



Cambridgeshire & Peterborough  
Local Skills Improvement Plan

Led by Cambridgeshire Chambers of Commerce



# Business-Education Translation Guides: **Green Skills**



Department  
for Education



Cambridgeshire  
Chambers of  
Commerce



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# Green Skills - what are they and why they are needed now?

The global push for net-zero emissions is driving big changes in the labour market. Digitisation and automation trends combined with the green economy transition will reshape jobs and skills in the near future. 1 in 3 workers in Cambridgeshire and Peterborough stand to be impacted. The UK government aims to create 2 million green jobs by 2030, requiring green skills in engineering, science, operations, and monitoring.



## 50%

higher per capita carbon emissions

in Cambridgeshire and Peterborough than the UK average in 2021 due to high emissions from land use, transport and farming.



## 20%

of UK engine and turbine manufacturing

happens in Cambridgeshire and the area ranks amongst the leaders in solar PV capacity.



## 144,500

people in 2023

in Cambridgeshire and Peterborough were employed in occupations significantly affected by greening.

## Cambridgeshire and Peterborough

boasts a strong base for a green economy with significant employment across several key sectors, and **opportunities for future growth**

# Green Skills - the policy context



## The UK has ambitious climate and related policy targets

Eliminate net carbon emissions by 2050, with interim goals for reduction.



## Recommendations of the Green Skills Jobs Taskforce Report 2021

Encourage investment in environmentally friendly positions and low-carbon activities.



## Net Zero Strategy: Build BackGreener 2021

Cut carbon emissions across all UK sectors. Create more green jobs through projects that hit net-zero emissions. Incentives for retraining into the low-carbon economy.



## Cambridgeshire and Peterborough Local Skills Improvement Plan (2023)

Build a shared understanding between employers and education providers of green skills, integrating them into provision and career guidance.

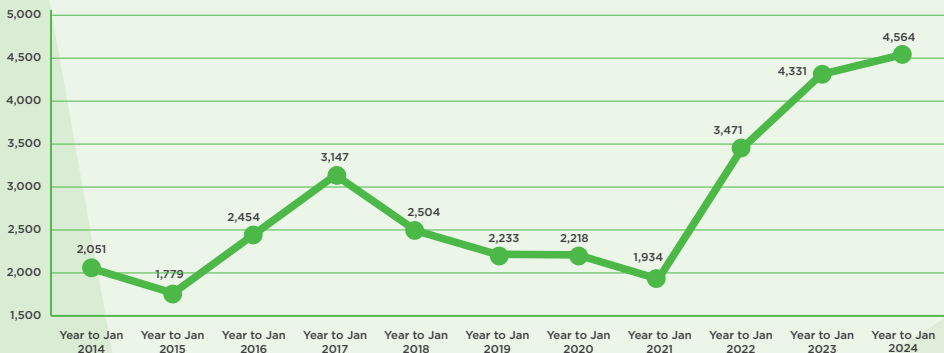
**UK and local strategies** for the economy, including Cambridgeshire and Peterborough’s Economic Growth Strategy, put **green skills and jobs at the top of funding priorities**

**Every job has the potential to be ‘greened’ and benefit from green skills as industries seek to adopt more sustainable practices**

Green Categories		Top 5 occupations in Cambridgeshire and Peterborough by volume
<b>‘Green increased demand’ occupations</b>	These occupations will likely see increased demand due to greening, though work and worker requirements will remain basically the same.	Programmers and Software development professionals
		Elementary storage occupations
		Biological scientists and biochemists
		Electricians and electrical fitters
		Natural and social science professionals not elsewhere classified
<b>‘Green enhanced skills’ occupations</b>	These occupations face major alterations, though core roles remain. Tasks, skills, knowledge and credentials now differ. This likely requires training and qualification changes.	Production managers and directors in manufacturing
		Plumbers and heating and ventilating engineers
		Large goods vehicle drivers
		Finance and investment analysts and advisers
		Marketing and sales directors
<b>‘Green new and emerging’ occupations</b>	These occupations require new skills due to green economy activities and technologies creating a need for unique work and workers.	Management consultants and business analysts
		Business and related associate professionals n.e.c.
		Engineering professionals n.e.c.
		IT business analysts, architects and systems designers
		Managers and directors in storage and warehousing

