up the **Energy Research Accelerator** have a strong portfolio of hydrogen-related research. The ERA collaboration hosts national training programmes associated with doctoral level training for hydrogen and fuel cells. Its members have pioneered hydrogen for heating, hydrogen microcabs, trains, houses and boats and hydrogen generation and storage systems. Helping to build up the whole hydrogen economy in the Midlands, including through working with SMEs, established businesses, and multinational companies, is the **HyDEX** collaboration. All the universities involved in the ERA are making their facilities, capabilities, and expertise available to the industrial hydrogen economy.

Engineers from the University of Birmingham and Porterbrook have been working on a ground-breaking project to convert a train to low-carbon hydrogen power as part of the **HydroFLEX** project. Following a successful test phase, the technology could now be used to retrofit existing trains to use hydrogen.

Cranfield University is home to a state-of-the-art, award winning hydrogen pilot plant. HyPER (Bulk Hydrogen Production by Sorbent Enhanced Steam Reforming) is testing an innovative hydrogen production technology that substantially reduces greenhouse gas emissions. It will examine the potential for low-carbon hydrogen to be the clean fuel of the future.

As one of the only universities in the world with its own airport, Cranfield's work on hydrogen spans all aspects of generating, storing and using the fuel, with research covering many sectors including aerospace, energy, marine and automotive.

In Birmingham, Tyseley Energy Park is home to the largest green hydrogen refuelling station (3.5MW Green Hydrogen Electrolyser), and the City Council has a fleet of 20 hydrogen buses, run between Birmingham and Walsall. There is also a project in development for an Ammonia to Hydrogen Plant, utilising an "ammonia cracker", which will lead to the production of green hydrogen on scale.

The Humber industrial cluster is developing a range of low carbon hydrogen production projects including the Oyster Project (Grimsby), Gigastack Project (Immingham), Project Mayflower (Immingham) and Humber Hub (Killingholme).

The University of Nottingham in partnership with other regional universities is developing the East Midlands Hydrogen Innovation Zone, focusing on three heavy transport hydrogen demonstrators in road, rail and aviation. The East Midlands Institute of Technology is seeking to develop a Future Fuels Academy with the Freeport. They work with businesses, skills partners and universities to provide the skills needed to support the hydrogen economy in the region.

Loughborough University's Green Hydrogen Group covers all aspects of the green hydrogen timeline, from creation to implementation. Themes include fundamental science, low-cost production, distribution, low-cost storage, usage, economics, policy, and safety. Intelligent Energy, a company focused on the development of lightweight, high efficiency, hydrogen fuel cell systems, originates from Loughborough University research.

The Midlands Engine Hydrogen Technologies Strategy could deliver: 167,000 new or safeguarded jobs

- £10bn of additional Gross Value Added (GVA) and a 29% reduction in CO₂ (17m tonnes).
- Transport for West Midlands aims to have over 120 hydrogen fuelled buses on the road by 2024.

Nuclear

Nuclear energy, and new nuclear technology will be a core part of the future zero carbon energy sector. In 2020, 16% of the UK's electricity came from nuclear power plants in 2020, second only to gas. The government's [Energy Security Strategy](#) plans to significantly accelerate nuclear generating capacity to 24GW by 2050. This represents 25% of projected electricity demand.

The Midlands contains a number of world class centres of research excellence, leading on the development of new nuclear technology. The **Nuclear Advanced Manufacturing Research Centre (AMRC) Midlands** is a new industrial R&D centre in Derby where partners are developing a £20m bespoke research facility for the UK's nuclear supply chain. It adds value by developing the industrial and academic pipeline through supply chain development and by engaging with academic organisations and the 'skills pipeline', such as nuclear apprenticeships.

The **Energy Research Accelerator** collaboration has significant expertise in nuclear energy technology, operational performance and decommissioning. The **National Centre for Nuclear Robotics** is developing cutting-edge technologies to solve the problem of nuclear waste.

EDF's West Burton A site in Nottinghamshire will be to host the **UK's first prototype fusion energy power plant**. The government has pledged more than £220m of support for the **STEP (Spherical Tokamak for Energy Production)** programme, at the site.

Retaining a pipeline of skills is critically important to maintaining the skills pipeline for the nuclear sector. Rolls-Royce in Derby is the project lead for the Small Modular Reactor (SMR) programme and recently committed to taking on 200 apprentices a year for ten years at its new **Nuclear Skills Academy**. Meanwhile, Midlands universities like Birmingham host degree programs in nuclear-related skills.

Almost 5,000 people are employed in the civil nuclear sector in the Midlands. The majority of these are in the East Midlands, within the Rolls Royce nuclear cluster, with a further 1,000 located in the West Midlands. Other important businesses in the nuclear supply chain include Assystem (Derbyshire), Cavendish Nuclear (Leicestershire), Goodwin International (Stoke-on-Trent), Ansaldo Nuclear (Wolverhampton) and Kuka Systems UK (Birmingham).

The University of Birmingham's **Birmingham Centre for Nuclear Education and Research** was launched in 2010 and provides the investment and infrastructure to grow the nuclear expertise and capacity that has existed in Birmingham for over 50 years. The Centre brings together a multidisciplinary team from across the University to tackle fundamental nuclear industry problems. It is making a significant new investment in the area of Nuclear Engineering, Waste Management and Decommissioning. This is timed to support the UK's investment in new construction in the Nuclear Power sector, the need to manage the legacy waste, the decommissioning of the current generation power stations and the tremendous challenges in developing the next generation nuclear facilities.

The Midlands is well placed to play a significant role the development and deployment of **Small Modular Reactors (SMRs)**, Advanced Modular Reactors (AMRs) and nuclear fusion.

Great British Nuclear has been set up to bring forward new projects backed by substantial funding. This includes the £120m **Future Nuclear Enabling Fund**, which could help deliver up to 8 SMRs by 2030. The £210m **Advanced Nuclear Fund** is supporting Rolls-Royce to develop the design for one of the world's first SMR. This SMR could be deployed in the UK in the early 2030s to turbocharge UK nuclear capacity.

The world's first nuclear fusion plant could be built in the East Midlands;

- Almost 5,000 people work in the civil nuclear sector in the Midlands.
- Rolls Royce are developing the world's first Small Modular Reactor, supported by £210m from the Advanced Nuclear Fund.

Renewables

Currently only 37% of the electricity generated in the UK comes from renewable sources. Electricity demand is projected to double by 2050 and this, combined with carbon reduction targets, means a four-fold increase in clean electricity generation is needed. The Midlands consumes 16% of Great Britain's electricity and has 19% of England's total installed renewables capacity, with wind, solar and bio-energy being the most significant sources. The Midlands is leading the way in renewable energy production and is home to the world's biggest offshore windfarm in Lincolnshire.

Significant expertise in the Midlands is already helping to shape the future of our energy systems. Situated in the widest part of the Humber Estuary, the ABLE Marine Energy Park will be a bespoke port facility for the renewable energy sector, particularly offshore wind, representing a £450 million investment by ABLE. It is designed specifically for the marine renewables sector providing a multi-user facility for the manufacture, storage, assembly and deployment of next generation offshore wind turbines and their associated supply chain(s), all in the heart of the largest offshore wind market in the world.

The Midlands is also home to a number of energy sites that have either already or are about to be decommissioned as the use of coal is phased out. This will create a number of major sites already linked to the energy network that could be repurposed for 21st century low carbon energy projects such as the Ratcliffe-on-Soar power station. Future opportunities include developing large-scale onshore wind, anaerobic digestion, geothermal and mine water heat recovery.

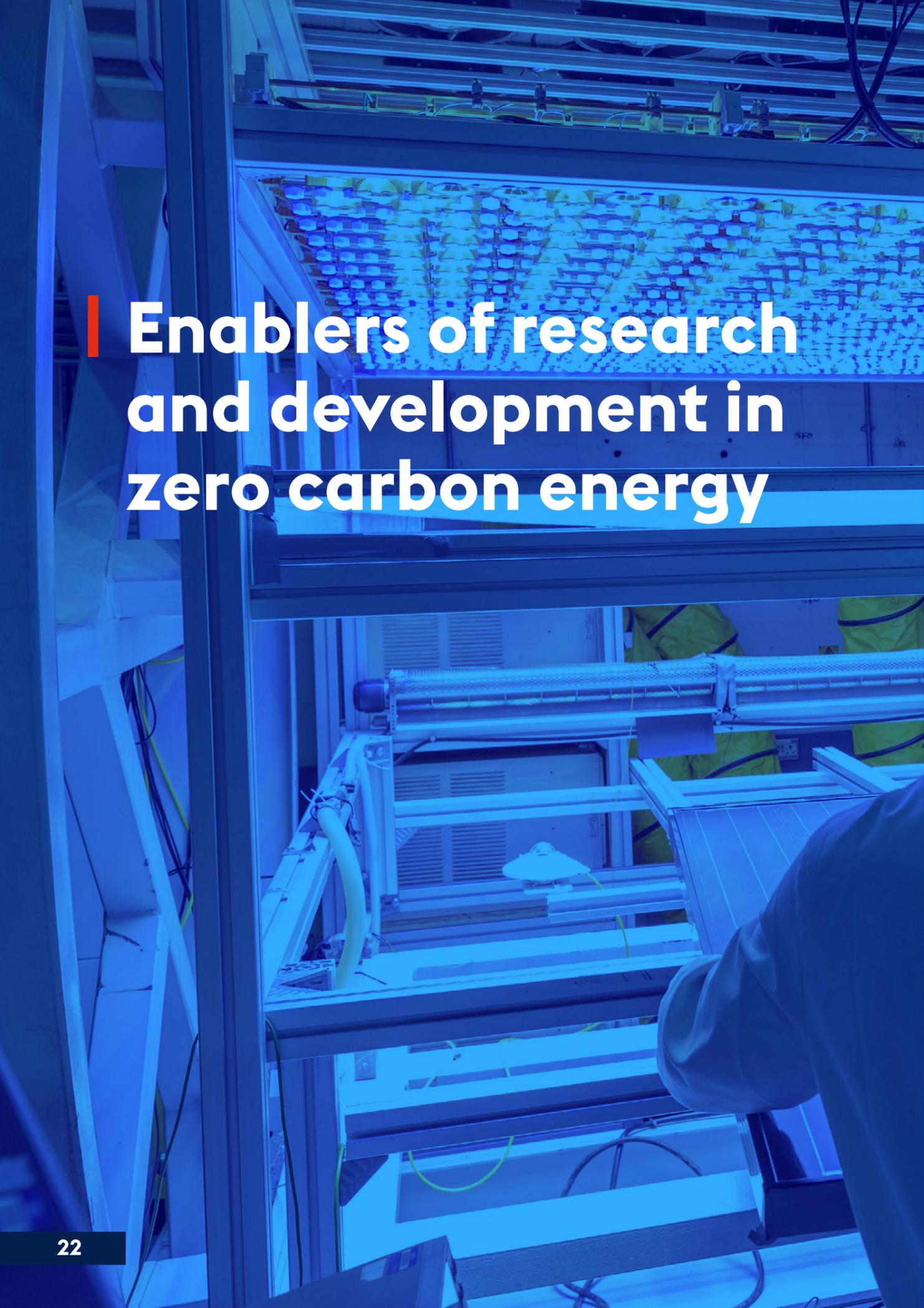
The SUPERGEN Supersolar Hub, a UK centre of excellence for Solar Photo Voltaic technology led by Loughborough University, brings together universities and industry from across the country and connects members with finance. The Hub brings together research, grants access to facilities, and supports training. Loughborough University's National Facility for High Resolution Cathodoluminescence Analysis is a multi-million resource to advance knowledge of how solar cells work at the atomic level.

