

Wakefield College

Green Curriculum Research Project

December 2022

think...



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1. Executive summary

The transition to a green economy characterised by improved resource efficiency, reduced emissions, and better protected biodiversity, is likely to be one of the landmark features of our economy and society over the coming decades. Ambitious targets for West Yorkshire and Wakefield to achieve net zero by 2038 set a more stretching goal for the area than the UK Government's statutory net zero by 2050 goal.

The implications of the transition to a green economy on the labour market has been the focus of much research and policy interest at the national level. In addition to this local, regional and national politicians have over recent years displayed a high level of interest in securing the benefits of green growth for people and places.

Wakefield College and Wakefield Council's Adult Education Service have significant roles to play in ensuring that local people are equipped with the skills that employers seek, enabling access to opportunity and supporting growth. This project, supported by the UK Community Renewal Fund, sought to establish an evidence based from which a 'green curriculum' can be developed by the two providers.

Initial work by the project team identified a series of national, regional and local plans and strategies, all of which emphasise the economic opportunity created by net zero and the wider green economy.

The project review of key data concluded that, though emissions in Wakefield are currently around 20% above the national average, the area is home to a mix of high emission employers for whom environmental considerations are a large and growing agenda. Sectors such as manufacturing, construction and transport employ a higher-than-average proportion of people in Wakefield, but they also offer fertile ground for making significant improvements in local environmental performance. Labour market data indicates that around 4% of advertised vacancies in Wakefield contain green skill requirements and that these jobs (commonly STEM occupations, especially in Wakefield's considerable manufacturing sector) are better paid than the average for the area.

A significant plan of employer engagement via interviews and an online survey yielded several key insights, such as:

- Customer expectations, government regulation, energy costs, and brand value were the key drivers of activity by employers to reduce their environmental impact.
- There appears to be a fairly low level of understanding among many employers about what sustainability and green practices mean for their organisation its workforce skills needs.
- The need for 'green skills' is far eclipsed by shortages of staff with 'core' skills.
- Employers are seeking a level of carbon literacy/knowledge from staff, but are happy to either teach or use short-courses to plug specialist green skills requirements as and when required.
- Interest in the environment among young people is not translating into demand for vacancies in occupations that will be at the forefront of the transition to a green economy, such as within manufacturing and construction.
- Policy and regulatory uncertainties hamper demand, with a need for regulators and political leaders to use financial and non-financial levers to help 'make the market' in areas such as residential retrofit, if anticipated demand for green skills is ever to materialise at scale.

Analysis and conclusions identified three key priorities and ten related recommendations, for implementation by the College, Council and its key partners. The priorities are:

- Improving employer understanding of, and engagement with, the workforce implications of the green economy.
- Adapting the curriculum offer to respond to green skills needs.
- Building capacity and providing system leadership.

2. Introduction

2.1 Background

In 2019 Wakefield Council declared a climate emergency, committing to become a net zero organisation by 2030 and for the wider area to reach the same target by 2038 at the latest. This requires Wakefield to transition to become a green economy, characterised by low carbon emissions, greater resource efficiency, and protected ecosystems and biodiversity.

Wakefield Council and Wakefield College have significant roles to play in supporting the growth of the local economy, while helping to ensure that more local people are able to share in the benefits of that growth. As part of Wakefield's response to climate change and other environmental issues, Wakefield College and Wakefield Council are seeking to develop a 'green curriculum' across their further education and adult education delivery – seeking to equip local people and employers with the skills needed to respond to demands generated by the green economy.

2.2 Requirement

In early 2022, Wakefield College and Wakefield Council published a project brief seeking consultancy support to help identify the skills needed to respond to the labour market challenges and opportunities created by the green economy. The project, supported by the UK Community Renewal Fund, set out the following key questions to be addressed:

- What are the short, medium, and long-term interventions, developments and activities required to achieve net-zero in the district by 2030?
- Which organisations can best deliver the above?
- What does business in Wakefield need to do to support net zero by 2030?
- What is the current state of play of Wakefield residents' skills in relation to the above?
- What are the skills required by College and Council staff to be able to deliver the necessary training to businesses and individuals?
- What equipment, facilities, resources, human capital will be required by the College and Council to be able to deliver a 'Green Curriculum'?

The project output is intended to better assist Wakefield College and Wakefield Council to plan changes to their curriculum offer to address the skills needs created by the green economy, particularly in relation to climate change and net zero. In doing so, Wakefield College and Wakefield Council are aiming for their delivery of education and training, and thus the skills of local people, to better enable employers of all types to respond to the opportunities and challenges of the green economy, helping to create a more resilient and productive Wakefield.

2.3 Definition

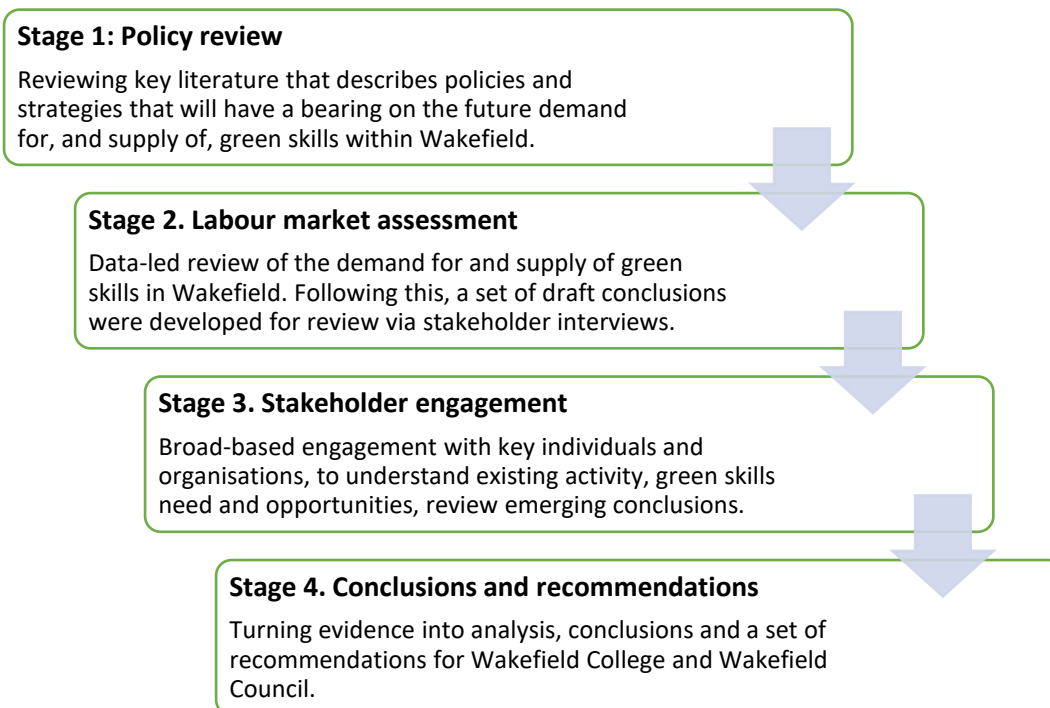
As the project's policy review (see section 3) highlights, several definitions of the 'green economy' have been used in prior studies and strategies. Broadly, these tend to describe the 'green economy' in a variety of ways, such as:

- Activities that focus on environmental protection, and/or the conserving/maintenance of natural resources;
- The production of renewable energy, energy efficient products and low emissions transport and infrastructure;
- Economic activity that reduces emissions, improves resource efficiency, assists ecosystems and protects biodiversity.

For the purposes of this project, a broad definition of the green economy was used when discussing its impact on workforce skills requirements. This meant consideration of specialist low carbon technologies, as well as the broader impact of environmental sustainability and green practices on every type of business. This decision was driven by a need to ensure wide engagement from employers in the project, while also permitting conclusions about the impact of the green economy on the curriculum offer to be felt beyond a narrow group of occupations which are likely to face significant change due to the emergence of new green skill requirements.

2.4 Summary method

A four stage project plan was established for delivering the project, the overall structure of which is summarised in the diagram below:



A proposal was submitted by the consultants in response to the above brief in late February 2022. A decision to award the contract was received in March. The bulk of project activity was undertaken between March 2022 and June 2022. The project was delivered by Think, a consultancy specialising in post-16 and post-18 education and training strategy and delivery.

3. Policy Review

A summary of key national, regional and local policy developments is outlined below.

3.1 National, regional and local policies

The green economy has been the focus of a series of national research, policy and strategy reports over recent years, supported by a high level of interest from national, regional and local politicians.

The project's literature review identified five key plans and strategies that, combined, outline the key features of the operating environment for green jobs and skills now and in future. These were:

The Ten Point Plan for a Green Industrial Revolution¹

Published by HM Government in November 2020, the Ten Point Plan was billed as *“the approach Government will take to build back better, support green jobs, and accelerate our path to net zero”*.

The Plan, led by the Department for Business, Energy and Industrial Strategy (BEIS) identifies ten key opportunities that the green industrial revolution creates for the UK economy, as follows:

1. Advancing Offshore Wind
2. Driving the Growth of Low Carbon Hydrogen
3. Delivering New and Advanced Nuclear Power
4. Accelerating the Shift to Zero Emission Vehicles
5. Green Public Transport, Cycling and Walking Point
6. Jet Zero and Green Ships
7. Greener Buildings
8. Investing in Carbon Capture, Usage and Storage
9. Protecting Our Natural Environment
10. Green Finance and Innovation

While clearly some of these opportunities are more relevant to Wakefield than others (offshore wind and nuclear power being concentrated in coastal locations), the plan describes how *“engineers, fitters, construction workers and many others”* will have a key role in using new science and technology to access market opportunities at home and abroad.

Net Zero Strategy: Build Back Greener²

Published in October 2021, the 386-page net zero strategy focused more clearly on green skills, built around the industries (eg power supply, heat and buildings, transport, natural resources etc) that will be key to the UK achieving its net zero target by 2050.

On skills, the strategy identifies four skills priorities:

- Making the skills system more responsive to the needs of employers so that providers, employers, and workers are incentivised and equipped to support the net zero transition;
- Enhancing support for workers in the high carbon economy to transition to green jobs;
- Ensuring people from all backgrounds can access opportunities in the green economy, including through career advice; and,

¹ See <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>

² See <https://www.gov.uk/government/publications/net-zero-strategy>

- Providing children and young people with the high-quality education and training they need to work in a future green career, through better teacher training and development in STEM and other key subjects, and expanding post-16 training in line with the needs of the green economy.

