

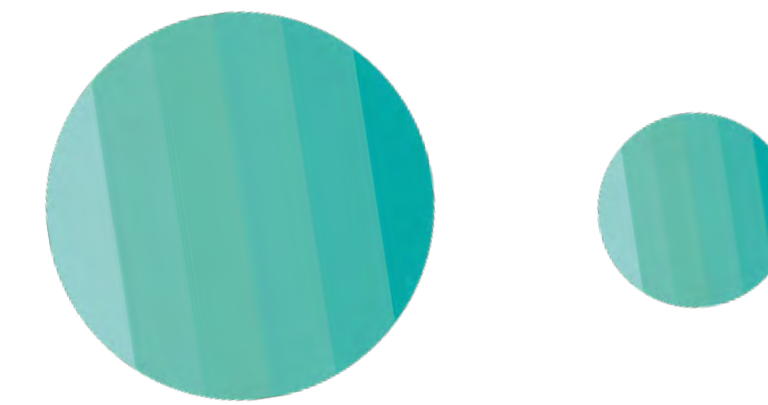
**Deloitte.**

**A blueprint**

for green workforce transformation

**IEMA** Transforming the world  
to sustainability





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The world faces a serious

**environmental crisis.**

**This crisis is more than just global warming.**

Declining biodiversity and a pressing need to reduce wastage in all aspects of our economy are equally threatening to human life on our planet.

# In response to the need for global action, the UK government has set out a plan to transform the UK economy so that it achieves net zero by 2050.

The plan calls for significant evolution of foundational parts of our industrial economy, entailing decarbonising the electricity grid and installing new national infrastructure to create and distribute future fuels such as hydrogen, biofuels and e-fuels. Essential sectors, such as food production, will experience system-wide changes right the way through from agricultural practices and land use to distribution, retail and consumption.

Organisations of all sizes will play a part in contributing to the UK government commitments to mitigate and repair environmental damage. Doing so while remaining economically viable will require different ways of operating, placing new demands on workers at all levels. Our research paints a picture of an accelerating drive to build this greener workforce across the UK economy. In preparing this report we have developed a set of insights intended to help organisations design their strategic green workforce transformation.

Our recommendations seek to accelerate your organisation's transition to the 'green' future. The report contains:

- case studies drawn from a wide range of organisations, showing how they have begun to adopt environmental sustainability into strategies and ways of working.
- an assessment of key blockers and corresponding enablers related to strategically embedding green skills and behaviours across an organisation. Each is mapped by organisational maturity and supported with case studies from featured organisations.
- key regional and national initiatives that stakeholders believe can assist workforce transformation in communities across the UK.

In addition, we have built a standalone toolkit for leaders to mobilise a green skills workforce transformation within organisations. It contains a maturity matrix to identify gaps and possible options to create change.

We know that eighty per cent of individuals who will be in the workforce in 2030 are already working today which means that now is the time to act to build their capabilities for the future.

**We hope you find our research useful and look forward to your feedback.**



**Matthew Guest, Partner**



**Daniel Grosvenor, Partner**



**Sarah Mukherjee, CEO, IEMA**





Definitions and

research methodology

## Definitions

As the UK transitions to a green economy, our understanding of what it means to be 'green' will undoubtedly evolve. The following are our working definitions and assumptions.

### Green skills

An umbrella term for the technical skills, knowledge, behaviours and capabilities required to tackle the environmental challenges we face and to unlock new opportunities for growth. Our definition for environmental challenges goes beyond achieving the UK government net zero decarbonisation ambitions to include a more holistic view. The three core environmental challenges that green skills span are:

- Nature and biodiversity
- Climate change and decarbonisation
- Waste and pollution reduction

### Green jobs

Specialist roles that focus on specific domains or initiatives dedicated to improving environmental outcomes for an organisation or for the economy.

### Green economy

A potential future state of the whole UK economy in which fundamental change in the way the economy functions, not unlike the first industrial revolution has taken place. Growth will continue to be the essential motif of our economy but its measurement will be more holistic, more consistently factoring in people and planet alongside profit. For example, we will quantify and value biodiversity as we quantify and value domestic production.

