

Claire Arbery

Director - West of England IoT

Vice Chair National Network of
Institutes of Technology

02.07.25

INSTITUTES OF TECHNOLOGY

Institutes of Technology (IoTs) are the Government's flagship programme designed to spearhead the delivery and growth of higher technical education (Levels 4 & 5) in STEM subjects.

Backed by £290 million of government investment, each **Institute of Technology (IoT)** is a regional partnership between further education colleges, universities and leading employers, ensuring that students get the skills that will secure them good jobs, as well as progression pathways to degree level.

Every IoT has its own specialisms including:



Advanced Manufacturing;



Agritech;



Cyber security;



Healthcare.



The National Network of Institutes of Technology

Operating as a highly collaborative, national network to share ideas and expertise.

21 Institutes of Technology

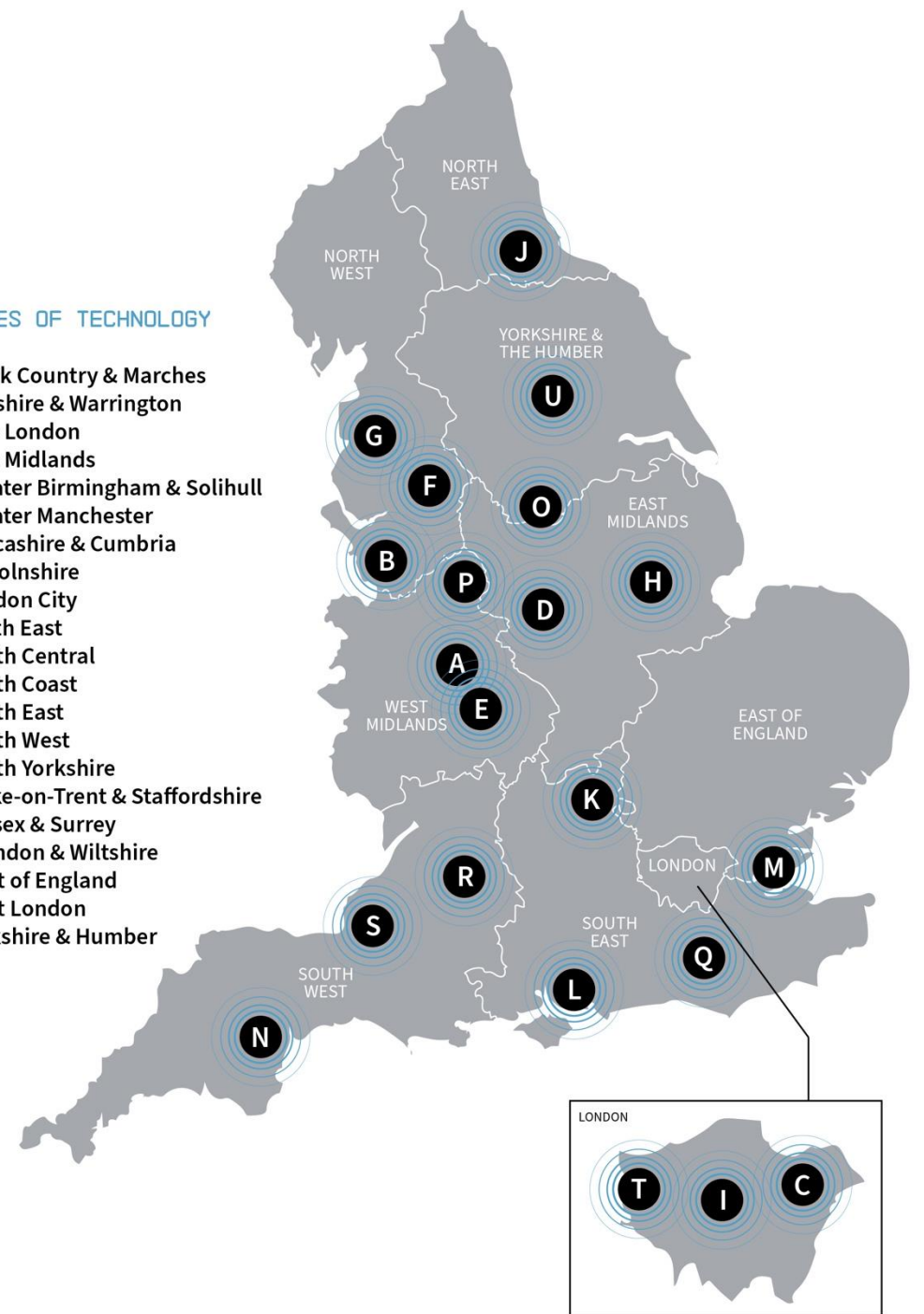
87 Colleges or FE partners

36 Universities

101 Employers

INSTITUTES OF TECHNOLOGY

- A Black Country & Marches
- B Cheshire & Warrington
- C East London
- D East Midlands
- E Greater Birmingham & Solihull
- F Greater Manchester
- G Lancashire & Cumbria
- H Lincolnshire
- I London City
- J North East
- K South Central
- L South Coast
- M South East
- N South West
- O South Yorkshire
- P Stoke-on-Trent & Staffordshire
- Q Sussex & Surrey
- R Swindon & Wiltshire
- S West of England
- T West London
- U Yorkshire & Humber



INSTITUTES OF TECHNOLOGY

[“Skills England](#) will work with Technical Excellence Colleges (TECs) and Institutes of Technology (IoTs) to ensure they are supported in delivering the skills that local employers need, as aligned to the needs of national priority sectors.”