Green Jobs Taskforce³

Government's Green Jobs Taskforce report, published in 2021, provided an indication of the likely scale of demand for green jobs and skills in the UK economy. It concluded that:

- There are 410,000 jobs in low carbon businesses and supply chains in the UK (1.1% of all jobs)
- These businesses turn over an estimated £42.6bn annually, with exports of £7bn.
- 10% of jobs in the whole economy may experience demand growth through the transition to a green economy, however 10% jobs may also see a reduction in demand at the same time.

The Taskforce report made 15 recommendations across three themes: Driving investment in net zero to support good quality green jobs; building pathways to good careers; and a 'just transition' for workers in the high carbon economy.

West Yorkshire Climate and Environment Plan 2021-24⁴

West Yorkshire CA adopted a target to achieve net zero by 2038. Full deliver of its Climate and Environment Plan is consistent with achieving this target, with plans and activities set out across eight key themes – spanning areas such as homes, transport, business and industry, energy generation. The Plan also describes a series of green jobs and skills targets and interventions, some of which will be supported by the output from this research project, including:

- 1,000 well paid, skilled green jobs for young people.
- Identify skills shortages, gaps, and demand in workforce.
- Training programmes to address skills shortages and gaps and build the local skills base ready for the future.
- Careers and inspirational activities to ensure a future pipeline of talent.

Wakefield Climate Change Action Plan⁵

Wakefield Council has set a target to become carbon neutral by 2030. Its climate change action plan sets out five workstreams of activity to enable the council to achieve this, with a sixth theme (District-wide Net Zero) focused on supporting the wider community to reach net zero by 2038.

Interventions planned by the council include decarbonising the vehicle fleet, estate, facilities and energy supply; developing solar energy and battery farms; and to embed net zero into decision making.

3.2 Regulatory change

Changes in UK and international regulations will continue to play a key role in driving the responses of individuals, organisations and places to the challenges and opportunities presented by climate change and the environment.

The national, regional and local policies listed above contain numerous examples where regulatory measures are either in progress, or are being considered, as a mechanism to drive improvements (most notably in relation to the achievement of the UK's statutory Net Zero target date of 2050).

³ See <https://www.gov.uk/government/publications/green-jobs-taskforce-report>

⁴ See <https://www.westyorks-ca.gov.uk/media/7382/west-yorkshire-climate-and-environment-plan.pdf>

⁵ See <https://www.wakefield.gov.uk/localplan2020/wakefield-climate-change-action-plan-ccap.pdf>

Changes to regulation that are expected to have a particular bearing on employers in Wakefield include:

- Extended Producer Responsibility⁶ in for companies that handle or supply packaging to consumers or business, targeted on reducing packaging waste. Data collection responsibilities take effect from January 2023, with much broader responsibilities to ensure that packaging waste is being recycled taking effect for most firms from 2024. Wakefield has a concentration of packaging businesses, supporting the area's extensive food manufacturing industry.
- The Future Homes Standard⁷, which from 2025 will require that CO2 emissions produced by new homes are 75-80% lower than those built to current standards.
- A ban on the sale of new petrol and diesel cars from 2030⁸ (all new cars must be zero emissions from 2035).
- Government recently announced a new framework for reducing industrial emissions⁹, seeking to work with business and the devolved administrations to devise 'best available techniques' to reduce harmful emissions from industry.

3.3 Skills policy themes

Chronic policy and funding instability has been a defining feature of post-16 education and training over the past four decades, requiring providers to be ever-vigilant.

However since 2016, a number of consistent themes of Government skills policy have begun to emerge for further and higher education. In summary, these broadly centre on the following points:

- Upgrading the quality and status of technical education, via new T-levels at level 3 (an alternative to A-Levels), and Higher Technical Qualifications at levels 4 and 5.
- A more diverse higher education offer that delivers better graduate labour market outcomes
- Increasing the level of adult retraining to get more people into 'good jobs' (such as via the new Lifetime Skills Guarantee including entitlement to adult retraining via Skills Bootcamps and Level 3 courses; Lifelong Loan Entitlement, etc).
- The centrality of employers in setting skills priorities and investing public funds. For example, new Local Skills Improvement Plans will be developed by employer groups to set out key technical skills priorities within LEP areas, these much include net zero considerations.
- A focus on the 50% of young people who do not go to university, emphasising social mobility.
- Improving the financial resilience of colleges and strengthening the connection between their courses and local economic needs via new accountability mechanisms.
- Greater willingness to use state intervention to steer the market, rather than being driven by learner demand.

3.4 Summary: Policy Review

Over the past two years a series of strategies have been launched at the national, regional and local level that provide a framework for action focused on achieving net zero, while recognising the opportunities presented by green growth.

⁶ See <https://www.gov.uk/guidance/packaging-waste-prepare-for-extended-producer-responsibility>

⁷ See <https://www.gov.uk/government/consultations/the-future-homes-standard-changes-to-part-l-and-part-f-of-the-building-regulations-for-new-dwellings>

⁸ See <https://www.gov.uk/government/news/government-takes-historic-step-towards-net-zero-with-end-of-sale-of-new-petrol-and-diesel-cars-by-2030>

⁹ See <https://www.gov.uk/government/news/new-framework-announced-to-tackle-industrial-emissions-across-the-uk>

To a lesser degree, these same strategies provide some indication of the sectors and type of occupations that are likely to be at the forefront of the green economy now and in future. In sectoral terms the focus appears to be on energy, construction, engineering and transport.

At a national level, Government has a pivotal role to play as a promoter of the green economy and as a regulator, using statutory instruments to drive the behaviour of firms (such as via levies, tariffs, and other regulatory requirements). While WYCA and Wakefield Council lack such leverage, they have set stretching net zero targets (to be achieved by 2038, or 2030 in the case of the council).

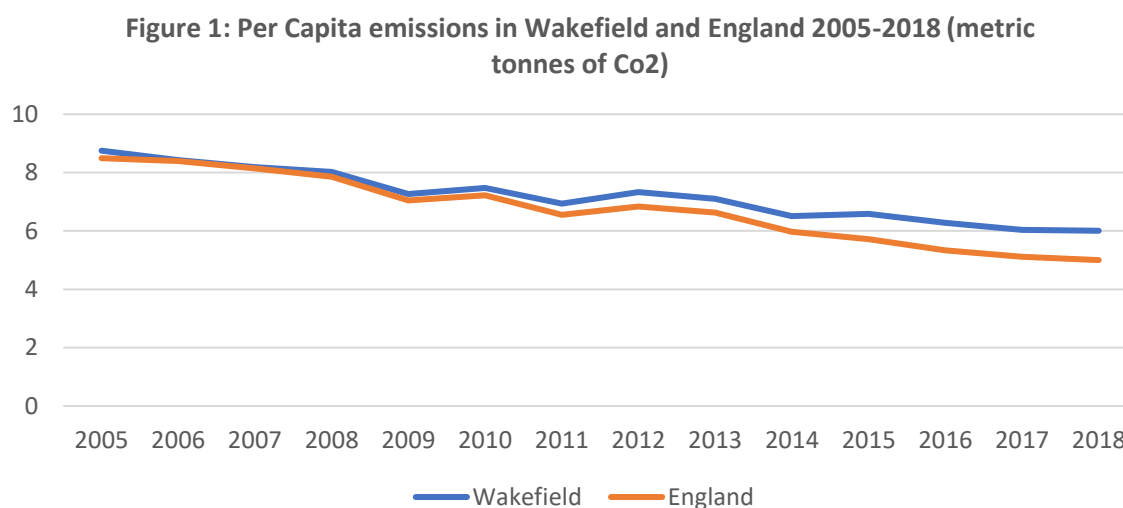
Meanwhile, reforms to post-16 and post-18 education and training are designed to create a more responsive, flexible skills provider market where the investment of public funds more closely reflects employer needs in the area, particularly in relation to net zero.

4. Data review

The project team undertook a desktop data review, to establish the key facts relating to the green economy and green skills needs in Wakefield, as follows:

4.1 Emissions and sectors

Per capita emissions of CO₂ within Wakefield have reduced in recent years, driven by falling emissions by industry and within domestic properties. Emissions arising from transport, which now account for around 35% of all emissions in Wakefield, have increased slightly over the same period.



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As the chart above shows, per capita emissions within Wakefield are around 20% higher than the England average. This is primarily due to two factors: First, emissions from motorways in Wakefield are well above average due to the area being crossed by the M1, M62 and the A1(M). Second, and more significantly, emissions resulting from industry and the use of commercial gas in Wakefield are about double the national average. This reflects a mix of industries located in Wakefield. The largest single emitters in Wakefield are, by a considerable margin, the Multi-Fuel 1 and Multi-Fuel 2 power stations at Ferrybridge (the latter came on stream in 2019).

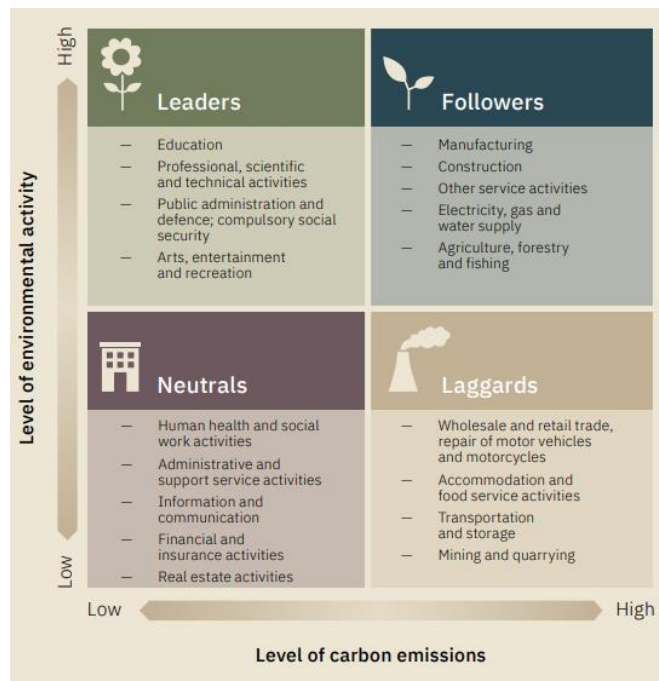
The sectoral mix of Wakefield's economy suggests it is a good place to examine the impact that environmental sustainability is having on employers and their workforce skill requirements. NESTA's Eco-Transformation of Industries Matrix helps us to categorise and understand sectors according to their level of emissions and level of environmental activity, as shown in the table below.

NESTA's view is that the most significant gains in reducing emissions are to be made in the group of sectors it classes as 'followers' – ie. significant in scale, with current high levels of emissions, but also a high level of environmental activity due to customer expectations, government regulation, and market competition.

The data on Wakefield emissions (see figure 1) already indicates that the district is home to a concentration of industries that have high emissions.

