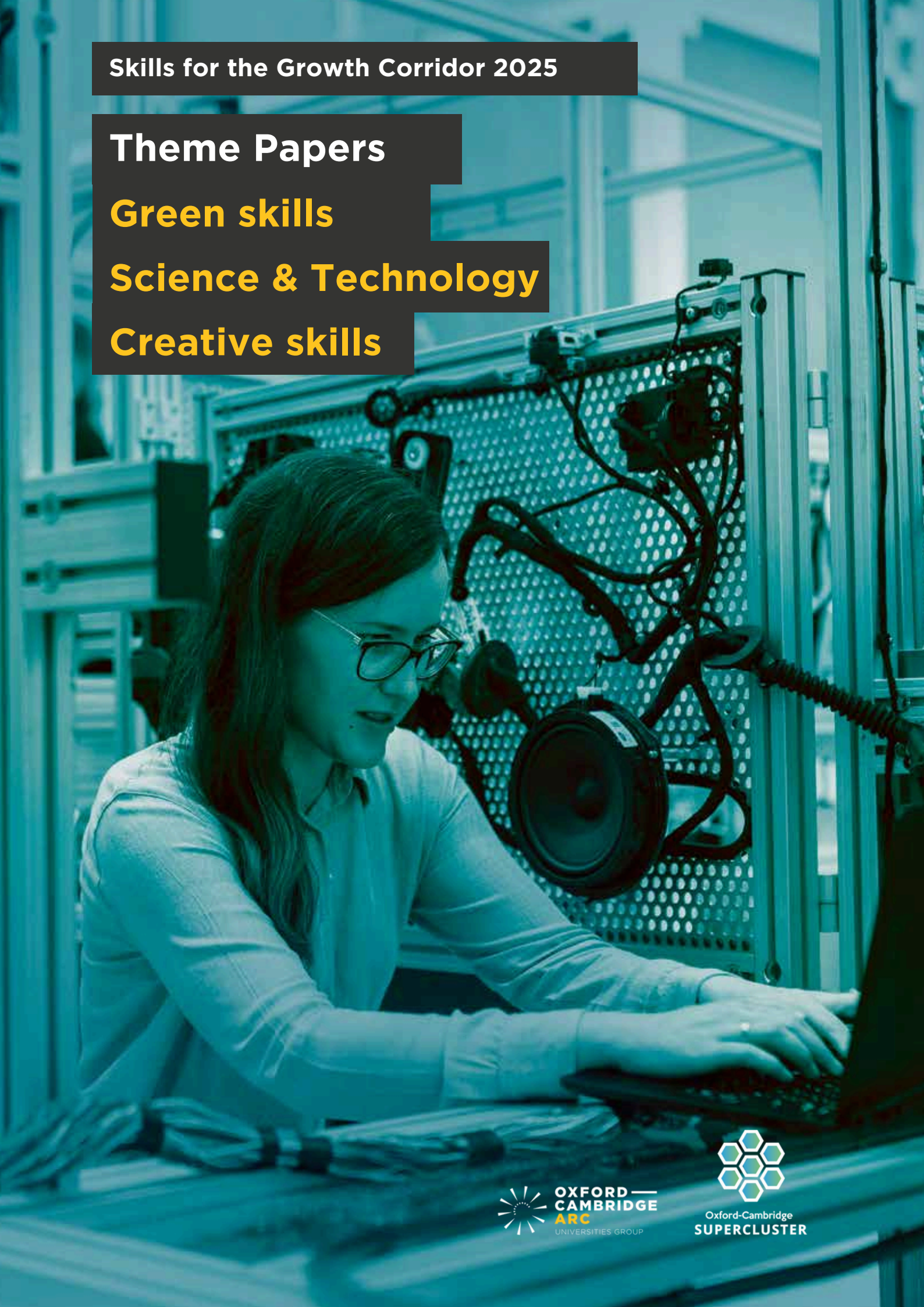
Skills for the Growth Corridor 2025

Theme Papers

Green skills

Science & Technology

Creative skills



OXFORD CAMBRIDGE ARC UNIVERSITIES GROUP

Oxford-Cambridge SUPERCLUSTER

Towards a net zero workforce: building the skills for a sustainable future

The transition to a net zero economy is accelerating, and with it comes profound change for employers, workers and communities across the region.