Minister for Education, Janet Daby

“Building on the work started by IoT collaborations, we will work to expand on their success and establish coordination as the default way of working across all providers”

Minister for Skills, Baroness Jacqui Smith



EMPLOYER PARTNERSHIPS

Institutes of Technology (IoTs) are distinctive to the education landscape because of their strong relationship with employers, particularly SMEs. Employers sit at the heart of IoTs as core partners, customers and members of their governing bodies.

Across the Network there are over 100 anchor employer partners feeding into IoT strategy and designing and delivering curriculum.



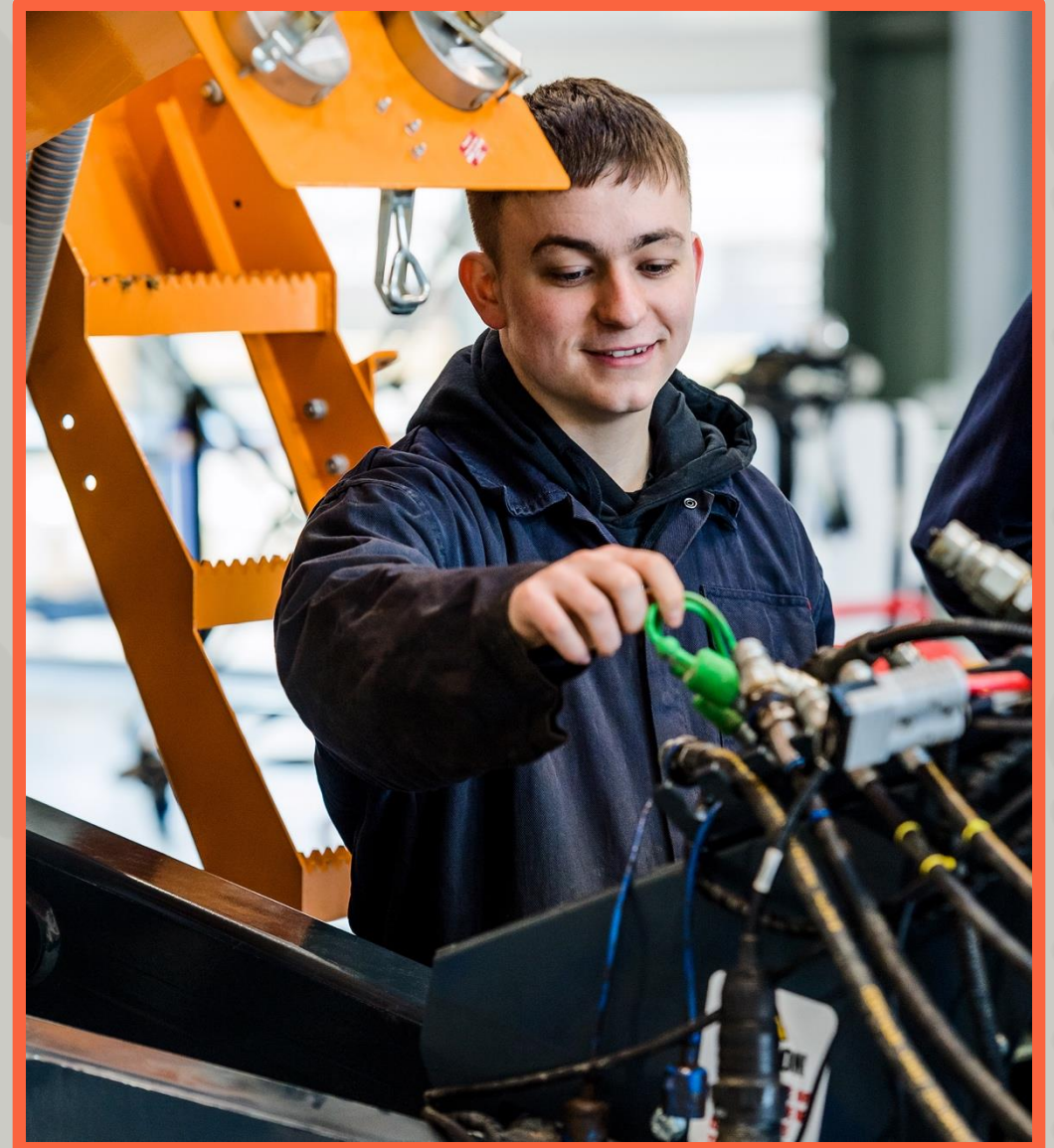
BUILDING THE PROFESSION

Institutes of Technology (IoTs) are home to students of all ages and backgrounds – young adults (aged 18-21), professionals looking to upskills and older adults changing career.

Rooted in their regions, IoTs help fill immediate skills gaps, while providing a diverse, skilled pipeline of employees who bring practical knowledge that is valuable to both national and local employers.

IoT staff are experts in their field and have broad industry experience. Ensuring quality delivery of free and low-cost short courses, apprenticeships and student-loan funded higher technical qualifications.

IoTs have a strong ambition to increase participation among underrepresented groups. Enabling young people from non-traditional backgrounds to access higher education locally. Increasing the representation of women in STEM.