¹⁰ Source: UK local authority and regional carbon dioxide emissions national statistics: 2005-2018

Figure 2: The NESTA Eco-Transformation of Industries Matrix¹¹



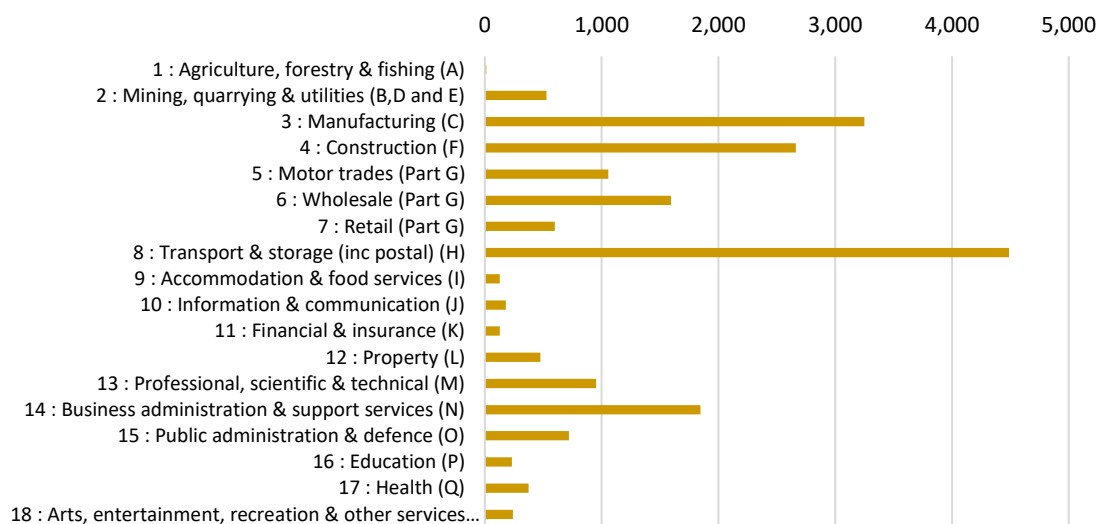
When we analysed the share of the Wakefield labour market that is taken by sectors classed by NESTA as ‘followers’, we found a higher-than-average concentration in Wakefield – 27.3% of all jobs in Wakefield are in ‘follower’ sectors (where NESTA argues the greatest potential gains in terms of emissions lie), compared to 23.7% for West Yorkshire and 21.6% for England as a whole.

Wakefield also has a concentration of jobs in sectors classed as ‘laggards’ by NESTA – 23.8%, compared to a West Yorkshire average of 15.8% and an England average of 18.2%. Again, this data supports the conclusion that Wakefield’s labour market contains a concentration of jobs in high-

emission industries.

Our research highlighted two other methods of projecting the likely impact of the transition to a green economy on Wakefield’s labour market. The Place-Based Climate Network (PCAN) provides model-based estimates of the number of jobs in an area that will require reskilling as a result of changes in our economy driven by environmental considerations.

Figure 3: Estimated number of jobs in Wakefield requiring reskilling



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¹¹ Source: https://media.nesta.org.uk/documents/Going_Green-Preparing_the_UK_workforce_to_the_transition_to_a_net_zero_economy.June.2020.pdf

¹² Source: <https://pcancities.org.uk/tracking-local-employment-green-economy-pcan-just-transition-jobs-tracker>

The PCAN model highlights three sectors that appear to be at the forefront of change as the shift to a green economy progresses – manufacturing, construction, and transport¹³.

The Office for National Statistics provides an estimate of the scale of labour demand in the Low Carbon and Renewable Energy Economy (LCREE)¹⁴. This is a relatively narrow sub-sector of the economy, focused on activities such as low carbon heat and electricity; energy from waste and biomass; low carbon advisory services; and low emission vehicles and infrastructure. Based on the ONS data, we estimate that around 1000 jobs in Wakefield currently sit within the LCREE (about 0.6% of all jobs), with the largest concentration in manufacturing (c500 jobs), construction (250 jobs) and electricity, gas, steam and air conditioning (around 100 jobs).

4.2 Green jobs and skills demand

We used Lightcast Analyst, an economic and workforce data system, to capture information about the demand for green jobs and skills among employers within Wakefield. This system uses 111 ‘green skills’ search terms to sift and analyse a vast database of vacancy adverts posted by employers on recruitment websites (a list of the search terms is available at Annex C).

Key facts from the Lightcast data include:

- There were 1174 unique job postings (around 4% of all job postings) in Wakefield that contained at least one green skills search term between April 2021 and January 2022.
- Jobs advertised containing green skills search terms carry a wage premium. 54% of jobs advertised seeking green skills offered annual salaries in excess of £30,000, compared to an average of 35% among all jobs in Wakefield.
- Jobs seeking green skills were distributed across Wakefield in broad alignment with existing concentrations of employment – there were no stand-out green skills ‘hotspots’, beyond existing key employment sites (such as central Wakefield, South Kirkby, Pontefract, M62 J31, etc)

The ten most-common occupations advertised in Wakefield seeking green skills are shown below:

Figure 4: Top occupations seeking green skills in Wakefield, April 2021 – January 2022¹⁵

Occupation	Number of unique job postings
Health and Safety Officers	68
Engineering Professionals n.e.c.	57
Civil Engineers	55
Elementary Storage Occupations	38
Managers and Proprietors in Other Services n.e.c.	36
Electrical Engineers	33
Large Goods Vehicle Drivers	33
Production Managers and Directors in Manufacturing	32
Business and Financial Project Management Professionals	31
Engineering Technicians	29

Manufacturing, construction and engineering roles all feature heavily. The unique job postings for LGV drivers relates to jobs being advertised by Renewi, a waste and recycling business.

¹³ ONS data highlights key subsectors in Wakefield including food manufacturing (5000 jobs) and related packaging industries (eg manufacturing of non-metallic mineral products (1750 jobs) and manufacture of fabricated metal products (1750 jobs)); as well as specialised construction activities (4500 jobs)

¹⁴ Source:

<https://www.ons.gov.uk/economy/environmentalaccounts/datasets/lowcarbonandrenewableenergyeconomyfirstestimate/dataset>

¹⁵ Source: Lightcast Analyst

Local employers whose job adverts most commonly featured green skills requirements were:

- Ardagh (packaging)
- Highways England
- NHS
- Renewi (waste and recycling)
- RSK UK (engineering and environmental consultancy)
- Stroma (building, environmental, and regulatory compliance consultancy)
- Wakefield Council
- Yorkshire Water

Lightcast Analysis identifies the key ‘hard’ (technical) and ‘soft’ (traits, attributes) required by jobs that included green skills requirements, summarised below:

Figure 5: Skills in demand in job postings that seek green skills

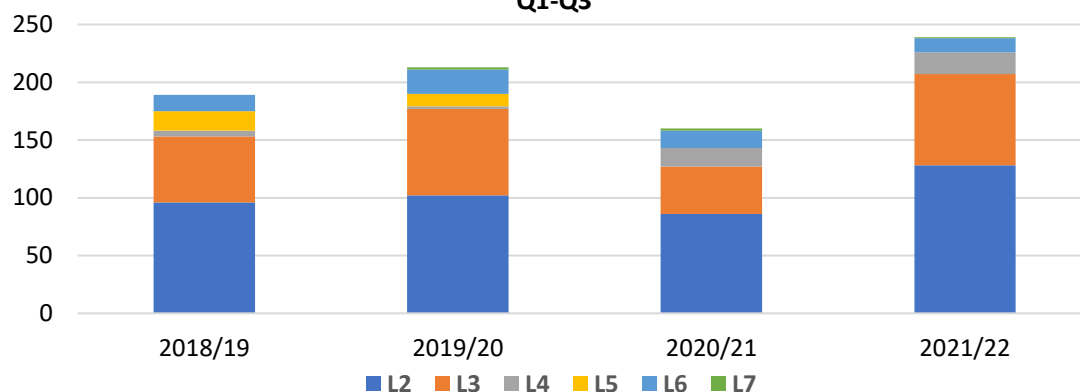
‘Hard’ Skill	Frequency in Postings	‘Soft’ Skill	Frequency in Postings
Environment Health And Safety	28%	Communications	43%
Auditing	15%	Management	42%
Risk Analysis	14%	Customer Service	20%
Key Performance Indicators (KPIs)	12%	Planning	17%
Sustainability	11%	Operations	16%
Construction	11%	Detail Oriented	14%
ISO 14000 Series	10%	Leadership	13%
ISO 9000 Series	10%	Innovation	11%

4.3 Green jobs and skills supply

DfE data provides some insight into the volume and distribution of training in occupations and sectors that are likely to be at the forefront of the transition to a green economy. The data does not allow a fine-grain analysis of education and training that is specifically focused on green skills. Nor is any data available showing participation in 16-19 study programmes by subject area, meaning no recent information is available about mainstream college-based delivery of 16-19 education and training.

Data on learning by Wakefield residents shows that Wakefield is home to a concentration of construction apprentices – Wakefield accounts for around 0.4% of all construction jobs in England, but its residents comprise around 0.9% of all construction apprenticeship starts in 2021/22. The number of construction apprenticeships in Wakefield is also increasing compared with the pandemic years and, significantly, pre-pandemic too (2018/19), as shown in the chart below:

Figure 6: Construction apprenticeship starts by Wakefield residents by level, Q1-Q3



The largest provider of apprenticeships to Wakefield residents is the Heart of Yorkshire Education Group (which includes Wakefield College), accounting for 89 starts (37% market share). Apprenticeships in carpentry and joinery (53 starts), bricklayer (34) and plumbing/domestic heating (28) are most popular.

Within engineering and manufacturing, the picture is less positive. The share of all-England apprenticeship starts in Wakefield matches the city's share of all-England manufacturing employment (0.8%). As with construction, Heart of Yorkshire Education Group is the largest provider with 100 starts, around 30% of the market share. Electrician (53 starts), light vehicle technician (28) and LGV driver (27) are the most popular apprenticeship standards.

Education and training delivery (excluding apprenticeships) to adults living in Wakefield is summarised in the table below.

Figure 7: FE and Skills (age 19+) learning by Wakefield residents, 2020/21

Sector (SSA tier 2)	Total FE and skills learning aim starts (19+) 2020/21	Most popular courses (starts)	Largest providers (starts)
Building and Construction	153	Health & Safety level 1 (47); Award in Construction Skills (14).	Leeds College of Building (48); Tec Partnership (47).
Engineering	95	Certificate in Lean Management Techniques (25); Diploma in Engineering Technology (17).	Wakefield College (17); Kirklees College (9).
Manufacturing Technologies	82	Non regulated L1 Manufacturing Technologies, 197 to 292 hrs (26); Award in Health and Safety Awareness (25).	Remit Group (28); Personal Track Safety (27); Tec Partnership (25).

