UNIVERSITY OF BIRMINGHAM | Business with Birmingham

Energy

The Birmingham Energy Institute is the University's focal point for innovation, affecting change and informing policy around the generation and consumption of energy. We are at the forefront of technological advancements addressing the challenges that face the globe as it seeks to develop sustainable energy solutions in transport, electricity and heat supply. Committed to renewable energy and a zero-emission vision, the University of Birmingham is creating partnerships with national and international businesses, as well as guiding government policy.

Our industry links are revolutionising the way in which energy is understood and providing industry with the knowledge and skills to develop their technology and accelerate the transition from concept to a commercially available product. With over 140 high-calibre academics and funding of over £75 million, the Institute is shaping the energy solutions of tomorrow.

Our expertise

- Energy storage
- Nuclear energy
- Economics
- Fuel cells and hydrogen
- Transport
- Electricity and smart grids
- Materials for energy applications
- Sustainability
- Strategic elements and critical materials
- Energy law and regulation

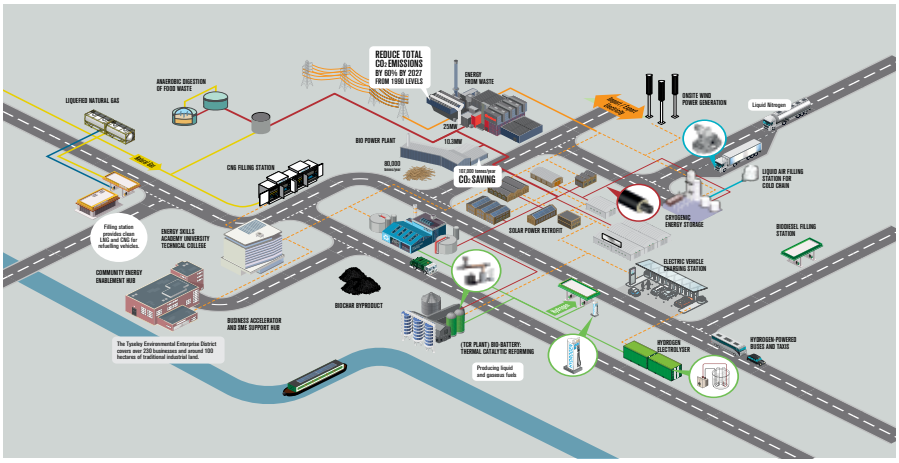
Success and impact

- The University of Birmingham is a founding member of the Energy Research Accelerator (ERA). The ERA is a partnership made up of six internationally renowned Midlands universities and the British Geological Survey.
- The Thermal Energy Research Accelerator (T-ERA) is one of the three work streams that form the ERA: a capital investment of £60 million by the government to tackle some of the biggest challenges facing the global economy. This is supported by an additional £120 million of co-investment secured from industry and academic partners. The government's initial investment is expected to generate a return of £323 million.
- The University is playing a leading role in the city of Birmingham's Green Commission. In partnership with national research partners, the University has carried out a review of Birmingham to support the city's vision to reduce its carbon footprint by 60% by 2027.
- We have developed an advanced real-time power grid simulator which has the capability to model system components at nanoscale.
- The Birmingham Centre for Cryogenic Energy Storage (BCCES) is the first in the UK to have a research facility for energy storage using cryogenic liquids, comprising new laboratories, state of the art equipment, and a major demonstration plant. The pilot plant was developed in collaboration with Highview Power Storage.

THE UNIVERSITY IS PLAYING A LEADING ROLE IN HELPING THE CITY OF **BIRMINGHAM TO REDUCE** ITS CARBON FOOTPRINT BY **60% BY 2027**

Energy

'WE NEED TO BACK INNOVATION HERE – TO SUPPORT OUR GREAT UNIVERSITIES TO TURN THEIR DISCOVERIES INTO BUSINESS, AND GET BEHIND MIDLANDS' ENTREPRENEURS. THAT'S WHY WE'RE INVESTING £60 MILLION IN THE EXCITING WORK OF BIRMINGHAM AND FIVE OTHER UNIVERSITIES ON THE ENERGY RESEARCH ACCELERATOR, WHICH WILL HELP MAKE THE MIDLANDS A CENTRE FOR NEW ENERGY TECHNOLOGIES.' PRIME MINISTER, THE RT. HON. THERESA MAY MP



Key projects

Energy Research Accelerator (ERA): A vital component of ERA is the International Thermal Energy Manufacturing Accelerator (ITEMA), which is creating an environment that enables companies to refine technologies, optimise the development of the manufacturing of products and reduce the time it takes to bring their innovations to market. This is in collaboration with the Manufacturing Technology Centre (MTC), based in Coventry.

Energy Capital: Energy Capital aims to establish the Greater Birmingham area as the global capital for energy systems innovation and market development, synergising its energy, waste, and transport infrastructure. Working alongside ERA, Birmingham City Council and the Energy Systems Catapult, the Tyseley Energy and Environmental Enterprise District will become the energy and waste nexus for the City of Birmingham, showing how novel energy technologies can create an innovative industrial ecology. This will attract international companies to the region and catalyse the skills development required to underpin this essential transformation.

Dearman Engine: Working with the University's Centre for Cryogenic Energy Storage has enabled the Dearman Engine Company to develop, refine and test applications for their flagship Dearman engine. The piston engine utilises the rapid expansion of liquid air, or liquid nitrogen, leading to zero-emission power and cooling. Through this partnership the Dearman Engine Company has been able to acquire essential knowledge and skills required to continue the development of their revolutionary clean cold technology.

Getting in touch

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