The Sustainability Roundtable, facilitated by **Professor Aled Jones of the Global Sustainability Institute**, brought together leaders from education, industry and the public sector to explore how the region can build the skilled workforce required for long-term, sustainable growth.

Participants were clear: the green transition is not only an environmental imperative but a major economic opportunity. Realising this potential will depend on deliberate planning, coordinated investment and an inclusive approach to developing the skills people need to thrive.

A changing landscape of skills

Nationally, the nature of work is shifting rapidly. The Climate Change Committee (CCC) estimates that between 135,000 and 725,000 net new jobs could be created by 2030 in low-carbon sectors, offsetting projected losses of 8,000 to 75,000 jobs in high-emitting industries. This scale of transformation will not happen by itself – it requires a strategic, forward-looking approach to ensure people and businesses are equipped for a greener future.

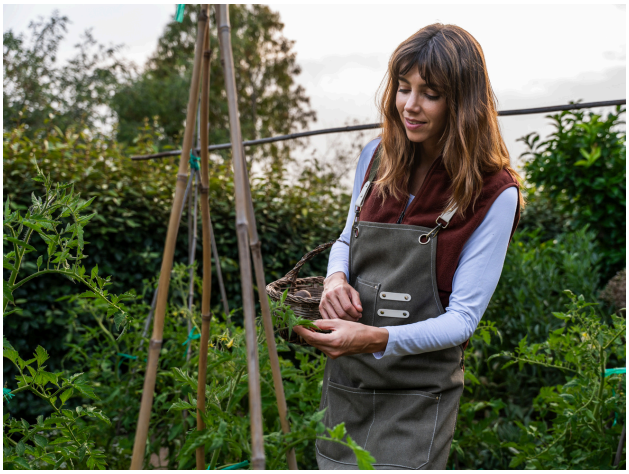
The shift to net zero is not only about new technologies - it is fundamentally about people. Workers across all sectors will need to adapt, whether through reskilling, upskilling, or entering the labour market with a different mix of capabilities. This includes technical skills, such as heat pump installation, battery manufacturing, retrofit delivery and EV charge point deployment, alongside soft skills like communication, project management and digital literacy.

Crucially, the transition is deeply local. Many of the technologies and interventions that will deliver net zero - from large scale retrofit programmes to community energy projects - rely on social interaction, trust and leadership at community level. As a result, social and people skills are becoming increasingly valuable and provide resilience for individuals in the workforce against technological change and automation.

Skills across the career journey

Employers are clear about what they need at different stages of the career pipeline. At entry level, they prioritise strong personal attributes: logical thinking, openness, collaboration and a willingness to learn. At more senior levels, the emphasis shifts towards credibility, authenticity and the ability to apply specialist knowledge to complex real-world challenges.

Across all levels, there is growing recognition of the importance of future and systems thinking, resilience, adaptability and collaboration. These capabilities underpin a more sustainable economy and society, enabling people to navigate uncertainty, work across disciplines and respond to emerging technologies and business models.



Strategic actions for policy and practice

To respond at the scale and pace required, three strategic actions are essential:

- Embed Education for Sustainability (EfS) across all stages of learning, from schools and further education through to higher education and professional training, supported by a proactive strategy to strengthen STEM pathways.
- Develop tailored upskilling and reskilling programmes that are aligned with sectoral needs and delivered flexibly so they fit around people's lives, careers and caring responsibilities.
- Link industrial strategy to skills investment, ensuring that training provision responds to emerging technologies and market demand, for example by investing in further education capacity for core skills such as construction, retrofit and green infrastructure.

Aligning with the European Green Deal

The European Green Deal's Pact for Skills offers a useful framework for action. It calls on organisations to promote lifelong learning, build strong partnerships, anticipate skills needs and ensure equal opportunities. These principles should guide regional efforts to build a workforce that is inclusive, agile and future-ready.