4.4 Data review – Summary

- Wakefield's per capita CO2 emissions are above national benchmarks due to its mix of industrial activity and its proximity to the M1 / M62 / A1M.
- 'Followers' - construction, manufacturing, and transportation – are concentrated in Wakefield and are likely to generate green skills demand, primarily reskilling.
- Jobs requiring 'green skills' are better paid, suggesting higher qualification requirements and greater barriers to entry for the unemployed and young people.

- No specific data is available on ‘green skills’ training but within the key sectors, Heart of Yorkshire Education Group is in a good market position on apprenticeships, less so on 19+ FE and skills
- No detailed study programme data is available, though achievement rate data indicates annual cohorts of over 300 in construction, and engineering and manufacturing at Wakefield College in 2018/19 – suggesting substantial demand from young people to enter the sector.
- No data shows privately-funded training such as full-cost short courses

4.5 Emerging conclusions

Based on the findings of the policy review and data review, the project team developed a series of emerging conclusions about the nature of demand for green jobs and skills in Wakefield, and the potential implications for a ‘green’ curriculum offer from Wakefield College and Wakefield Council.

A workshop with Wakefield College and key local stakeholders in late March 2022 helped to refine these initial conclusions.

1. **The extent to which green skills is reshaping occupations will vary:**

- *Behaviour changes*: awareness and simple changes to working practices.
- *Adaptations to roles*: updating of skillsets to respond to new technologies / market demands.
- *Specialist skills*: significant changes to skillsets/new knowledge requiring in-depth training.

2. **Barriers to entry for unemployed and young people may be higher in jobs with green skills than in the wider labour market** because the roles appear predominantly to be better paid and require advanced/higher skills. It also means that the cohort generating the highest demand for green skills may be those who are already in work, earning good salaries (lowest priority for public investment in training).

3. **One of the best ways to enable local people – especially young people - to access the economic benefits of net zero is to enable more of them to enter key sectors and occupations** that are going to be at the forefront of the drive for net zero, such as within selected construction and engineering/manufacturing roles.

4. **Employers may be seeking more short course interventions for existing staff** to address their more immediate green skills needs. But currently public funding is mainly focused on training young people and the unemployed. Apprenticeships are well used in the key sectors (construction, manufacturing) and often for workforce development but have a minimum 12 month duration.

5. **Employer understanding of the extent to which net zero will impact on workforce requirements may vary** considerably by sector, and possibly by size of employer too.

6. **Work will be required to increase the capacity and capability of the college and council** to respond to green skills requirements; delivery collaborations with other specialist providers (and employers?) may be an option.

7. **For some employers, knowledge transfer about green skills requirements with the college will need to be two-way** (helping employers understand and plan for green skills).

8. Employer groups and networks could play a key role in leading the development of employer knowledge, reviewing curriculum changes by the college, and brigading demand for green skills to create viable cohorts for training.

9. Regulatory requirements will be a major driver of demand for green skills. This will vary considerably by sector but are likely to involve licenses to practice/certifications for firms and employees if they are to deliver to certain markets. The stop/start nature of some policy (eg residential retrofit) creates instability which makes skills planning difficult.

10. Adjustments to the labour market resulting from the transition to net zero will be positive (creating new career development opportunities) **and negative** (green technologies deskilling some occupations).

11. There is a system leadership role for Wakefield College and Wakefield Council in relation to net zero – exemplar behaviours in workforce development and recruitment in relation to green skills

5. Stakeholder feedback

Equipped with the key facts gathered via the review of key policies and relevant data (above), the project team undertook an extensive round of engagement with employers and other stakeholders, to review and revise the draft conclusions listed above, and gather further insight into the labour market opportunities and challenges emerging from the transition to a green economy in Wakefield.

5.1 Approach

An engagement plan was developed and agreed with Wakefield College, focused on engaging employers of all size. Personalised invitations were sent to 65 Wakefield employers and a further 20 other contacts (networks, council staff, WYCA, business support etc) seeking an interview.

In addition to this, we developed an online survey which was distributed to thousands of other employer contacts in Wakefield via email lists managed by the FSB, Wakefield College, Wakefield Council, CITB – our thanks to these organisations for their support. The project team sought to extend the reach of its evidence gathering via presentations to the We Are Wakefield SME network, and the West Yorkshire Learning Provider Network's Green Skills Group.

Over three months the team completed 19 interviews and received 27 survey responses. Interviews tended to be with mid-large employers in construction, manufacturing and public sector, conducted on a semi-structured basis along similar lines to the survey questions (which are listed at Annex B). Survey responses were from a wide range of employers from all sectors and of all sizes.

5.2 Survey feedback

Detailed survey results are available at Annex A of this report.

Employers responding to the survey highlighted three common reasons why the environment and climate change was an issue that required a response:

- The need to reduce energy and/or raw material costs (highlighted by 78% of respondents)
- Meeting customer expectations (67%)
- Maintaining or improving brand and reputation (63%)

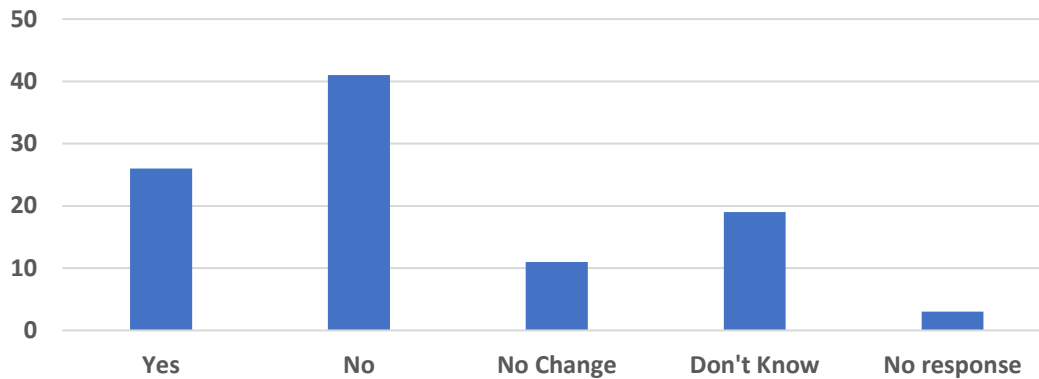
Other notable factors driving firms' approach to the green economy included improving efficiency and productivity, meeting supply chain expectations, accessing new markets, meeting investor expectations. Notably, a high proportion of respondents (59%) said that they were driven by a desire to make an impact on an issue they care about.

The most common changes highlighted by employers in responding to the green economy are:

- Sharing more information about a new product or service (44% of respondents)
- Using new technology and/or materials (37%)
- Offering more sustainable brands to consumers (33%).

One striking finding from the survey is that the largest number of respondents – many of whom who stated that this is an issue they want to make an impact on – do not think that changes in resulting from sustainability and green practices will make an impact on their organisation's workforce skills needs, as shown in the chart below.

Figure 8: Survey response - "Will these changes impact on your organisation's skill requirements?" (%)



There is a clear sense from the survey that many employers are unclear about how the shift to a green economy will impact on their workforce skills needs. For example:

- A limited range of occupations was identified by respondents as likely to be affected by sustainability and green practices – roles such as facilities management; building design; and finance roles (such as in relation to carbon accounting).
- Education and training demand arising from sustainability and green practices was identified by only a handful of survey respondents. Where training needs were highlighted, they tended to focus on short-course for specific qualifications (such as for ISO14001) and a desire for broader, awareness-raising programmes to promote understanding and carbon literacy among a wider workforce.
- Some respondents did identify the need to adapt apprenticeships and professional qualifications to respond to the needs generated by environmental sustainability.

5.3 Interview feedback

Feedback from interviewees mirrored many of the messages gathered via the survey. Key themes included:

Many employers are not clear on what the transition to a green economy means for them and therefore are uncertain about its implications for their workforce. This contributed to challenges securing employer feedback via interview and the survey. The project team are well used to engaging employers in conversations about skills and workforce development we found securing employer interviews on this topic more challenging than usual. Feedback from some interviewees suggested that this is the result of many employers being uncertain that their approach to the green economy is sufficiently well developed and thus do not want to risk exposing a lack of preparedness.

Notably, a survey by the Leeds City Region Manufacturing Growth Programme found that, out of all other topics facing management teams in the sector, 'Environmental' is the theme where disagreements between senior manager are most likely, and it is the topic where respondents are most likely to acknowledge that they have 'some way to go' in terms of company maturity.

Some of the interviewees we spoke with also noted that 2022 has been an extremely challenging year for many employers, particularly within manufacturing, where significant hikes in raw material, energy and labour costs, along with supply chain disruptions, have conspired to make sustainability a

relatively low priority. As one interviewee put it, many firms in the manufacturing sector are focused on survival, with little time or appetite for prioritise other matters.

Four main drivers for employer engagement with the green economy were identified by interviewees, as follows:

- Customer/investor expectations (such as from consumers in B2C employers, OEMs/supply chains within B2B employers, as well as Environmental/Social/Governance (ESG) considerations by major investors)
- Government regulation (such as on emissions reductions, and extended producer responsibility rules governing waste and packaging)
- Energy costs, which we assume have further escalated for most employers since the interviews were undertaken between April and June 2022.
- Enhancing brand and/or reputation, which was felt to be of particular importance among B2C employers.

We found minimal examples where employers have undertaken root-and-branch overhauls of strategy, operations and culture to reduce emissions and costs. Such decisions tend to be taken when regulators force a fundamental redesign of products, their production and use; a large customer/OEM incorporates emissions data into sourcing decisions; and/or when investors prioritise businesses with strong ESG performance. Some respondents described how environmental considerations remain something of an ‘add on’ to company strategy and operations, which are often dominated by short-term thinking.

While the changes described by many employers were far from superficial (and some employers may never need to make fundamental changes), we should expect more employers to make more far-reaching changes to adapt to the green economy in the coming years.

Even among those employers who foresee big changes, ‘green skills’ needs are eclipsed by the need for more, better quality staff with ‘core skills’. The employers we spoke with described significant challenges sourcing staff with relevant skills and that this issue had grown over the past 12 months. Most employers appeared to have limited appetite for green skills training; while some employers expressed a limited expectation that Wakefield College and Wakefield Council could (or should) provide specialist skills where these are required.

Instead, employers are seeking core skills within key STEM occupations alongside what sounded like a fairly basic level of carbon literacy from new recruits and existing staff. In the main, employers seem willing to teach any further green skills needs either on the job or, where required, via short courses (noting that such courses are often provided by the equipment manufacturer, where new technologies are concerned).

