

SHAPING THE UK'S BIO-INDUSTRIAL FUTURE

Manufacturing sovereignty,
economic growth, jobs and
a greener future.



Foreword



David Skaith,
Mayor of York
& North Yorkshire

"York and North Yorkshire is home to globally recognised institutions such as the University of York, the Biorenewables Development Centre, and the Centre of Excellence for Green Chemistry, which are pioneering sustainable technologies and circular solutions. **I am proud to champion the development of a modern industrial bioeconomy that harnesses our region's scientific excellence, natural assets, and entrepreneurial drive.** Alongside Fera Science Ltd – an international leader in agri-food innovation and biosecurity – we are building a robust foundation for **a bioeconomy that supports the UK's environmental ambitions, creates high-value jobs, and attracts global investment.** This is a strategic opportunity for York and North Yorkshire, and Tees Valley to position ourselves as leaders in the transition to a low-carbon, resilient economy, that supports maintaining UK industrial sovereignty."



Ben Houchen,
Mayor of
Tees Valley

"Tees Valley is helping to shape the future of the UK's industrial bioeconomy, **leveraging its world-class chemical and process industries, strategic infrastructure, and innovation assets.** As one of Europe's leading chemical clusters, Teesside, Darlington and Hartlepool are home to major industrial sites such as Wilton International, where organisations like CPI and the Pioneer Group are accelerating the development and scale-up of bio-based technologies. With an unparalleled reputation for expertise and an abundance of local talent in advanced manufacturing, biologics, and sustainable materials, **our region is the perfect place to turn turning scientific breakthroughs into business solutions.** This partnership brings together our complementary strengths in research, innovation, and industrial innovation – forming a fantastic alliance that is putting the UK at the forefront of the global bioeconomy, shaping the industries of the future and creating good-quality, well-paid jobs."



Professor Charlie Jeffery
Vice-Chancellor,
University of York

"York's excellence in bioeconomy is deeply rooted, forming the foundation of **our ambitious BioYorkshire initiative,** driving innovation and translating world-class research into sustainable economic growth for the region and the UK. **Now, to truly scale our impact in engineering biology, a critical national priority, we must think bigger.** I wholeheartedly support forging a macro cluster spanning Tees Valley and York & North Yorkshire. **By aligning our complementary industrial and scientific strengths, we can unlock transformative new capabilities, attract significant inward investment, and secure the North's position as a global leader in the green industrial revolution, delivering high-value jobs for the nation.**"



Professor Paul Croney OBE
Vice-Chancellor,
Teesside University

"Teesside University is driving bioeconomy innovation, exemplified by our leading research and industry collaboration in the sector. The future prosperity of the UK will directly benefit from our collective regional strengths in engineering and biology. That's why I wholeheartedly support the vision for a macro cluster that unites the Tees Valley and York & North Yorkshire. **This strategic partnership will create a powerful engine for engineering biology growth,** accelerating investment, stimulating job creation, and positioning the North East and Yorkshire as a globally competitive hub for sustainable technologies. **This collaborative spirit is essential for delivering the next generation of UK economic success.**"



Jo Smith,
Chief Executive,
NEPIC

"For generations, the Tees Valley has been central to the UK's industrial success. It is a place where ingenuity, engineering excellence and a strong sense of community has driven national progress. **From the birth of the chemical industry to the development of world-class process innovation, the region has continually evolved to meet the challenges of its time.** Today, we enter a new chapter in that story. We have a unique opportunity to harness our collective expertise, infrastructure and ambition to develop the materials and chemicals of the future. We will build on our proud industrial heritage whilst driving innovation in biotechnology, low-carbon manufacturing and advanced materials. It will help create skilled jobs, attract new investment and strengthen the UK's position in global markets. **Together, we are establishing a partnership with the scale, capability and commitment to deliver real economic and environmental impact for our region, and for the country as a whole.**"



Frank Millar,
Chief Executive of CPI
(Centre for Process Innovation)

"This partnership brings together regional expertise and confirms the UK as a global leader in the creation of a modern industrial bioeconomy. **By combining North Yorkshire's excellence in green chemistry and agritech with the Tees Valley's established position in chemical manufacturing and process scale-up we are creating a unique corridor that spans discovery to deployment.** This collaboration enables us to accelerate commercialisation of sustainable technologies, attract greater international investment and establish resilient supply chains for future chemical and materials manufacturing. **Together we are driving regional and national economic growth and harnessing the power of engineering biology for global impact.**"



Miranda Knaggs,
Corporate Development
Director, Pioneer Group

"From start-ups to multinationals, this cluster exemplifies what Pioneer Group stands for – **helping science and technology companies to grow, scale and succeed.** Building on the strong industrial heritage of our Wilton Centre site as a chemicals powerhouse and strengthened by the Tees Valley Freeport and new biomanufacturing planning permission, **this partnership creates an unrivalled platform for scientific and technological innovation.** By connecting next generation companies with world-class facilities, investment opportunities, venture building programmes, and access to esteemed figures from science and technology, **we're building a vibrant ecosystem that accelerates sustainable biomanufacturing, fuels regional prosperity, and delivers global impact.**"



Dr Damian Kelly,
Vice President – Innovation
& Technology Development,
Croda Europe Ltd

"**Croda is a great example of how the bioeconomy can deliver growth, jobs and sustainable innovation that impacts society and our planet.** Croda's heritage in bio-based specialty chemicals and commitment to sustainability aligns strongly with the cluster's ambition and we know how the power of collaboration can deliver sustainable innovation, which the YNYCA & TVCA Bio Industrial Cluster exemplifies perfectly. Through our existing relationships with BioYorkshire, the University of York, BDC and CPI, **we are proud to support this triple helix partnership between industry, academia and government,** which will not only drive new globally impactful innovation but also deliver real impact for communities across the North and the UK."