A series of predictions taken from our Futures We Want report<sup>1</sup> illustrates what a green economy in 2050 might be like. A world in which carbon emissions are captured and reused, where renewable energy is stored and used when its needed and where the UK's homes have moved to low carbon heating. Precise AI-driven farming and robotic weeding will produce more from less land, insects are a mainstream dietary protein source and food 'waste' is transformed into valuable medicine. There will be low energy city travel, from shared technology like driverless electric taxis to 'digital commuting' and a service-based sharing economy in areas as diverse as clothes and power tools.

To get us to this vision of 2050 will require us to change the way we work and live – every industry and every business will change. That means every job will change and we will need to learn new skills as we go. In fact, all of our jobs will be greener – not just those in specialised sustainability areas, but everyone will need to learn about sustainability and develop green skills relevant to their roles.

The faster we develop these new green skills, the faster we will be equipped to make the transition.

## Research methodology

In November 2021 the Institute of Environmental Management and Assessment (IEMA) and Deloitte engaged with public and private sector organisations to explore the barriers experienced in and potential enablers for the transition to green skills in the UK.

IEMA commissioned a survey of 178 senior sustainability professionals. Alongside this survey, 34 organisations were engaged through roundtables and interviews to discuss the current state of green skills in their organisation and how they see the transition to the green economy progressing. Deloitte and IEMA hosted two roundtable events – one with private sector and one with public sector professionals. In addition, we conducted a series of interviews with sustainability leaders (e.g. Heads of Sustainability) and other senior sustainability professionals from a

wide range of sectors such as energy, construction, retail, transport and health.

Deloitte also undertook analysis of LinkedIn and UK Office for National Statistics (ONS) data to examine trends in green skills uptake and green jobs demand in the UK market.

### LinkedIn data

Deloitte was granted access to LinkedIn Talent Pool Insights to analyse UK green jobs and green skills talent pools in 2020 to 2021 (the data analysed covered the year to November 2021). These talent pools were created by selecting keyword filters based on job titles and professional skills. The talent pools generated showed a number of trends across job roles, employers, industries, skills and location, as well as other variables. These insights have been represented in tables and graph in the report.

### ONS data

Deloitte analysed publicly available datasets on employment in the UK – accessed via the ONS 'NOMIS' website – to derive additional insights on the current state of green jobs across the UK. This included the Annual Population Survey on Employment by occupation (latest annual dataset available was the year to June 2021) and the annual Business Register and Employment Survey (latest annual dataset available was the year to December 2020).



# Introduction

Green skills are increasingly sought after with job searches for green skills seeing double digit growth.<sup>2</sup>

This is not just in sectors noticeably linked to heavy decarbonisation and energy transition. In fact, it appears that the fastest growing demand for green skills is in sectors such as luxury goods and internet technology. This could indicate that many organisations already recognise the competitive advantages that may result from early adoption of environmentally positive business models.

**Sustainability professionals increasingly influence business model decisions.**

Not only has there been an increase in demand for green skills, but these skills are also seen as more important with a trend towards elevating some sustainability professionals to executive positions. Sustainability professionals now need both subject matter knowledge, influencing and strategy skills to help make business model and organisational-level decisions.<sup>3</sup> This suggests the emergence of both highly specialist sustainability roles to solve technical problems and generalist sustainability roles that work across their organisation to ensure alignment and coherence.

**Over the next decade we predict a green workforce emerging in which every employee understands how sustainability can create economic value.**

Environmental sustainability will be business as usual for this workforce, just as digital is to the workforce of today. This workforce will need the skills to take advantage of this change. The blend of green skills adoption, coupled with an environmentally sustainable workforce culture will inspire new business models and creative strategies that deliver for people, planet and profit.

**A one-size-fits-all approach to workforce transformation will not be enough.**

Individuals and job families within an organisation will require a tailored combination of skills and behaviours to improve performance of their team and organisation in the 'green economy'. Our findings indicate that the application of green skills and knowledge in daily roles will be key to value realisation and that approaches will vary depending on the industry and key factors like emissions intensiveness.