The need for clean, affordable and secure energy, coupled with the applied skills to be able to deliver innovation is a national priority.

- Solar power on rooftops in the Midlands alone could reduce greenhouse gas emissions by 187 kilo-tonnes of CO₂.
- The UK's offshore wind fleet is due to more than treble in size by 2030. Based on existing deployment, this could mean that over 3 million homes in the Midlands are powered by offshore wind by 2030, reducing emissions by 4.2 megatonnes of CO₂.
- Lincolnshire hosts the world's biggest offshore windfarm, generating 18% of England's renewable generating capacity.



Keele University.



Enablers of research and development in zero carbon energy

Battery technology and energy storage

The Midlands' low carbon economy is worth £12 billion and growing. The Midlands hosts a number of research centres dedicated to driving the transition to net zero.

The **UK Battery Industrialisation Centre (UKBIC)**, located in Coventry, is the national battery manufacturing scale-up facility. UKBIC is a £130 million, 20,000m² pioneering facility, which provides the missing link between battery technology at laboratory or prototype scale, through to successful 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.

The **West Midlands Gigafactory** will create the UK's largest battery manufacturing facility in the heart of the UK automotive industry. Midlands SMEs like Acceleron are already making the world's first serviceable, upgradeable and recyclable lithium batteries.

Cheesecake Energy Ltd., a spinout from the University of Nottingham, is just one of the innovative SMEs in the Midlands working to solve the energy storage challenges. Their technology uses thermal energy storage and compressed air to achieve costs that are 30-40% lower than that of the cheapest batteries currently

available, by repurposing long-lasting, proven industrial components from existing automotive, oil and gas equipment supply chains.

In Nottingham, project **SCENE (Sustainable Community Energy Networks)**, enables residents to generate, store and use solar electricity and will provide around 500 contemporary, high quality, low carbon homes at the edge of the city centre.

The University of Birmingham are leading the way in energy storage beyond batteries. Their research in thermal energy storage, their construction of the world's biggest liquid air storage unit (CYROBattery), and their work with the Supergen Network+ are some of the activities delivered by the university focused on developing new ways to store energy.

Loughborough University is successfully developing low-cost green hydrogen production through its novel IP for a flooded battery-electrolyser cell solution offering a transformative approach to harnessing excess renewable energy, utilising wind curtailment and solar shaving, and efficiently storing it for later use while simultaneously producing green hydrogen, driving cleaner and more balanced local energy grids. The technology has already attracted project-based grant investment of over £12 million.

- 30% of renewable electricity generated in the Midlands comes from wind, and 25% from solar.
- The UK Battery Industrialisation Centre is a £130m, 20,000m² facility supporting battery manufacturing in the UK.



University of Nottingham.

Smart grid technology

The UK's energy system is changing at an unprecedented pace to meet its economy-wide net zero target by 2050.

A Smart Energy System is an approach in which smart electricity, thermal and gas grids are combined and coordinated to identify synergies between them to achieve an optimal solution for each individual user, or sector, as well as for the overall energy system. This drives down costs, enhances efficiency and reduces carbon emissions.

The Midlands accounts for approximately one-sixth of Great Britain's electrical and gas demand. The scale of the region's energy use alongside world class energy technology research capabilities, means the Midlands is uniquely placed to become a model smart energy region. Cranfield University is a partner in several UK funded doctoral training centres – including the CENTA partnership, focused on energy and sustainability, and WIRe, focused on Water Infrastructure and Resilience.

There are several pioneering projects in the smart energy sector in the Midlands. The **Smart Energy Network Demonstrator (SEND)**, at Keele University, in Staffordshire, is the largest of its kind in Europe. SEND is an at scale environment providing a platform that allows energy generation, distribution, storage, forecasting and energy balancing to be intelligently carried out across different energy sources using 350 buildings across the Keele University campus, as a genuine 'living laboratory'.

Working in partnership with Siemens and Engie, this is the first time a constant stream of live energy data from so many sources been integrated, processed and analysed – automatically balancing and controlling energy flows. It will all be controlled by the cutting-edge intelligent information systems in the new Horwood Energy Centre, complemented by a "digital twin" allowing researchers to "plug in and play", conducting energy experiments in a perfect virtual model.

The **West Midlands Regional Energy System Operator (RESO)** project looks to explore the advantages of a new kind of energy system operating at a city scale. The new system will include local low carbon energy generation, storage and management and will integrate future mobility assets such as electric vehicles into its overall envelope. The RESO project team is a group of leading-edge partners, led by Energy Capital – part of the West Midlands Combined Authority (WMCA), including Coventry City Council, University of Birmingham, University of Warwick, ENZEN Global Ltd, Electron Ltd, Camirus Ltd, Western Power Distribution (WPD), Cadent Gas, and Places in Common. This city level, whole systems approach is unique in its ambition to deliver a cross energy vector infrastructure, with real-time demand optimisation. This complements Coventry's existing decarbonisation assets including the district heating scheme, the Very Light Railway and all-electric bus plans.

In the East Midlands, the **Trent Basin** project in Nottingham is a housing development focused on local smart energy systems. At the heart of this ground-breaking, clean energy residential development is Europe's largest community battery, which stores and trades energy produced from on-site renewable sources to benefit homes across the development.

Supporting wider grid development, the £40 million (US\$50 million) **Power Electronics and Machines Centre (PEMC)**, also based at the University of Nottingham, offers purpose-built laboratories that host the UK Government-funded **Driving the Electric Revolution Industrialisation Centre – Midlands (DER Midlands Industrial Centre)**. The PEMC group is partnered with academic institutions and global companies, as well as supporting research conducted with local SMEs. Their purpose-built facility is home to 3 purpose-built labs – High Power, Power Electronics, and Drives which supports research into power electronic systems, electrical machines, electric motor drives and systems, and power electronic integration.

With a steady deployment of smart grids by 2050, the Midlands could see:

- A reduction of approximately 80% of CO₂ emissions compared to 1990 levels.
- Up to £9bn in cost savings.
- Additional GVA of £1.5bn.
- 1,400 new jobs.

Invest in a partnership with Midlands universities



Research translation

Universities in the Midlands have an exceptional track-record of working with the world's largest companies, helping translate fundamental research into industry-leading innovations in the transition to net zero.

Our universities have dedicated teams and institutes that provide a concierge service to companies seeking to access our expertise, technology-platforms and equipment you won't find anywhere else in the world.

We will work with your R&D divisions to support everything from product design, development, testing, joint application for UK Government funding and direct contract research.

For zero carbon technologies, Midlands universities are renowned as translational research partners, including Rolls Royce at the Nuclear R&D centre at Infinity Park, Derby; Siemens working with the University of Birmingham at Tyseley Energy Park; the British Geological Survey, and Schlumberger, working at the University of Nottingham's Geothermal test bed; or, the Energy Research Accelerator facilities in Birmingham, Loughborough, Warwick and the Manufacturing Technology Centre, to drive the development of thermal and cryo-energy technologies.

Innovation

Midlands universities have been supporting the innovation eco-system of their local and regional economies for decades. If your business is looking to access innovation support chains, our dedicated support programmes, funding and networks can help you do this. Through co-funded Government schemes like Knowledge Transfer Partnerships (KTPs), which is one of the most successful, long-running innovation schemes anywhere in the world, we help businesses of all sizes to innovate using the knowledge and expertise of UK universities.

The University of Warwick and the University of Nottingham are both in the **Top 5 recipients of the £885m of Innovate UK Funding allocated across the UK in the last 10 years.**

Case study

The Energy Systems Catapult, based in Birmingham was set up to accelerate the transformation of the UK's energy system and ensure UK businesses and consumers capture the opportunities of clean growth on the way to Net Zero.

The Catapult is an independent, not-for-profit centre of excellence, funded by Innovate UK, that bridges the gap between industry, government, academia and research.

The Catapult takes a whole-systems view of the energy sector, helping to identify and address innovation priorities and market barriers, in order to decarbonise the energy system at the lowest cost. The Catapult offers free support to help businesses to capitalise on opportunities within the energy innovation landscape, by providing guides, insights and data; access to events and workshops; and, help in identifying funding calls, and engaging with potential investors and international opportunities.

Aston University has teamed up with Midlands based forging experts [Brockhouse Group Limited \(BGL\)](#) through a [Knowledge Transfer Partnership \(KTP\)](#) to transform BGL into a more competitive and sustainable business. The project will look at how the business can improve its operational performance and energy efficiency through reduced usage of gas and utilising waste heat to generate electricity.

A KTP is a three-way collaboration between a business, an academic partner and a highly qualified researcher, known as a KTP associate.