In practical terms, organisations should be encouraged to adopt a corporate risk register approach to identify future skills needs within a net zero transition. By assessing and acting on key risks associated with skills requirements, businesses and public bodies can move from reactive responses to more strategic workforce planning.

Businesses could be supported through mentoring and advisory programmes to develop these corporate skills risk registers, while the public sector could require them through procurement to encourage better long-term planning across supply chains.

Local leadership and regional innovation

Local economies will play a pivotal role in delivering the green transition. By engaging with Local Skills Improvement Plans, employers and devolved authorities can forecast green skills needs and design targeted interventions that reflect local priorities and sector strengths.

A clear regional vision is needed that champions skills development at all levels, including GCSEs, further education, degree apprenticeships, higher education and lifelong learning. By aligning this skills vision with the Combined Authority growth plan, local providers can design new offers with confidence, and employers can plan for future workforce needs.

There is much to learn from other places. Examples include Manchester's coordinated approach to skills and industrial strategy, the GoConstruct initiative, and the Oxford green infrastructure investment project led by Global City Futures. Without a similar level of coordination and ambition, there is a real risk that the infrastructure required to support regional growth will not be delivered on time or at the necessary scale.

A test and learn approach

As pilots and interventions in skills development are set up across the region, they should be supported, evaluated and enabled to share best practice. When an environmental solution is needed - whether a new process, technology or delivery model - the skills system needs the flexibility to respond, test and refine its approach.

There are already positive examples. Urban & Civic have worked with local skills organisations and their supply chain while planning and delivering large infrastructure projects, including new towns such as the Waterbeach development. Cambridge Cleantech is exploring ways to develop opportunities building on successful initiatives such as the A-Lab in Australia. European programmes such as Build-Up Skills (Croatia, Cyprus), REDU (Lapland, Finland) and Sweden's Energy Lift Programme demonstrate how flexible, accredited training in energy efficiency and construction can be scaled in practice.

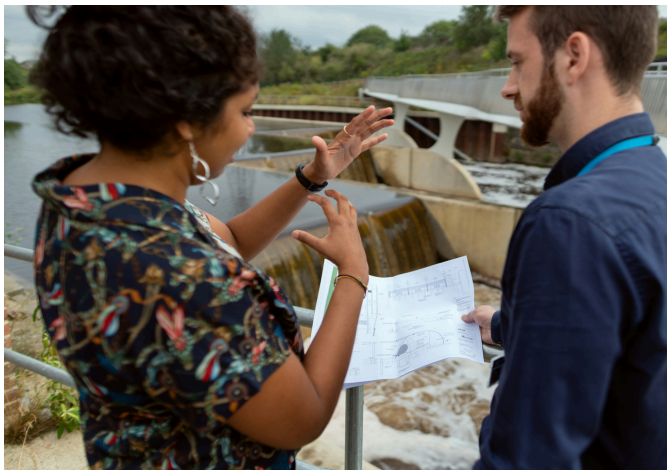
The role of an opportunities hub

The proposed Opportunities Hub should focus on supporting environmental skills development and be championed and led in partnership with industrial trade federations. Its core functions could include:

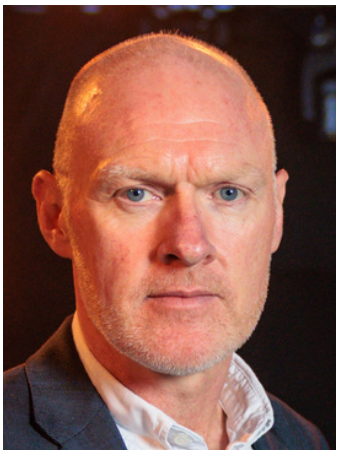
- An intelligence hub to track real-time skills mismatches and develop clear career pathways, including routes into specific roles, timelines across the environmental skills journey and mapping of core essential skills across job types, building on existing Local Skills Improvement Plans.
- A brokerage hub to guide individuals towards learning and job opportunities, making the system easier to navigate for both learners and employers.
- A multi-mentor hub to support scaling businesses, including helping them develop corporate skills risk registers, identify future capability needs and plan for workforce growth.
- A test and learn hub to capture insights from the implementation of environmental solutions in the economy and to link these to skills development, ensuring lessons from pilots and innovations are shared and embedded.