Steve Bagshaw,
Chair of BioYorkshire Industrial
Advisory Group & Chair of High
Value Manufacturing Catapult

"As Chair of BioYorkshire and the UK's High Value Manufacturing Catapult, I believe the partnership between York and North Yorkshire and Tees Valley represents a transformative opportunity for UK bio-industrial growth. York and North Yorkshire bring **world-leading capabilities in green chemistry, biotechnology, and agritech,** while Tees Valley offers **unparalleled industrial infrastructure and expertise in chemical processing and advanced manufacturing.** This alignment of scientific excellence with industrial scale-up is exactly what the UK needs to accelerate innovation and commercialisation, attract global investment, and build resilient supply chains in sectors such as feedstocks from waste, chemicals, plastics, and construction. **Together, these regions form a dynamic engine for growth – one that will help position the UK as a global leader in bioindustries and deliver long-term economic and environmental value.**"



York & North Yorkshire and Tees Valley – a shared vision for a bio-industrial future

Vision

Our vision is to establish the UK as a global leader in the industrial bioeconomy by harnessing the combined strengths and assets of Tees Valley and York and North Yorkshire.

Together, we aim to create a pioneering bioeconomy that transforms our shared regional assets - world-class research institutions, advanced manufacturing capabilities, and deep-rooted chemical and agritech industries - into a dynamic engine of innovation and sustainable, bio-industrial growth.

This joint initiative will unlock new opportunities for clean growth, high-value employment, and global investment, positioning our regions at the forefront of the UK's transition to a low-carbon, circular economy.

By aligning scientific excellence with industrial scale-up, we will catalyse the UK's transition to bio-industrial advanced manufacturing in sustainable materials and chemicals – delivering national and global impact for the UK.

- By unlocking the potential of our region's world-leading bioeconomy cluster – with the right public and private-sector investment – the York & North Yorkshire and Tees Valley bioeconomy cluster has the potential to:**
- Create 5,000 high-quality green jobs across biotechnology, agritech, and low-carbon industries – driving inclusive growth and regional prosperity.
 - Grow the regional bioeconomy by £5 billion, unlocking new markets, boosting exports, and attracting inward investment.
 - Accelerate decarbonisation through scalable, bio-based solutions that reduce reliance on fossil-derived materials and cut carbon emissions across key sectors.
 - Equip 5,000 people with future-ready skills through apprenticeships, reskilling programmes, and higher education pathways tailored to the bioeconomy.
 - Launch 100 innovative bio-based startups, supported by access to finance, incubators, and global research and industry partnerships.
 - Policy-aligned and future-focused, supporting the UK's Net Zero and Engineering Biology strategies, with a clear roadmap for decarbonising hard-to-abate sectors through bio-based innovation.
 - A 'living lab' of assets for sustainable construction, with demonstrator projects already underway using bio-based insulation, panels, and composites – proving the viability of greener building materials in real-world settings.

Why here, why now?

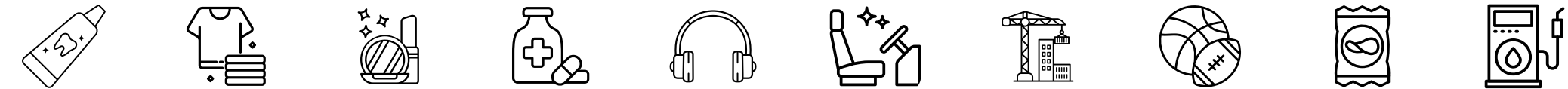
- **Strength of pan-regional asset base** from innovation to commercialisation from feedstocks to production.
- **Strategic industrial heartland, connected to Tees Freeport** – the UK's largest freeport – with shovel-ready sites across York & North Yorkshire and Tees Valley, offering direct access to ports, rail, and road networks - ideal for scaling bio-based manufacturing and logistics at pace.
- **Feedstock-rich region** with unparalleled access to agricultural, forestry, and food waste streams, enabling the development of sustainable bio-based chemicals, plastics, and construction materials at industrial scale.
- **World-class innovation ecosystem** anchored by BioYorkshire, University of York and Teesside University, driving transformative R&D in industrial biotechnology, circular economy, and green chemistry.
- **Cross-sector Triple Helix collaboration** between academia, industry, and local government, accelerating the commercialisation of bio-based technologies into industry, through shared infrastructure, pilot facilities, and investment-ready projects.
- **Established industrial base with deep expertise** in process industries, chemical engineering, and advanced manufacturing – ready to pivot toward low-carbon, bio-based alternatives.
- **Policy-aligned and future-focused, supporting the UK's Net Zero and Engineering Biology strategies,** with a clear roadmap for decarbonising hard-to-abate sectors through bio-based innovation.
- **A 'living lab' of assets** for sustainable construction, with demonstrator projects already underway using bio-based insulation, panels, and composites – proving the viability of greener building materials in real-world settings.

