ncc innovating for industry

Strategic Delivery Plan 2025-2030

Proud to be part of | University of BRISTOL | CATAPULT High Value Manufacturing

Innovating for industry

Who we are

NCC is a world-leading innovation organisation, solving industry's biggest challenges by translating cutting-edge research and technology into industrial impact. Part of the High Value Manufacturing (HVM) Catapult and the University of Bristol, we provide a gateway to world-class expertise and facilities.

What we do

We bridge the gap between research and industry—supporting organisations of all sizes across the entire product lifecycle, from the earliest concept to end-of-life. A not-for-profit organisation, we operate as an independent extension of our customers' capabilities, helping them achieve the technology and product leadership they need to grow, compete and succeed.

Vision

An innovation partner to industry, we help create a sustainable, productive, and resilient future.

Mission

Transforming today's industries and creating tomorrow's.

Values

We live our values across every interaction with our people, places, customers, and industry:

- Make a difference
- Push the boundaries
- Deliver excellence together
- Care about our future

As industry's innovation partner, we help create a sustainable, productive, and resilient future.

Our strategy

Our strategy is to maximise the impact we have on the companies we support. By pulling through research excellence and scaling technologies into next-generation products, we anchor product and technology leadership in the UK, secure the competitiveness of the sectors we serve, and shape future markets.

Delivering Our Strategy

Our strategic delivery plan sets out our innovation priorities and provides the foundation for collaboration with our business and wider industry and innovation partners as we continue to expand our impact for the UK.

Creating wider conditions for success

We are committed to doubling our impact between 2025 and 2030.

We help create the conditions that enable UK innovators and industry to thrive. This includes providing national and local decision-makers with insight and evidence to inform strategy, policy, and investment decisions. We will continue to work with key government departments (e.g. DSIT, DBT, DESNZ, MOD) to realise the full potential of the UK's industrial base, as well as with UKRI, Innovate UK and the wider R&I ecosystem.

Innovating for impact

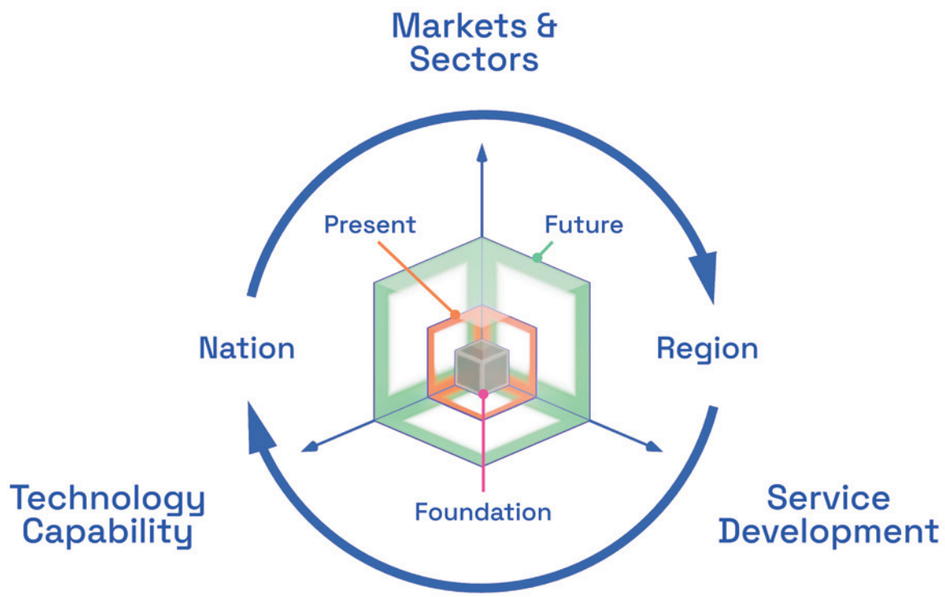


Established in 2009 as a single technology centre focused on composites and aerospace, our commitment to support businesses to push boundaries and create market-leading products and services has seen NCC continuously evolve.

Today we are an organisation that drives innovation across multiple technologies and growth-driving sectors.

This is across three axes of innovation:

- **Markets & Sectors:** We lead innovation across growth-driving sectors e.g. aerospace, defence, and energy.
- **Technology Capability:** We pull through and apply advanced and emerging technologies to enhance product and process performance — improving cost, quality, sustainability, and time to market.
- **Services Development:** We help businesses of all sizes stay at the cutting edge, using our Innovation, Technical, Skills & Supply Chain services — translating great ideas into real-world outcomes.



