“A vibrant innovation ecosystem that creates a better future”

National Composites Centre

16 November 2023
400 companies in supply chain, employing 30,000 people

Highly technology-intensive, valuing £4bn in 2019
Engineering Challenges

- Cost
- Time-to-market
- Waste
- Environmental impact
- New technologies
  - Digitalisation
  - New energy vectors
  - AI / ML
  - New materials
- Design flexibility
- Rate
- Quality
- New solutions
Technology Innovation

Basic Principles  PILOTS  Extensive Implementation
The NCC at a glance... 2023

- £40m turnover
- £200m invested in capabilities
- 10 State-of-the-art, tailor-made technologies
- 2 locations, NCC HQ and NCC Filton

- Over 21,500m² facility at NCC HQ
- Over 300 specialist engineers
- Over 25,000 engaged followers on social media
- Over 100 innovation impacts

- Over 70 members and 8 major sectors supported
- Over 60 university partners
- Over 625 organisations engaged
- 40% of those are SMEs
Some Sectors we work with...

Aerospace
Defence
Space
Energy
Construction

Rail
Automotive
Marine
Medical devices
Sports & Leisure
Engineering Capabilities

**DESIGN**
- Market Drivers
- Concept
- Requirements
- Detailed Design
- Manufacture / Implementation

**DEVELOP**
- Verification & Validation
- Testing

**DELIVER**
- Maintenance & Repair
- Operation
- Retirement
Technology Supply Chain

TRL1 ➔ TRL2 ➔ TRL3 ➔ TRL4 ➔ TRL5 ➔ TRL6 ➔ TRL7 ➔ TRL8 ➔ TRL9

INDUSTRY
Significant investment from EPSRC for the last 14 years has supported and energised the low-TRL composites research ecosystem

What next...?
Impacting Composites
SUSTAINABILITY: Emissions and circularity

MATERIALS: Harsh environments

OPTIMISED STRUCTURES: Harnessing composites effectively
Innovation Pathways

- Private Venture & Member Directed
- Joint Industry Projects
- Collaborative Research & Development
- Knowledge Transfer Partnerships
- Core Programme
- Capability Development Programme
- Technology Pull-Through
- EngD Programme

EPSRC Programmes

MSc & PhD Projects

TRL1 → TRL2 → TRL3 → TRL4 → TRL5 → TRL6 → TRL7 → TRL8 → TRL9
Innovation Pathways

- Private Ventures
- Joint Industries Projects
- Knowledge Transfer Partnerships
- Collaborative Research & Development
- Joint Industry Projects
- Private Venture & Member Directed
- EngD Programme
- EPSRC Programmes

- 10+ live projects
- 11 live EngDs
- 5 EngDs
- 3 EngDs
- 2 live TPTs
- 2 EngDs
- 3 live PhDs
- 1 EngD
- 5 EngDs
- 20 academic stakeholders

TRL1 > TRL2 > TRL3 > TRL4 > TRL5 > TRL6 > TRL7 > TRL8 > TRL9