



UNIVERSITY
OF HULL

Accelerating a Net Zero Future

Our home. Our responsibility.



“The need to take action to protect our environment has never been more pressing. We’re proud to be working with partners the world over to make a real difference, right now.”

**Professor Dan Parsons, Director,
Energy and Environment Institute**

Climate change is a global crisis that affects us all

Rising temperatures are fueling environmental degradation, natural disasters, weather extremes, food and water insecurity, economic disruption, conflict, and terrorism. Sea levels are rising, the Arctic is melting, coral reefs are dying, oceans are acidifying, and forests are burning. We need to work together to avert this crisis.

At the University of Hull, colleagues and students are uniting in action towards becoming carbon neutral. We’re rising to the challenge, leading the way to help to solve some of the most complex problems facing society. Not just for our region, but for the world beyond our shores.

Here on campus, we have made an ambitious commitment to be carbon neutral by 2027, which sets our centenary as a target date and reaffirms our commitment to contribute towards the urgent action needed to reverse global heating, addressing the climate crisis.

The University of Hull is working to find solutions to some of the biggest challenges facing the world today. Bringing together expertise from across the University and working with partners, industry and stakeholders, we deliver research that helps shape the future.

Our world-leading [Energy and Environment Institute \(EEI\)](#) brings together leading researchers to tackle global challenges and issues relating to climate change and the resulting impacts on society and livelihoods. Through the EEI and initiatives like [Aura](#), [Living with Water](#) and [The Waterline](#), we’re working collectively with partners and industry to seek sustainable solutions for the future of our planet. Our work is helping to create a sustainable future in which vulnerabilities are reduced and diverse ecosystems can flourish.

**The future depends on us.
Let’s get on with it.**

[> Find out more](#)

Discover more about how we're leading the way in low carbon innovation

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Shaping the future of offshore wind

Aura is a coalition of public and private sector partners collaborating successfully to support the development of a sustainable low carbon supply chain to contribute to establishing the UK as a global leader in offshore wind and renewable energy.

An initiative of the University of Hull, Aura is a powerful consortium of organisations including Siemens Gamesa Renewable Energy, Ørsted, the universities of Sheffield and Durham, the Offshore Renewable Energy Catapult (OREC), CATCH (an industry led training partnership), the National Oceanography Centre and the Humber Local Enterprise Partnership (LEP). Our mission is to find innovative solutions to the challenges we face, from technical and operational to economic and societal, to accelerate ground-breaking solutions with industry and academic partners to help them deliver innovation in offshore wind and low carbon energy - for the region, the UK and globally.

Rooted at the heart of the UK's 'Energy Estuary' Aura is a leader in the Humber Advanced Offshore Wind Cluster and a key delivery partner in the UK Government's Offshore Wind Sector Deal.

Aligned with the national government policy and the Industrial Strategy's Offshore Wind Sector Deal, Aura operates in five key impact areas - Ideas, Infrastructure, People, Business Environment and Place. These connect a range of experts from manufacturers, developers, operations and maintenance, skills providers, universities, local government and others to build vibrant offshore wind and low-carbon industries. All leading to a fairer, brighter, carbon neutral world.

Identifying opportunities to innovate and collaborate in offshore wind and low-carbon energy across the UK is the engine that drives. At Aura, we work together to turn innovative ideas into game-changing reality.

[> Find out more](#)

With the University of Hull, Aura is a key partner in delivering the £48-billion offshore wind sector deal to further transform the future energy economy, nationally and internationally.



Creating a flood resilient future



It is estimated that around the world twice as many people will be affected by floods in 2030 compared to 2010. With this dramatic change over a 20-year period there has never been a greater need for research and action.

The [Energy and Environment Institute](#) at the University of Hull brings together leading researchers from a range of disciplines to tackle global challenges related to climate change and population growth, and a central theme of the Institute's work is around water and flooding.