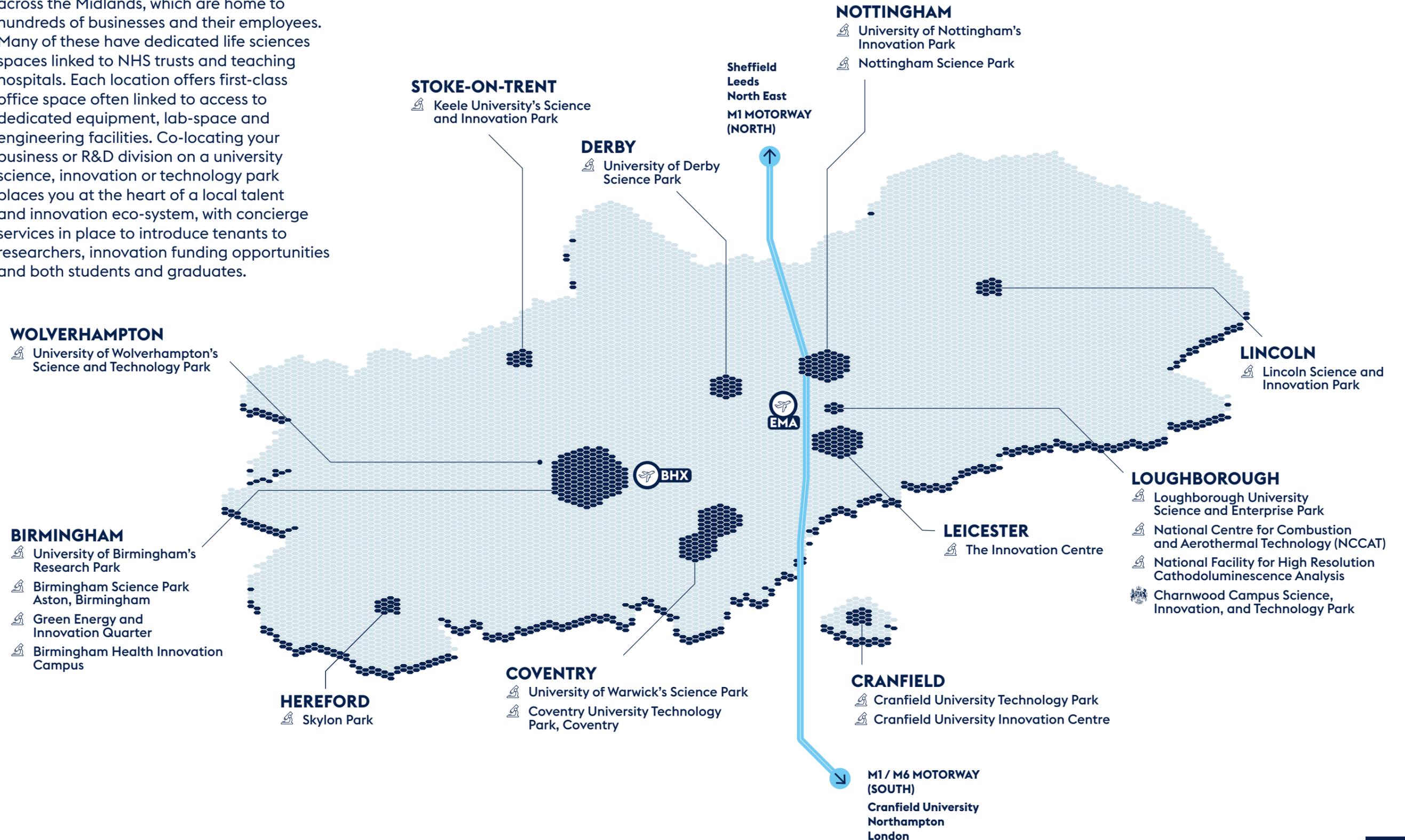
BGL, based in West Bromwich in the West Midlands, design and manufacture professional forgings in carbon, high alloy and stainless steel for leading companies across the world.

The company currently exports 40 percent of its output into the deep coal mining sector, which is expected to decline over the next ten years due to the global commitment to reduce carbon emissions. This KTP will enable BGL to attract new customers in energy conservation and renewable sectors by developing sustainable manufacturing processes.

This will be achieved using [Dr Breno Nunes'](#) GRASS Model to investigate current operations characteristics and sustainability performance. This is an innovative approach directing the project to increased operational efficiency and reduction of energy costs in manufacturing, by reducing energy usage and converting waste heat to electrical power using the Organic Rankine Cycle.

Co-location

There are numerous university-linked science, innovation and technology parks across the Midlands, which are home to hundreds of businesses and their employees. Many of these have dedicated life sciences spaces linked to NHS trusts and teaching hospitals. Each location offers first-class office space often linked to access to dedicated equipment, lab-space and engineering facilities. Co-locating your business or R&D division on a university science, innovation or technology park places you at the heart of a local talent and innovation eco-system, with concierge services in place to introduce tenants to researchers, innovation funding opportunities and both students and graduates.



Regeneration and integration

Universities across the Midlands work in partnership with the UK and Local Government to help drive economic growth through innovation and inward investment. Through a range of public-private partnerships, universities are involved in over 20 major economic development opportunities identified by the Midlands Investment Portfolio, worth over £10bn in Gross Development Value. In the West Midlands, universities work with the Combined Authority and Growth Company to work on a range of projects as a part of one of only three UK Innovation Accelerators.

Through two of the Department for Business and Trade's High Potential Opportunities programme, Midlands universities have dedicated inward investment concierge support for zero carbon clusters.

These include those seeking to invest in: capital investment in battery storage, in Spalding, Lincolnshire; and, the Able Marine Energy Park, by the Humber.

Businesses looking to integrate into zero carbon energy clusters can take advantage of the interconnections, networks and eco-system of one of the greatest zero carbon technology clusters in the world. Across the Midlands, universities host and work in close partnership with zero carbon networks and organisations such as the Energy Research Accelerator and Midlands Nuclear. The universities also work extensively with each other, with an estimated 1,500 academics and researchers currently working on zero carbon related research.

Our commitment is that if our universities can't help, we will introduce you to someone who can.

Talent

Home to 20 universities, the Midlands hosts over 350,000 students and 100,000 graduates a year. Our universities will work in partnership with local economic growth organisations to develop tailored skills and training package – from degree apprenticeships, to dedicated training and skills programme, to industry-funded PhDs – to support the growth of future industries and your business.



University of Nottingham: Graduating students.



Brilliant ideas | Successful businesses | Global impact

Midlands Mindforge - £250m patient capital fund combining the spinout portfolios of eight leading UK universities

Midlands Mindforge is an ambitious, patient capital investment company aiming to transform ground-breaking science and technology into successful businesses with the potential to positively impact our world and accelerate the commercialisation of research from our partner universities - Aston, Birmingham, Cranfield, Keele, Leicester, Loughborough, Nottingham, and Warwick.

By providing capital and company-building skills to university spinouts and early-stage IP rich businesses in the Midlands, we will build the foundations of a new technology eco-system in the region and create companies that can drive economic growth whilst delivering real-world impact.

Midlands Mindforge is an independent company that aims to raise up to £250m from strategic corporate partners, institutional investors and qualifying individuals.

Mindforge will “invest with impact” to found and scale transformational science backed companies in sectors such as Clean Technologies, AI and Computational Science, Life Sciences and Health Tech, to create highly skilled jobs and support the UK’s ambition to become a science and technology superpower.

enquiries@midlandsmindforge.com

Directory of key zero carbon energy R&D assets across the Midlands



Biomass

Businesses can work with a range of research and development facilities, which can help them translate their research, innovate their product, or co-locate to access research facilities and a skilled community of experts. Companies could choose to co-locate with other bioenergy innovators at the Tyseley Energy Park, collaborate with the Energy and Bioproducts Research Institute (EBRI) at Aston University to accelerate the commercial energy of bioproducts, or work with researchers to access the hydrothermal carbonisation facility and a sorbent capture looping facility at the University of Nottingham.

Investor Support

Alongside wider investment support, and local assistance available to businesses through research collaboration, grant support can be found from a number of sources. Funding is often made available through time limited competitive calls for projects.

- The Biotechnology and Biological Sciences Research Council's (BBSRC) interests are focused on supporting research projects that will deliver greenhouse gas emission savings through the biologic production of sustainable, advanced biofuels and other low carbon fuels. £2m of research funding is available.
- UK Research and Innovation recently announced that UK registered organisations could apply for a share of up to £12 million for collaborative research and development in sustainable bio-based materials. This is to develop a step-change in sustainable biomanufacturing in the UK.
- The former Department for Business, Energy and Industrial Strategy (BEIS) previously provided £30 million in funding to support innovation in the production of sustainable domestic biomass across a number of projects.

Aston University – Energy and Bioproducts Research Institute

The EBRI is the result of a £20 million investment to support the development of a regional bioenergy supply chain. The EBRI has four core objectives in supply chain development: characterise feedstocks and products; measure conversion/technology performance; model process energetic, economic, and environmental performance; and integrate expertise in supply chains, markets, policy and regulation. Demonstration facilities used in collaborative projects include a 1MW, full gasification pilot plant, and a combined heat and power facility. The EBRI has had a marked, positive economic impact, including creating 234 new jobs in the West Midlands and an increase of over £28.9 million in GVA.



Birmingham Energy Innovation Centre at Tyseley Energy Park.