*The biggest barrier is inertia. It is just about getting things to change for businesses quickly enough to deliver the outcomes we need."*

Adrian Barnes, Green Analytics,  
Green Investment Group,  
Macquarie Group

**Realigned incentives will be needed to persuade many current workers to develop green skills.**

Much of the workforce has been trained in organisations that are optimised to generate economic value with relatively little thought to broader impact on people or planet. Embedding a green culture and developing green skills will need strategies and initiatives that break established habits and practices. Through incentives, symbols and role modelling, clear signals can be sent to the workforce on how the organisation chooses to operate, which behaviours and practices are valued and rewarded and where employees have autonomy to create wider impact.

**The shift to a green economy will create jobs within new and emerging sectors.**

The emerging hydrogen sector will create 8-10,000 new jobs by 2030 and potentially up to 100,000 jobs by 2050.<sup>4</sup> Carbon capture and storage is a nascent green sector but one that has been highlighted as vital by the IPCC.<sup>5</sup> Building such an industry would require significant technical green capability to mobilise and scale. Both these sectors will require technical skills that may be in limited supply currently or sit in adjacent sectors. For example, project management skills used in oil and gas and engineering expertise all have great value to emerging green industries. Setting up these new and emerging sectors for success through early government commitments and education is seen as critical to enabling private sector organisations to have the confidence to invest in training their workforce.