Hull is ideal as a centre for flood expertise. It is one of the Rockefeller Foundation's [five global cities](#) that demonstrate future water resilience. Our National Flood Resilience Centre, known as [Ark](#), brings together a range of flood expertise and specialist facilities for flood research and innovation, education and support for communities and flood responders.

The [Flood Innovation Centre](#) has been created to support businesses through our academic research and cutting edge facilities to help turn their ideas into reality. These innovative services, processes and products in flood resilience will help our communities become better prepared for rising flood risks.

We also work closely with the [Living with Water](#) partnership and are conducting [research with local residents](#) about their experiences of flooding and attitudes towards flood resilience.

A number of our researchers are working closely with partners in Vietnam, exploring the [Mekong delta's future flood resilience and sustainability](#), as well as working with young people in the [Red River catchment](#) area to improve community-led climate action and resilience.

University experts from a variety of subjects - including environmental science, humanities and arts - have recently combined to secure £330,000 of funding to help the University make a stand against climate change. The [Risky Cities](#) research project will explore the history of flooding in Hull, examining how communities have learned to live with water over the past 800 years. It will also examine how flooding has been documented in centuries gone by, including that in literature and by famous poets including Andrew Marvell. Finally, the project will explore opportunities to use arts and heritage to engage local communities, telling stories from the past which will raise and prompt action in relation to climate change and flood resilience.

Mobilising the bioeconomy

By combining the collective knowledge and expertise across the universities of Hull, Teesside and York, the [THYME](#) project is helping to reduce our reliance on non-renewable energy sources and drive innovation and productivity through sustainable natural resources.

Together we're working to find greener solutions, building on our regional assets and boosting the local bioeconomy.

Sharing ideas to find solutions

Through industry and academically driven projects and partnerships, we're working together to help the region develop its natural resources, replacing fossil fuels and utilising renewable biological resources to create greener and more sustainable solutions for business.

University of Hull expertise has come to play in a wide range of THYME activities relating to the bioeconomy, from low carbon production of [biofuels](#) and [bio-based energy](#), to [improving soil quality](#) to increase agricultural productivity and flood resilience.

A Hull-based team is also working with regional employers to shape an education curriculum that ensures a [talent pipeline of skilled graduates](#) for the sector.

[> Find out more](#)

Our region has the potential to become a world leader, securing food, water and energy without sacrificing the environment.

THYME Project

Teesside, Hull and York - Mobilising Bioeconomy Knowledge Exchange

Sustainable energy for a zero carbon future

Our [Centre for Sustainable Energy Technologies \(CSET\)](#) is at the forefront of developments in renewable energy and sustainable technology.

Through the CSET, we are reducing reliance on fossil fuels and forging international collaborations to help progress new energy technologies. From inventing new super-efficient heating and air-conditioning systems to creating solar-powered beds, we're innovating solutions and technologies that have the potential to make massive reductions to the international carbon footprint.



Led by Professor Xudong Zhao, a key figure in global efforts to combat climate change by reducing carbon emissions, our CSET is working on developments involving solar power, low-carbon heating and cooling, and green building design to reduce consumption of fossil fuels.



Driving innovation in low carbon and flood resilience

Through our world-leading [Aura](#) and [Flood Innovation Centres](#), and our innovation support and grants programme [SparkFund](#), the University of Hull is focused on proactively supporting research and innovation in low carbon and flood resilience technologies.

Located in the Humber, the very heart of the UK's 'Energy Estuary', our Innovation Centres provide a community that supports businesses of all sizes, helping them to accelerate low carbon and flood resilience projects, drive green innovation and deliver clean business growth.

A place like no other

A state-of-the-art hub designed for collaboration and sharing and developing ideas, the Aura Innovation Centre enables businesses of all sizes to connect with the research power at the University of Hull to develop carbon-reducing and flood resilience ideas across all sectors. Working together to accelerate and de-risk innovation and maximise commercial returns.