Working with Innovate UK and Skills Shortages

- Further Education Innovation Funding
 - Greater Birmingham & Solihull Institute of Technology
 - Birmingham Innovation Centre Partnership
 - Black Country & Marches Institute of Technology
 - Black Country FE Innovation Service
- Battery Workforce Training Initiative
 - Greater Birmingham & Solihull Institute of Technology
 - DEBUT WM
 - North East Institute of Technology
 - National Battery & Skills Academy
 - Electrification Skills Network



East Midlands Freeport partners with East Midlands IoT on the Future Skills Energy Hub

- Supported by the University of Derby, Loughborough University, Derby College and Loughborough College, as well as other regional FE and HE institutes, the Hub will deliver level 3 to 5 engineering and digital skills with pathways to higher learning, providing the facilities and knowledge required to train and re-train the local workforce.
- This will enable site safe, industry standard skills across a range of new and sustainable energy platforms and will incorporate the UK's first practical, industry-based training centre associated with the production, handling, storage and use of hydrogen.
- The result will be a local capacity pool of higher-skilled employees, boosting productivity, innovation and creating a thriving business community across our Freeport sites and wider East Midlands geography.



Developing an Academic Community in cutting edge technologies

The team at GBS IoT have been working with our local university partners to recruit a community of undergraduate placement learners who are trained in the specialist equipment and software used at the Learning Factory.

These placement learners work with the GBS IoT partner colleges and universities, led by the IoT's Operations Manager, to support the curriculum offer and create a specialist community of practice.

Further Education Colleges have previously looked to recruit similar learners into their campuses to support with teaching. However, the feedback has been that the undergraduates or postgraduates feel isolated and so choose to leave.

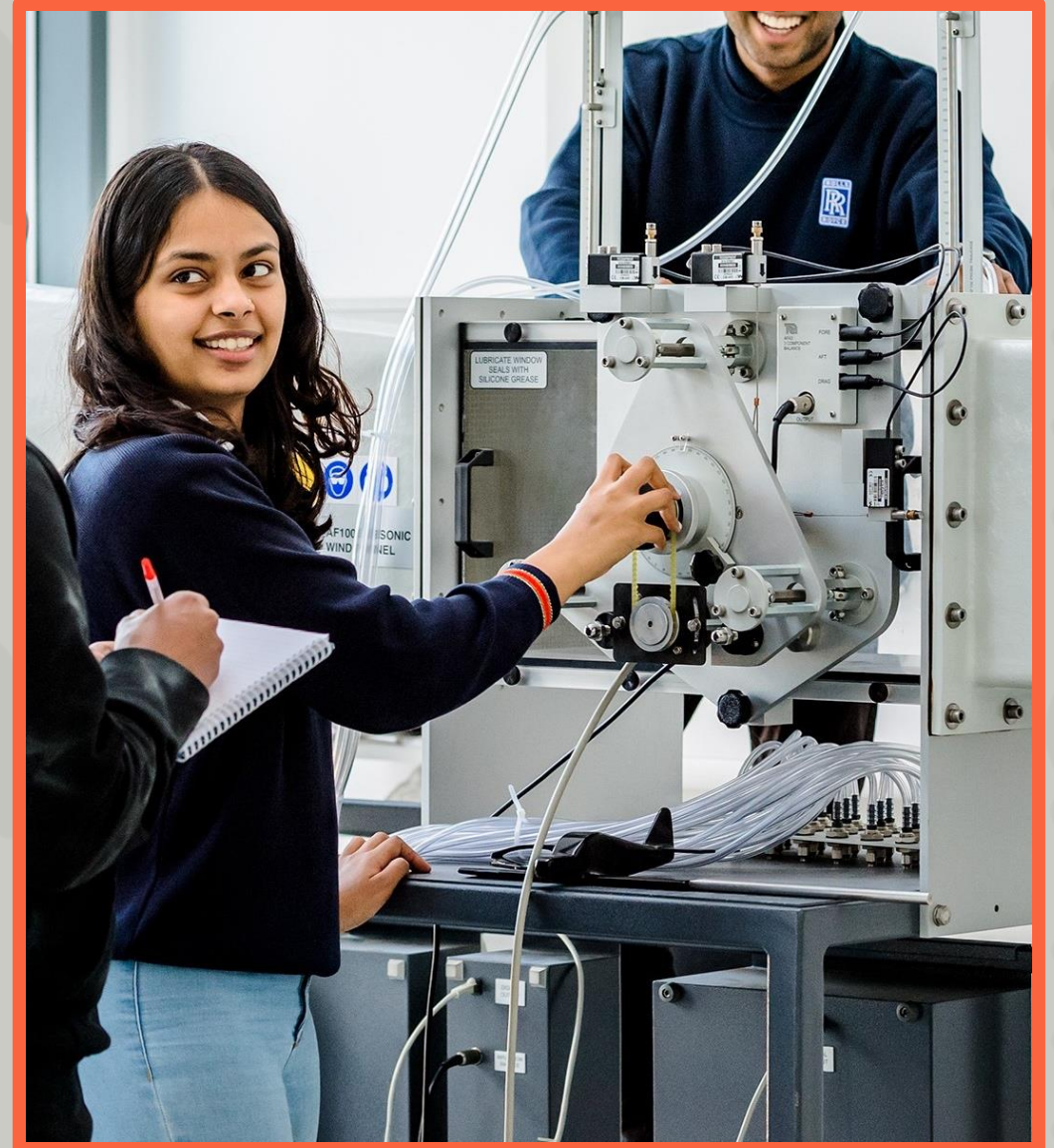
By creating this focus at a central hub, we are able to encourage and provide space for innovation and creativity enhancing the regional engineering training provision.