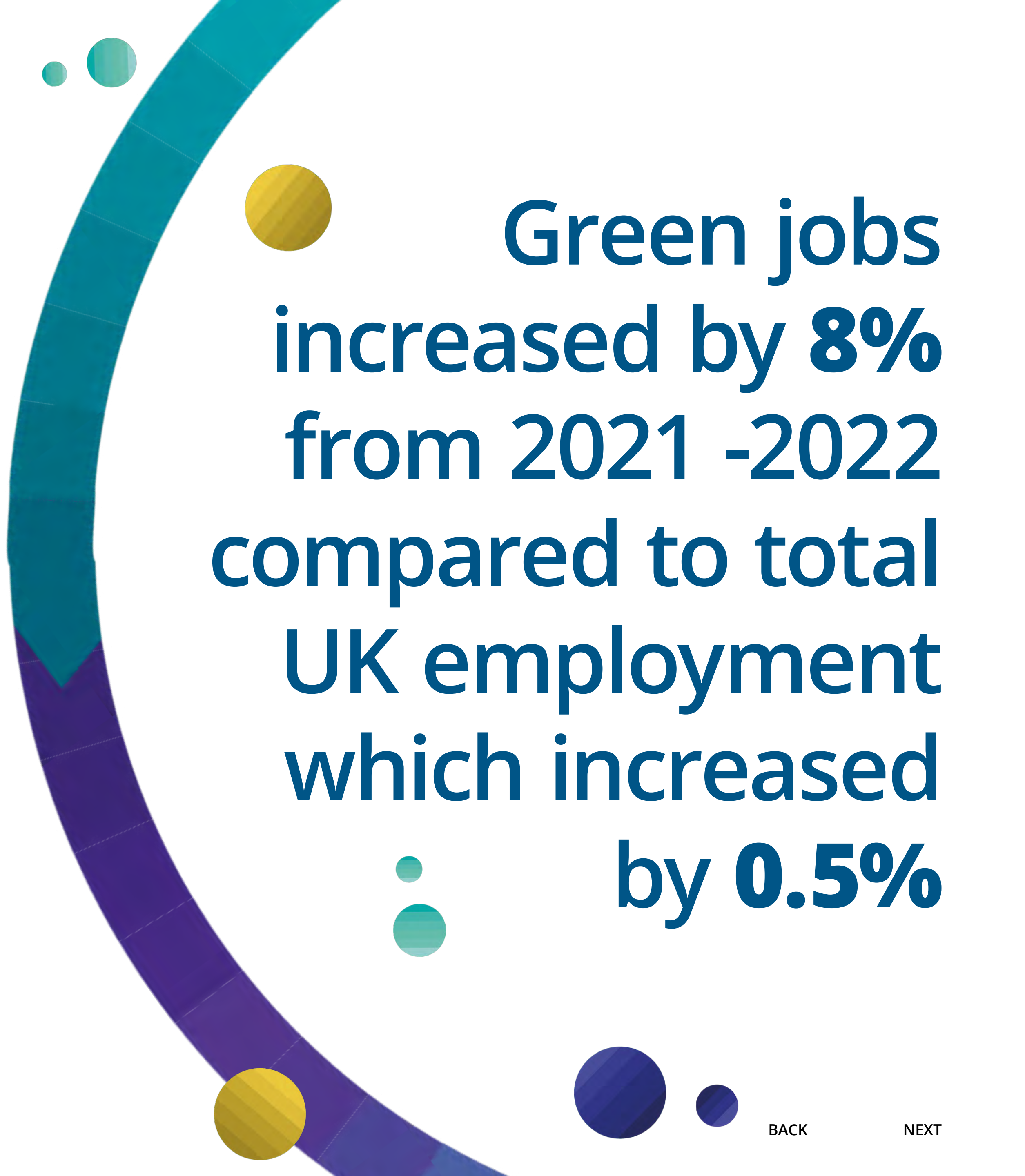
# Current state

The initial focus of our research was on understanding the present-day context of green skills and jobs across UK organisations, identifying workforce shifts, growth industries and skill gaps. This section lays out our findings.

Green jobs and skills have been in the national spotlight in recent years. The UK government has outlined its intention to drive the creation of two million green jobs by 2030 as a key enabler for both the UK's environmental agenda and regional levelling up initiatives.<sup>6</sup> Several reports have been published in support of this intention, including the Green Jobs Taskforce report, which directly examined the state of green jobs and skills in the UK economy and offered a roadmap to motivate action. Even so, the Environmental Audit Committee has since commented that government action to close the green skills gap is insufficient to fulfil the Net Zero Strategy's ambitions.<sup>7</sup>

Our research examined ONS and LinkedIn data, to uncover trends in demand and supply of green skills and jobs in the UK economy. Demand for candidates with green skills has seen a double-digit growth.<sup>8</sup> Analysis of LinkedIn data shows that the pool of professionals working in green jobs increased by 8 per cent in the past year, whereas total UK employment increased by only 0.5 per cent in the same period.<sup>9</sup>

LinkedIn data also suggests that green skills are becoming more widespread within workforces. The largest pools of employees with green skills in 2021 were within traditionally 'green' sectors of the economy, such as environmental services, construction and renewable energy, but the fastest growing pools of green skills were in the luxury goods, technology, finance, and health sciences sectors.<sup>10</sup>



**Green jobs increased by 8% from 2021 -2022 compared to total UK employment which increased by 0.5%**

**Top 5 industries for professionals with green skills, by talent pool size**

1. Environmental services
2. Construction
3. Higher education
4. Renewables and environment
5. Government administration

Source: Analysis of data from LinkedIn Talent Insights

**Top 5 industries for professionals with green skills, by percentage growth of talent pool (2020-1)**

1. Luxury goods and jewellery
2. Internet
3. Biotechnology
4. Apparel and fashion
5. Investment management

Source: Analysis of data from LinkedIn Talent Insights

Rapid growth in demand for green jobs and green skills in these sectors is evidence of growing demand in the wider economy. If demand increases at the pace shown in the data analysis, then the workforce for the green economy will have to grow rapidly if UK organisations are not to be starved of critical skills.