96% of all manufactured goods are made from chemicals derived from fossil fuels

this accounts for ~10% Global GHG emissions

Our everyday lives are dependent on chemicals:

- Household items:** Detergents, shampoo, toothpaste, deodorant, plastic containers, synthetic rugs, furniture (materials, fillings, finishes – varnish, paint etc)
- Clothing:** Polyester, nylon, acrylic fabrics
- Cosmetics:** Moisturisers, cleansers, foundations, lipsticks, mascara, blushers, hairspray, fragrances, and perfumes
- Medical supplies:** Aspirin, heart valves, artificial limbs, antiseptics, single use plastics in NHS
- Technology:** Smartphones, laptops, TV casings, headphones
- Transport:** Tyres, dashboards, lubricants, fuel tanks, interior fabrics
- Construction:** Insulation, adhesives, paints, roofing materials
- Recreation:** Sports gear and clothing, surfboards, tents, kayaks
- Food & Food Production:** Synthetic fertilisers, pesticides and herbicides, animal vaccines, artificial colours and preservatives, emulsifiers, packaging, artificial sweeteners, colourants
- Fuels:** Petrol, diesel, natural gas



York & North Yorkshire and Tees Valley – the UK’s scalable bioeconomy powerhouse

Our cluster is the UK’s scalable bioeconomy powerhouse – uniting York & North Yorkshire and Tees Valley to deliver the full bio-based supply chain from feedstocks to markets. With world-class science, advanced scale-up facilities, a strong industrial base, and freeport advantages, it is where engineering biology meets industry to create global impact.

A collaboration focused on developing the next generation of plastics, chemicals, fuels and construction materials. These markets are huge contributors to UK GDP and are critical to UK manufacturing growth and sovereignty.

This cluster brings together the UK’s full bioeconomy supply chain – linking feedstocks and biological design with logistics, processing, manufacturing, and markets. Home to thousands of businesses in agritech, biomanufacturing, bio-based materials, and sustainable food, the region is more than a research hub: it is where science meets industry to deliver global impact.

With world-class facilities, strong industrial and SME bases, and proven expertise in scaling bio-based innovation, our cluster is the UK’s testbed for the industrial bioeconomy. Its land availability, proximity to feedstocks and logistics, and freeport status – offering tax incentives, streamlined customs, and trade support – make it the nation’s scalable bioeconomy powerhouse and launchpad for international investment and growth.

Shaping the UK’s bio-industrial future – cleaner, smarter and built to last



UK innovation, security and supply chain resilience

The UK Government’s Engineering Biology Strategy 2035 sets out a transformative vision: to harness the power of biology to solve global challenges, drive sustainable economic growth, and secure the UK’s leadership in next-generation bio-industries. This regional prospectus – developed in partnership between **York & North Yorkshire and Tees Valley Combined Authority regions** – responds directly to that call. **It presents a bold, investable opportunity to establish a world-class bio-industrial accelerator focused on delivering scalable, bio-based solutions for chemicals, plastics, and construction.**

Our shared ambition is to reimagine how materials are made, used, and reused – replacing fossil-derived inputs with renewable, circular alternative feedstocks e.g. waste streams. By leveraging the region’s rich feedstock base, extensive research, and development assets – which support a strong innovation ecosystem – and with an established industrial infrastructure, we aim to accelerate the commercialisation of bio-based solutions across our identified sectors. This will not only reduce emissions and environmental impact but also unlock new markets and value chains for the UK and support the UK’s industrial regeneration.

Our regions’ joint proposal confirms the UK’s strategic need for national resilience and sovereign manufacturing capability. The COVID-19 pandemic exposed vulnerabilities in global chemical supply chains. This cluster will help address those risks by reshoring critical chemical production – such as ethylene and methanol – and replacing fossil-derived inputs with sustainable alternatives, enabling the creation of low-carbon plastics and polymers that meet demanding market standards, for clients such as the NHS that rely on single-use plastics. Industrial commercialisation of these innovations will reinforce domestic supply chains and reduce reliance on volatile global markets.

At its core, this cluster is an engine of innovation, leveraging engineering biology to develop entirely new classes of high-value chemicals and materials. By scaling sustainable manufacturing within the UK, it will foster economic growth, regeneration and strengthen industrial capability. Collaborations with major industry partners will drive market adoption, particularly for advanced materials and products requiring specialised manufacturing techniques.

By forging national and international partnerships, promoting open innovation, and aligning with government priorities, the York & North Yorkshire and Tees Valley cluster will become a cornerstone of the UK’s bio-industrial future. It will not only deliver regional transformation but also position the UK as a global leader in sustainable, sovereign, and resilient bioeconomy development. Providing the UK with the opportunity to take a significant share of trade of a global bioeconomy market set to be worth \$30 trillion (£22 trillion) by 2050.

Importantly, this cluster will open-up opportunities for our regions’ residents, creating thousands of high-quality jobs, supporting existing and creating new training pathways across both regions.



York & North Yorkshire and Tees Valley – the UK’s bio-industrial accelerator.

Now is the time to act.