From shaping and defining your vision to accessing specialist funded support, we bring together the skills and knowledge needed to accelerate your ambitions - all under one roof. If you want to reduce your carbon emissions, build for a more flood resilient future, save on energy costs, increase efficiency and productivity, or access new markets, our team are here to help.

Access to research expertise

A unique opportunity to work with leading academics to turn your ideas into a reality. We provide access to ground-breaking research from some of the best minds. The University brings together researchers from a wide range of disciplines to conduct insightful investigations on the global challenges presented by environmental change, underpinning innovations and progression in flood and low carbon research.

Workspace

We have a range of work and desk spaces available to lease, enabling onsite access to expertise and facilities - [find out more here](#).



Workshop

Home to the latest specialist, high tech equipment, tools and machinery to help get your projects off the ground.



Meetings, events & conference space

Looking for an event space with a difference? Inspire your delegates in our state-of-the-art meeting and conference spaces, available to hire.

[> Find out more](#)

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Tackling the plastics problem

Plastic has completely changed the way we live. It's cheap, convenient and long lasting. But this has had a devastating effect on our oceans. By 2050 there will be more plastic in our waters than fish*. And society's reliance on single use plastic is also driving climate change.

A recent report from the Center for International Environmental Law estimated plastic will be responsible for up to 13% of the total "carbon budget" by 2050; the equivalent to the output of 615 coal-fired power plants.

To reach our zero carbon targets, society needs to transition to a circular economy model where we make, use and recycle rather than make, use and discard. So to save the environment we need to stop our dependence on single-use plastic. This is one of the biggest crises of our generation, and the University of Hull is working on solutions.

Our [Plastics Collaboratory](#) brings together a diverse team of more than 45 researchers from a range of academic disciplines to help drive

future plastic related research and programmes of activity across the University and beyond. The group secured £1.1million funding for [Evolving a Circular Plastics Economy](#) - a major research project tackling plastic from creation, through to usage and disposal, looking at biodegradable alternatives to single use plastic and working with a major supermarket on their plastic usage.

Our Energy and Environment Institute also hosts the [Plastics in the Environment Research Cluster](#) examining the flow of microplastics from river to ocean and their effects on marine ecosystems alongside partners in both the Arctic and Antarctic, the British Overseas Territories, South East Asia and the UK.