# Job postings requesting specialist green skills have more than doubled over the past five years

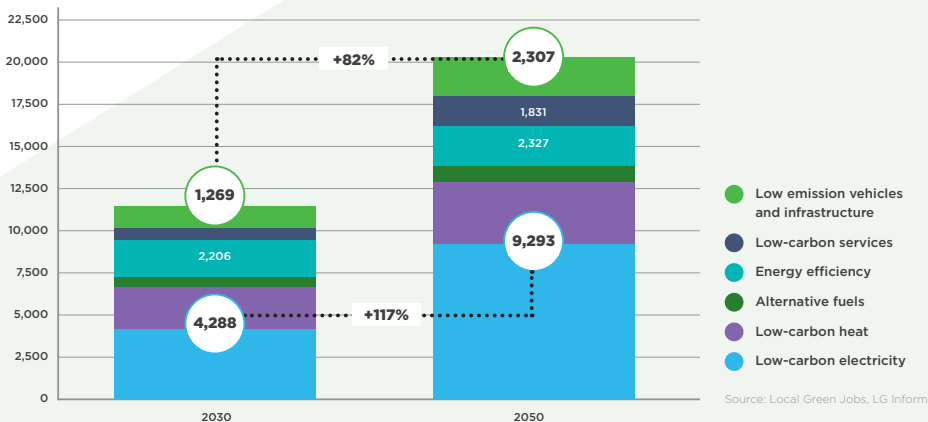
Job postings requesting green skills, Cambridgeshire and Peterborough



Source: Lightcast

# Supply of green jobs in Cambridgeshire and Peterborough

The drive for a more environmentally sustainable economy will directly deliver new types of jobs. Research finds that there could be 11,300 direct jobs in low-carbon sectors across Cambridgeshire and Peterborough by 2030, rising by 80% to 20,300 by 2050.



# The nature of the green skills gap in Cambridgeshire and Peterborough



## Rapidly evolving green technologies

Education providers and businesses struggle to keep pace with changing skill demands



## Shortage of STEM teachers

This constrains the development of a skilled workforce in crucial green applications



## Limited awareness of green careers

A lack of understanding about career opportunities within the green economy



## Narrow perception of green jobs

Misconceptions limit the appeal of green jobs to within a smaller-than-necessary range of the workforce



## Ageing workforce in key sectors

Retirement in sectors like construction and energy creates skill gaps that need to be filled



## Lack of workforce diversity

Green jobs are currently concentrated in specific demographics, hindering inclusivity

## Basic features of the formal education landscape as they relate to green skills

Feature	Apprenticeships	T Levels	Higher Technical Qualifications (HTQs)
Level of qualification	Intermediate (Level 2 and 3)	Intermediate (equivalent to Level 3)	Levels 4-5 (equivalent to higher education)
Focus	Job-specific skills and knowledge	Combination of vocational skills and broader knowledge	Specialised technical knowledge and professional skills
Delivery	Classroom learning and significant on-the-job experience (min 80%)	80% classroom learning, 20% industry placement (45 days)	Primarily classroom-based, may include work placements
Assessment	Combination of coursework, practical assessments, and employer evaluations	Exams, coursework, practical projects	Exams, coursework, assignments
Funding	Government and employer cofunding (via Apprenticeship Levy)	Government funding	Government funding, student loans

Apprenticeships and T Levels can provide pathways to relevant HTQs. Some green skills may be covered in all three qualifications, depending on the specific programmes. Apprenticeships offer the most on-the-job experience, while T Levels provide a balance between classroom learning and industry exposure. HTQs are typically pursued after completing an apprenticeship or gaining relevant work experience. T Levels offer a broader range of specialisms compared to the often highly specific focus of apprenticeships.

