High Value Manufacturing Catapult

The High Value Manufacturing Catapult.
The go-to place for advanced manufacturing technologies in the UK
High Value Manufacturing Catapult

- Healthcare
- Energy
- Digital and automation technologies
- Construction and infrastructure
- Aerospace
- Electrification and low emission mobility
- Additive Manufacturing
- Automotive
- Global defence manufacturing
- Global circular economy
- Through-life services
- Food and drinks
- WMG
- Construction and infrastructure
- Health care
- Energy
- Digital and automation technologies
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- Additive Manufacturing
- Automotive
- Global defence manufacturing
- Global circular economy
- Through-life services
- Food and drinks
- AFRC
- Agile Composites Research Centre
- University of Strathclyde
- AMRC
- Advanced Manufacturing Research Centre
- CPI
- National Composites Centre
- Sustainable Composites
Green Economic Growth

World Economic Forum top global risks

Carbon Neutrality 2050

Sustainable Composites
Green Economic Growth

Economic Demand + HVMC delivery capability

Construction and infrastructure
Healthcare
Energy
Digital and automation technologies
Automotive
Aerospace
Electrification and low emission mobility
Additive Manufacturing
Food and drinks
Global defence manufacturing
Global circular economy
Through-life services

Societal Demand + Environmental Imperative

Challenge: Enable a transition towards a sustainable UK economy that meets net zero by 2050?

Question: Where do composites fit?
Where do Composites fit with Green Economic Growth?

Approximately 110,000 tonnes of FRP composite is produced in the UK annually. And on average only 15% of this is sent for recycling at EoL. And just 6% is reused in secondary applications.

More than 98% of matrix materials are derived from petroleum. 95% of fibres that are derived from petroleum.
Two significant reports published in 2019 highlight the need for radical transitions across the UK Composite Materials Supply chain.

Included in the comprehensive roadmaps:

- Efficient qualification for new materials
- Digital Toolsets to improve confidence in performance and durability
- Design for Sustainability
- End-Of-Life solutions

Full supply chain collaboration and partnership needed:

- Academia
- Research Technology Organizations
- Industry
Sustainable Composites.. what does success look like?

Challenge: How can HVMC delivery capability support application and innovation across a complex supply chain?

With a multitude of Academic Research Institutes and End-Users, that spans multiple different technology readiness scales?
What have we been doing within HVMC? NCC Examples

Industry support

Creating new Networks

Scale-up support

Development of new processes for sustainable products

End-of-life and bio-demonstrators

Recycling and Reprocessing technologies

Technology development for end-of-life

Life Cycle Assessment and Value Stream Mapping

Business wide and commitment to sustainability
HVMC collaboration to build a community and inspire significant industry transformation

What is it?

“To transform the UK’s world leading composite end-of-life academic and commercial capabilities into a fully functioning and interconnected supply chain as the fledgling market expands exponentially”

What have we been doing within HVMC? ReDisCoveR

- Identify a shortcoming
- Collaborate within HVMC
- Build an industrial community

Aim
What have we been doing within HVMC? ReDisCoveR

**What is it?**

HVMC collaboration to build a community and inspire significant industry transformation

**Aim**

“To transform the UK’s world leading composite end-of-life academic and commercial capabilities into a fully functioning and interconnected supply chain as the fledgling market expands exponentially”
Sustainable Composites.. Where are we today?

Challenge: How can HVMC ensure continued momentum and encourage further partnership and collaboration from Industry and Academia?
Sustainable Composites is a partnership between industry, academia and government that brings together the UK's composites expertise to quickly turn research breakthroughs into industrial applications.
Vision

To ensure the next generation of composite materials, designs and products support net zero ambitions, securing the UK’s position as a world leader in sustainable composites.

Mission

- The national hub that brings together all cross-sector research and development, initiatives and activities that develop or promote sustainable composites and products, acting as a catalyst for action.
- Through collaboration and partnership; accelerate the development in zero impact sustainable composite materials, process and technologies.
- To promote sustainable composites as a driver for green economic growth, providing data and education into society, industry, funding bodies and policy makers.
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