Despite a need for green skills (across nature, biodiversity, waste and pollution) to date the focus of green jobs creation has been on decarbonisation and climate change. In our roundtable discussions and interviews with sustainability professionals the view was expressed that climate change dominates what organisations regard as the priority concern. This view is supported by the findings of a survey of sustainability executives carried out by the Institute of Environmental Management and Assessment (IEMA). The survey found that whereas climate change is in many cases a strategic and operational priority, other environmental topics, such as biodiversity and waste reduction are given much less attention.<sup>11</sup> Climate change has been covered by the media (in the UK, Canada and USA) up to eight times more than biodiversity issues.<sup>12</sup> The Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report clearly identifies restoration of the natural world as a major enabler for adaption to and mitigation of climate change.<sup>13</sup> Moreover, wider environmental challenges cannot be ignored as they intrinsically impact our future prosperity.

In our interviews with sustainability executives, it was suggested to us that several barriers preventing the development of green skills and increases in green jobs were suggested. These include:

- a widely held perception that green jobs and skills are limited to niche academic topics such as ecology and environmental management, for which extensive technical knowledge is required.
- limited clarity on the career paths for sustainability professionals/those with green skills.
- a lack of understanding around the breadth of green jobs and applicability of green skills.

There is also a lack of workforce diversity in traditionally 'green' professions, especially within engineering which was seen by most interviewees as a key enabling sector for the green industrial revolution. According to a Green Jobs Taskforce report, only three per cent of environmental professionals are from ethnic minorities and only nine per cent of all engineers are women.<sup>14</sup>

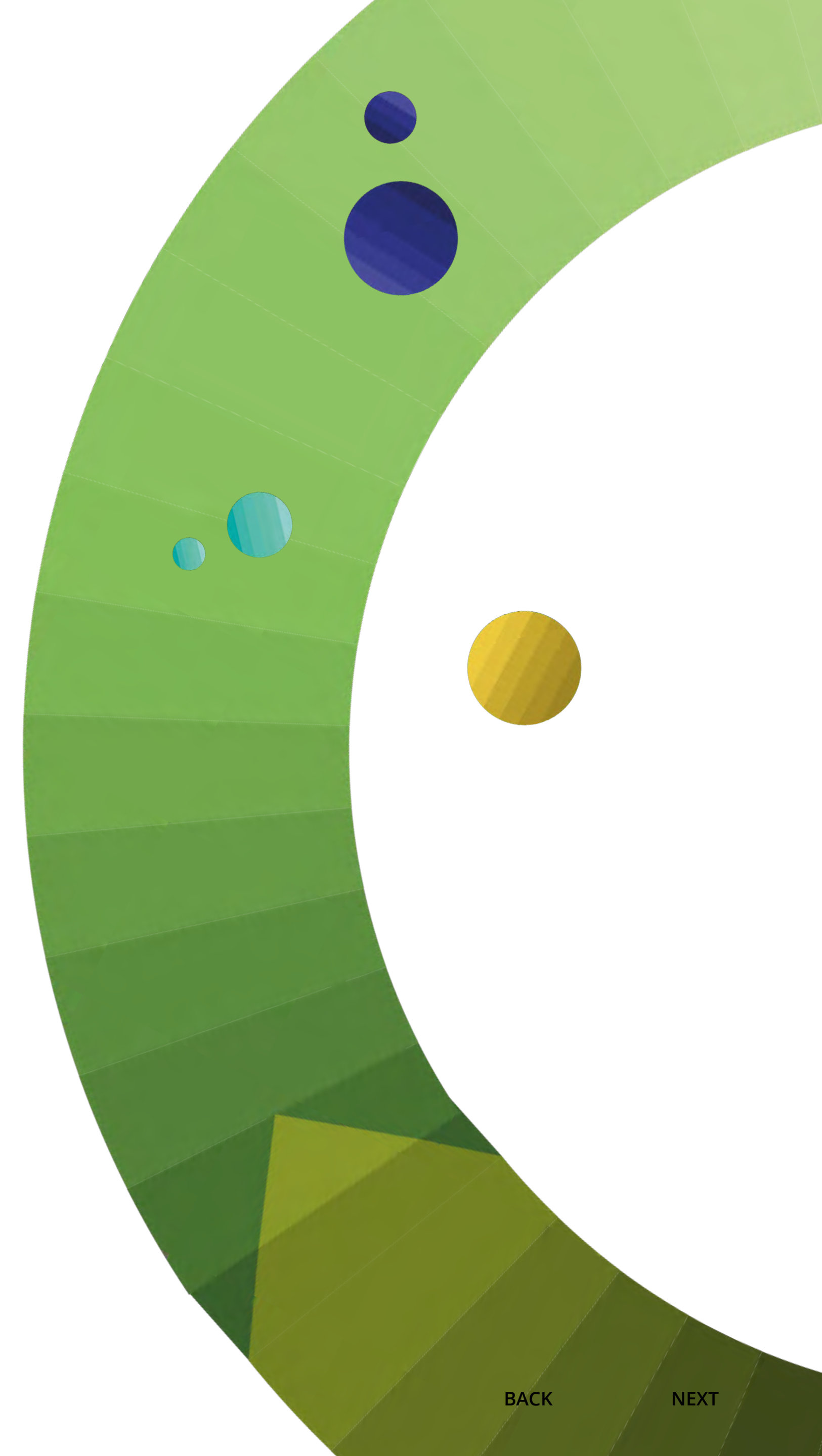
This and the barriers identified by those interviewed indicate that green jobs and skills are currently restricted to a specific segment of the workforce. However, our interviews and the Green Jobs Taskforce report state that by enabling greater diversity of thought to work on complex challenges, better solutions and outcomes could be delivered that benefit everyone in society.<sup>15</sup>