# Benefits of green skills partnerships between businesses and education providers



## Benefits for businesses

### Building a workforce optimised for the opportunities and challenges of net zero

- ▶ Get skills for the green transition. Work with education providers to help students gain the expertise the business needs
- ▶ Future-proof operations by collaborating on green skills training. Empower staff with knowledge for sustainable business practices
- ▶ Reduce environmental impact - equip staff with the skills to optimise resource efficiency and contribute to achieving the environmental goals of the business

### Fostering a culture of environmental sustainability

- ▶ Develop a green workforce through training programmes that increase awareness of environmental issues and teach skills for sustainable practices
- ▶ Offer green skills development to attract environmentally conscious job seekers

### Contributing to a greener future

- ▶ Show commitment to the environment through partnerships for green skills and a positive influence on community capacity for change

## Benefits for education providers

### Enhancing learner employability

- ▶ Develop industry-relevant courses by partnering with businesses to identify skills and knowledge employers require for green jobs
- ▶ Provide students with professional experience by partnering with employers on internships and practical projects working with green technologies and practices
- ▶ Provide targeted career guidance: access insights and expertise from businesses to align advice with latest green career trends

### Attracting funding and resources

- ▶ Collaborate to unlock funding for providing green skills to workers
- ▶ Gain access to cutting-edge technologies, equipment, and guest speakers from the business world
- ▶ Engage in joint research projects, fostering knowledge exchange and contributing to the development of innovative solutions for environmental challenges

### Staying ahead of the curve

- ▶ Develop future-proof course content by gaining insights into emerging green technologies, job roles, and curriculum needs
- ▶ Obtain valuable feedback on the effectiveness of green skills programmes, supporting continuous improvement and refinement of learning materials



# Four partnership models

**Work placements and internships**

**Industry guest lectures and workshops**

**Co-development of curricula and courses**

**Mentorship programmes**

## Work placements and internships

	Demands on participants	
Businesses	<b>Time and resource investment</b>	Allocating staff time to mentor and supervise placed learners and interns, providing necessary resources and equipment
	<b>Safety and security</b>	Ensuring a safe and secure work environment
	<b>Clear learning objectives</b>	Defining clear learning objectives and providing opportunities for skill development
Education providers	<b>Planning and coordination</b>	Developing internship placements, managing logistics, ensuring alignment with curriculum
	<b>Supervision</b>	Mentoring interns alongside business supervisors, assessing learning outcomes
	<b>Quality assurance</b>	Maintaining the quality of the internship experience for students
Learners	<b>Initiative and adaptability</b>	Actively seeking and engaging with assigned tasks, demonstrating a willingness to learn and adapt to a new work environment
	<b>Meeting performance expectations</b>	Delivering work to a professional standard and fulfilling assigned responsibilities
	<b>Building relationships</b>	Networking with professionals and colleagues, building communication and interpersonal skills

## Industry guest lectures and workshops

	Demands on participants	
Businesses	<b>Expertise and time commitment</b>	Providing industry professionals to deliver lectures or workshops, tailoring content to the educational setting
	<b>Clear communication</b>	Effectively communicating industry knowledge and insights in a way that is engaging and relevant to students
Education providers	<b>Coordination and logistics</b>	Arranging guest speakers, scheduling sessions, ensuring alignment with curriculum and student needs
	<b>Learning environment</b>	Providing appropriate venue and presentational resources to support guest lectures and workshops
Learners	<b>Active participation</b>	Attending sessions, actively engaging with guest speakers, asking questions, and participating in discussions
	<b>Critical thinking and analysis</b>	Applying the presented information to their existing knowledge and understanding the real-world context of digital skills

## Co-development of curricula and courses

Demands on participants		
Businesses	<b>Time and resource investment</b>	Committing staff time to collaborate with education providers aligning industry needs with curriculum development
	<b>Sharing industry expertise</b>	Providing insights into current skills requirements and emerging technologies
	<b>Clear communication of needs</b>	Clearly articulating the specific skills and knowledge needed by the industry
Education providers	<b>Curriculum development expertise</b>	Actively participating in curriculum development, adapting teaching methods to incorporate industry needs
	<b>Staying updated</b>	Ensuring curriculum reflects the latest industry trends and technological advancements
Learners	<b>Adaptability and openness</b>	Being receptive to changes in the curriculum based on business input, understanding the rationale behind industry-driven modifications
	<b>Engaging with business input</b>	Actively participating in discussions and providing feedback on the industry aligned curriculum