* Ellen MacArthur Foundation

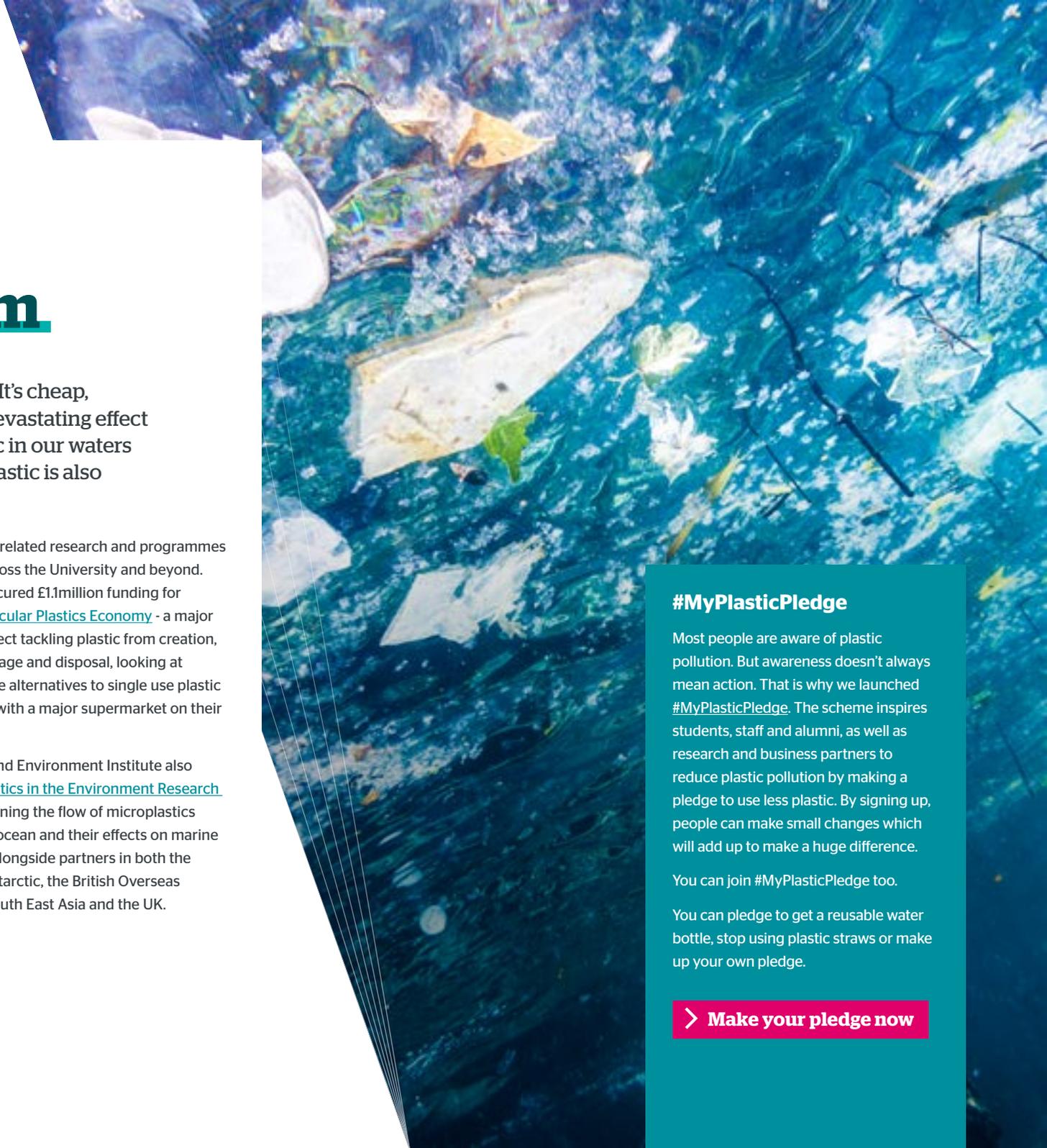
#MyPlasticPledge

Most people are aware of plastic pollution. But awareness doesn't always mean action. That is why we launched [#MyPlasticPledge](#). The scheme inspires students, staff and alumni, as well as research and business partners to reduce plastic pollution by making a pledge to use less plastic. By signing up, people can make small changes which will add up to make a huge difference.

You can join [#MyPlasticPledge](#) too.

You can pledge to get a reusable water bottle, stop using plastic straws or make up your own pledge.

[> Make your pledge now](#)



Building skills and knowledge

As the renewable energy sector continues to grow, there is more need for trained individuals – from engineers, innovators and planners to scientists, technicians and more.

And, with the Humber being the UK's 'Energy Estuary' and the focus of the renewables industry, we've shaped our programmes to meet this need, using [Aura's](#) industry links and [Energy and Environment Institute](#) expertise. Students will have the opportunity to work with industry, drive innovation and help develop a sustainable zero-carbon future, with excellent prospects for industrial placements and exciting career prospects.



Siemens Gamesa Postgraduate Apprenticeships

The University of Hull has expanded its postgraduate training portfolio by joining forces with Siemens Gamesa Renewable Energy (SGRE) to offer an Aura Postgraduate [Degree Apprenticeship](#) in Offshore Wind Energy Engineering. This ground-breaking programme is the first of its kind in the UK and aims to develop the next generation of technical and industry leaders to keep Britain at the forefront of the offshore wind industry.



MSc Renewable Energy

Our [MSc in Renewable Energy](#) will give students an understanding of a range of technologies, such as wind, tidal, solar and hydro-power. They will develop an understanding of the research and analytical skills relevant to renewable energy resource analysis, as well as learning key professional skills such as project management, presentations and group work. There is a strong industrial component, including site visits, guest speakers from industry and the use of 'real-world' examples. The programme is also ideal for students interested in further research.