Conclusion

The transition to net zero is not just a technological revolution - it is a human one. By investing in the right skills, at the right time, and in the right places, regions can unlock new economic opportunities, strengthen local communities and ensure that no one is left behind. A coordinated, forward-looking skills strategy is not simply desirable - it is essential.



Creativity as a driver of growth: insights from the Creative Skills Roundtable



The creative industries are one of the fastest-growing parts of the Oxford to Cambridge Growth Corridor, and their importance is increasing as digital technologies, immersive production and AI transform how creative work is made and consumed. At the Creative Skills Roundtable, facilitated by **Dr Steve Partridge, Dean of the School of Creative Arts at the University of Hertfordshire**, participants explored the skills, infrastructure and system changes needed to unlock the sector's full potential.

Across the discussion, a clear message emerged: creativity is now a core economic capability. It sits at the intersection of design, storytelling, technology, engineering, health, and advanced manufacturing. As highlighted in recent analysis, creativity is increasingly embedded across high-growth sectors and is a defining capability for the next generation of digital talent.

A creative economy defined by innovation and atypical career paths

The creative workforce is structurally different from many others. Nearly half of creative workers operate as freelancers, contractors or micro-businesses, often moving between projects, employers and collaborative environments. Traditional training models, rigid qualification structures and time-based apprenticeships do not easily support this kind of workforce. Participants agreed that skills systems must adapt to the realities of creative work, not the other way around.

New technologies - from virtual production and AI-assisted design to immersive experiences and interactive media - are reshaping practice at pace. This creates both opportunity and disruption: new types of work emerge quickly, but existing skills become obsolete just as fast. The group stressed the importance of foresighting so the region can anticipate future needs rather than responding once skills gaps have formed.

The system is not yet fit for purpose

Echoing challenges across science, technology and green industries, the creative sector faces a fragmented and slow-moving skills system. Barriers identified include:

- training that does not reflect freelance or portfolio-based careers
- apprenticeships that are difficult to apply in project-led environments
- uneven industry engagement with schools and colleges
- courses that cannot update quickly enough for fast-evolving technologies
- limited early exposure for young people
- shortages of flexible, affordable creative workspaces
- unclear career pathways for students, teachers and parents

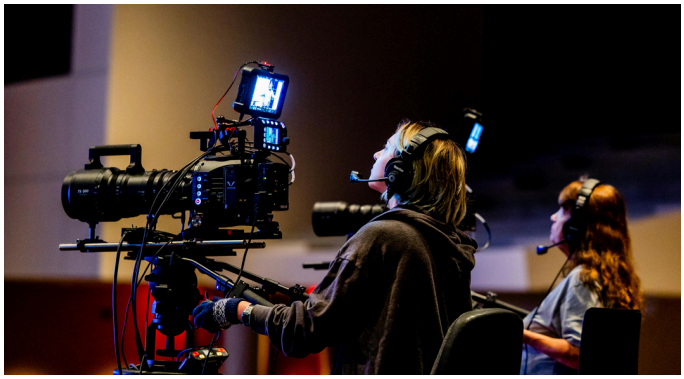
While excellent provision exists across the Corridor's universities and FE institutions, collaboration remains inconsistent, and there is limited shared data to guide decisions.

Widening access, visibility and aspiration

A strong theme was the need to lift the visibility of creative careers. Many young people and their families still see creative work as “risky” or “non-essential”, even though the sector is one of the region’s most future-proof. Participants recommended:

- earlier inspiration in primary and secondary education
- stronger presence of industry role models
- better guidance for teachers and careers advisers
- showcasing student and industry work more publicly
- accessible creative hubs that demystify the sector

Transport, housing, affordability and access to facilities were also highlighted as major barriers that often prevent talent from entering or staying in the sector.