## Mentorship programmes

Demands on participants		
Businesses	<b>Time commitment</b>	Mentors dedicating time to regularly connect with mentees, providing guidance and support
	<b>Industry knowledge and expertise</b>	Mentors possessing relevant industry knowledge and experience to share with mentees
	<b>Communication and interpersonal skills</b>	Mentors effectively communicating with mentees, building rapport, and fostering a supportive relationship
Education providers	<b>Matching and facilitation</b>	Matching learners with suitable mentors based on their interests and career aspirations
	<b>Programme management</b>	Overseeing the mentorship programme, ensuring effective communication, coordination, and addressing any challenges
Learners	<b>Initiative and proactivity</b>	Actively seeking guidance and feedback from mentors, taking the initiative to ask questions and engage in discussions
	<b>Commitment and follow-through</b>	Regularly attending meetings, completing assigned tasks, and demonstrating a commitment to the mentorship programme
	<b>Building relationships</b>	Developing a strong working relationship with the mentor, effectively communicating needs and aspirations

# Principles for effective communication and collaboration between partners



# Principles for effective communication and collaboration between partners

Action	Principles for education providers	Principles for businesses
Identify contact points	Designate a team or individual responsible for liaising with businesses	Identify key decision-makers within the business regarding workforce development needs
	Participate in industry events and conferences to network with potential partners	Establish a clear point of contact for communication with education providers
Establish joint objectives	Conduct needs assessments to identify the specific skills required by local businesses	Clearly articulate the desired skills and competencies needed for the workforce
		Collaborate with education providers to define measurable learning outcomes
Set out clear roles and efficient communication channels	Develop a communication plan outlining preferred methods and frequency of interaction (e.g., meetings, reports, online platforms)	Establish clear procedures for communication within the business to ensure information reaches the relevant decision-makers
	Designate specific individuals responsible for project updates and information sharing	Allocate dedicated resources to facilitate communication and collaboration with education providers
Explore opportunities to work with peer network organisations and sector partners	Reach out to national and local business networks, trade and professional bodies, to connect with their leads for people and skills	Engage with industry leaders and professional bodies to gain insights into emerging workforce trends
	Collaborate with other education providers to share best practices and leverage combined resources	Partner with other businesses to approach education providers with joint propositions for courses and training



# Resources and support



## Funded Programmes / Services for Business

Programme and availability	National	Regional	Local	Other
British Business Bank	✓	✓	✓	
Government Business Support Helpline (UK Government)	✓			
Growth Hub		✓	✓	
Institute for Manufacturing (University of Cambridge)				✓
Knowledge Transfer Partnerships	✓			
Cambridge University Institute for Manufacturing				✓
Low Carbon Innovation Fund	✓			
The East of England Regional Growth Loan Scheme		✓		
UKRI (includes sector Research Councils, England, and Innovate UK)	✓			
Workplace Charging Scheme	✓			



## Membership Organisations Providing Networking/Peer Learning

Network	National	Regional	Local	Other
Cambridge CleanTech	✓	✓	✓	✓
Cambridge Network		✓	✓	✓
Cambridge Wireless		✓	✓	✓
Cambridgeshire Chambers of Commerce	✓	✓	✓	✓
Federation of Small Businesses	✓	✓	✓	
MakeUK	✓	✓		
Smart Manufacturing Alliance		✓	✓	