FURTHER INFORMATION

IoT National Website: www.institutesoftechnology.org.uk

Contact address of IoT Network enquires:
iotnetwork@gatsby.org.uk





Working together to build the technical skills pipeline

Dr David Cameron, Technical Pathways Project Lead, Science Council
2 July 2025



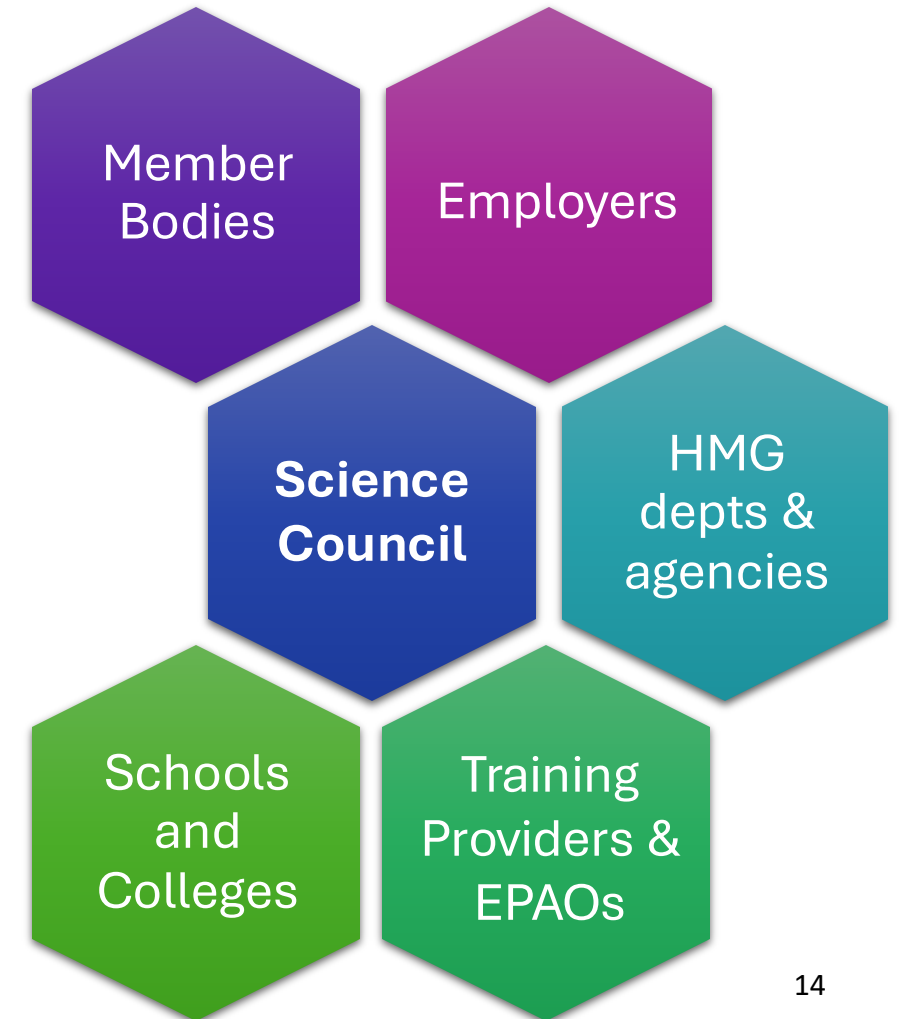
The Science Council



- Our vision is a diverse and growing science profession that is trusted, respected, innovative and equipped to meet regional, national and global challenges
- Our goal is to elevate the science workforce for public good, through:
 - Maintaining our **professional registers** (CSci; RSci; RSciTech; CSciTeach)
 - Supporting **technical pathways** into the scientific professions
 - Supporting **equality, diversity and inclusion** in the scientific professions
 - Acting as a '**voice of science**'

Facilitation and Engagement

- We have an important facilitation and convening role, working across the scientific disciplines.
- We provide an engagement channel between our Members, employers, educators, policy makers and delivery agencies across the UK.



Talent & Skills: Priorities and Challenges



National

- Growth
- Productivity
- Skills
- Science
- Technology
- Innovation



Enterprise

- Workforce
- Adaptability
- Quality
- Managing uncertainty
- Risk-taking



Challenges

- Macro-economic
- Social-cultural
- Administrative
- Financial

Working together



Workforce Skills
Conference



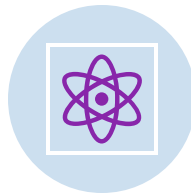
Promoting EDI with
our Member bodies



Connecting
employers and
training providers



Employer Insight
Project



The Science Council
Employer Network



Linked
apprenticeships with
RSci & RSciTech

Summary



- **Our vision: a diverse and growing science profession that is trusted, respected, innovative and equipped to meet regional, national and global challenges**
- We facilitate connections between government, employers, professional bodies and training providers.
- We recognise the context and priorities of the organisations we work with.
- We work collaboratively to address challenges and find effective solutions.
- Together, we are building an inclusive and diverse technical skills pipeline.