Research Assets

University based

Birmingham Energy Innovation Centre

- Location: University of Birmingham
- Key features: Supporting the delivery of a greener and cleaner ecosystem for Birmingham and the West Midlands, through promoting innovation in waste, energy, and low carbon vehicle systems.
- Opportunity: Partner with the Centre to collaborate on a range of new energy innovations, and benefit from the university's outstanding expertise.
- Contact: energy@contacts.bham.ac.uk

Energy and Bioproducts Research Institute (EBRI)

- Location: Aston University, Birmingham
- Key features: Delivers carbon reductions and cost-effective solutions. Combines expertise in thermochemical, biological and catalytic conversion of biomass to develop sustainable energy systems. Home to both academic and industry-facing teams.
- Opportunity: Partner with the Institute to collaborate with universities, industry, and government, and utilise expertise in cost-effective carbon reduction solutions.
- Contact: bioenergy@aston.ac.uk

Supergen Bioenergy Hub

- Location: Supergen Bioenergy Hub, Energy and Bioproducts Research Institute (EBRI), Aston University, Birmingham B4 7ET
- Key features: Covers resources, pre-treatment, vectors, and systems to develop the UK's bioenergy sector. Partners include 24 universities around the UK, industrial partners such as Uniper, and policy partners including the Department of Transport.
- Opportunity: Become a member to access flexible funding and research.
- Contact: r.fothergill@aston.ac.uk

Tyseley Energy Park

- Location: Hay Mills, Birmingham, B25 8DW
- Key features: Shaping the way Birmingham develops infrastructure for renewable heat and power, energy storage, and clean transport fuels in combination with advanced waste processing.
- Opportunity: Become a partner of TEP to work with industry, academics and local government to deliver clean energy solutions across a range of issues.
- Contact: enquiries@tyseleyenergy.co.uk

Training

CDT in Resilient Decarbonised Fuel Energy Systems

- Location: Faculty of Engineering, The University of Nottingham, University Park, Nottingham
- Key features: Developing specialist research skills to support major reductions in society's carbon footprint, by finding radically different ways to operate our existing energy systems. Includes learning techniques to allow carbon neutral fuels such as biomass and hydrogen to be used in systems designed for fossil fuels, use of CO₂ as chemical feedstock for industry and manufacture (turning waste into a product), use of biomass as a feedstock for chemical processes as a replacement for fossil fuels, and the automation of energy-intensive processes to improve flexibility and emission performance.
- Opportunity: Access a pipeline of specialists researching carbon neutral fuels for industry and manufacturing.
- Contact: robin.irons1@nottingham.ac.uk

CDT in Biotechnology and Biological Sciences

- Location: University of Nottingham
- Key features: Led by the University of Nottingham in partnership with Nottingham Trent University and the National Biofilms Innovation Centre (NBIC). Offers fully funded, four-year PhD studentships that are aligned to strategic priorities supported by the Biotechnology and Biological Sciences Research Council.
- Opportunity: Access a pipeline of specialists researching bioenergy and industrial biotechnology.
- Contact: bbdtp@nottingham.ac.uk

Hydrogen

Home to a number of global businesses innovating in hydrogen, the sector offers a range of opportunities for investors to grow their business. The Midlands' world-leading universities play an intrinsic part in the development of hydrogen technologies through the Energy Research Accelerator (ERA). The ERA collaboration offers world class research facilities across the Midlands, and hosts national training programmes associated with doctoral level training for hydrogen and fuel cells. It has pioneered hydrogen for heating, hydrogen microcabs, trains, houses and boats and hydrogen generation and storage systems.

Investor Support

- UK Research and Innovation regularly makes available funding calls to support hydrogen research. For example, companies at the cutting edge of hydrogen innovation recently benefited from £60 million of government funding, backing UK development of hydrogen as an affordable, clean, homegrown energy source.
- Funding was recently awarded to 28 projects across the UK, including Scotland, Wales and the north of England – supporting a range of different sectors and technologies through the Low Carbon Hydrogen Supply 2 (HySupply 2) competition.
- HyDEX, the Hydrogen Development and knowledge Exchange is a three-year programme with eight universities which are all associated with the Midlands-based Energy Research Accelerator (ERA). Each partner is making their hydrogen facilities, research capabilities and expertise available to businesses in order to accelerate innovation in hydrogen. Collaborating with HyDEX is an excellent way to identify grants or funding sources when calls for competition are released.

University of Birmingham – Centre for Fuel Cell and Hydrogen Research, BEI

As a part of the Birmingham Energy Institute, the Centre for Fuel Cell and Hydrogen Research focuses on research and development, applications and demonstrations of fuel cell and hydrogen systems and technologies. It was formed in early 2000 and has received over £10 million of investment while training over 100 PhD students in fuel cells and hydrogen, and their applications. The Centre runs an internationally recognised research programme into hydrogen as a future energy source and the development of key technologies. The Centre sits within the School of Chemical Engineering, and has some of the most advanced teaching, computing and laboratory facilities in the country, including multiple state-of-the-art fuel cell test stations, and a combined heat and power development unit. Research conducted at the Centre ranges from hydrogen trains and canal boats to the techno-economic and social aspects of hydrogen and fuel cells.

A fuel cell car being tested at the University of Birmingham.



Research Assets

University based

Birmingham Energy Institute

- Location: University of Birmingham
- Key features: Researchers work on new energy technologies, materials and applications.
- Opportunity: Locate at the Institute's state of the art premises, to access laboratories for testing and evaluation, and commercialise ground-breaking research products.
- Contact: energy@contacts.bham.ac.uk

East Midlands Hydrogen Innovation Zone (EMHIZ)

- Location: Research Acceleration and Demonstration Building, Jubilee Campus, University of Nottingham
- Key features: Will be the UK's biggest ever hydrogen R&D programme. Will be a 'live laboratory' for inland hydrogen production, distribution, conversion, storage, and usage.
- Opportunity: Work with EMHIZ to build a market-led hydrogen economy, and with local and regional partners like the Midlands Energy Hub.
- Contact: emhiz@nottingham.ac.uk

Global Research Airport and Hydrogen Research Network

- Location: Cranfield University
- Key feature: Cranfield University's airport offers a unique environment for transformational research into decarbonising the aerospace sector.
- Opportunity: Partner with the university and invest in a new clean hydrogen production process.
- Contact: +44 (0) 1234 75 4873

HyDeploy

- Location: Keele University, Keele, Newcastle, ST5 5BG
- Key features: Collaboration between Keele University and industrial partners including Northern Gas Networks and Cadent. Programme to generate evidence demonstrating how blended hydrogen can be used safely in industrial and commercial gas networks.
- Opportunity: Be a part of the next phase, discovering the role of hydrogen in the UK's future.
- Contact: futureofgas@cadentgas.com

HyPER

- Location: Centre for Renewable and Low Carbon Energy, Cranfield Campus, Cranfield
- Key features: Leading development of a new clean hydrogen production process in the UK, includes a state-of-the-art hydrogen production pilot plant. Supported by £7.5 million of UKRI funding.
- Opportunity: Partner with the university and invest in a new clean hydrogen production process.
- Contact: +44 (0) 1234 75 4873

HyDEX

- Location: Keele University, Staffordshire, ST5 5BG
- Key features: Three year programme with eight universities and in collaboration with the Energy Research Accelerator. Aims to address the challenge of building a thriving new business, industrial and manufacturing sector in hydrogen. Aligns £111m of capability, facilities and demonstrators to create the support programme that will allow this capability to be deployed.
- Opportunity: Partner with HyDEX to develop and test technology, and access partners' hydrogen facilities, research capabilities and expertise.
- Contact: +44 (0) 1782 733857

The Hydrogen Works

- Location: Loughborough University Science and Enterprise Park
- Key feature: Hydrogen advanced manufacturing and innovation facility, co-located with commercial partners on Loughborough University Science and Enterprise Park (LUSEP) will be capable of supporting up to eight on-site innovative scale up activities at any one time.
- Opportunity: Shared facilities for research, manufacturing and training. Access to around 100 senior academics delivering leading-edge hydrogen research and innovation.
- Contact: K.North@lboro.ac.uk www.lboro.ac.uk/hydrogen

Training

CDT in Sustainable Hydrogen

- Location: University of Nottingham, University Park, Nottingham
- Key features: £10 million Centre for Doctoral Training (CDT) in Sustainable Hydrogen. Aims to train the next generation of researchers in hydrogen technology, including for transport. Provides a platform for businesses to collaborate with researchers.
- Opportunity: Partner with the CDT to train the next generation of researchers in hydrogen technology and access world leading hydrogen research for transport.
- Contact: beinspired@sustainablehydrogen-cdt.ac.uk

C-DICE

- Location: Loughborough University (lead partner)
- Key feature: The Centre for Postdoctoral Development in Infrastructure Cities and Energy brings together the collective expertise of the Energy Research Accelerator partners and UKCRIC universities, working alongside research associations, institutes, and many leading industrial partners.
- Opportunity: Partner with C-DICE to build and sustain the advanced skills base required to create a pipeline of world-class talent for the Infrastructure, Cities and Energy sectors and accelerate progress towards a net-zero society by 2050.
- Contact: cdice-enquiries@mailbox.lboro.ac.uk



Photovoltaic research at the Centre for Renewable Energy Systems Technology, Loughborough University.

Nuclear

With a skilled workforce of 5,000 people across the civil nuclear industry in the Midlands, the sector is focused around the Rolls Royce nuclear cluster in the East Midlands, with a further grouping located in the West Midlands. The Nuclear Advanced Manufacturing Research Centre (AMRC) is a new industrial R&D centre in Derby where partners are developing a £20m bespoke research facility for the UK's nuclear supply chain. It adds value by developing the industrial and academic pipeline through supply chain development and by engaging with academic organisations and the 'skills pipeline'.

Investor Support

- Great British Nuclear is a new government body set up to bring forward new projects backed by substantial funding. This includes the £120m Future Nuclear Enabling Fund, which could help deliver up to 8 reactors by 2030.
- The Advanced Nuclear Fund includes £210m for Rolls-Royce to develop the design for one of the world's first SMRs. SMRs could be deployed in the UK in the early 2030s to turbocharge UK nuclear capacity.
- Joining the Nuclear AMRC allows you to tackle common industry challenges in collaboration with the Nuclear AMRC and other manufacturing companies. This joint approach allows you to leverage your R&D investment, and draw on the expertise and knowhow of the Nuclear AMRC and partner organisations. Most joint projects will draw on early-stage research completed with funding from the High Value Manufacturing Catapult.