# Glossary

## Green technologies

Jargon	Education perspective	Business perspective
<b>Battery Technology</b>	Providing students with knowledge on the chemistry, performance characteristics, and environmental considerations of different battery types used in EVs and energy storage systems.	Staying informed on advancements in battery technology to optimise battery performance, lifespan, and recycling or second-life applications.
<b>Carbon Capture</b>	Training students on technologies that capture carbon dioxide emissions from various sources, such as power plants or industrial facilities.	Investing in carbon capture technologies to reduce the company's carbon footprint and contribute to achieving net zero goals.
<b>Carbon Storage</b>	Educating students on methods for storing captured carbon dioxide underground or in other geological formations.	Evaluating and selecting safe and effective methods for storing captured carbon dioxide to permanently remove it from the atmosphere.
<b>Charging Infrastructure</b>	Training students on different types of EV charging, charging speeds, and considerations for installing and managing charging stations.	Developing and managing charging infrastructure for EVs. This involves selecting the right charger types, considering grid capacity, and providing convenient charging options for customers or employees.
<b>Chemical Recycling</b>	Teaching students about chemical processes used to break down waste materials into their basic components for reintegration into new products.	Investing in or using chemical recycling technologies to recover materials that are difficult to mechanically recycle, such as mixed plastics.
<b>Electric Vehicles (EVs)</b>	Educating / training students on the functioning, environmental benefits, and charging infrastructure of electric vehicles.	Integrating electric vehicles into fleets or offering EV charging as a service. This involves evaluating suitability of EVs for specific needs, considering total cost of ownership, and investing in charging infrastructure.
<b>Mechanical Recycling</b>	Educating students on the process of physically breaking down and separating materials from waste streams for reuse.	Implementing mechanical recycling processes to recover valuable materials from waste streams, such as plastics, metals, and paper.
<b>Precision Agriculture</b>	Teaching students about technologies that use agricultural practices based on real-time data and site-specific conditions. This could involve sensors, data analytics, and automated farming equipment.	Implementing precision agriculture techniques to improve crop yields, reduce water and pesticide use, and enhance overall sustainability of agricultural operations.
<b>Regenerative Agriculture</b>	Educating students on practices that improve soil health, biodiversity, and carbon sequestration in agricultural systems. This could involve cover cropping, composting, and reduced tillage.	Adopting regenerative agriculture practices to improve soil health, reduce environmental impact, and potentially increase long-term profitability.
<b>Smart Grid Technology</b>	Teaching students about technologies that improve the efficiency, reliability, and sustainability of the electricity grid. This could involve distributed generation, demand response systems, and smart metering.	Implementing technologies that optimise energy delivery and grid management. This could involve integrating renewable energy sources, communicating with distributed energy resources, and providing real-time data for better decision making.
<b>Waste-to-Energy</b>	Providing students with information on technologies that convert waste materials into usable energy, such as electricity or heat.	Exploring waste-to-energy options for diverting waste from landfills and generating energy from a renewable source.

## Energy efficiency and sustainability

Jargon	Education perspective	Business perspective
<b>Building Retrofit</b>	Training students on methods for improving the energy efficiency and sustainability of existing buildings. This could involve insulation techniques, renewable energy integration, and smart building technologies.	Upgrading existing buildings to improve energy efficiency, reduce operational costs, and enhance occupant well-being. This could involve upgrading lighting and heating, ventilation, and air conditioning (HVAC) systems.
<b>Carbon Footprint</b>	Teaching students how to calculate and understand the impact of their activities on the environment, including emissions from transport, energy use, and consumption.	Measuring and reducing the greenhouse gas emissions generated by a business across its entire value chain, including direct emissions from operations, and indirect emissions from purchased goods and services.
<b>Circular Economy</b>	Instructing students on moving from a linear 'take-make-dispose' model to a circular model that prioritises resource efficiency, waste reduction, and product lifecycles. This could involve teaching about repair, reuse, and recycling strategies.	Shifting business practices to minimise waste and pollution. This involves designing products for longevity and reparability, sourcing recycled materials, and exploring product-as-a-service models.
<b>Green Infrastructure</b>	Educating / training students in the design and delivery of infrastructure that provides environmental benefits. This could include green roofs, rainwater harvesting systems, permeable pavements, and urban forests.	Developing and using infrastructure that provides ecological and environmental benefits alongside traditional functionalities. This could involve installing bioswales to manage stormwater, planting trees to reduce urban heat island effect, or creating green spaces to enhance biodiversity.
<b>Net Zero Transition</b>	Equipping learners with the knowledge and skills to develop solutions and strategies for reducing greenhouse gas emissions to achieve a balance between emissions produced and removed from the atmosphere. This could involve teaching about renewable energy technologies, energy efficiency measures, and sustainable practices.	Developing and implementing a roadmap to achieve net zero emissions. This involves analysing current emissions, investing in green technologies, implementing operational changes, and reporting progress.
<b>Sustainable Procurement</b>	Educating students on how to source goods and services ethically and with minimal environmental impact. This could involve considering factors like environmental certifications, lifecycle assessments, and responsible sourcing practices.	Integrating sustainability considerations into purchasing decisions. This involves prioritising suppliers with strong environmental practices, selecting products with lower environmental impact, and negotiating contracts that promote sustainability.