“*Rapid growth in demand for green jobs and green skills in these sectors is evidence of growing demand in the wider economy.*”

# Four shifts in the market for green jobs and green skills

We have identified four key shifts in the transition to green jobs and skills.

Figure 1. Four shifts in the market for green jobs and green skills<sup>16</sup>



### Shift 1: Expansion of skills and scope in existing specialist sustainability roles

As organisations seek to transition their business model for the green economy, greater responsibilities are likely to be placed in the short-to-medium term on existing sustainability professionals and teams. The Goal 13 Impact Platform, (an initiative by Deloitte, the CBI, Chapter Zero, Boomi, A4S, Dell and the Met Office) found that new roles are being created to address the complexities of decarbonisation, including 'Programme Director of Carbon' and 'Chief Climate Risk Officer'.<sup>17</sup>

From our interviews it seems that the demand for sustainability professionals has risen dramatically. Lack of capacity was frequently mentioned as a problem for sustainability teams. This encompassed demands from leadership to own the growing sustainability agenda, the need to upskill people across the organisation and to provide input to discussions on specific problems faced by other business functions.

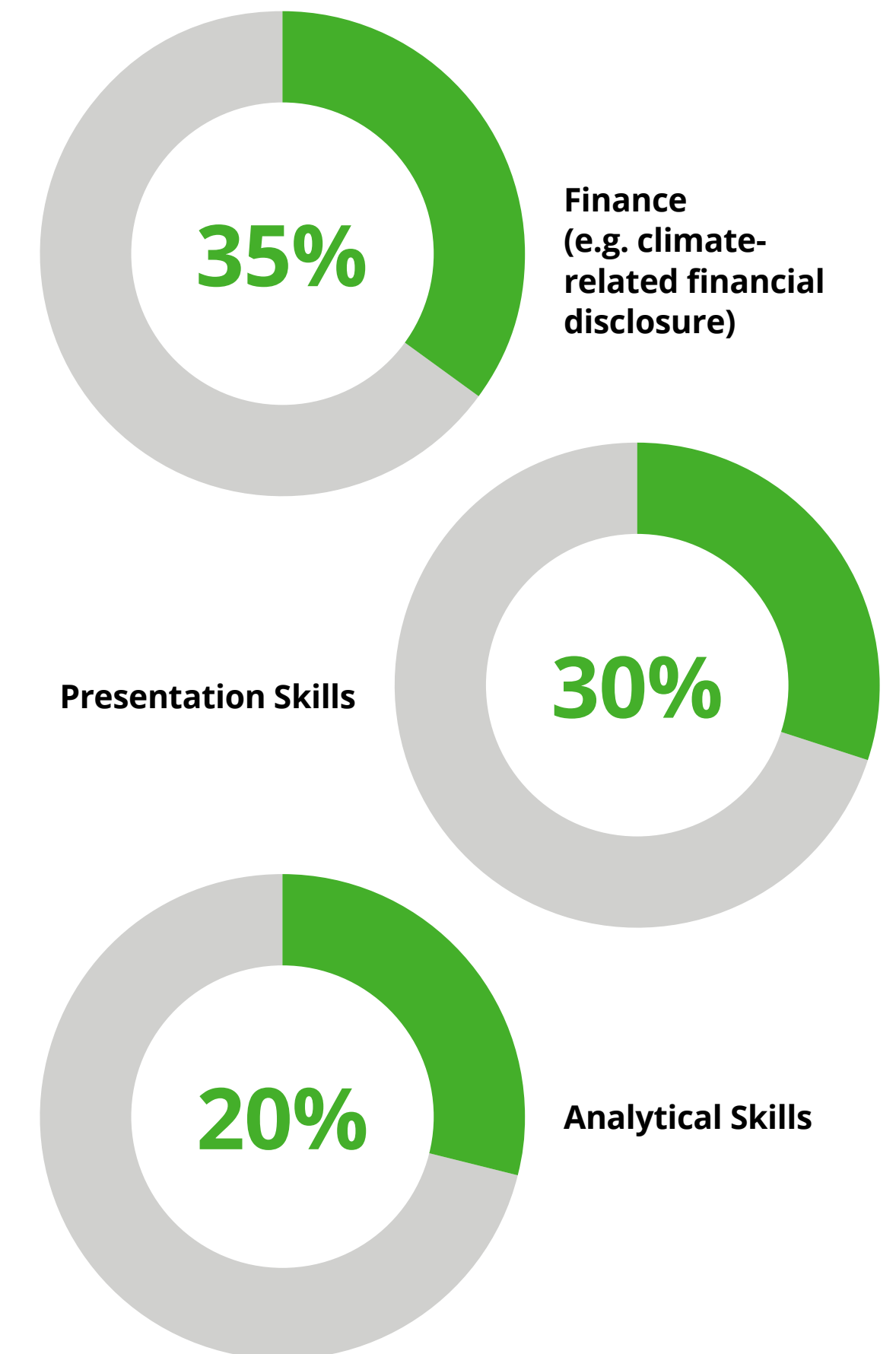
To fill this demand, many organisations are recruiting more dedicated environmental sustainability managers. In some cases, previously combined health, safety, and environment (HSE) roles are being split to create new environmental sustainability manager roles. This enables ownership and focus on sustainability training and compliance within the organisation.



*Sustainability teams now have to work at multiple levels. We have to build awareness that there is an issue, make sure everyone has all the right skills and capabilities and do institutional work within the organisation and we must tackle all those responsibilities at the same time."*

Daniel Caborn, Talent and OD Manager, Wienerberger

### The fastest growing skills among sustainability professionals in the year to November 2021<sup>18</sup> (percentage increase)



Source: Analysis of data from LinkedIn Talent Insights

**CURRENT STATE**

Sustainability professionals are also expected to respond to technical, analytical and complex challenges and opportunities across a range of environmental topics. Many large companies are prioritising a strategy for decarbonisation and achieving net zero targets, and sustainability professionals will need to develop further skills in this area. For example, a Head of Sustainability we interviewed with an environmental management background has had to acquire skills in carbon target-setting, measurement and reporting, which represent new areas of responsibility.