MSc Flood Risk Management

With an uncertain future climate, there's a global demand for a new generation of flood risk professionals. Our new [MSc in Flood Risk Management](#), developed in consultation with key industry partners, builds on the University's expertise in flooding to understand the application of innovative new approaches to managing flood risk to promote greater resilience for communities around the world. Students will gain an understanding of the drivers and impacts of flood hazards, equipping them for a career in the expanding flood risk sector.



MSc Advanced Energy Technologies for Buildings and Industry

New course launching 2021

A further Masters course is set to launch in 2021 – the MSc in Advanced Energy Technologies for Buildings and Industry. Students will benefit from teaching based on a knowledge of advanced energy technologies based on over 20 years of research activity from academics and cutting-edge facilities located in the new research laboratory within the Aura Innovation Centre.



Aura CDT - Driving a sustainable future for the Offshore Wind Industry

The EPSRC [Aura Centre for Doctoral Training](#) (CDT) in Offshore Wind Energy and the Environment is led by the Energy and Environment Institute at the University of Hull, with partners Durham, Newcastle and Sheffield Universities. Working closely with over 20 industry partners, the Aura CDT is directly addressing the skills gap within the offshore wind industry. With funding for 75 PhD scholarships running over a nine-year period, the Aura CDT supports innovation to drive the sustainable expansion of the offshore wind (OSW) industry in the Humber region and beyond.

Each year, we offer up to 20 scholarships, including Industry Scholarships in conjunction with leading employers such as ORE Catapult and Siemens Gamesa Renewable Energy. For people looking for a future in the offshore wind energy, there's no better place to study than the Aura CDT in the heart of the UK's 'Energy Estuary'.



Living with Water: Perceptions, Processes, Responses and Mitigation of Flooding

This cluster of five PhD students is focusing on better understanding the impacts of flooding and improving the approaches to mitigating flood risk to societies. Improved understanding of the impacts of flooding requires an improved understanding of the processes leading to flooding and the processes active during floods; from the changes in fluxes of water and debris, through to emergency responders' and the public's behaviour and perception in response to flood events.



Humber Present and Future PhD Cluster

The Humber Present and Future Cluster of PhD research links with the Interreg-funded Immerse project, addressing multiple estuary management challenges. It also aims to provide an evidence base for the new [Humber Flood Risk Management Strategy - Humber2100+](#) - that is being prepared by the Environment Agency, the Local Enterprise Partnership and 12 local authorities. The projects address eco-engineering approaches to improving flood defence and enhancing decarbonisation, as well as the potential for rewilding to enhance the resilience of the estuarine ecosystem, using the Humber as an exemplar. These projects will feed into the ambitious new Strategy that aims to support sustainable development and a prosperous Humber by redefining the strategic approach to managing tidal flood risk, setting the direction for the next 100 years and keeping pace with sea level rise.



Community outreach

Hosted at the University of Hull's Energy and Environment Institute, the [Earth Arcade](#) educates and inspires people of all ages to take positive action for our environment, using exciting and innovative outreach activities, online games and 360 experiences. [Crabby's Reef](#) is a classic arcade-style game that demonstrates the devastating effects of ocean acidification on our friendly crab, Crabby. Our 360 experiences will help you understand what it would be like if your home flooded in [Inundation Street](#), you can experience the story of a young boy affected by flood, in his own words, in [Help Callum](#), or take a trip to the 1600s to visit [Andrew Marvell's Hull](#) as it suffers a devastating flood.



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The University of Hull is spearheading a range of collaborations that are driving economic growth, particularly in the areas of low carbon innovation and flood resilience. Find out more about our family of brands and what funding streams and expert support is available to your business.

Find out more about
how we can support
your business growth
and innovation

[> Find out more](#)

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