Useful Links



- <https://technicaleducation.sciencecouncil.org/>
- <https://sciencecouncil.org/employer-network/>
- <https://sciencecouncil.org/blog/2024/04/09/report-launched-for-the-workforce-skills-conference/>

Dr David Cameron

Technical Pathways Project Lead, Science Council

d.cameron@sciencecouncil.org



Technicians: We Make The Difference

Jenni French— Gatsby Foundation

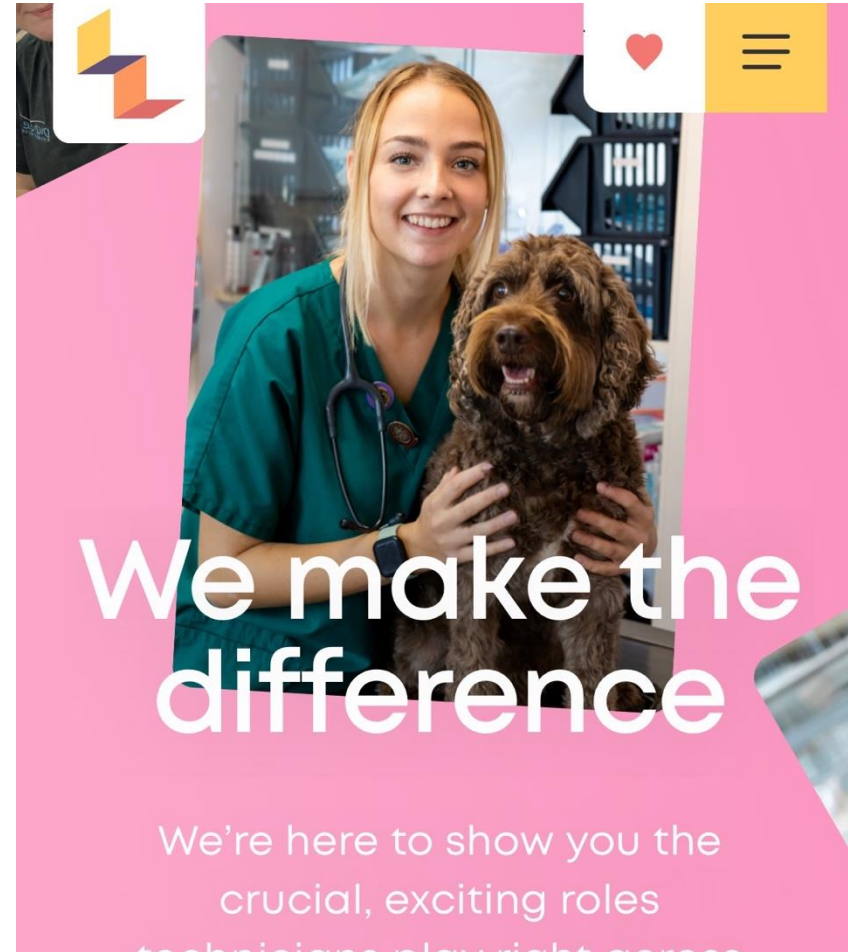


Technicians
We make the
difference

TECHNICIAN WORKING ACROSS ALL SECTORS



- Based around 100 technician roles
- Website (technicians.org.uk)
- Videos and Case Studies
- Animations
- Role Finder Game



- Posters
- Lesson Plans
- BBC Bitesize Careers Tour
- Big Bang Fair
- New Scientist Live

Kickstart your technician career with **physics...**



start your journey with a T-level or apprenticeship (no degree needed!)

 Technicians
We make the difference

technicians.org.uk 

TECHNICIANS: THE DAVID SAINSBURY GALLERY

**SCIENCE
MUSEUM**

TECHNICIANS: THE DAVID SAINSBURY GALLERY

Youtube, Tiktok, Snapchat and
Instagram

Case Study Videos

Origin Stories

Multi role videos

Wide penetration – 1 billion views
in year to March 25



CINEMA ADVERTISING



IS IT WORKING?

- **1 in 3** young people now claim to recognise at least one aspect of the campaign
- About **half** of young people feel they know at least a little about the jobs technicians could do, up from 41% in 2022.
Boys 44%-58% Girls 37%-50%
- Almost **2 in 3** now agree they could be a technician, with the gender disparity now just 3pp
Boys 63% - 66% Girls 56% - 63%
- Campaign recognisers significantly more likely than non-recognisers to consider becoming a technician and feeling they could be a technician

HOW TO GET INVOLVED

Provide Technicians

- Website Case Study
- Careers Uncovered at Science Museum
- BBC Bitesize Tour
- Social Media / Video / PR Campaign
- Live Events (Big Bang Fair, New Scientist Live)

Partnership events and activities

Spread the word

Jenni.French@gatsby.org.uk

SKILLS INNOVATION SYMBIOSIS

Catapult Network

Dr Joe Darlington – Technology Director (MTC)