University of Derby – High Value Manufacturing Catapult, Nuclear AMRC

The University of Derby is a member of the Nuclear AMRC, part of the High Value Manufacturing Catapult, a hub designed to transform manufacturing for the modern era by bringing together business, research, and government. In 2020/2021, £486 million of research and development took place, with almost 6,000 partners and over 2,000 commercial projects. The Nuclear AMRC is a new industrial R&D centre located at Derby's Infinity Park that focuses on later-stage development in technology areas delivering maximum impact for the nuclear supply chain. It was built with £6.85 million from UKRI. It supports the developing nuclear cluster based at Infinity Park, and will host the University of Derby's Institute for Innovation in Sustainable Engineering. Facilities include large open plan workshops with ten metre high ceilings, 50 tonne cranes, and dedicated laboratories for 3D printing, rapid prototyping, virtual reality, visualisation, and equipment qualification.

An Investible Opportunity in the West Burton Fusion Reactor

The West Burton Fusion Reactor is the site of a groundbreaking Spherical Tokamak for Energy Production (STEP) plant. Backed by the UK government it will demonstrate the ability to put net electricity on the grid and pave the way for future commercial fusion energy plants. With the STEP plant, the government is investing in apprenticeships training centres in the Nottinghamshire. The West Burton site currently hosts a coal-fired power station owned by EDF and the new plans will build on the areas long industrial history while exemplifying the UK's ability to lead the way on new, clean technologies by drawing on its past.



The Nuclear Advanced Manufacturing Research Centre (AMRC), Derby.

Research Assets

University based

Birmingham Centre for Nuclear Education and Research

- Location: University of Birmingham
- Key features: Conducts research in de-commissioning, health monitoring, and residual life prediction of existing nuclear power stations. New investments in nuclear robotics, nuclear engineering, waste management, and decommissioning. Facilities include positron imaging centre, high flux accelerator-driven, and MC40 Cyclotron.
- Opportunity: Partner with the Centre to receive world class training, utilise facilities, and access research across the nuclear sector.
- Contact: energy@contacts.bham.ac.uk

Catapults and other research collaboration opportunities

High Value Manufacturing Catapult East Midlands (Nuclear AMRC)

- Location: Nuclear AMRC Midlands, Rutherford Way, Derby
- Key features: Helping UK manufacturers win work in nuclear and other high-value low-carbon industries. Works with manufacturers to develop the technical capability to compete on cost, quality and delivery, and research techniques and technologies for the nuclear sector.
- Opportunity: Partner with the AMRC to enhance business capabilities and get help to bid for nuclear work.
- Contact: +44 (0) 114 222 9900

Cluster organisations

Midlands Nuclear

- Location: Energy Research Accelerator (ERA), Birmingham Energy Innovation Centre, 8 Energy Way, Tyseley Energy Park, Birmingham
- Key features: Works to bring together the supply chain, developers, generators, researchers and skills providers. Primary aim is to advocate on behalf of these stakeholders and the wider region, to make the case for increased and sustained investment into nuclear and related industries.
- Opportunity: Partner with Midlands Nuclear and collaborate with developers, generators, researchers and providers of the nuclear supply chain.
- Contact: enquiries@era.ac.uk

Nuclear Institute, Midlands Branch

- Location: Across the Midlands
- Key features: Professional body and network home to major nuclear organisations including Rolls Royce, Ansaldo Nuclear, and the Nuclear AMRC. Conducts lectures, events, and visits to foster growing regional nuclear community. Helps with outreach and public engagement activities for actors.
- Opportunity: Become a member and access the network.
- Contact: secretary.midlands@nuclearinst.com

Renewables

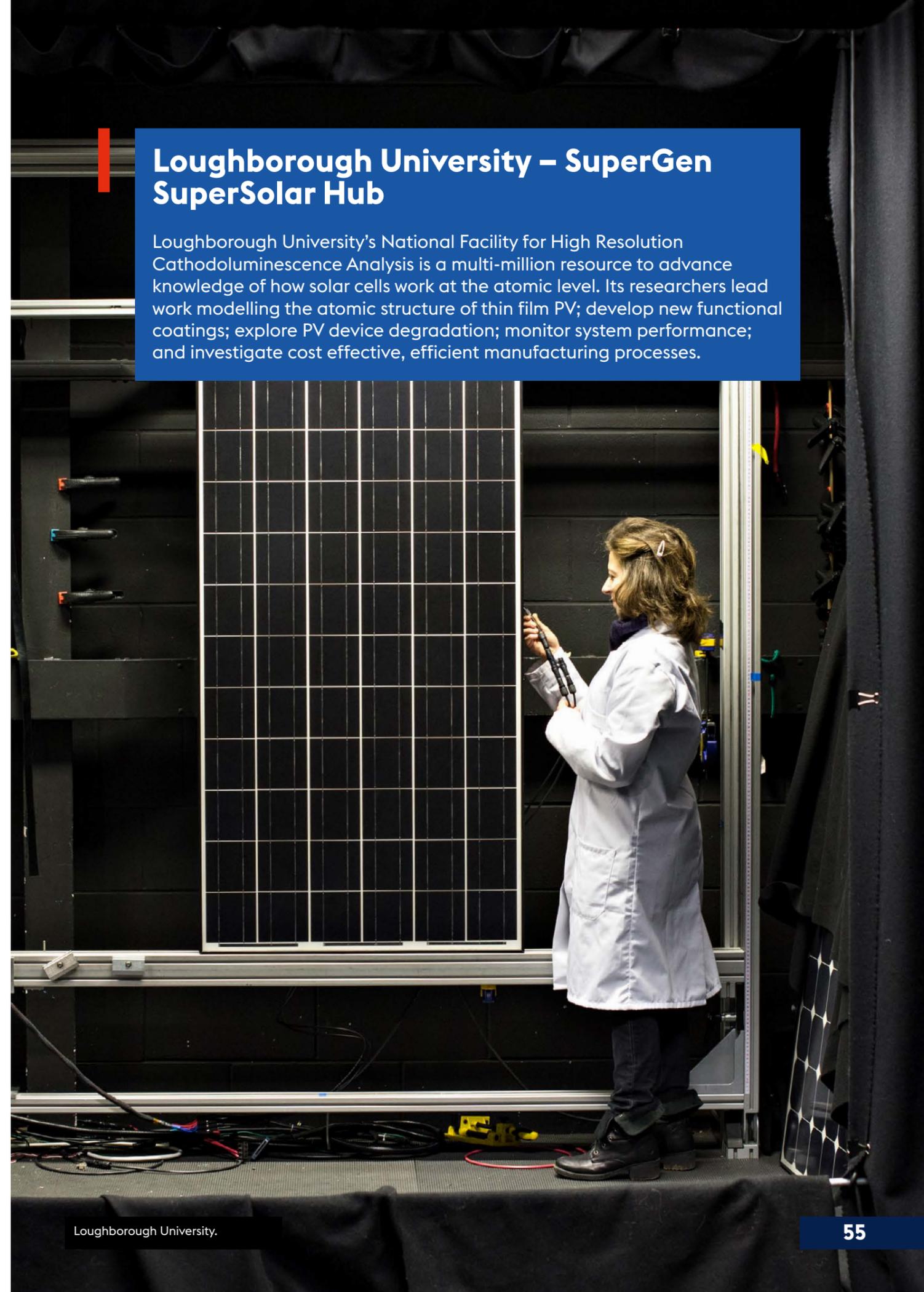
The Midlands is leading the way in renewable energy production and is home to the world's biggest offshore windfarm in Lincolnshire, providing 18% of England's renewables capacity. Significant expertise in the Midlands is already helping to shape the future of our energy systems. The Midlands is also home to a number of energy sites that have either already or are about to be decommissioned as the use of coal is phased out. Future opportunities for investors include developing large-scale onshore wind, anaerobic digestion, geothermal and mine water heat recovery.

Investor Support

- Research and grant support can be identified through working with the Energy Research Accelerator. UK Research and Innovation makes funding available on a regular basis via competition calls for projects. Partnering with the ERA can unlock access to university research facilities, expert researchers, and opportunities to apply for funding – when competition calls are made available.
- The Green Heat Network Fund (GHNF), supported by the UK Infrastructure Bank, is a £288 million capital grant fund that will support:
 - the commercialisation and construction of new low and zero carbon (LZC) heat networks (including the supply of cooling)
 - the retrofitting and expansion of existing heat networks.
- Aston University has been awarded UK Shared Prosperity Funding to run energy audits with partners Coventry City Council and Birmingham City Council.

Loughborough University – SuperGen SuperSolar Hub

Loughborough University's National Facility for High Resolution Cathodoluminescence Analysis is a multi-million resource to advance knowledge of how solar cells work at the atomic level. Its researchers lead work modelling the atomic structure of thin film PV; develop new functional coatings; explore PV device degradation; monitor system performance; and investigate cost effective, efficient manufacturing processes.



Research Assets

University based

Centre for Renewable and Low Carbon Energy

- Location: Centre for Renewable and Low Carbon Energy, Cranfield Campus, Cranfield
- Key features: Internationally leading research, that focuses on the different stages of energy production. Current research and development projects include carbon capture, usage and storage; power from waste; pollution from power production; industrial systems carbon reduction.
- Opportunity: Partner with the Centre to collaborate on research and development projects, in partnership with industry and government bodies.
- Contact: +44 (0) 1234 754766

Centre for Renewable Energy Systems Technology (CREST)

- Location: Loughborough University Science and Enterprise Park
- Key features: First centre in the UK to offer a bespoke postgraduate degree in renewable energy systems technologies. Encourage cultural acceptance of new energy sources, resourcing policy development and increasing knowledge through proactive dissemination.
- Opportunity: Collaborate with the Centre and deliver research on a range of renewable energy issues, and access top class graduates.
- Contact: crest@lboro.ac.uk

Cranfield Urban Observatory

- Location: Cranfield University
- Key feature: Cranfield is one of six universities receiving UKCRIC funding to establish urban observatories. At the heart of the observatory is a £1.05 million state-of-the-art campus-wide sensor network with associated IT infrastructure. The network harnesses the latest sensor technology and includes environmental and infrastructure sensors to monitor behaviour and factors such as air and noise pollution, customer satisfaction and water usage.
- Opportunity: Partner with the university and access data.
- Contact: +44 (0)1234 752973