A regional Opportunities Hub for creative talent

Drawing on strong interest in the Opportunities Hub model emerging across other sectors, the roundtable explored how this could serve the creative economy. Key functions could include:

- a central point of advice for learners, freelancers and employers
- real-time tracking of emerging skills needs
- signposting to tailored training and development programmes
- a mechanism for sharing case studies and successful career routes
- opportunities for students to collaborate with micro-businesses and freelancers
- structured mentorship, including alumni networks

It was agreed that any hub must create value for freelancers and small companies - two groups that often lack the capacity to engage with formal initiatives despite being critical to the sector’s success.

Rethinking creative education and embedding creative mindsets

There is a need for creative problem-solving, collaboration and innovation to be embedded across the curriculum. This includes:

- project-based learning
- cross-disciplinary collaboration
- assessment models that support innovation
- building confidence, communication, pitching and business skills
- better integration of arts, design and technology across education pathways

Creativity was repeatedly positioned as a problem-solving capability that will be essential far beyond the creative industries themselves.

Unlocking space and infrastructure for growth

The roundtable highlighted the urgent need for more accessible creative spaces - from studios and rehearsal rooms to immersive labs and virtual production stages. Repurposed buildings and mixed-use developments could play an important role, but planning and regulatory processes often create hurdles. Connecting these spaces with local communities, schools and universities was seen as key to building a coherent creative ecosystem.

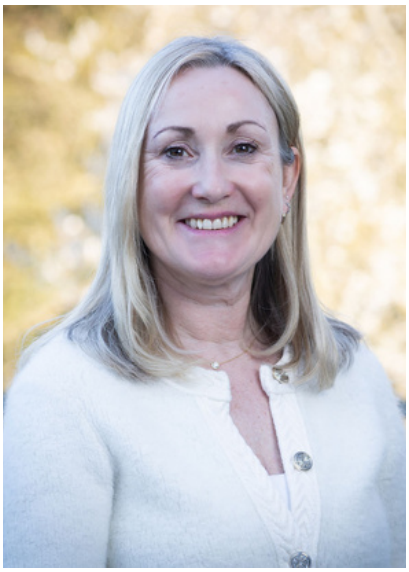
Towards a regional strategy

The group concluded with a call for a clearer strategy for creative skills across the Corridor, aligned with the broader vision for science, technology and green industries. Priorities include:

- engaging students directly in programme design
- improving long-term data across the system
- enabling collaboration between education, industry and local authorities
- creating shared talent pipelines
- designing flexible pathways for freelance and hybrid careers
- securing sustainable funding and shared infrastructure

Creativity was framed not just as an economic asset, but as a way of thinking that can unlock new solutions to complex challenges - a crucial capability as the region looks to triple the scale of its innovation economy in the decades ahead.

Building a future-ready skills system: insights from Technology sectors



The Oxford to Cambridge region is home to large numbers of science and technology businesses. The region is not dominated by one particular sector, and has strengths across science and technology - life sciences, automotive, aviation, space, deep tech, robotics, advanced manufacturing, energy, and more. Despite this range of sectors, each of which requires particular expertise in different scientific and technology disciplines, when it comes to the question of skills and talent, there is more in common between businesses than separates them As a consequence, our work on Technology sectors, facilitated by **Sarah Haywood of Advanced Oxford**, brought together employers, educators, sector specialists and policy leaders from different science and technology areas to explore the skills and talent required for the region's long-term growth. The discussions provided a clear message: the UK's skills system must evolve rapidly if businesses are to innovate, scale and compete internationally. While the challenges are significant, the insights from this work point towards a more agile, inclusive and coordinated model, capable of supporting a dynamic, high-growth knowledge economy.

A rapidly changing skills landscape

Across the conversations, it was agreed that skills needed for future growth are not confined to traditional technical roles. As companies scale - from early-stage research organisations to commercialisation and production of new products and services - their requirements diversify. They need layers of capability: technicians, engineers, data scientists, project managers, commercial specialists, regulatory expertise and strong leadership. Technical training and scientific education must therefore sit alongside the development of business acumen, project management, people management and commercialisation skills.