Part of something bigger

Proud to be part of
High Value Manufacturing Catapult



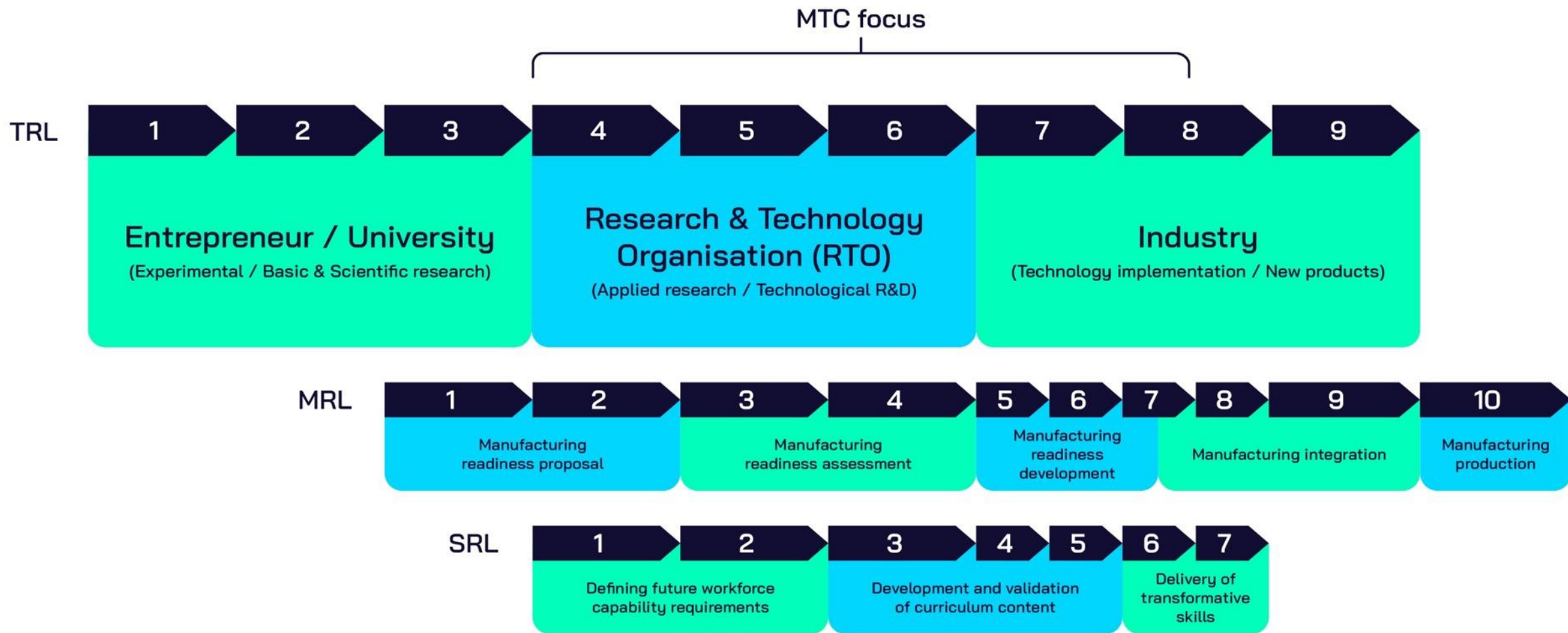
Supported by Innovate UK



Our founding partners



Bridging the valley of death



TRL = Technology readiness level

MRL = Manufacturing readiness level

SRL = Skills readiness level

Progressing innovation into industry

Challenges



MTC innovation toolkit

Industrial transformation

Business & supply chain transformation
Digital & automation transformation
Technology & sustainability transformation

Digital engineering

Modelling & simulation
Metrology & NDT
Informatics

Advanced production systems

Robotics & automation
Design & build
Process, product & equipment

Component manufacturing technologies

Additive manufacturing
Laser processing
Materials technology

Future skills

Manufacturing engineering apprenticeships
Advanced manufacturing training & workforce foresighting
Bespoke course creation & delivery