Employers can foresee that a level of green knowledge and skills will need embedding across a wider range of roles, encompassing technical and office-based staff, as technology develops and customer requirements change. Via surveys and interviews gathered feedback indicating that office-based roles - such as in finance, planning, procurement and legal teams – increasingly require understanding of environmental sustainability and its impact on company strategy and operations.

The NESTA taxonomy (whereby ‘followers’ appear to offer the greatest opportunity to reduce emissions) appears correct, but there is a much broader base of interest in green practices / sustainability across the whole economy. Employers of all size and in all sectors are either engaging with, or interested in, the impact the transition to a green economy will have on their business.

While the level of green skills requirement will vary by sector, carbon literacy and understanding what sustainability means for a business appear needed in every part of the economy.

Employee interest in the environment appears high and this can be harnessed to positive effect.

We heard limited evidence that staff activism is helping to drive employer responses to sustainability, but employers recognised that the potential for this exists. Training providers highlighted how, within some employers, apprentices have acted as ‘agents of change’ on environmental issues within their workplace, given low levels of knowledge about the green economy among employers.

Interest in the environment among young people is not translating into demand for job opportunities in occupations that will be at the forefront of the shift to a green economy.

Employers in manufacturing and construction regularly described concerns about declining levels of interest among young people in apprenticeship and other job opportunities within the occupations that are likely to play a pivotal role in enabling the shift to a low carbon economy.

Policy uncertainties continue to hamper the potential market, especially in construction. Within the sector, the likely requirements have been analysed and qualifications and occupational standards are now much better developed. Installer roles will require people with core electrician / HVAC / insulation / glazing etc skills. But several roles associated with retrofit activity (such as advisor, coordinator, assessor etc) are open to a broader range of project management, customer service, finance skills.

Though growth in demand for green skills in construction is anticipated, the market for green skills training remains relatively ‘stuck’, with feedback suggesting that work is still required to ‘make the market’ for low carbon technologies in construction. For example:

- The high initial outlay and disruption generated by retrofit activity is unappealing to homeowners and Government stimuli (eg Green Homes Grant) have been too stop/start to drive any sustained investment in workforce skills by employers.
- There will be no mandatory phase-out of gas boilers from existing homes and the cost of the alternatives are currently prohibitive for most people (especially at a time of high inflation), even when Boiler Upgrade Scheme grants and the high cost of fossil fuel energy is accounted for (according to one interviewee, *‘as it stands, Net Zero is not affordable for most householders’*).
- Lack of clarity about future social housing standards, which is hampering plans by registered providers to clarify investment requirement (though new housing standards should now mean that now new private home will require retrofitting...if built after 2025).

This, combined with the structure and culture of the sector (described by the 2016 Farmer Review¹⁶ as operating in ‘survivalist mode’) means that, aside from civil engineering and some tier 1 contractors, the bulk of the sector comprises small and micro businesses that are very busy and have little incentive (or sometimes, opportunity to) plan for the future.

¹⁶ See <https://www.constructionleadershipcouncil.co.uk/wp-content/uploads/2016/10/Farmer-Review.pdf>

6. Analysis and conclusions

Taken together, the above data, survey and interview feedback provides a solid evidence base to support Wakefield College and Wakefield Council as they develop a green curriculum that supports employers in the transition to a green economy.

The project team discussed the emerging evidence base at regular intervals with the client and key stakeholders to share emerging conclusions and discuss the implications.

Based on this, the table below summarises the conclusions based on the available evidence gathered via the project team, with supporting analysis providing the rationale. These conclusions provide the foundation for the recommendations that follow under section 7 of this report.

Conclusion	Summary analysis
<p>The evidence gathered to date is insufficient to support a significant investment by Wakefield College or Wakefield Council in new facilities</p>	<ul style="list-style-type: none"> • Too few employers are able to articulate their green skills requirements at this stage • Based on the evidence, it is difficult to be specific about the exact type, scale and timing of green skills needs in Wakefield. • Steps can be taken to de-risk investment by providers in developing green skills training and education – details of this are contained in the recommendations, below.
<p>Improving employer understanding of how to adopt more sustainable practices should be a local priority in the drive for net zero.</p>	<ul style="list-style-type: none"> • The UK is seeking to achieve net zero by 2050. In Wakefield and West Yorkshire, that target date is 2038 (2030 for Wakefield Council). These stretching targets for the district and region risk being missed unless action is taken quickly to reduce emissions. • However we have found relatively few employers who have a clear understanding of how their organisation could, or will, contribute to achieving net zero. • Within Wakefield, the College and Council have roles to play in helping to accelerate employer understanding of green skills, supported by WYCA.
<p>The change required to adapt to green skills needs within workplaces and occupations will vary considerably, and this should be reflected in the green curriculum offer from Wakefield College and Wakefield Council.</p>	<ul style="list-style-type: none"> • Notably, when discussing green skills, most employers articulate needs that can be described as knowledge and behaviours, rather than technical skills. This is not necessarily a problem, but it suggests that the level of understanding about green skills and practices is relatively low among workforces and that initially at least, work is required to ensure that staff and managers understand what sustainability, the green economy and net zero means for them. • Hence we suggest that the curriculum offer should be built around: <ul style="list-style-type: none"> ○ Behaviour change: Improving awareness and making simple changes to practice ○ Adaptations to roles, which typically require the updating of skills to respond to new technology and market demands ○ Specialist skills, required in a small number of occupations and settings, delivering significant changes to skills requiring in-depth training.
<p>Weak local interest in jobs that will be at the forefront of the transition to green economy represents a major risk to the</p>	<ul style="list-style-type: none"> • Employers frequently reported weak candidate interest in technical job vacancies, especially among young people. These opportunities lead to well paid work. More broadly,

<p>ability of Wakefield residents to access the benefits of green jobs and skills.</p>	<p>if there are shortages of people with core skills in key green economy occupations, this will result in the jobs created by investment in key developments (including retrofit) going to people who do not live in Wakefield.</p> <ul style="list-style-type: none"> • There are examples from other places where providers have successfully promoted courses (such as construction T-Levels) to learners based on the important role that such occupations will play in the green economy.
<p>The gap in knowledge on the part of employers provides an opportunity for Wakefield College, Wakefield Council and local learners to take the lead in building knowledge about the implications for workforce skills arising from the shift to a green economy.</p>	<ul style="list-style-type: none"> • Current skills policy orthodoxy appears to assume that employers know their workforce skills requirements, now and in future. This is true for many employers however we have not found this to be the case for many employers in relation to green skills. • Therefore we believe that a different sort of relationship is needed between providers and employers – whereby the flow of information and insight about green skills needs is two way, rather than simply from employer to provider. • This will require providers such as Wakefield College and Wakefield Council to grow a degree of expertise in relation to the green economy, such that they and their learners can help employers to better understand the skills challenges and opportunities emerging from the shift to a low carbon economy. This will create capacity and capability questions for providers, if such knowledge and experience does not already exist in-house.
<p>Delivery collaborations with other providers may be required to generate a viable green curriculum that responds to employers’ skills needs.</p>	<ul style="list-style-type: none"> • Though this study has focused solely on Wakefield, the geography of the local labour market (featuring significant cross-borough commuting flows) and the need to generate viable skills demand volumes from employers for programmes might require Wakefield College and Wakefield Council to collaborate with other providers over a wider area. • Different providers have different specialisms; a collaboration of providers can ensure that employers over a wider area are better able to access high quality education and training that meets their needs.
<p>There is a system leadership role for Wakefield College and Wakefield Council in relation to net zero, to act as exemplars for other organisations to follow</p>	<ul style="list-style-type: none"> • Wakefield College and Wakefield Council are among the largest employers and procurers of goods and services in the district, and thus have significant power to drive change within their organisations and their supply chains. • There is also a need for both organisations to act as exemplars – modelling the behaviours that they want other employers in the city to exhibit, embedding sustainability.
<p>Green skills sits within a broader shift in our economy where consumer choices, supply chain selections and investor decision-making are increasingly shaped by Environmental, Social and Governance (ESG) considerations.</p>	<ul style="list-style-type: none"> • There is a question about how Wakefield Council and Wakefield College may want to embed a green curriculum within a wider approach to economic growth in the city. • In this context, green skills is not just a question of how individual occupations in a sector may change – this is part of a wider picture that will define what it takes for an employer and a place to be competitive in future.

7. Recommendations

The following tables set out a total of 10 recommendations that respond to the conclusions detailed in section 6, above. Recommendations have been grouped around three priorities, as follows

Priority 1: Improve employer understanding of, and engagement with, the workforce implications of the green economy

Recommendation	Rationale / detail	Partner involvement
<p>1. <u>Large-scale</u> investment in developing and delivering a green curriculum should only be made in close partnership with a large employer or group of employers that can generate skills demand and/or influence its supply chain.</p>	<p>Many employers appear unclear on what the transition to a green economy means for them. Even among those who have a fair degree of understanding, the timing of likely skills demand is often unclear.</p> <p>To avoid the risk of investing in low-demand courses, Wakefield College and Wakefield Council should seek to foster relationships with large employers (or groups of employers) that provide greater certainty of demand for green skills delivery.</p> <p>The Local Skills Improvement Plan provides an opportunity to build a sector-based demand-side infrastructure that can generate and brigade training demand for the college to respond to, bringing greater certainty to demand (and minimising the risk that all employers will want bespoke training).</p>	<p>Work with West and North Yorks Chamber (Local Skills Improvement Plan) to understand how green skills demand will be articulated and opportunities to brigade demand to create viable cohorts for training.</p>

<p>2. Work with West Yorkshire Combined Authority to identify other ways in which this emerging market can be further de-risked</p>	<p>This could include:</p> <ul style="list-style-type: none"> • Supporting capital investment where the business case for the college or council is clear. • Reducing the risk of Adult Education Budget funding clawback if courses are unfilled. • A focus on embedding green skills education and training requirements within social value clauses in public sector contracts 	<p>WYCA skills and employment team.</p>
<p>3. Knowledge transfer about green skills needs to be a two-way street between employers and colleges. Wakefield College and Council should:</p> <p>a. Develop a communications plan that shares more information and advice on green skills.</p> <p>b. Work with Chambers and other employer groups (eg We Are Wakefield) to create fora where the transition to a green economy can be discussed by employers</p>	<p>There is a role for FE to inform and develop employer demand, helping employers better understand what sustainability means for their business, and to plan workforce skills development accordingly. This could be supported by existing DfE Strategic Development Fund resources over the short term.</p> <p>A forum could be based on either existing sector groups, or via new LSIP-related demand-side infrastructure – the idea being to overcome employer reluctance to engage in discussions on green skills, because they are unsure they are doing the right thing (despite customer expectations).</p> <p>The College and Council should agree a plan of communications activity sharing insights and developments around green skills, to routinely put the issue on the radar of local employers.</p>	<p>With WYCA, Chambers, We Are Wakefield</p>