We invite government, investors, and industry leaders to partner with us in delivering this vision. **Together, we can build a globally significant bioeconomy cluster** that not only meets the UK’s strategic goals but also **sets a new standard for sustainable industrial growth.**

The opportunity – lab to launch

The York & North Yorkshire and Tees Valley Bio-Industrial cluster offers a unique opportunity to transform trail-blazing research into commercial success. By clustering bio-manufacturing around renewable local feedstocks – including agri-waste, biomass, biogenic CO₂ and low carbon hydrogen – the region can deliver true circularity without compromising land use or food supply. This approach benefits farmers leveraging pre-consumer waste from one of the UK’s leading food and feed processing areas, turning regional challenges into global solutions.

The cluster is underpinned by world-class research and development capabilities. The University of York leads in sustainable chemistry and agricultural innovation through its Green Chemistry Centre of Excellence and the Centre for Novel Agricultural Products. These institutions, alongside the Biorenewables Development Centre and CPI (part of the High Value Manufacturing Catapult), provide open-access bioprocessing facilities that enable businesses to optimise and scale bio-based products – from chemicals and materials to fuels. Teesside University hosts the Net Zero Industry Innovation Centre and the National Horizons Centre, driving innovation in clean growth and biosciences.

The shared regional infrastructure supports a truly circular economy, with advanced end-of-life technologies such as anaerobic digestion, in-vessel composting, carbon capture and storage (CCS), advanced plastics recycling, and energy-from-waste facilities. These assets ensure that bio-based products can be part of a regenerative value chain – reducing emissions, recovering resources, and keeping materials in use for longer. This integrated approach supports the UK’s transition to net zero while creating new industrial value chains rooted in sustainability.

Industrial Infrastructure at a number of key investment sites, including Wilton International, provides a unique opportunity for rapid industrial transformation, with retrofitting enabling cost-effective and accelerated pathways to modern bio-based manufacturing. The Wilton Centre, located within the Teesside Freeport, is a leading hub for sustainable chemicals and materials. Operated by Pioneer Group, it has attracted over £4.3 billion in investment and supported more than 1,400 companies.

Teesside is also home to CPI, one of the leading parts of the UK’s Catapult network. This organisation helps companies to understand what it takes to scale up bio products and processes, with multidisciplinary experts ready to support the scale up journey, through a range of national scale-up assets.

A thriving SME ecosystem, supported by large anchor corporates like Croda and bp, provides fertile ground for innovation. With over 7,000 bio-based businesses, £91 billion in annual turnover, and 415,000 employees, the region is primed to launch and scale 100 bio-based startups. Government-backed programmes and corporate partnerships will enable innovators to beta test, refine, and commercialise new technologies – making this cluster a launchpad for global bioeconomy leadership. Clusters are supported by membership organisations such as NEPIC (Northeast of England Process Industry Cluster) and BioYorkshire’s Industrial Advisory Group.