Our strategic priorities

We are focused on realising industrial impact over 3 time horizons, with each being pursued in parallel:

- **Horizon 1:** Extend and expand to scale up impact — aerospace, defence, services, skills, and systems engineering.
- **Horizon 2:** Invest to build new capabilities — energy transition, advanced materials, digital & AI.
- **Horizon 3:** Explore our future pipeline in other technologies, innovation areas, and our future footprint.
- **Enabling:** Develop our people and processes to set us up for success.

Delivering our strategic priorities

We will continue to:

- **Expand** and strengthen our established capabilities to deliver greater industrial impact today — investing in the products, processes, and people that support immediate industry needs.
- **Shape** tomorrow's industries by developing the technologies, products, and services that will drive the next wave of innovation, sustainability, and competitiveness.
- **Explore** the frontiers of industrial transformation — building our future pipeline to keep UK industry at the forefront of global innovation and resilience.

Technology capability

Pushing the boundaries of technology is at the core of what we do.

NCC is the National Centre of Excellence in composite technology. This is underpinned by our proven track record of innovation, world-leading capabilities, and deep expertise in wide-ranging composite technologies.

We are further expanding our technology expertise towards 2030, developing leading capabilities in advanced materials and digital technologies to be applied across the product lifecycle in multiple sectors.

Our technology portfolio

Materials

Advanced Materials: Developing and applying novel materials to enhance performance, durability, and sustainability across demanding applications.

Process

Composite Processes: Advancing the manufacture and assembly of composite structures to deliver lightweight, high-performance, and cost-effective solutions.

Metallic Processes: Improving the forming, joining, and processing of metallic materials to meet evolving demands in strength, precision, and sustainability.

Production Systems: Designing and optimising manufacturing systems that are flexible, scalable, and digitally enabled for modern industrial needs.

Assurance: Applying advanced inspection, monitoring, and measurement techniques to ensure manufacturing processes consistently meet quality and performance requirements.

Product

Systems Engineering: Integrating complex technologies through a structured, whole-system approach to ensure functionality, efficiency, and reliability.

Design & Test: Accelerating innovation through advanced design methods, simulation, and physical testing to validate performance and reduce risk.

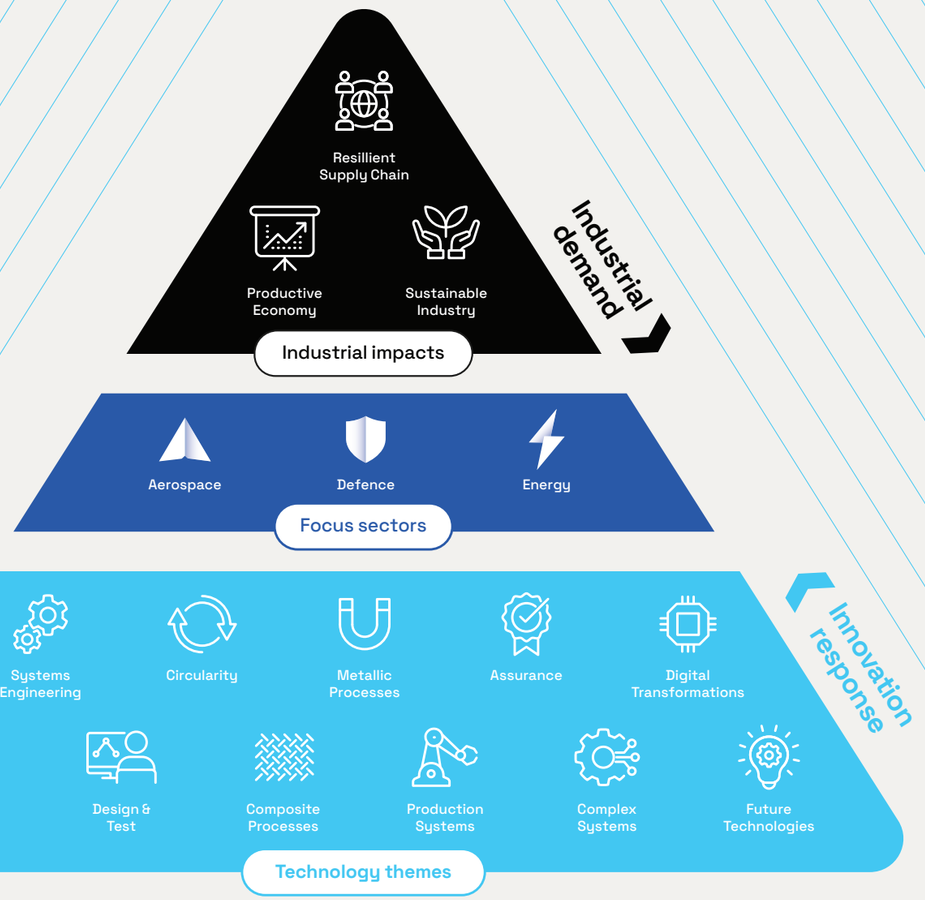
Circularity: Enabling efficient and sustainable product lifecycles through design for repair, maintenance, reuse, and end-of-life recovery — reducing waste and extending asset value.