Institute for Environmental Futures

- Location: The University of Leicester
- Key features: Transformative and transdisciplinary research into human-environment systems together with partners and stakeholders. Focus on co-developing policy solutions and innovations towards an environmentally sustainable future.
- Opportunity: Partner with the Institute to collaborate with world class academics, policymakers, practitioners, and industry to co-design and deliver research.
- Contact: +44 (0) 116 252 2522

UK GeoEnergy Test Bed Platform

- Location: University of Nottingham, Sutton Bonington, Loughborough
- Key features: Provides facilities to test, develop and validate sensors and fluid flow simulation software to develop a range of new monitoring technologies applicable to a number of subsurface industries. Aims to advance geoscientific research to support the global need for secure, sustainable and safe energy.
- Opportunity: Partner with the testbed to access facilities for testing and improving sensing technologies.
- Contact: enquiries@gerc.ac.uk



Catapults and other research collaboration opportunities

Energy Research Accelerator

- Location: Across Midlands universities
- Key features: Partnership of eight research intensive Midlands universities plus the British Geological Survey. Over 1,000 companies are working with ERA partners, undertaking R&D and commercialising products. £60 million investment from UK government with further funding attracted.
- Opportunity: Collaborate with universities and industry on energy related products and receive support for commercialisation and delivery of energy solutions.
- Contact: enquiries@era.ac.uk

Energy Systems Catapult

- Location: Birmingham
- Key features: Independent research and development organisation for energy systems. Aims to accelerate the development and deployment of new energy technologies. Provides a platform for businesses to share knowledge and expertise.
- Opportunity: Partner with the Catapult to secure funding, develop innovative Net Zero solutions, and work with a range of public and private partners.
- Contact: info@es.catapult.org.uk



Hydrogen refuelling station at Tyseley Energy Park in Birmingham.

Cluster organisations

British Geological Survey

- Location: British Geological Survey, Keyworth, Nottingham
- Key features: UK's premier provider of objective and authoritative geoscientific data, information and knowledge to help society use its natural resources responsibly.
- Opportunity: Partner with the Survey to conduct and access research to understand environmental processes.
- Contact: enquires@bgs.ac.uk

An Investible Opportunity in the ABLE Humber Port – ABLE Marine Energy Park

- Location: Rosper Road, Immingham
- Key features: 1,349m of new heavy-duty deep-water quays and 217 hectares of developable land. Provides a multi-user facility for the manufacture, storage, assembly and deployment of next generation offshore wind turbines and their associated supply chains. Quays designed for importation of components and raw materials.
- Opportunity: Invest and secure access to top grade facilities, and cutting edge innovation for the next generation of offshore wind production.
- Contact: +44 (0) 1642 806080

Battery technology and energy storage

University of Warwick – Energy Innovation Centre

The Energy Innovation Centre supports research and development into the entire battery life cycle. Initially built with a £50 million award from the Government, it has since received an additional £20 million of funding to expand its facilities. Facilities include cutting edge laboratories; a dry room for cell assembly; equipment for characterisation work at cell, module and pack levels; innovative charging infrastructure and second-life evaluation facilities; a material scale-up line; and the UK's first openly accessible 1MW pack test facility to support larger testing projects for motorsport and aerospace companies. There are now 20 different laboratories working side-by-side.

Research Assets

University based

Birmingham Centre for Energy Storage

- Location: University of Birmingham
- Key features: Brings together research expertise to identify and address key energy storage challenges and their solutions. Leading the Supergen Energy Storage Network+, and currently involved in over twenty international research projects and thirty national research projects.
- Opportunity: Join the partnership of 12 institutions in the UK, focused on creating and sharing expertise on energy storage.
- Contact: o.saeed.1@bham.ac.uk

Reusing and Recycling Energy Technologies at Birmingham

- Location: University of Birmingham
- Key features: Interdisciplinary research theme across different departments at the University of Birmingham covering recycling batteries, recycling rare earth magnets, chemical recovery of strategic elements, battery storage and the electricity network, and robotic disassembly and end of life.
- Opportunity: Collaborate on research to develop solutions to the problems in the making and using of batteries critical to future electrification.
- Contact: j.r.read@keele.ac.uk



Energy Innovation Centre

- Location: University of Warwick, Lord Bhattacharyya Way, Coventry
- Key features: National facility for battery research across the R&D process from materials and electrochemistry through to application integration and recycling/re-use. Facilities support test, development and scale up of new battery chemistries from concept through to full proven traction batteries, produced in sufficient quantities for detailed industrial evaluation target applications.
- Opportunity: Partner with the Centre to access government backed research and development across the entire battery life cycle.
- Contact: imcreception@warwick.ac.uk

Research Acceleration and Demonstration Building

- Location: 3 Triumph Rd, Lenton, Nottingham
- Key features: Home to several research groups of the Energy Research Accelerator (ERA), the collaboration provides laboratory and office space for industry leading academics and post graduate students. Explores new energy technologies, ranging from harvesting and storing wind energy, to the development of new materials for hydrogen storage.
- Opportunity: Locate in the Building and access the University of Nottingham's Energy Institute and collaborate with researchers across a range of relevant industries.
- Contact: +44 (0) 3330 430 643

Smart Energy Network Demonstrator

- Location: Keele University, Staffordshire
- Key features: Providing a platform that allows generation, distribution, storage, forecasting and energy balancing to be intelligently carried out across different energy sources. Will deliver better energy management, reduce reliance on fossil-fuel derived energy, provide the opportunity to trial innovative ways of energy use and management.
- Opportunity: Partner with a graduate researcher to support innovative business ideas to develop low carbon solutions for your business.
- Contact: j.r.read@keele.ac.uk

Catapults and other research collaboration opportunities

Advanced Propulsion Centre

- Location: Advanced Propulsion Centre, IIPSI Building, University Road, Coventry
- Key features: £1 billion research and development centre for advanced propulsion. Aims to accelerate the development and deployment of new propulsion technologies. Provides a platform for businesses to share knowledge and expertise.
- Opportunity: Partner with the centre to receive funding, access international networks, and showcase at APC's events.
- Contact: info@apcuk.co.uk

MIRA Technology Park and Institute

- Location: Watling Street, Nuneaton
- Key features: Flexible property solutions, centre of the UK auto industry, automotive technology cluster, skills availability and development. Funded by £9.5 million from local and national government.
- Opportunity: Receive specialist training and apprenticeships backed by local and national support.
- Contact: +44 (0) 2476 35 5000

Ratcliffe on Soar Power Station

- Location: Ratcliffe on Soar, Nottingham
- Key features: Uniper, one of the worlds largest power producers, is currently working with regional stakeholders to develop a vision for this significant site. Planning anticipates low-carbon energy production, storage and distribution, hosting manufacturing businesses and opportunities for gigafactories for battery manufacturing.
- Opportunity: Locate at Ratcliffe as a part of a developing cluster of low carbon energy production and manufacturing.
- Contact: info@emdevco.co.uk

UK Battery Industrialisation Centre

- Location: UK Battery Industrialisation Centre, Rowley Road, Baginton, Coventry, CV8 3AL
- Key features: £130 million research and development centre for battery industrialisation. Equipped with the latest cutting-edge technology. Researchers work on a range of projects, including new battery manufacturing processes, new battery materials, and new battery applications.
- Opportunity: Develop and deploy new battery technologies without extensive capital outlay and get support in reducing manufacturing complexity.
- Contact: info@ukbic.co.uk



Aston University.

Investible opportunities

Spalding Battery Energy Storage

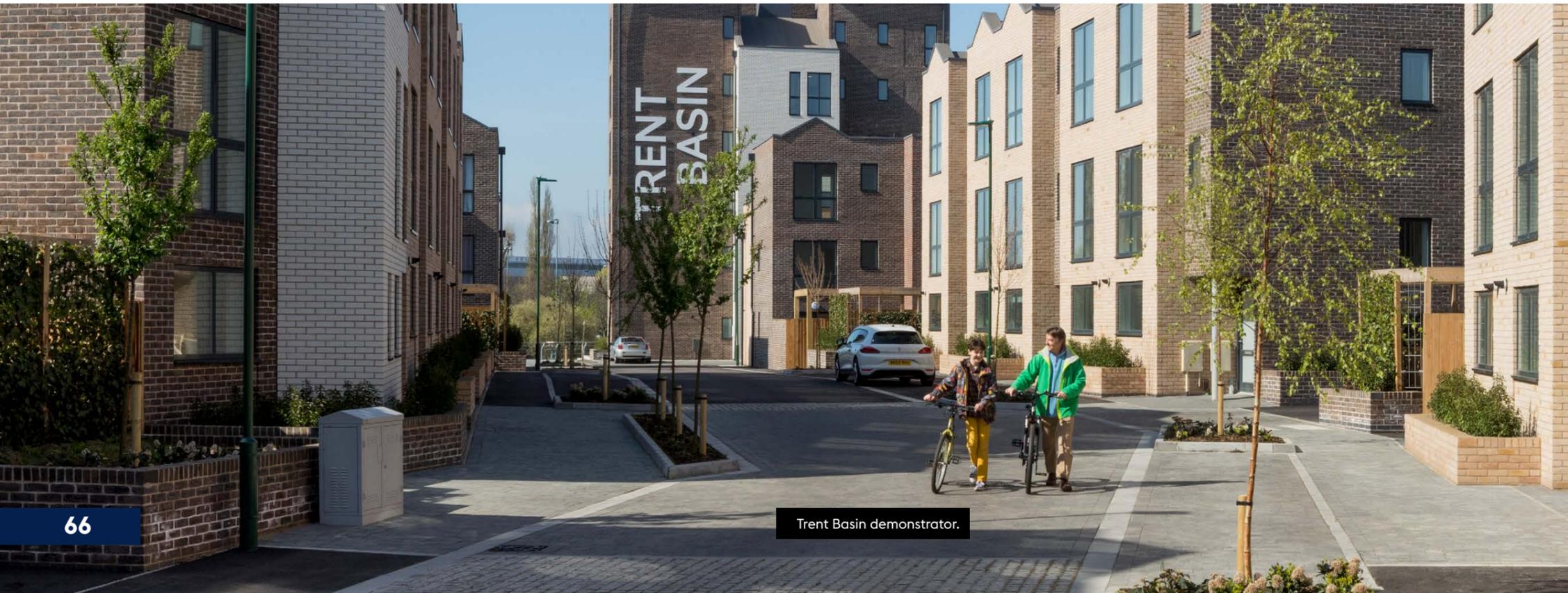
- Location: West Marsh Road, Spalding, Lincolnshire
- Key features: The Battery Energy Storage Systems will play a key role in the UK's drive to bring all greenhouse gas emissions to net zero by 2050. It will have a final capacity of 550 megawatts for a 2 hour discharge duration, with zero greenhouse gas emissions.
- Opportunity: Invest in a key player in the UK energy storage sector.
- Contact: investment@lincolnshire.gov.uk