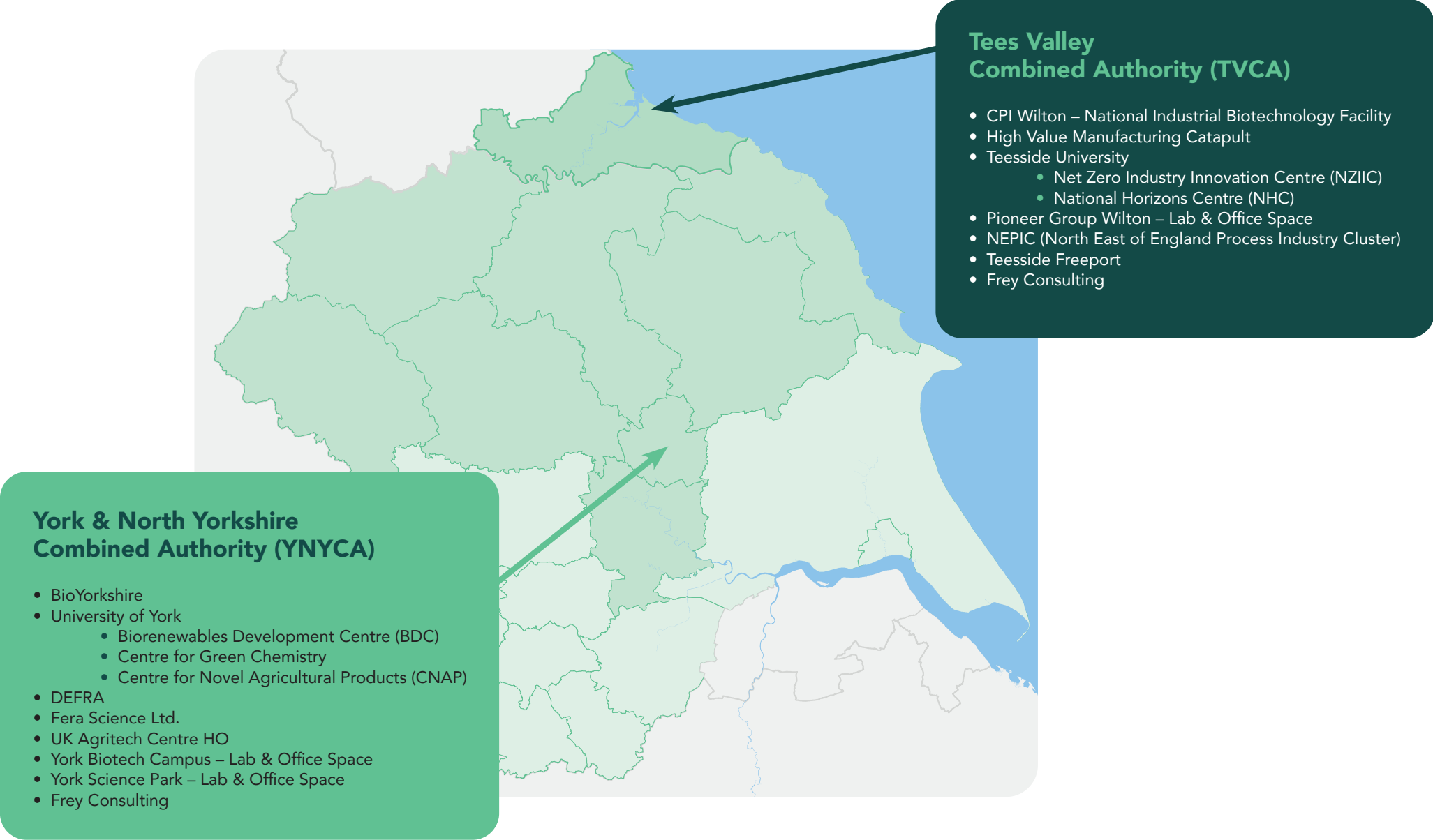
Our regional commitments

- We are committed to leading the UK’s transition from extractive industries to a regenerative bioeconomy – where waste is transformed into valuable resources, carbon becomes a commodity, and innovation drives real-world change. Every molecule matters, and every action is designed to restore ecosystems, reduce emissions, and create long-term value.
- We will mobilise investment in skills, education, and opportunity to ensure that people across our towns, cities, rural, and coastal communities are equipped to lead in the green economy. From technical training to advanced research, we will build a workforce capable of powering the next generation of sustainable industries – ensuring prosperity is shared and future-ready.
- We will establish a globally recognised cluster of excellence, connecting universities, businesses, farmers, investors, and communities to drive inclusive growth, environmental regeneration, and industrial innovation. This ecosystem will unlock new value chains, boost regional productivity, and deliver measurable social and economic impact.
- We will forge strategic partnerships across the UK and internationally, championing open innovation and accelerating the adoption of bio-based technologies. Our region will be the destination of choice for bioeconomy leadership – where ideas scale, industries transform, and sustainability becomes a competitive advantage.