AI, automation, and digital technologies are reshaping the skills profile of every sector. Hybrid skills - where disciplines such as genomics, engineering, computer science and data converge - are rising in demand. New roles are emerging fast, and others are evolving before job descriptions can catch up. The pace of innovation means both individuals and organisations must develop the capacity to reskill continually. As one participant put it, "being skilled in reskilling" is now a core capability in itself.

A system struggling to keep pace

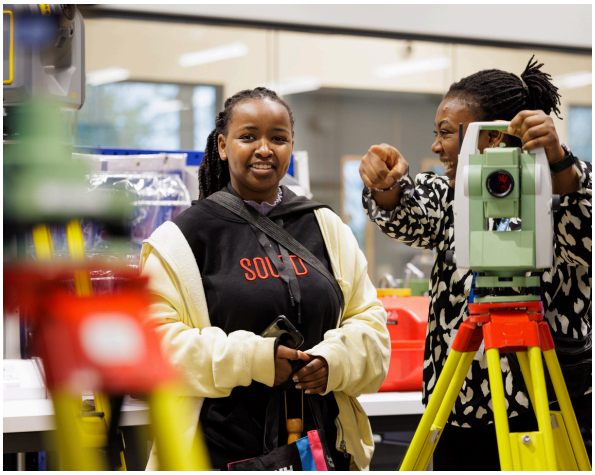
Despite pockets of excellence, the current UK skills system was described as too rigid, too fragmented and too slow to adapt. Qualifications can take years to update, even in the face of rapid technological change. Apprenticeships - highly valued, especially by scaling companies - were seen as underused, overburdened by bureaucracy, and not flexible enough to serve mid-career professionals or fast-growing SMEs. Transferable skills remain undervalued, and the cultural bias towards academic routes continues to limit uptake of technical and vocational pathways.

Skills shortages – alongside funding and infrastructure - are a primary barrier to growth. The STEM pipeline is not strong enough, and international competitors such as India and China are producing AI and data graduates at a scale the UK cannot currently match. Meanwhile, universities often move slowly, leaving companies to build their own competency frameworks or training content.

Barriers to access and participation

Our roundtable discussions also highlighted the practical barriers preventing many people - especially young people - from entering or progressing within the workforce. Transport, childcare, housing, insurance restrictions for work placements, and general affordability concerns all limit participation. Businesses spoke of the difficulty SMEs face in releasing staff for training, reducing "absorptive capacity" at the very moment when reskilling is most needed.

Diversity and inclusion remain significant issues. Untapped talent pools exist across the region, yet structural constraints and uneven engagement with schools mean many young people lack exposure to the breadth of opportunities available. Careers advice is inconsistent and often poorly aligned with the needs of local employers, and many businesses are unaware of the training provision that does exist. There is also poor coordination between businesses, creating repetition and duplication of activities, or failure to assess true demand for skills and development.



The need for greater foresight, clarity and coordination

There is a need for stronger foresighting - identifying future skills needs five to ten years ahead. National bodies such as Innovate UK, and its centres of expertise including the MTC the Catapults, already generate valuable intelligence, yet regions frequently start from scratch. Leveraging existing insights would speed up planning and reduce duplication. Nevertheless, the pace of change is such that it can be difficult to forecast effectively, so the skills system needs to be more nimble, with greater engagement between employers and skills providers.

The policy landscape was described as fragmented, with overlapping initiatives and short-term programmes creating churn and uncertainty. Businesses want clarity on the long-term plan: what the region is prioritising, how interventions will be coordinated, and how employers can meaningfully plug in.

Towards a more agile, inclusive and demand-led system

Several priorities for change emerged:

1. **A more flexible and responsive skills ecosystem**
Training must adapt far more quickly to industry need. Modular learning, micro-credentials, short cycles and stackable qualifications can provide the agility required for people at every career stage - from new entrants to mid-career workers transitioning into new fields.