Growth initiatives

Complex Systems: Understanding and managing highly interconnected systems, from multi-domain products to infrastructure and supply networks.

Digital Transformation: Harnessing data, automation, and digital tools to revolutionise design, manufacturing, and decision-making processes.

Future Technologies: Exploring emerging and disruptive technologies to unlock new capabilities and prepare for long-term industrial evolution.



Pathway to industrial impact

We deliver impact for businesses through new and improved products, processes, people, and places.

Our ‘theory of change’ model sets out how we will leverage our expertise, capabilities, and partnerships to translate cutting-edge ideas into real-world industrial impact, at scale — driving productivity, resilience, and sustainable growth for the UK.

We are committed to doubling the impact we make by 2030.

Our unique inputs...

Expertise, capability and infrastructure

- World-leading engineering, manufacturing and sector expertise.
- Materials, product, and process technology leadership.
- Cutting-edge R&D and industrial scale facilities.
- Deep systems integration and digital engineering capabilities.

Strategic partnerships and collaborations

- Strong partnerships — government, industry and academia — aligned to Industrial Strategy.
- Strategic leadership within key growth sectors and innovation programmes.
- Regional and national influence, shaping innovation policy and industry-led opportunities.
- Core membership base and network from across industry.

Innovation platform

- Portfolio of business facing services.
- Highly skilled workforce.
- Diversified and secure funding streams with targeted capital programmes.

forge the way we deliver these outputs...

Transforming innovation into technology leadership

- Development and deployment of high-rate, sustainable production technologies.
- De-risking innovation for industrial use, creating industry pull.
- Advanced technology demonstrators to increase business capability.

Enabling sustainable growth for UK industry

- Strategic national and regional programmes to accelerate product and process development.
- Pushing emerging technologies and new supply chain opportunities.
- Unlocking business growth through a connected pathway from research to industrialisation.

Strengthening UK capability and supply chain resilience

- Enhancing sovereign capability and reinforcing UK content and skills in target sectors.
- Strengthening SME integration through collaborative R&D and capability uplift.
- Supporting secure and responsive supply chains through digital and data-led approaches.

and outcomes that achieve impact

Improved products

Improved processes

Improved people

Improved places

A highly productive and transformative economy

- Increased adoption of advanced technologies.
- Firm level productivity growth — lower cost, better products and processes, and time-to-market.
- Stronger export potential and inward investment through innovation leadership.

A sustainable, low carbon industrial base

- Reduced industrial emissions and waste through new materials and processes.
- Scalable solutions supporting a low carbon economy.
- More resilient energy sector.

A resilient and competitive supply chain

- Technology leadership for increased UK content in aerospace, defence, and energy.
- Greater agility, security, and responsiveness in supply networks.
- A future-ready industry — underpinned by capability, innovation, and talent.

A prosperous UK

- Strengthen regional innovation ecosystems (sectors, technologies and geographies) to foster the development of industrial clusters nationally.

Business Growth

Delivering impact



Our commitments pave the way for impact. They are informed by industry, our sector knowledge and insights, setting out where NCC will focus its time and resources for maximum benefit.

Our focus sectors

Aerospace

Our commitment...

NCC will develop the future materials, products, and processes that secure the UK's position on next-generation sustainable aircraft platforms.

Focusing on...

Aerostructures: Lead in high-value structures innovation for wings, fuselage, and empennage, underpinned by digital technologies.

Propulsion: Advancing novel material & technology solutions for propulsion through process innovation and digital engineering.

Interiors: Accelerating development of innovative interior solutions using advanced materials and engineering sustainability.