Priority 2: Adapt the curriculum offer to respond to green skills needs

Recommendation	Rationale / detail	Partner involvement
<p>4. Wakefield College and Wakefield Council’s curriculum offers should be calibrated to reflect the very variable levels of green skills need, broadly as follows:</p> <ul style="list-style-type: none"> • Broad-appeal learning programmes. • Targeted short-course activity • Potentially, limited number of more substantial learning programme 	<p>Broad-appeal, light touch learning programmes will help ensure that current and future staff and managers at all types of employers all sectors gain a basic understanding about what environmental sustainability means for their organisation and role (described by one employer as a ‘how to go green’ guide).</p> <p>Targeted short-course activity needs to be flexible and responsive to new market demands where gaps exist. Licences to practice and required standards (such as PAS 2035 in relation to retrofit) create ‘mandatory’ training requirements for workers, and may be a good place to start.</p> <p>More substantial learning programmes within selected occupations may be required, but these are thought to be small in number and may be best done in partnership with an HEI, given most jobs requiring long-term learning programmes typically have high skill requirements/barriers to entry.</p>	<p>Employers</p> <p>Other providers</p> <p>Higher Education</p> <p>Public commissioners/ procurers</p>
<p>5. Wakefield College and Wakefield Council should weave sustainability into the curriculum offer so that it becomes integral to the learner journey (as per British values, English and maths, etc)</p>	<p>Sustainability should be embedded into apprenticeships and study programmes to capitalise on learner interest, making use of case studies and practical activities focused on reducing environmental impact. In essence, providers should seek to ensure that basic carbon literacy and environmental awareness is an integral part of the knowledge, skills and behaviours that young people and adults learn from further education.</p> <p>This should apply across all curriculum areas and to all learners, such that environmental sustainability is accessible and translatable into any sector and occupation, though feedback highlighted this as especially important for leadership and management courses).</p>	
<p>6. Seek collaborations with other providers to help create a high quality, viable green skills</p>	<p>Though system incentives for FE providers encourage competition rather than collaboration, a collaborative approach could:</p>	<p>Other providers</p> <p>WYCA</p>

<p>curriculum offer than can benefit employers in Wakefield and nearby areas.</p>	<ul style="list-style-type: none"> • Offer WYCA a ‘system’ response they likely desire (rather than nugatory competition), in accordance with the intent of the recent Skills and Post-16 Education Act to review provision ‘in conjunction’ to meet local needs. • Allow providers to play to their sectoral specialisms over a wider geography. • Open up new markets especially where pathways to higher qualifications and professional occupations can be developed (T-levels?) . 	<p>Chamber (LSIP)</p>
<p>7. Work with employers and other providers to increase learner interest in the technical jobs that will be at the cutting edge of the green economy.</p>	<p>This should aim to ensure that more Wakefield residents benefit from the transition to the green economy. Activity should include:</p> <ul style="list-style-type: none"> • Work with WYCA (including the West Yorkshire Careers Service), CEC, local schools and the college’s existing learners to promote courses and occupations on their ‘green content’ and career potential, including T-levels • Work with local employers to increase learner interest in existing technician jobs, based on their position within green economy (employers will also be able to promote their CSR/ESG credentials) 	<p>WYCA, CEC, schools, employers, other colleges</p>

Priority 3: Build capacity and provide system leadership

Recommendation	Rationale / detail	Partner involvement
<p>8. Assess the capability and capacity gap at Wakefield College and Wakefield Council in relation to green skills education and training delivery</p>	<p>Once an outline curriculum plan is developed, an assessment is required of staff knowledge and capability, capital requirements, and other aspects such as marketing and communications.</p> <p>The extent of this need will be determined by the level of ambition for the green curriculum. Our advice is to tread carefully in terms of major investments (based on the evidence gathered via this project), but at the least Wakefield College and Wakefield Council should be embedding sustainability and green skills into staff CPD activity.</p>	

<p>9. Wakefield College and Wakefield Council to become exemplars in relation to green skills, setting a model for other organisations to follow</p>	<p>Subject to the level of current activity, a series of actions may be required to embed sustainability that goes beyond staff development, recruitment and training delivery, eg:</p> <ul style="list-style-type: none"> • Procurement and supply chain (including planning/social value for Wakefield Council) • Staff development in curriculum and non-curriculum roles • Engagement with learners on sustainability • Transparent environmental reporting (waste, recycling, emissions, biodiversity, etc) and associated management of performance • Reflect sustainability within corporate strategies and policies. <p>The AoC’s Green College Commitment provides a useful starting point for such activity.</p>	
<p>10. Wakefield College and Wakefield Council should work with WYCA/Growth Hub to plan how to make Wakefield an attractive place for inward investment by employers who are increasingly judged on their ESG performance.</p>	<p>The competitiveness of a place will increasingly be judged on its ability to perform against ESG metrics. With OEMs already embedding sustainability KPIs into their supply chain management, there is an opportunity for places to develop expertise sustainability that includes green skills, to improve the competitiveness of the place. Via this, greater commitment can be secured from local employers towards the need to ensure that staff have the skills required to manage a successful transition to a green economy.</p>	<p>WYCA Growth Hub</p>

8. Implementation

It is the responsibility of Wakefield College and Wakefield Council's Adult Education Service to work with employers to shape a proposed green curriculum building on the conclusions and recommendations of this report. However if demand for green skills is to grow, more needs to be done to help 'make the market' for training and education that improves the knowledge, skills and behaviours of local people and employers about the environment.

Wakefield College and Wakefield Council's Adult Education Service have limited leverage over the pace at which local employers respond to the challenges and opportunities presented by sustainability and green practices because the major drivers of employer behaviour sit outside of their control. Hence, we advise that the College and Council maintain active dialogue with WYCA, local Chambers and business groups – sharing progress updates in implementing this report's recommendations, communicating new insights, and (where appropriate) working together to lobby government to develop and clarify the expectations and regulatory levers which have such an important role in shaping employer strategies and behaviours towards the environment.

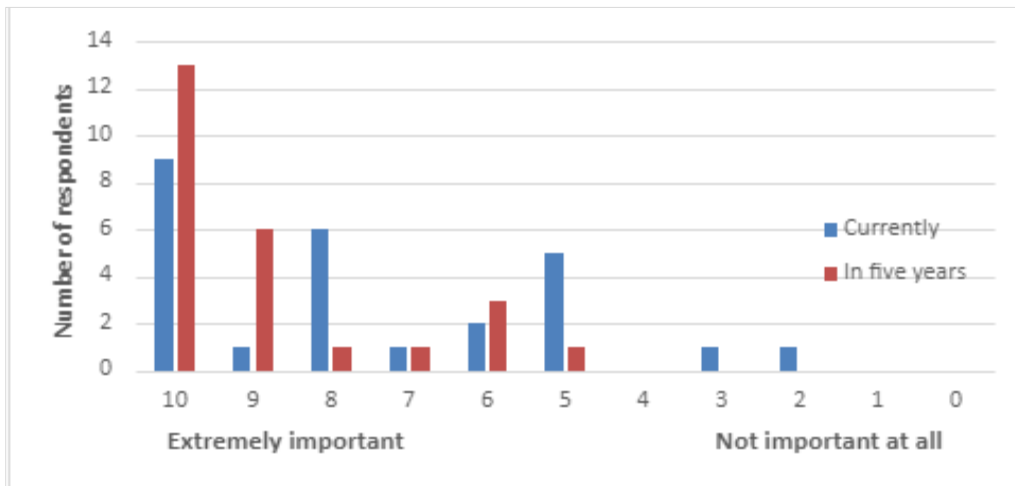
Only via such a partnership can employer interest in, and demand for, green skills be energised – helping businesses, their staff and Wakefield as a whole maximise the economic benefits of the transition to a green economy.

Annex A: Survey results

Total surveys completed: 27

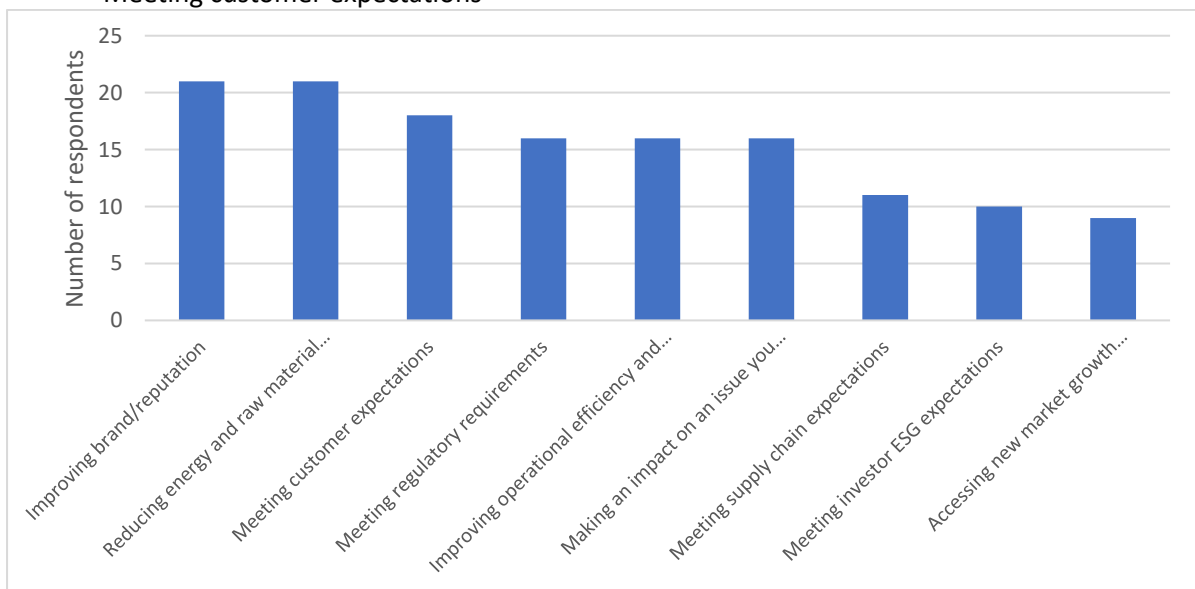
How important is sustainability and green practices to current and future strategy and operations (from 1 (extremely important) to 10 (not important at all))?

- Average score now: 7.6/10
- Average in five years: 8.3/10



What is driving your organisation's approach to sustainability and green practices?