Trent Basin demonstrator (Community Energy demonstrator)

- Location: University of Birmingham
- Key features: Space and equipment to develop new quantum technologies. Experienced team of researchers skilled in the commercialisation of research. PhD students available for placements as well as research support.
- Opportunity: Work with researchers investigating applications of quantum sensors for industry.
- Contact: qthub@contacts.bham.ac.uk

West Midlands Gigafactory

- Location: Control Tower, Rowley Rd, Coventry
- Key features: The Gigafactory will be able to produce up to 60Wh. It will be ready for production in 2025, and at full capacity will be able to power 600,000 electric vehicles per year. The Gigafactory will be supported by a microgrid of photovoltaic panels.
- Opportunity: Invest in the growing plans of a world leader in both automotive technology and climate action.
- Contact: <https://ukgigafactory.com/contact-us>



Electrics and grid technology

University of Nottingham – Power Electronics Machine Centre

The PEMC is a purpose built centre for the Power Electronics, Machines, and Control research group from a total £23.5 million of investment from various sources. There are three purpose-built labs: High Power, Power Electronics, and Drives. The research group is internationally renowned and one of the largest in its field with 19 academic staff, 60 research fellows, and around 70 PhD students. Research themes include power electronic systems, electrical machines, electric motor drives and systems, and power electronic integration. The Centre delivers high-impact teaching, research and industrial collaborations.

Research Assets

University based

Driving the Electrification Revolution

- Location: 6 Lord Bhattacharyya Way, Coventry, CV4 7AL
- Key features: a UK-wide project to accelerate delivery of Power Electronics, Machines and Drives (PEMD) solutions for a global market. Supports industry across multiple sectors to develop and scale-up new PEMD technologies and manufacturing research. £28m of state-of-the-art equipment for industrial partners to accelerate their capability, capacity and competitiveness.
- Opportunity: Access funding competitions, events, and expertise to test, develop, and strengthen manufacturing and supply chain capabilities.
- Contact: +44 (0) 7802 476479

Electrical Lab

- Location: Aerospace Technology Centre, Innovation Park, Triumph Road, Nottingham
- Key features: Independent facility developing new technology concepts in a range of energy systems, energy management and controls. international standards, current state has received commendation from leading European airframers such as Airbus.
- Opportunity: Utilise the lab to access research, conduct testing, and receive support across all technology, recruitment, and training.
- Contact: +44 (0) 115 74 86155

Energy Technologies Building

- Location: The University of Nottingham, Triumph Rd, Lenton, Nottingham, NG7 2TU
- Key features: Laboratory space for low carbon research, office accommodation, seminar and exhibition rooms, Wolfson Prototyping Hall (light, industrial type space for the purpose of constructing and testing full-scale prototypes of facades and building fabrics with a related external test area. Green and brown roof with solar thermal and PV's, and experimental micro wind turbines.
- Opportunity: Locate on campus and access office space, laboratories, and the prototyping hall, as well as research from the University of Nottingham.
- Contact: +44 (0) 115 846 7668

Institute of Energy and Sustainable Development

- Location: 17 The Newarke, Leicester LE1 5RR
- Key features: Undertakes research to develop knowledge, skills and technology to support sustainable living in communities. Applies systems thinking and integrative methods to capture the complex interrelationships between all aspects of sustainability.
- Opportunity: Consult with the Institute for industry-leading advice on improving design and performance of grids and buildings.
- Contact: muyiwa.oyinlola@dmu.ac.uk

Power Electronics and Machines Centre

- Location: 15 Triumph Rd, Lenton, Nottingham, NG7 2TU
- Key features: Research themes include power electronic systems, electrical machines, electric motor drives and systems, power electronic integration. Project work strengthens existing and develops important new relationships with colleagues across electrification, sustainability, machine-development, aerospace and packaging.
- Opportunity: Partner with the research group at the Centre to receive training, access research, collaborate on projects, and utilise state-of-the-art laboratories.
- Contact: research@nottingham.ac.uk



University of Nottingham: Postgraduate students working with a gas analyser in the Energy Technologies Building.

Training

CDT in Sustainable Electric Propulsion

- Location: Power Electronics and Machines Centre, University Park, Nottingham
- Key features: Fusion-Training-Units, Supervisor-on-Demand scheme, a large choice of taught modules and laboratories. Collaboration between two world leading universities. Backed by UKRI.
- Opportunity: Become a partner to deliver high quality research and comprehensive training with other industry and academic partners.
- Contact: +44 (0) 191 208 6539





**Work
with us**



Researcher examining surface roughness characteristics at CREST, Loughborough University.

Our universities

Location

From the Midlands, 90% of the UK's population and businesses are less than a four-hour drive away; 45% of heavy rail freight and 33% of heavy road freight comes from, goes to, or passes through the Midlands and, with the advent of HS2, London will be less than an hour away. By air, the Midlands is home to two international airports – Paris is just a 90 minute flight away – with access to the seaports of the Humber. The Midlands are home to 11 million people, 15% of the UK's GVA, and the only inland freeport. This is critical to dispersing the output of the Midlands and accessing the potential markets of not only the wider UK, but Europe and international buyers. The region is constantly growing with new development sites and spaces for bespoke builds, including labs, test spaces, and offices.

Joint research and knowledge exchange

The Midlands universities all have dedicated teams ready to assist with knowledge exchange and set up joint research teams between their world-leading academics and investors. These partnerships have in the past led to some of the critical innovations driving both current and future zero carbon technology.

Directory of contacts across the Midlands

University offices

Each university has a team of experts who can provide advice on all aspects of research and development, including locating on a science park, joint research and knowledge exchange, commercialisation and equity investment, and accessing a skilled talent and innovation pool.

University	Business engagement and Technology Transfer	Careers service
Aston University	rke@aston.ac.uk	employerteam@aston.ac.uk
University of Birmingham	info@enterprise.bham.ac.uk	recruiters@contacts.bham.ac.uk
Coventry University	ei@coventry.ac.uk	talentteam@coventry.ac.uk
Cranfield University	business@cranfield.ac.uk	cranfieldcareers@cranfield.ac.uk
De Montfort University	businessservices@dmu.ac.uk	employerliaison@dmu.ac.uk
University of Derby	businessgateway@derby.ac.uk	employerteam@derby.ac.uk
Harper Adams University	reception@harper-adams.ac.uk	careers@harper-adams.ac.uk
Keele University	gateway@keele.ac.uk	gateway@keele.ac.uk
University of Leicester	redenterprise@le.ac.uk	employer.services@le.ac.uk
University of Lincoln	enterprise@lincoln.ac.uk	careers@lincoln.ac.uk
Loughborough University	innovation@mailbox.lboro.ac.uk	employer.services@lboro.ac.uk
University of Nottingham	workwithus@nottingham.ac.uk	recruiterservices@nottingham.ac.uk
Nottingham Trent University	workingwithyou@ntu.ac.uk	talent@ntu.ac.uk
University of Warwick	ventures@warwick.ac.uk	employerconnect@warwick.ac.uk
University of Wolverhampton	engage@wlv.ac.uk	theworkplace@wlv.ac.uk
University of Worcester	researchforbusiness@wor.ac.uk	careers@worc.ac.uk

Energy Research Accelerator – at the forefront of energy innovation

The pioneering Energy Research Accelerator (ERA) brings together 1,400 researchers in eight internationally-recognised research universities from the Midlands region (Aston, Birmingham, Cranfield, Keele, Leicester, Loughborough, Nottingham and Warwick) and the British Geological Survey.

- ERA is the largest energy research partnership in the United Kingdom. It has received £60 million funding from the government to invest in energy research and development facilities which it has leveraged an additional £120 million from industry and government.
- ERA has established 23 new cutting-edge research facilities and demonstration projects across the partnership, which have been the catalysts for working with business and generating new research areas and developments. In addition, ERA also supported the development of PhD and postdoctoral researchers.
- The Midlands employs around one third of the people in the UK's energy sector with over 56,000 regional jobs. Every year more than £2.5 billion of capital investment is made in energy technologies and infrastructure (excluding buildings and transport) across the Midlands. The Energy Research Accelerator has engaged with over 1,000 companies to date, including many leading companies based in the Midlands such as Toyota, Rolls-Royce, JCB, Siemens, EDF and Cadent.

Energy Research Priorities

ERA's research priorities are focused on:

1. Energy and the built environment, including:

- Heating and cooling
- Thermal efficiency
- Local area energy planning
- Net-zero buildings

2. Energy generation and systems, including:

- Energy generation
- Energy storage and materials
- Smart energy
- Energy markets

3. Transport and mobility, including:

- Electric and hydrogen flight and airports
- Space travel and applications
- Batteries and hydrogen
- E-mobility trucks and trains

4. Sustainability and people, including:

- Circular economy and critical materials
- Habitable earth and climate justice
- Sustainable fuels and biochar
- Nature inspired materials

5. Decarbonisation of industry, including:

- Hydrogen for industry
- Energy efficiency and storage
- Low cost energy
- Next generation manufacturing

For more information about the Energy Research Accelerator and to find out how it can support you with energy innovation, visit www.era.ac.uk or email enquiries@era.ac.uk

Developing the Hydrogen Economy through HyDEX

The Energy Research Accelerator is also working to develop a hydrogen economy in the Midlands through its HyDEX programme.