## Investment in a green future

Jargon	Education perspective	Business perspective
<b>Environmental Regulation and Policy</b>	Teaching students about laws, regulations, and policies related to environmental protection.	Staying informed on environmental regulations and policies to ensure compliance, manage environmental risks, and identify opportunities presented by policy changes.
<b>Green Finance</b>	Instructing students on financial products and services that support environmentally sustainable activities. This could involve green bonds, environmental impact investing, and climate finance.	Identifying and using green financing options to fund sustainable projects, reduce environmental impact, and potentially improve brand image and attract investors.
<b>Sustainable Supply Chain Management</b>	Educating students on integrating environmental and social responsibility considerations throughout the supply chain. This could involve supplier selection, material sourcing, logistics, and product lifecycles.	Implementing sustainable supply chain management practices to minimise environmental impact, improve transparency, manage risks, and potentially reduce costs.

## Environmental protection and restoration

Jargon	Education perspective	Business perspective
<b>Biodiversity</b>	Educating students on the variety of life on Earth, its importance for ecosystem health, and threats to biodiversity.	Understanding and minimising impacts on biodiversity through operations and supply chains.
<b>Environmental Monitoring</b>	Training students on methods and technologies used to measure environmental parameters such as air and water quality.	Conducting regular environmental monitoring to ensure compliance with regulations, identify potential environmental risks, and demonstrate environmental responsibility.
<b>Habitat Restoration</b>	Teaching students about techniques used to recreate or improve degraded habitats for plants and animals.	Engaging in habitat restoration projects to offset environmental impacts, improve ecosystem services, and potentially enhance brand reputation.
<b>Pollution Control</b>	Providing students with knowledge on different types of pollution, sources, health impacts, and control technologies.	Implementing pollution control measures to comply with regulations, minimize environmental impact, and protect employee and community health.
<b>Sustainable Waste Management</b>	Educating students on practices that reduce waste generation, encourage reuse and recycling, and divert waste from landfills.	Developing and implementing a comprehensive sustainable waste management plan. This could involve waste reduction initiatives, recycling programmes, and exploring waste-to-energy options.

## Approaches to learning

Jargon	Education perspective	Business perspective
<b>Blended Learning</b>	Combining traditional classroom learning with online components.	Providing a mix of instructor-led sessions and online resources for a well-rounded learning experience.
<b>Collaboration Tools</b>	Software applications that enable communication, document sharing, and project management within teams.	Facilitating teamwork, knowledge sharing, and efficient project completion.
<b>E-Learning</b>	Learning through online platforms with interactive modules, videos, and quizzes.	Offering flexible and self-paced learning opportunities for employees.
<b>Gamification</b>	Incorporating game mechanics (points, badges, leaderboards) into learning activities to increase engagement and motivation.	Making learning fun, interactive, and competitive, leading to improved knowledge acquisition.
<b>Mentoring</b>	Pairing experienced professionals with individuals seeking guidance and career development.	Facilitating knowledge transfer, providing support, and empowering employees to achieve their full potential.
<b>Micro-Learning</b>	Breaking down training content into short, focused modules for easier absorption and knowledge retention.	Delivering bite-sized learning content that can be easily integrated into busy schedules.

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