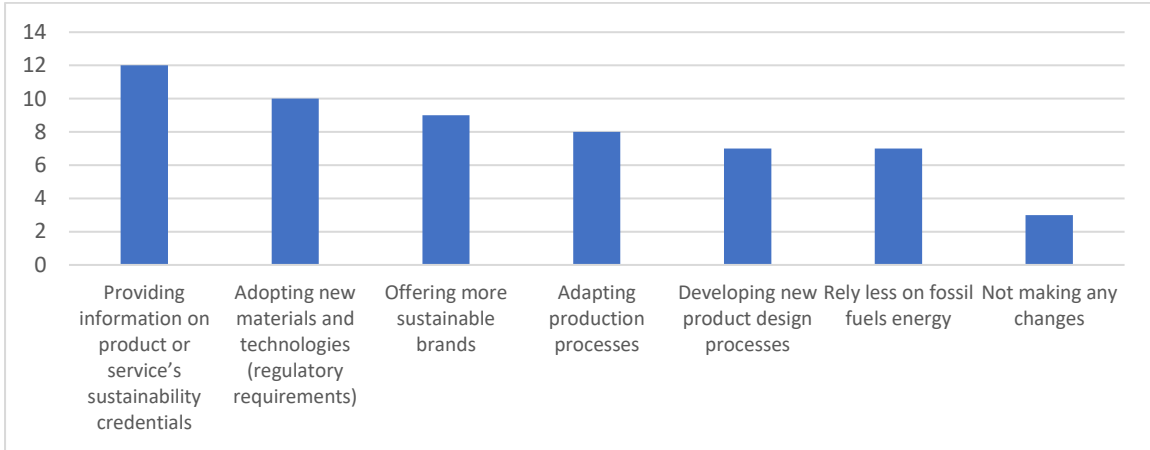
- Brand and reputation
- Reducing raw material and energy costs
- Meeting customer expectations



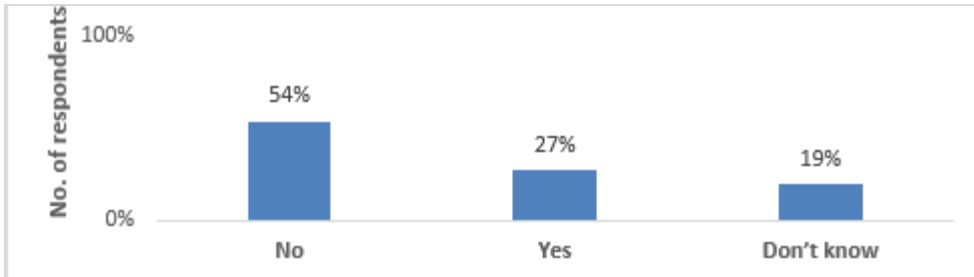
The types of changes being made in response to the above drivers

- Providing information about a product or service's sustainability credentials

- Adopting new materials and technologies
- Offering more sustainable brands



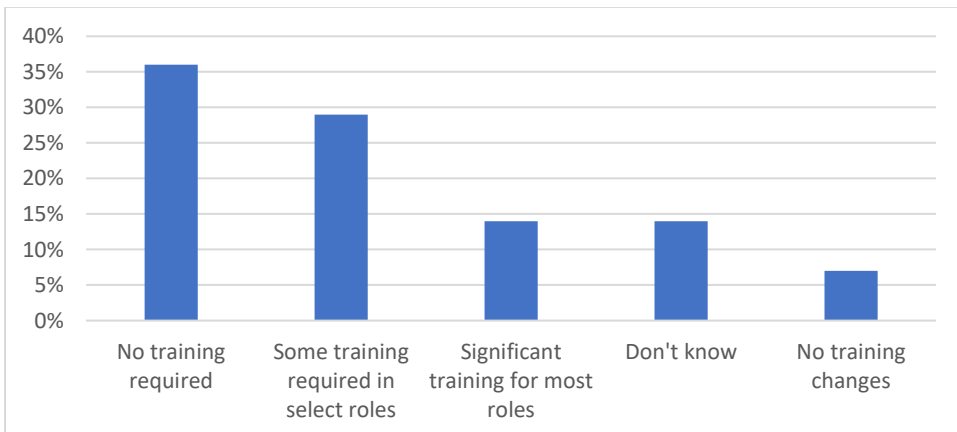
Will these changes impact on your organisation's workforce skills requirements?



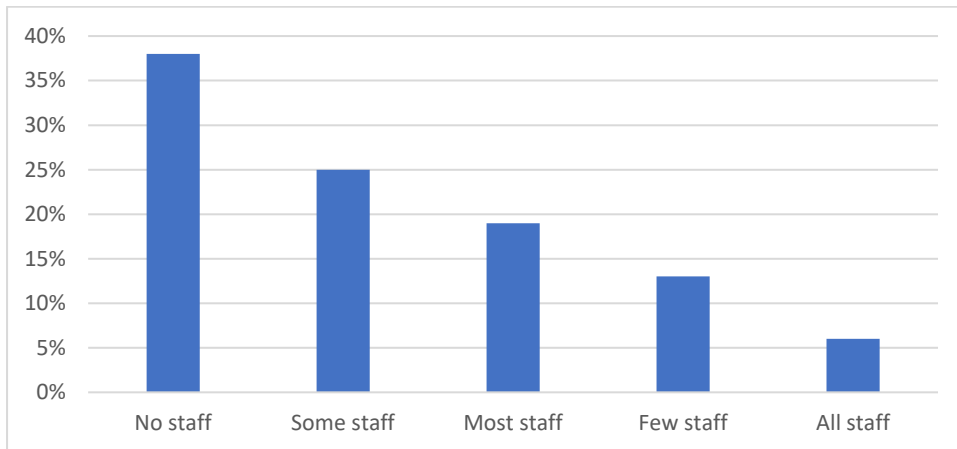
Key roles named by survey respondents as being impacted include:

- Technical designers
- Buyers
- Finance teams
- Marketing
- Facilities managers
- QHSE
- Quality department

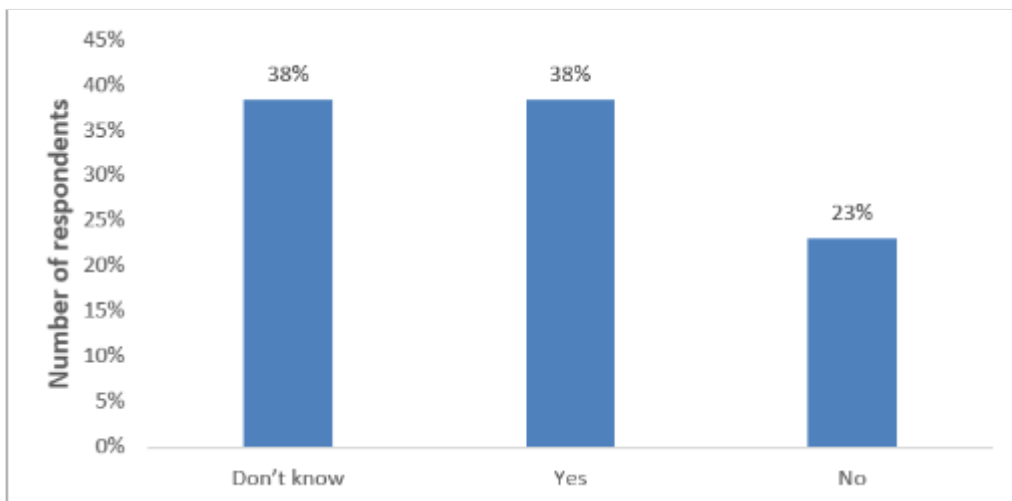
To what extent does your current workforce possess the skills needed to implement these changes successfully?



What proportion of staff are already trained to better embed sustainability/green practices into their work?



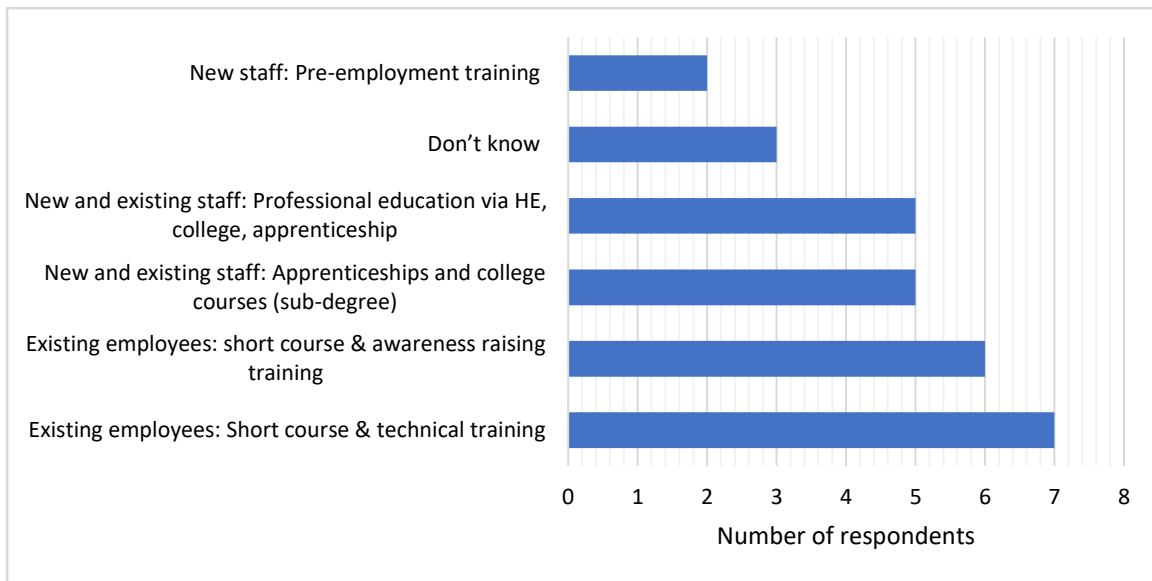
Are there any specific skills, qualifications, accreditations likely to be required over the next few years?