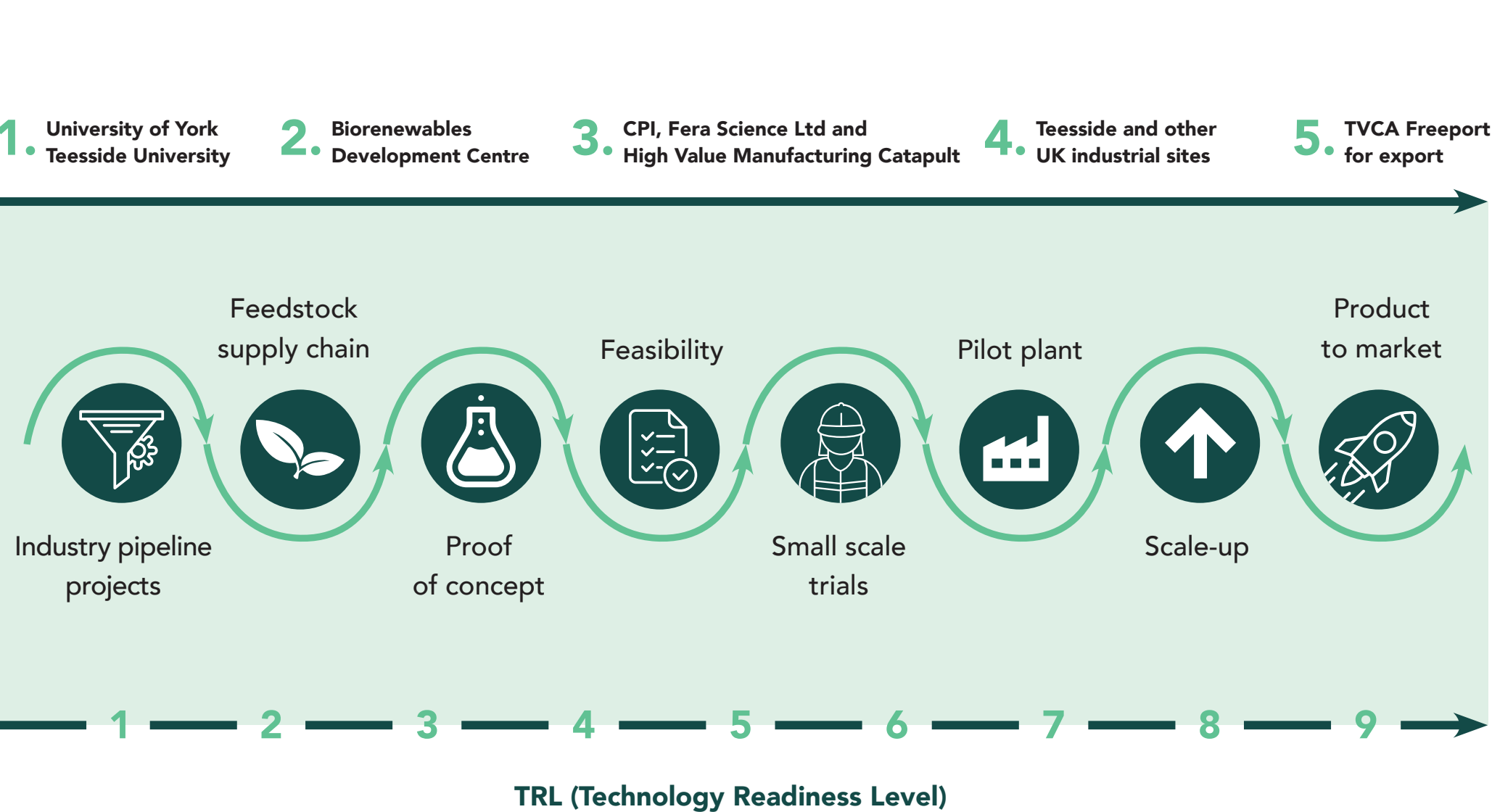
Our asks of government

- 1. Long-Term Investment & Infrastructure**
We call for sustained public and private investment to deliver the scale-up infrastructure essential for growing bioeconomy companies, attracting foreign direct investment (FDI), and strengthening regional supply chains. This includes biomanufacturing facilities, logistics hubs, and circular economy infrastructure.
- 2. Skills & Innovation Support**
We ask for targeted funding to expand workforce development and R&D collaboration – bridging industry and academia to close critical skills gaps in engineering biology. This will ensure a pipeline of talent and innovation capable of powering the UK’s bio-industrial future.
- 3. SME & Cluster Growth**
We seek dedicated support for SMEs and high-growth innovators, alongside investment in building a connected, innovation-driven bioeconomy cluster. This will accelerate commercialisation, foster inclusive growth, and position our region as a national engine for sustainable industrial transformation.
- 4. Shared Industrial Challenge Fund**
Match funding for identifying and addressing major industrial challenges, leveraging supply chain knowledge of key businesses within the regions to develop technical, collaborative solutions.

Pan-regional assets – lab to launch



Pan-regional process map – lab to launch



Unlocking highly-skilled, highly-productive and well-paid jobs across our regions

- **The York & North Yorkshire and Tees Valley Bio-Industrial cluster is designed to unlock inclusive growth by creating thousands of high-quality jobs and training pathways across both regions.** From technical roles in biomanufacturing and agritech to advanced research in green chemistry and engineering biology, the cluster will generate demand for a skilled workforce equipped to lead the UK's transition to a low-carbon economy. This transformation will be powered by a coordinated network of universities, colleges, and training providers committed to delivering future-ready skills.
- **In York & North Yorkshire, the University of York, Askham Bryan College, Fera Science, and the Biorenewables Development Centre are central to the BioYorkshire programme,** offering end-to-end support from research to commercialisation. These institutions are developing sector-specific training and education programmes in partnership with industry, ensuring that learners – from apprentices to postgraduates – gain the practical and academic expertise needed to thrive in the bioeconomy. Their work is complemented by regional hubs and demonstrator sites that provide hands-on experience and accelerate workforce development.
- **In Tees Valley, the region's Employment and Skills Strategy sets out a bold vision to create 10,000 job openings annually and 41,000 additional roles by 2030, many of which will be in clean energy, biotechnology, and advanced manufacturing.** Institutions such as Teesside University and the region's further education college network are leading the charge, offering tailored programmes in biosciences, process engineering, and industrial innovation. These efforts are supported by local skills improvement plans and strategic investment in training infrastructure – ensuring that residents across Tees Valley can access high-value careers without leaving the region.



APPENDIX

York & North Yorkshire and Tees Valley Combined Authorities Pan regional assets



Regional partners

BioYorkshire

BioYorkshire is a flagship regional initiative aiming to transform York and North Yorkshire into the UK's leading bioeconomy cluster. It focuses on translating cutting-edge research into commercial bio-based solutions, including sustainable chemicals, materials, fuels, and food systems. The initiative is a collaboration between the University of York, Fera Science, Askham Bryan College, and the Biorenewables Development Centre, alongside industry and private sector partners.

BioYorkshire is underpinned by world-class research and innovation infrastructure and aims to make the region the UK's first carbon-negative economy. It supports enterprise development, green skills training, and demonstrator facilities for scaling up industrial technologies. With up to 10% of the UK's bioeconomy already active in York and north Yorkshire, BioYorkshire is positioned to drive national and global leadership in sustainable bio-manufacturing and land use.

bioyorkshire.co.uk

Biorenewables Development Centre (BDC)

Biorenewables Development Centre (BDC) is a scale-up facility bridging the gap between laboratory research and commercial production. It supports businesses in developing bio-based products and processes, particularly in areas like waste and biomass valorisation, green chemistry, and industrial biotechnology. The centre works closely with academia and industry to accelerate innovation.