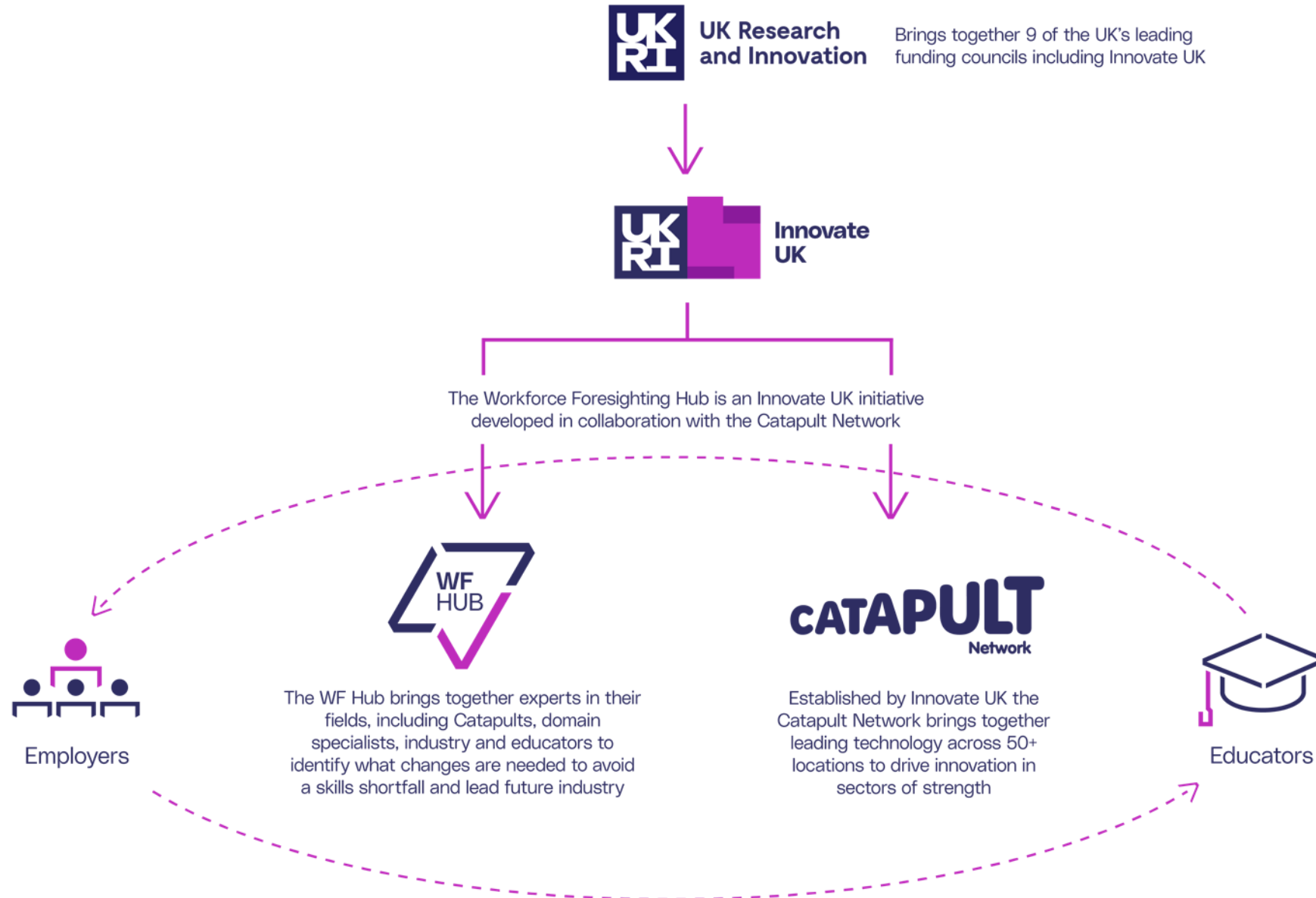
Solutions

The skills challenge

The global marketplace is changing at a rapid pace and the continued development of innovative technologies is creating opportunities for growth in all sectors.

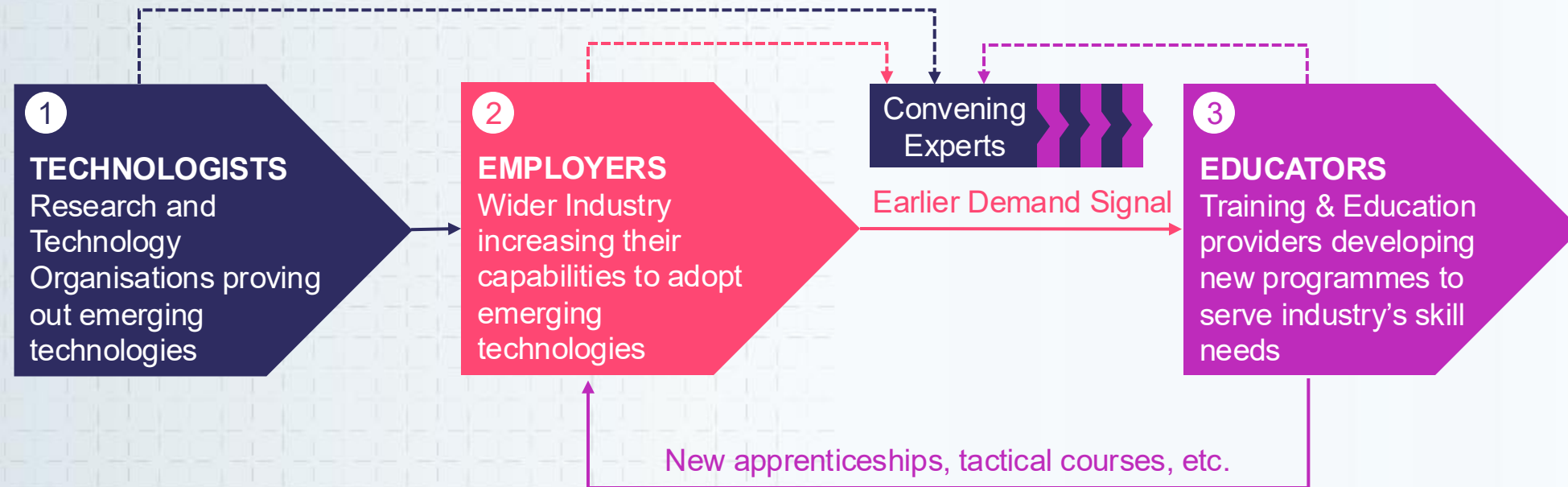
Building a skilled workforce for tomorrow's industries

Workforce Foresighting Hub



A lagging-based skills system

||||| The adoption of emerging technology...



REDUCED LAG
=
QUICKER ADOPTION
=
COMPETITIVE

Future Skills for Floating Offshore Wind (ORE Catapult)



ORE Catapult have convened experts from technology, industry and education and completed 5 WF Cycles to support national renewable energy challenge:

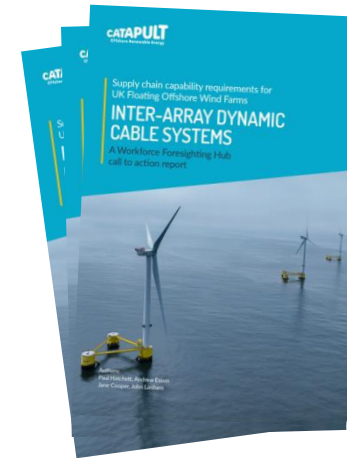
- The UK should generate 50GW in offshore wind by 2030.
- This should include 5GW of floating offshore wind.
- The offshore wind workforce needs to increase from 32,000 to 100,000 by 2030.