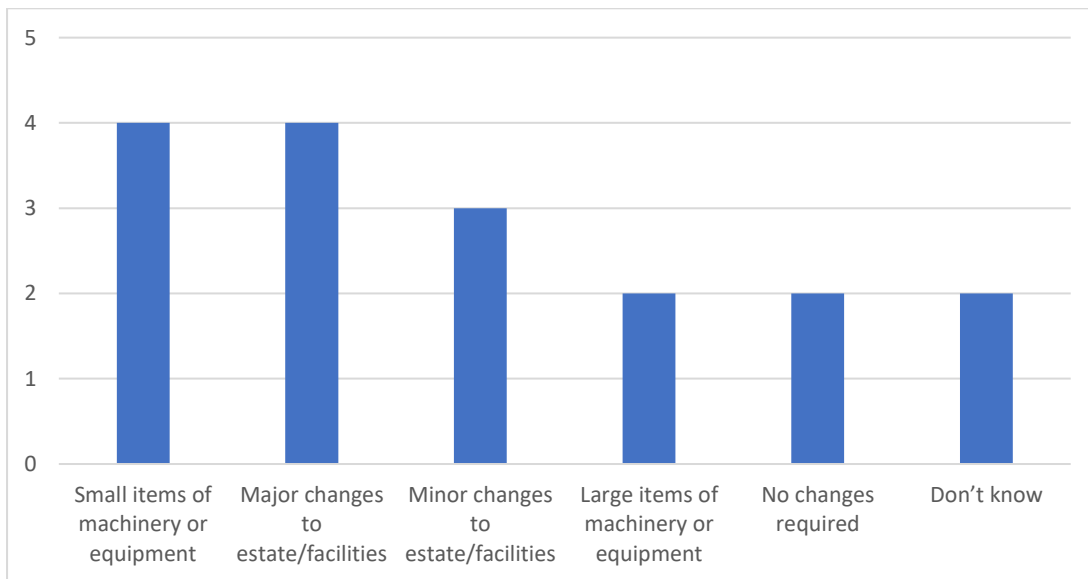
Examples cited by respondents include:

- Digital skills
- Energy efficiency
- ISO Audit training
- ISO14000
- ISO14001 and sustainability prediction
- Risk analysis

What type of training do you expect to be required?



The changes to estate required to become more sustainable



Annex B: Survey questions

1. **Which sector does your organisation operate within? (please select one)**

2. **On a scale of 1 (no importance at all) to 10 (extremely important), please indicate how important sustainability / green practices are to your organisation's current strategy and operations**

3. **On a scale of 1 (no importance at all) to 10 (extremely important), please indicate how important you expect sustainability / green practices to be to your organisation's future strategy and operations (next five years).**

4. **What is driving your organisation's approach to sustainability / green practices? (tick all that apply):**
 - a. Meeting customer expectations
 - b. Meeting supply chain expectations
 - c. Maintaining or improving your organisation's brand/reputation
 - d. Meeting existing or anticipated regulatory requirements
 - e. Improving operational efficiency and productivity
 - f. Reducing energy and raw material costs
 - g. Accessing new market growth opportunities via new products and services
 - h. Meeting investor expectations relating to environmental, social, governance factors
 - i. Making an impact on an issue you care about
 - j. The organisation does not have an approach to sustainability
 - k. Other (please state)

5. **Reflecting on your answer to question 4, please indicate what type of change your organisation is making in responding to these drivers**
 - a. We are developing new product design processes to minimise waste and energy consumption
 - b. We are adapting our production processes to minimise waste and energy consumption
 - c. We are changing our energy use to rely less on fossil fuels
 - d. We are adopting new materials and technologies that respond to regulatory requirements
 - e. We are offering more sustainable brands to our customers
 - f. We are providing more information to our customers about our product or service's sustainability credentials
 - g. We are not making any changes
 - h. Other (please state)

6. Will these changes impact on your organisation's workforce skill requirements and if so, within what type of roles?

- a. Yes (please state roles affected)
- b. No (please go to question 12)
- c. We are not making any changes
- d. Don't know

7. To what extent does your current workforce possess the skills required to implement these changes successfully? (please select one option)

- a. Our staff have all the skills required, no additional training needs
- b. Our staff have most of the required skills, limited additional training will be required
- c. Our staff have some of the required skills, but additional training is required within selected roles and departments
- d. Our staff have few of the required skills, significant additional training is required within most roles and departments
- e. Our staff are unable to implement these changes and required substantial retraining and upskilling to implement the expected changes.
- f. We are not making any changes
- g. Don't know

8. What proportion of staff have already received training to better embed sustainability / green skills into their work? (please select one option)

- a. All staff
- b. Most staff
- c. Some staff
- d. Few staff
- e. No staff
- f. Don't know

9. Where additional skill needs have been identified, what kind of training do you expect will be required? (please tick all that apply)

- a. Short course, technical training for existing employees
- b. Short course, awareness raising training for existing employees
- c. Targeted pre-employment training for new staff,
- d. Apprenticeships and college courses (below degree level) for new and existing staff
- e. Professional education for new and existing staff via universities, colleges, higher/degree apprenticeships.
- f. Other (please state)
- g. Don't know

Please give examples of the sort of training identified or already undertaken:

10. Are there specific skills, qualifications, accreditations and /or compliance training that your organisation is likely to seek in the next few years, relating to environmental sustainability?

- a. Yes (please state below)
- b. No
- c. Don't know

e.g. ISO 14001, PAS 2035, risk analysis, carbon accounting/pricing, etc

Please give examples of the sort of training identified or already undertaken:

11. What sort of equipment, machinery or changes to estate is your organisation likely to require (please tick all that apply)?

- a. Small items of machinery or equipment.
- b. Large items of machinery or equipment.
- c. Minor changes to estate/facilities.
- d. Major changes to estate/facilities.
- e. No equipment, machinery or changes to estate required.
- f. Don't know.

Please give examples of the sort of equipment, machinery or changes to estate likely to be required:

12. We would welcome the chance to hear more about the impact of sustainability on your organisation and its workforce. Please indicate whether you would like to join a focus group or discussion to explore this topic further.

- a) Yes, I would like to be involved in a focus group or other discussion
- b) No, I would not like to be involved in a focus group or other discussion.

13. Name:

Position:

Organisation/company name:

Companies House Registration Number (if applicable):

Charities Commission Number (if applicable):

Organisation/company address (inc. postcode)

Email address:

Thank you for completing this survey.

Annex C: Interviewees and survey respondents

Interviewees

Name	Job Title	Organisation
Lynne Allison	Customer Engagement Manager	CITB
Steve Batty	Head of Sustainability	Equans UK and Ireland
William Beer	Managing Director	Tunley Engineering
Gary Blenkinsop	Service Director: Environment, Streetscene and Climate Change	Wakefield Council
Jeremy Boye	Manufacturing Growth Manager, Leeds City Region	Manufacturing Growth Service
Caroline Davies	Head of HR Business Planning	Drax Group
Peter Duffy	Managing Director	Peter Duffy Civil Engineering
Mick Hamill	Regional Delivery Manager	CITB
Javed Khan	Investment and Enterprise Manager	Wakefield Council
Lorraine Kirbitson	General Training Officer	Promoting Construction West Yorkshire
Emma Link	Industry Analyst	CITB
Lucy McDonald	Economic Place Manager	Wakefield Council
David Masters	Group Managing Director	OE Electrics
Sonya Midgley	Head of Employment and Skills Policy	West Yorkshire Combined Authority
Alex Miles	Managing Director	West Yorkshire Learning Providers
Simeon Perry	Head of Operations	En:Able Communities CIO
Satpal Purba	Head of Estates	Mid-Yorkshire NHS Trust
Karl Rigg	General Manager, Works	SEW Eurodrive
Martyn Shaw	Executive Director	Wakefield District Housing
Jane Walton	Education Policy Chair	Federation of Small Businesses
Mel Wray	Inward Investment and Strategic Account Officer	Wakefield Council
Andy Young	Coordinator	Wakefield Manufacturing Forum

Survey respondents

Respondent	Organisation
Mark Atkins	Sewtec
Theresa Barrett	Greenkeeper Wakefield
Lindsay Bennett	National Trust
John Bowden	Keepmoat
Holly Buckley	Willmott Dixon
Arina Dubose	Knight's Fish and Chips
Jenny Felstead	Bluebird Care
Gill Hartley	Ebsford Environmental
Steven Helliwell	Orange Media
Mick Hinchcliffe	Printforms
John Austin Lee	The Yorkshire Handbag Company
Howard Lunn	LPA Lighting
Helen McDonald	Solupak
Tim Mee	Planet Platforms
Katie Miller	KateKierVA Solutions
Philip Pickard	West Riding Recruitment
Claire Thornton	Thornton Jones Solicitors
Darren Winter	Landsec
Jonathan Wensley	Beeit
Natty Zvimba	Ezimtech Distributors
Plus seven anonymous respondents	

Meeting attendance

In addition to regular meetings with the client, the project team also presented at the following meetings:

- West Yorkshire Learning Providers Green Skills Working Group, 13th May
- We Are Wakefield network meeting, 1st July
- Heart of Yorkshire Colleges Group Executive Management Team, 20th September
- WYCA Green Jobs Taskforce, 4th October
- Wakefield College employer event: Green Curriculum Research Findings, 2nd December.

Annex D: Lightcast Analyst 'Green Skills' search terms

Air Quality
Battery Pack
Biological Hazards
Biomass
Building Management Systems
Built Environment
Certified Energy Manager
Certified Hazardous Materials Manager
Climate Variability And Change
Conservation Biology
Conservation Planning
Conservation Science
Corporate Sustainability
Development Management
Earth Science
Ecological Restoration
Ecology
Energy Conservation
Energy Demand Management
Energy Policy
Energy Supply
Energy Technology
Environmental Auditing
Environmental Chemistry
Environmental Compliance
Environmental Consulting
Environmental Design
Environmental Economics
Environmental Education
Environmental Engineering
Environmental Health
Environmental Impact Assessments
Environmentalism
Environmental Issue
Environmental Laws
Environmental Management Systems
Environmental Mitigation
Environmental Monitoring
Environmental Planning
Environmental Reporting
Environmental Resource Management
Environmental Science
Environmental Studies
Environmental Tests
Environmental Toxicology
Environment Health And Safety
Environment Management
Field Surveys
Forestry
Geochemistry
Geographic Information Systems
Geography
Geology
Geotechnical Investigation
Green Building
Greenhouse Gas
Grid Connections
Groundwater
Hazardous Waste Operations And Emergency Response Standard (HAZWOPER)
High Voltage
Hydrogeology
Hydrology
ISO 14000 Series
Land Management
Land Tenure
Land Use
Liquefied Petroleum Gas
Marine Conservation
Materials Recovery Facility
NABCEP Certified Energy Practitioner
Occupational Hygiene
Occupational Safety And Health
OHSAS 18001 Standard
Passive Solar Building Design
Photovoltaic Systems
Planning Permission
Pollution Prevention
Recycling
Renewable Energy
Safety Culture
Sediment
Sewage Treatments
Soil Science
Solar Energy
Solar Systems
Surface Water
Sustainable Design
Sustainable Development
Thermal Modeling
Toxicology
Transfer Station
Turbines
Waste Collection
Waste Management
Wastewater
Water Consumption
Water Pumps

Water Quality
Water Resource Management
Water Services
Water Treatment
Water Wells
Wildlife Conservation
Wind Farming
Wind Power
Wind Turbines
Zoology