Located near the University of York, the BDC offers end-to-end pilot-scale processing, analytical services, and technical consultancy. It plays a pivotal role in BioYorkshire's mission by enabling companies to test and refine technologies before full-scale deployment. With a focus on bio-based chemicals, biomaterials, bioenergy, and feedstocks, as well as circular economy models and supply chain building, the BDC supports the bioeconomy from growers to final product manufacturing, and market development.

biorenewables.org

University of York

The University of York (Member of Russell Group Universities) is a national leader in industrial biotechnology research, with a strong focus on developing sustainable solutions for health, food, fuel, and materials. Researchers in its Department of Biology use advanced tools such as omics technologies, systems biology, and mathematical modelling to engineer microbial, plant, and mammalian systems. This work supports the production of high-value chemicals, enzymes, and biofuels from low-cost, renewable feedstocks, contributing to a circular bioeconomy. The research addresses global challenges and is applied both locally and internationally, with notable projects in enzyme discovery, anaerobic digestion, algal biotechnology, and plant-based biomanufacturing.

The University's strength lies in its interdisciplinary expertise and strong industrial partnerships, which enable the translation of research into real-world applications. It is home to a diverse team of scientists working across plant biology, microbiology, protein engineering, and synthetic biology, many of whom lead or contribute to national and international bioeconomy initiatives. The University benefits from state-of-the-art facilities, including the Bioscience Technology Facility and specialist plant growth environments, which support transformative research and innovation. Its excellence is reflected in its top-tier REF rankings – ranked in the top 10 in the UK for Biological Sciences, according to the Times Higher Education analysis. Specifically, 57% of its research outputs and 75% of its research environment were rated 4* – the highest possible rating, indicating world-leading quality in terms of originality, significance, and rigour. Its leadership role in initiatives such as BioYorkshire, position it as a key driver of the UK's green industrial transformation.

york.ac.uk/biology/research

Fera Science Ltd

Fera Science Ltd is a leading applied science organisation specialising in agri-food, environmental safety, and biosecurity. It delivers research, testing, and consultancy services to government and industry around the globe, with a strong emphasis on sustainable agriculture and food systems.

Based at York Biotech Campus, Fera plays a central role in national and regional bioeconomy strategies. It leads projects on soil health, pest control, and food chain resilience, and is a key partner in BioYorkshire. Its expertise supports regulatory science and innovation in areas critical to the UK's net zero and food security goals.

fera.co.uk

Green Chemistry Centre of Excellence (GCCE)

The Green Chemistry Centre of Excellence (GCCE) at the University of York is a world-leading research hub focused on developing sustainable chemical technologies. Its work spans renewable feedstocks, green synthesis, and circular economy solutions, aiming to reduce environmental impact and support global sustainability goals. The Centre aligns its research with the UN Sustainable Development Goals and plays a key role in advancing green chemistry education and innovation.

GCCE's strengths lie in its interdisciplinary approach, strong industry partnerships, and advanced facilities that support both academic and commercial research. It offers the UK's first MSc in Green Chemistry and Sustainable Industrial Technology and provides tailored training for professionals. With a proven record in scaling up green technologies and influencing policy, the Centre is a cornerstone of the UK's sustainable innovation landscape.

york.ac.uk/chemistry/research/green

York Biotech Campus (YBC)

York Biotech Campus (YBC) is a leading science and innovation park located just outside York, designed to support organisations working in bioscience, agri-tech, and industrial biotechnology. It provides a collaborative environment for both public and private sector organisations, offering high-spec laboratories, office space, and access to specialist facilities.

YBC is home to key tenants such as Fera Science, Abingdon Health, and Labcorp. The campus's strengths lie in its integrated support for research, innovation, and commercialisation. It offers access to unique assets like the E-Flows Mesocosm for environmental testing and the Lakeside Conference Centre for knowledge exchange and events. YBC fosters cross-sector collaboration and provides tailored support for startups and scale-ups, making it a vital hub for translating bioscience research into real-world impact.

yorkbiotechcampus.com

Centre for Novel Agricultural Products (CNAP)

The Centre for Novel Agricultural Products (CNAP) at the University of York focuses on harnessing plant, microbial, and algal-based renewable resources to develop sustainable solutions for food, energy, and chemical production. Its research spans natural product biosynthesis, low-carbon fuels, algal biotechnology, and crop improvement for environmental and industrial applications. CNAP's mission is to apply gene discovery and bioscience to address global challenges such as food security, climate change, and land degradation.

CNAP's strengths lie in its interdisciplinary research, long-standing industrial partnerships, and leadership in national bioeconomy networks. It collaborates with organisations like GlaxoSmithKline, DEFRA, and the Ministry of Defence, and leads two BBSRC Networks in Industrial Biotechnology and Bioenergy. With over 20 years of experience, award-winning research, and a strong commitment to postgraduate training, CNAP is a key driver of innovation in sustainable agriculture and industrial biotechnology.

york.ac.uk/biology/centrefornovelagriculturalproducts

CPI

CPI, headquartered at the Wilton Centre in Redcar, is a social enterprise and Nationally leading innovation hub. It houses the National Industrial Biotechnology Centre and is part of the High Value Manufacturing Catapult network. It supports the development and scale-up of technologies in industrial biotechnology, food production, and sustainable materials, offering advanced labs and pilot facilities to help businesses bring products to market.

Its core strengths include bioprocess development, sustainable materials, and chemicals development, and medtech and pharma product and process development. They also support businesses with access to both public and private finance and help to foster collaboration and accelerate commercialisation across multiple deep tech sectors.

uk-cpi.com

Teesside University

Teesside University's net-zero research is playing a vital and proactive role in the Tees Valley Industrial Cluster, with the Net Zero Industry Innovation Centre (NZIIC) helping to position Teesside at the heart of the UK's green industrial revolution. The University's research focuses on addressing the challenges of industrial decarbonisation, particularly through the study and development of Carbon Capture, Utilisation, and Storage (CCUS) technologies and hydrogen innovation.