Technology areas addressed

- Inter-Array dynamic cables systems
- Advancing Production of Blades for Offshore Wind Turbines.
- Automated Welding of Offshore Wind Flotation Structures
- Autonomous inspection of Offshore Wind Flotation Structures
- High Voltage Direct Current (HVDC) Cable Systems Manufacture

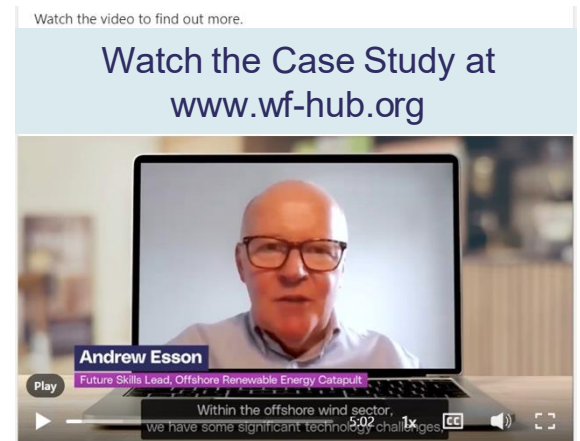
Results to date:

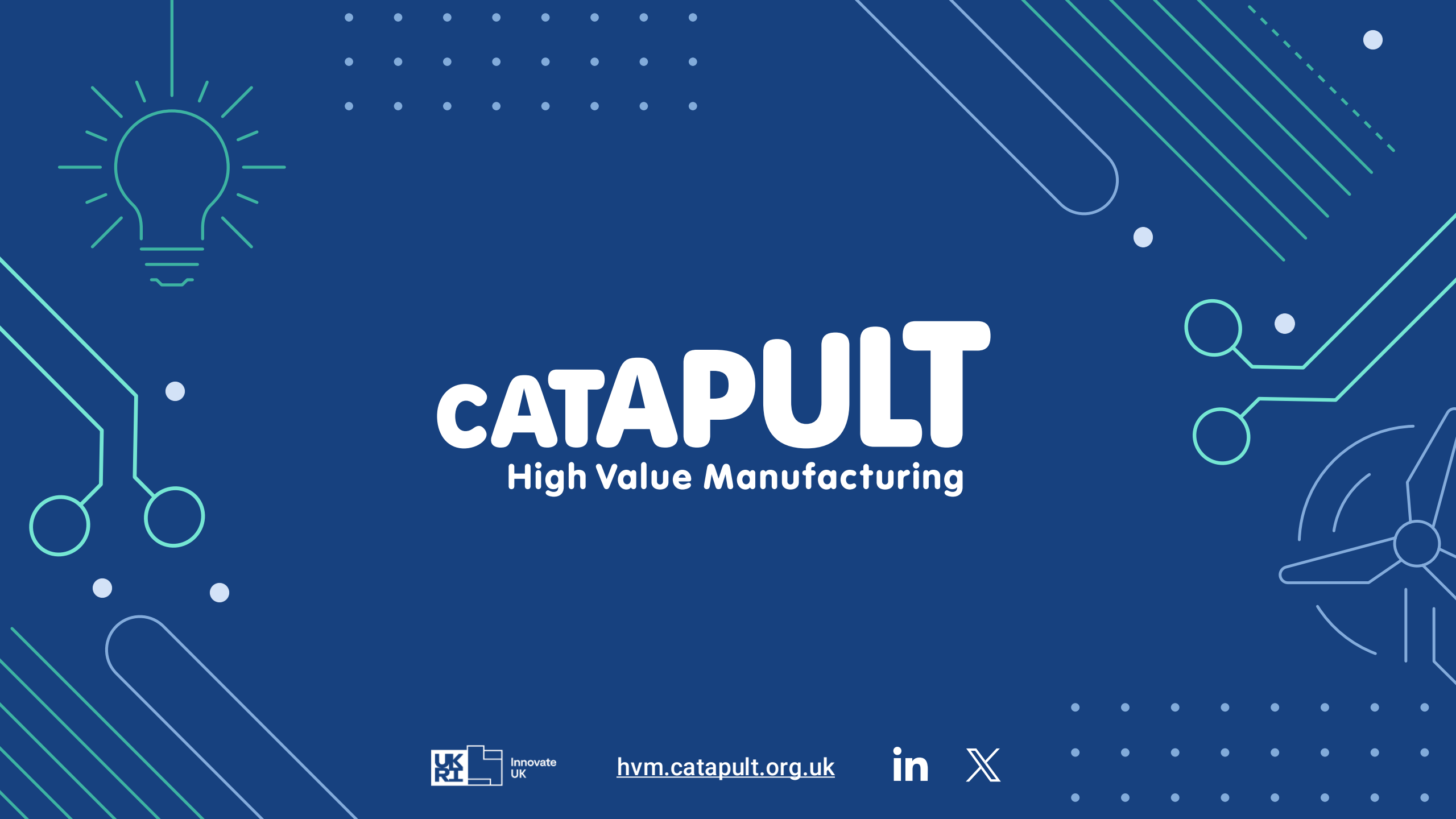
- Embedding workforce foresighting into sector growth plans (OW IGP also refers to the OWIC People and Skills Plan).
- Discussion with Universities for the development of a HV Engineering degree apprenticeship.
- Development of a new HV competency standard.
- Establishing a commercial/catapult partnership in HV electrical training
- Report findings are a catalyst for action to prepare the future workforce to excel in the sector



Findings identified (Average per cycle):

- +120 Capabilities defined
- +18 Future occupational profiles
- +800 Knowledge Skills & Behaviours
- Map & Gap on education provision





CATAPULT

High Value Manufacturing



hvm.catapult.org.uk