2. **True lifelong learning as the default**
As technological change accelerates, people will move between roles, specialisms and careers more often. Systems must support easy re-entry into training throughout life, without punitive financial barriers or rigid qualification structures.

3. **Deep, early and sustained employer engagement**
Employers need a greater role in shaping content, delivering training, providing early exposure to industry and offering work experience and mentoring. Multi-mentor hubs could widen young people's networks and enhance their understanding of available pathways. Equally, early-stage companies, which frequently do not have the capacity or capability to engage with the skills system, need better incentives and support to encourage them to engage with the skills system and to invest in staff development, education and training.

4. **A coordinated regional approach**
Participants saw real value in creating a skills and talent intelligence hub - a central point bringing together future demand forecasts, training provision, opportunities, gaps and best practice. This could streamline employer engagement, reduce outreach fatigue in schools and help align interventions across the entire corridor.

5. **Inclusivity and infrastructure as core principles**
Housing, transport and childcare are not peripheral issues - they are foundational enablers of workforce participation. The system must also better engage underrepresented groups and reduce structural barriers that prevent people from accessing training or jobs.

6. **Supporting both domestic and international talent**
While strengthening local pathways is vital, international expertise will remain essential - particularly in frontier science and technologies. Current visa constraints were widely viewed as a brake on growth and severely impacted the attractiveness of the UK as a place for talent to come and stay.

7. **Building retention alongside pipeline**
The aim is not only to train people but to create conditions for them to stay. Retention strategies - including career progression, reskilling routes and strong ecosystems anchored by leading firms - will be key to long-term success.

Conclusion

The discussions made one thing clear: the region needs a skills system that is faster, more flexible and more aligned to the realities of innovation-led growth. Businesses, educators and policymakers all share responsibility for shaping a system that supports scaling companies, inspires young people, removes barriers to participation and prepares the workforce for emerging industries we cannot yet fully define. By improving foresight, deepening collaboration, investing in lifelong learning and building the enabling infrastructure around talent, the region can create a future-ready skills ecosystem - one capable of powering sustainable growth, strengthening communities and ensuring that opportunity is accessible to all.

A shared skills mission for a thriving Growth Corridor

Across green industries, creative sectors and the technology ecosystem, one message is consistent: the region's future depends on a skills system that moves as fast as its ambition. The insights captured in these papers show industries converging around common needs - adaptability, lifelong learning, stronger foresight, and deeper collaboration between employers, educators and policymakers.

Each sector faces distinct pressures, yet all are being reshaped by rapid innovation, shifting career pathways and rising demand for hybrid capabilities. Whether accelerating the transition to net zero, unlocking the potential of the creative economy, or enabling science and technology businesses to scale, the opportunities are significant - but only if the right foundations are in place. As highlighted throughout the papers, barriers such as fragmented provision, slow qualification cycles, limited access, and uneven engagement with young people risk constraining future growth. Addressing these challenges requires a system that is more agile, more inclusive, and more closely aligned to real-time industry needs.

What emerges is a shared call to action: to build a coherent, region-wide approach to skills and talent - one that blends intelligence gathering, early exposure to careers, flexible training pathways, new forms of employer engagement and the infrastructure that enables participation. The proposed Opportunities Hub model, referenced across all three themes, demonstrates how the region can coordinate insight, support learners and businesses, and accelerate innovation in training systems.

This work marks an important step in shaping a future-ready talent ecosystem for the Oxford to Cambridge Growth Corridor. Realising its full potential will require sustained partnership and a commitment to experimentation, learning and continuous improvement.

The blueprint is not the conclusion - it is an invitation. An invitation to collaborate, to test new ideas, and to build a skills system capable of powering one of the UK's most dynamic and innovative regions.

The blueprint set out in this report is just the beginning. To ensure the Oxford to Cambridge Growth Corridor's success continues to lead in innovation, we invite organisations across the region to register their interest in ongoing discussions about skills and workforce development.

To stay connected or express interest in joining the Skills Commission: please sign up to our regular newsletter at **www.arcuniversities.co.uk**