This research provides critical insights, which address the social, economic, and environmental impacts of new technologies in the Teesside area. By engaging directly with local experts and industry stakeholders, the university supports the region's ambitious strategy to transition its economy, attract investment, and establish the Tees Valley as a global leader in clean energy and a decarbonised industrial cluster.

tees.ac.uk

Net Zero Industry Innovation Centre (NZIIC)

Teesside University's Net Zero Industry Innovation Centre (NZIIC), based at TeesAMP in Middlesbrough, is a £13.1 million facility driving the region's clean energy transition. It serves as a national centre of excellence for industrial decarbonisation, sustainability, and circular economy innovation. The centre is a key part of the Tees Valley Combined Authority's strategy to position Teesside at the heart of the UK's green industrial revolution, supporting job creation and regional growth through clean energy technologies.

NZIIC's strengths lie in its industry-led approach and collaborative partnerships. It works closely with businesses to develop practical solutions for reducing waste and pollution, leveraging expertise in hydrogen innovation, recycling, and low-carbon manufacturing 1 2. The centre also hosts events and expert panels to share insights and accelerate net zero adoption across sectors, making it a vital hub for innovation, knowledge exchange, and sustainable development.

tees.ac.uk/minisites/netzero/index.cfm

The National Horizons Centre (NHC)

The National Horizons Centre (NHC) at Teesside University focuses on bioscience and health innovation, supporting research, industry collaboration, and workforce development. It specialises in biomanufacturing, digital health, and sustainable biotechnology.

Its strengths include advanced facilities for disease research, biomarker discovery, and data-driven healthcare. NHC fosters industry partnerships and integrates digital technologies to accelerate innovation and improve patient outcomes. Through strategic partnerships with organisations like CPI and Fujifilm Diosynth Biotechnologies, NHC has helped position the Northeast as a hub for bioscience innovation and training.

tees.ac.uk/nhc

Northeast of England Process Industry Cluster (NEPIC)

NEPIC (Northeast of England Process Industry Cluster) is the UK's largest process industry cluster, supporting over 4,000 companies across sectors such as chemicals, pharmaceuticals, biotechnology, renewables, and engineering. Its core focus is to foster collaboration between industry, academia, and government to drive innovation, investment, and sustainable growth in the Northeast. NEPIC plays a strategic role in shaping regional industrial policy and infrastructure, helping businesses scale and compete globally.

Its strengths include deep sector expertise, strong industry networks, and a commitment to net zero leadership. NEPIC is actively involved in developing the Tees Valley Cluster Plan, aiming to create the world's first net zero industrial cluster by 2040 1. It leverages regional assets like Wilton International, Teesport, and Teesside University's innovation centres to support decarbonisation, advanced manufacturing, and export growth. Through technical support, funding advice, and strategic partnerships, NEPIC enables companies to innovate and thrive in a globally competitive market.

nepic.co.uk

The Pioneer Group

Pioneer Group's Wilton Centre in Redcar is a key site within its UK-wide network of science parks, focused on supporting life sciences, sustainable processing, and advanced manufacturing. The site offers high-spec laboratories, technical development areas, and flexible office space, making it ideal for scaling science and tech businesses. With a 50-year legacy, Wilton Centre has attracted spinouts from leading universities and global firms Mura Technology, Seloxium and Descycle, thanks to its infrastructure and integrated support services.

The Centre's strengths lie in its ability to foster growth through tailored lab space, collaborative ecosystems, and access to venture development. Pioneer Group's investment strategy includes expanding the site by 150,000 sq. ft. within the Teesside Freeport, creating new jobs and boosting regional innovation. Companies benefit from hassle-free property management, hybrid working facilities, and connections to a wider network of scientists and entrepreneurs, positioning Wilton Centre as a catalyst for industrial and scientific advancement in the Northeast.

thepioneergroup.com/locations/wilton-centre

Frey Consulting

Frey Consulting – Growing the Bioeconomy. Provides expert advise in business development, fundraising, stakeholder engagement, strategic partnerships, policy development, marketing and communications and project management.

frey-consulting.co.uk

High Value Manufacturing Catapult (HVMC)

The High Value Manufacturing (HVM) Catapult helps drive economic growth across the country by keeping UK manufacturing innovative, productive and globally competitive. Each year, thousands of businesses come to HVM Catapult seeking solutions to a particular problem or looking for ways to improve the products they sell, the way they make them and the skills of their workforce which could help them attract inward investment and prosper in the global marketplace.

HVM Catapult's national network of centres and 3,800 employees provide those companies with access to world-class facilities and expertise that would otherwise be out of reach.

As part of the Innovate UK Catapult Network, HVM Catapult is the link between academia and industry to apply research, commercialising the UK's most advanced manufacturing ideas. Working at scale and across the UK, our centres are a strategic research and innovation hub for UK industry, collaborating to accelerate industrial transformation by tackling key objectives in support of net zero, healthy living and national security.

As a delivery partner to government, we help shape industrial strategy and are working to ensure the UK has the people, the places and the potential to be a net zero manufacturing superpower.

hvm.catapult.org.uk