- HyDEX is a £5 million programme with is supporting and fostering the creation of a new hydrogen industrial economy in the Midlands. This is being achieved by working with SMEs, established Midlands-based and UK commercial partners, and multinationals to accelerate innovation, build markets and support the required skills transition.
- ERA is making available hydrogen facilities, research capability and expertise, and large-scale hydrogen demonstrators that are based at partner universities.
- For more information about the HyDEX hydrogen development programme, visit www.hydex.ac.uk or email hello@hydex.ac.uk



Supporting the Midlands' Nuclear industry

The Energy Research Accelerator has also established Midlands Nuclear. Midlands Nuclear is bringing together the supply chain with developers, generators, researchers and skills providers to maximise nuclear opportunities in the Midlands region.

Midlands Nuclear is working on behalf of these stakeholders and the wider region, to make the case for increased and sustained investment into nuclear and related industries in the region.

The UK's new STEP Fusion plant will also be built at West Burton A in north Nottinghamshire and this will provide great opportunities for businesses in the Midlands region that want to supply the nuclear industry.

Midlands Nuclear is focused on:

- Supporting bids for nuclear manufacturing sites in the Midlands
- Supporting the development of new nuclear generation in the Midlands.
- Supporting the development of the fusion energy sector.
- Supporting nuclear skills development to meet Midlands and national demand.
- Supporting the creation of nuclear test, validation and R&D facilities.

- Supporting the siting assessment of the UK's long-term Geological Disposal Facility.
- For more information about Midlands Nuclear visit: www.midlandsnuclear.co.uk

Supporting International Investment

We have supported numerous visits into the region including from government, academia and industry who are keen to either collaborate or invest in the region in relation to energy or net zero. Depending on the exact needs we have worked with incoming visitors to facilitate visits to our partners and others based in the region and we have also organised missions including our partners and others to potential international partners.

We have also supported the establishment of joint research projects with international partners and provided training for international students and professionals.

To find out more about how the Energy Research Accelerator can help you with energy research and innovation, or if you would like to work with ERA on their HyDEX and Midlands Nuclear programmes, email enquiries@era.ac.uk

Science Park Contacts

The Midlands is home to a thriving network of science parks, which offer businesses access to a skilled workforce, cutting-edge research facilities, and a supportive ecosystem. If you're looking to grow your business, a science park in the Midlands is the perfect place to do it.

University	Science or Technology Park
Birmingham Science Park Aston, Birmingham	info@astonsciencepark.co.uk
Birmingham Research Park, Birmingham	brpl@bham.ac.uk
Coventry University Technology Park, Coventry	+44 (0) 2476236000
Cranfield University Technology Park, Bedfordshire	joshua.parello@kirkbydiamond.co.uk
The Innovation Centre, Leicester	innovationcentre@dmu.ac.uk
University of Derby Science Park	+44 (0) 1332 742 800
INFINITY Park, Derby	ssalloway@salloway.com
Keele University Science and Innovation Park, Staffordshire	gateway@keele.ac.uk
Lincoln Science and Innovation Park	enquiry@lincolnsiencepark.co.uk
Loughborough University Science and Enterprise Park	lusep@lboro.ac.uk
University of Nottingham Innovation Park, Nottingham	reception@unip.nottingham.ac.uk
Nottingham Science Park	regeneration@nottinghamcity.gov.uk
University of Warwick Science Park, Coventry	more-info@uwsp.co.uk
University of Wolverhampton Science Park, Wolverhampton	joinus@wolverhamptonsp.co.uk
Birmingham Innovation Quarter, Birmingham	hello.scitech@bruntwood.co.uk
Skylon Park, Herefordshire	info@skylonpark.co.uk



Loughborough University Science and Enterprise Park.

Investment Support across the Midlands

The [West Midlands Growth Company](#) offers investors support to find the right networks, receive advice on locations, secure sector specific market research, identify funding support, and generate publicity. The West Midlands Growth Company has a number of sector specialists to offer bespoke support to help you achieve your goals. As a single point of contact, they can put together a team from recruitment agencies, universities, public agencies, and property agents to assist companies investing in or moving to the West Midlands. For international companies, there are fully funded market entry support packages on offer through the West Midlands Global Growth Programme. Packages can cover market entry, commercial space and business accelerator support. You can get in touch at invest@wmgrowth.com, or by calling +44 (0) 121 202 5022.

A new £107 million support service has also just been launched by the West Midlands Combined Authority. Business Growth West Midlands provides business advice and funding to businesses looking to expand. Contact them online or by calling +44 (0) 345 646 1352.

The UK Government is committed to supporting investors that are seeking to expand into the Midlands. [Officials from the Department Business and Trade](#) can assist with contacts, identifying funding sources, sourcing opportunities, and to navigate the investment environment. DBT provides advice directly to investors about the business environment in the UK, including tax, access to finance, banking, research and development (R&D), visas and skills. Department for Business and Trade (DBT) specialists provide international trade and investment support to businesses seeking to locate in the East Midlands. They can be reached on +44 (0) 20 4566 5302. Other relevant government contacts include the Science and Innovation Network (SIN) hosted at UK embassies, and the Department for Science, Innovation, and Technology (DSIT), which works to build the UK's capabilities in these areas.

Place focused inward investment support

Inward investment is supported by dedicated organisations in other parts of the Midlands, as detailed below.

- **[Destination Chesterfield](#)**
+44 (0) 1246 207207
- **[Invest Coventry and Warwickshire](#)**
contact@investcw.co.uk
- **[Marketing Derby](#)**
invest@marketingderby.co.uk
- **[Invest in Leicester](#)**
enquiries@investinleicester.com
- **[Invest in Nottingham](#)**
enquiries@investinnottingham.co.uk
- **[Invest Telford](#)**
Invest@telford.gov.uk
- **[Invest Shropshire](#)**
invest@shropshire.gov.uk
- **[Invest Stoke-on-Trent](#)**
enquiries@investstoke.co.uk
- **[Invest Staffordshire](#)**
hello@wearestaffordshire.co.uk
- **[Invest in West Midlands](#)**
invest@wmgrowth.com
- **[Invest Wolverhampton](#)**
invest@wolverhampton.gov.uk
- **[Invest in Worcestershire](#)**
+44 (0) 1905 677888
- **[Team Lincolnshire](#)**
investment@lincolnshire.gov.uk

UK Investment Support

The UK's ability to develop new ideas is one of our great strengths, from the jet engine and the bagless vacuum cleaner to MRI scanners and the world wide web. The UK's talent pool, funding and incentives and business infrastructure all help create an environment of business innovation. Our commitment to world-leading research and development will help your business reach its full potential. We are one of the most innovative countries in the world - ranked in the top 5 countries in the Global Innovation Index 2019. For companies such as Ford, Pfizer, Eli Lilly, Nokia and Eisai, the UK's business environment is the natural choice for investment in innovation.

Government help for your business

The UK government's innovation agency, [Innovate UK](#), helps businesses develop new ideas and turn them into a commercial success.

It can help you:

- access funding
- connect with researchers and other collaborators
- find potential customers

Financial incentives to innovate in the UK

The UK offers generous financial support and tax incentives for innovation in the UK.

These include:

- [UK Research and Innovation \(UKRI\)](#) funding through our Research Councils and Innovate UK
- research-led tax incentives such as Patent Box, R&D Tax Relief and R&D Expenditure Credit

World-class talent

In the UK you'll have access to world-class academic and research talent. You'll also be able to take advantage of a good supply of highly skilled employees. Our many innovation initiatives include our [Grand Challenges](#). These bring together the best minds in science and business to explore opportunities from 21st century global trends.

Regulation to protect your ideas

The UK has a world class intellectual property regime. This protects the names, ideas, products, designs and written word of businesses.

Find out about [UK intellectual property laws](#) after the UK's exit from the EU on the [great.gov.uk](#) website.

Infrastructure that supports innovation

Nationally, the UK invests £6 billion each year in research councils and universities. The UK's network of Catapult Centres help emerging technologies become commercially viable. A range of 'business clusters' up and down the country offers specialist expertise. These include:

- advanced engineering and medical technologies in the Northern Powerhouse
- the UK's answer to Silicon Valley in the Cambridge, Milton Keynes and Oxford corridor
- a thriving life sciences research and renewables scene in Edinburgh

High Potential Opportunities

[The UK Department for Business and Trade](#) identified multiple High Potential Opportunities for investment in the Midlands. The HPOs are supported by the UK government to make them more accessible to foreign investors. To find the full list of HPOs available in the Midlands and how the government can support your business taking advantage of them, contact DBT by calling +44 (0) 20 4551 0011, or using one of the services listed on the next page.

Freeports

The UK Freeports are areas where the normal customs do not apply. At Freeports, imports can enter with a simplified customs documentation and without tariffs. Business operating in the designated zone around the Freeports can manufacture using the imports and export the finished products through the Freeports, all without facing the regular tariffs. The East Midlands Freeport is the only UK Freeport connected to an airport rather than a traditional sea port, and presents a unique opportunity for companies who manufacture and re export. To find out more and how your company can benefit from the East Midlands Freeport, get in contact with the team at info@emfreeport.com.

Investment Zones

The UK government has designated both the East Midlands and the West Midlands as investment zones, a new policy announced in 2023. The zones will receive £80 million support from the government over the next five years for tax incentives and resource spending. Examples of policies include business rates relief, stamp duty relief, capital allowances, and lower employer National Insurance contributions. To find out more, get in contact with one of the investment specialists listed above.

General investment support

- The [Global Entrepreneur Programme](#) provides support for overseas high growth business looking to move to the UK.
- The [Venture Capital Unit](#) connects UK registered growth businesses and start-ups with investors and funders.
- The [UK Investment Support Directory](#) provides connections between overseas businesses wanting to set up in or expand to the UK and those from the private sector in the UK who can assist, whether that be in legal concerns, marketing, HR, or other needs.

Export Support Service

- The [Export Support Service](#) helps those based in the UK looking to export abroad.
- The [UK Export Finance](#) team can help with funding and insurance for UK exports. m can help with funding and insurance for UK exports.
- The East Midlands Freeport team can help you take advantage of the tax incentives and freeport benefits. Reach them at info@emfreeport.com.





GREAT
BRITAIN & NORTHERN IRELAND

Department for Business and Trade

We support growth by backing businesses in the UK and globally, promoting investment and championing free trade.

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