Systems & in-service: Building capability in flight control, landing gear, fuel systems, and next-generation product platforms to enhance our offering and support in-service innovation.

Defence

Our commitment...

NCC will become a centre of defence innovation in advanced materials, manufacturing, and digital technologies shaping a secure, sovereign, and sustainable defence future.

Focusing on...

Advanced materials: Develop lightweight, high-performance composites for enhanced endurance, survivability, and integration.

Hypersonics & propulsion: Advance high-temperature composite systems for thermally resilient, next-generation platforms.

Autonomous systems: Drive the adoption of modular, lightweight structures to boost payload, range, and rapid deployment.

Digital engineering: Leverage digital twins and data-driven tools for improved availability and through-life performance.

Emerging tech: Harness academic partnerships to pull through early-stage, disruptive innovations.

Energy

Our commitment...

NCC will develop the products and technologies that anchor future industries, grow supply chains, and accelerate the energy transition.

Focusing on...

Wind: Lead innovation in large-scale wind structures by leveraging our unique, transferable engineering capabilities.

Hydrogen: Advance materials and product technologies for efficient hydrogen storage and distribution.

Oil & gas: Drive the deployment of composite solutions in extreme environments to enhance performance, durability, and sustainability.

New nuclear: Pioneer the development of advanced materials for high-temperature nuclear applications.

Our wider portfolio

Other sectors

Our commitment...

NCC's unique capabilities, technology pull through, and innovation-support interventions will enable businesses across all industrial sectors to compete and scale.

Focusing on...

Space: Develop and scale strategic capabilities to position the UK and Europe as global leaders in space technology.

Growth sectors and foundation industries: Provide targeted support to high-growth sectors and strategically important industries.

Adjacent markets: Unlock new value by extending our strengths into adjacent markets.

Advanced materials

Our commitment...

NCC will advance material technologies to accelerate the growth of a resilient and high-value UK materials manufacturing sector.

Focusing on...

Future fibres: Establish the UK's first carbon fibre development line to build domestic capability and accelerate national leadership in advanced fibre technologies.

Materials for extreme applications (e.g. CMCs): Drive innovation in high-performing materials for critical sectors and demanding environments.

Circularity & recycling solutions: Accelerate the deployment of end-of-life and circular composite technologies to support a more sustainable, low-waste future for materials.

Digital & AI

Our commitment...

NCC will establish itself as a national centre of excellence for digital & AI innovation, enabling the next generation of engineering and manufacturing.

Focusing on...

Digital engineering: Harness innovation in digital engineering to enhance performance, efficiency, and value across the product lifecycle.

Digital manufacturing: Deploy digital technologies to improve production rate, resource efficiency, and operational performance.

Technology translation: Broaden the industrial application of digital technologies to unlock value across sectors and use cases.

Our services portfolio, skills, and place leadership

Services

Our commitment...

NCC's services portfolio will help businesses access the innovation, technical, supply chain, and skills support they need to scale and grow.

Focusing on...

Innovation services: Accelerating technology adoption, managing risk, and maximising the potential of new solutions.

Technical services: Providing access to world-class facilities, equipment, and deep engineering expertise.

Supply chain services: Targeting SMEs and helping them scale in their industrial sectors.

Skills

Our commitment...

NCC will leverage its thought leadership and training expertise to develop a workforce equipped to meet the challenges of future manufacturing.

Focusing on...

Defining future skills: Aligning workforce development with emerging technologies.

Delivering skills: Enhancing domestic workforce capability through expert-driven training and industry-aligned skills programmes.

Developing future workforce: Developing the next generation of engineers and innovators by building future-ready skills & capabilities that respond to the UK's evolving industrial challenges and workforce needs.

Place

Our commitment...

NCC's delivery, partnerships, and impact will strengthen regional innovation clusters for local and national benefit.

Focusing on...

Strengthening regional innovation clusters: Building and expanding regional innovation partnerships.

Play a leading role in scaling the West of England's innovation and engineering cluster: Champion the West of England as the UK's leading engineering cluster.

Delivering national impact through regional reach: Delivering a connected pathway of support, translating research excellence into industrial impact.

Supporting the University of Bristol to create even greater industrial impact from world class research: Expand the portfolio of research translated into commercial applications and companies.

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Contact us
W: nccuk.com
E: info@nccuk.com

University of BRISTOL
CATAPULT High Value Manufacturing
UKRI Innovate UK