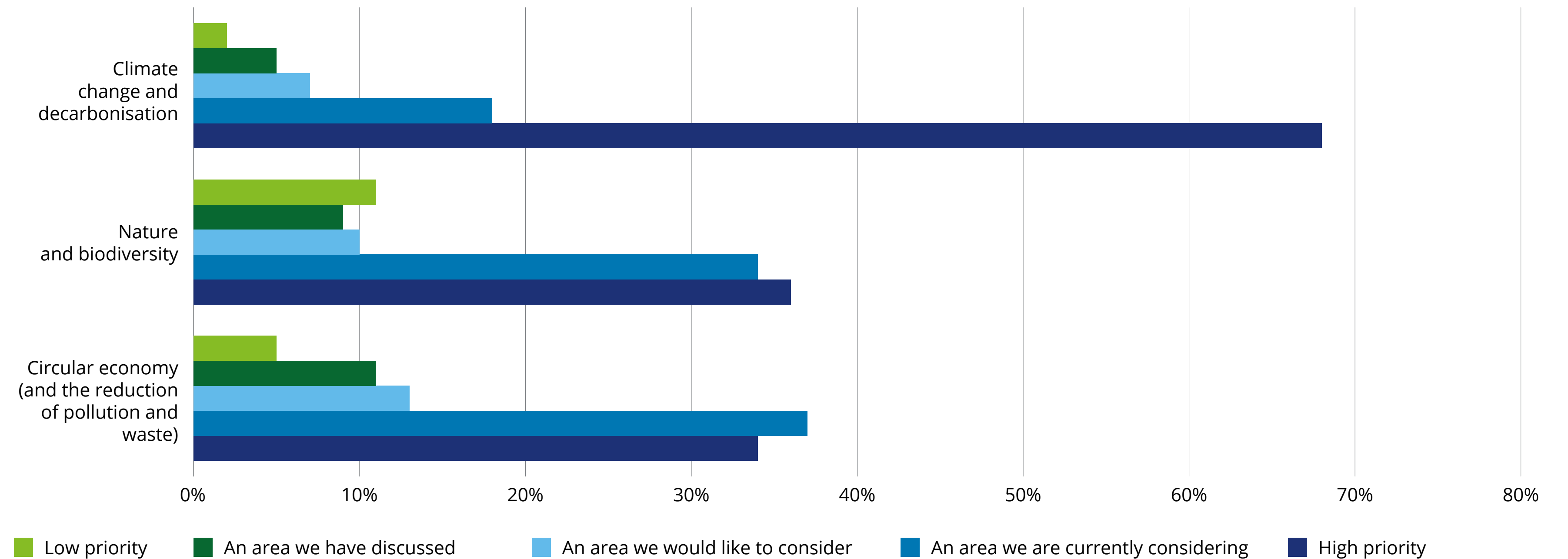
Sustainability professionals are being involved increasingly in high-level discussions and long-term decision-making. Responses to the joint IEMA and Deloitte survey and interviews with sustainability leaders frequently included the comment that sustainability is often discussed at senior management level and it is important to involve individuals with a deep understanding of the subject.

Sustainability professionals may reach a career crossroad in the future; whether to remain as a sustainability specialist and develop their technical role, or whether to move to a role within a function and apply their green skills in those areas. In 2020, 77 per cent of sustainability managers were reporting regularly to their board of directors.<sup>20</sup> Chief Sustainability Officers (CSOs), and Chief Climate Officers are also becoming increasingly common; between 2011 and 2020 there was a 228 per cent increase in the number of CSOs in Fortune 500 companies.<sup>21</sup>

The elevation of sustainability professionals to executive positions means that they will need not only strong technical and subject matter knowledge, but also skills in strategy and communication in order to contribute to top level decisions.<sup>22</sup> This suggests that we may see the emergence of two separate types of role for sustainability professionals: highly specialist sustainability roles to solve technical problems, and generalist sustainability roles that work across the organisation to ensure alignment and coherence with company objectives.



**Figure 2. Level of priority for environmental topics in organisations' strategies and operations<sup>19</sup>**



Source: Analysis of data from LinkedIn Talent Insights

**Shift 2: Increased need for green skills in non-specialist roles**

There was growing recognition from interviewees that successful organisations will need every team member to have some level of green skills to be effective in their role in the green economy. From our roundtable discussions and interviews with organisations, some were already planning to deploy strategies and initiatives to deliver this workforce transformation, though most were in very early stages of thinking on the value green skills could bring to their organisation.

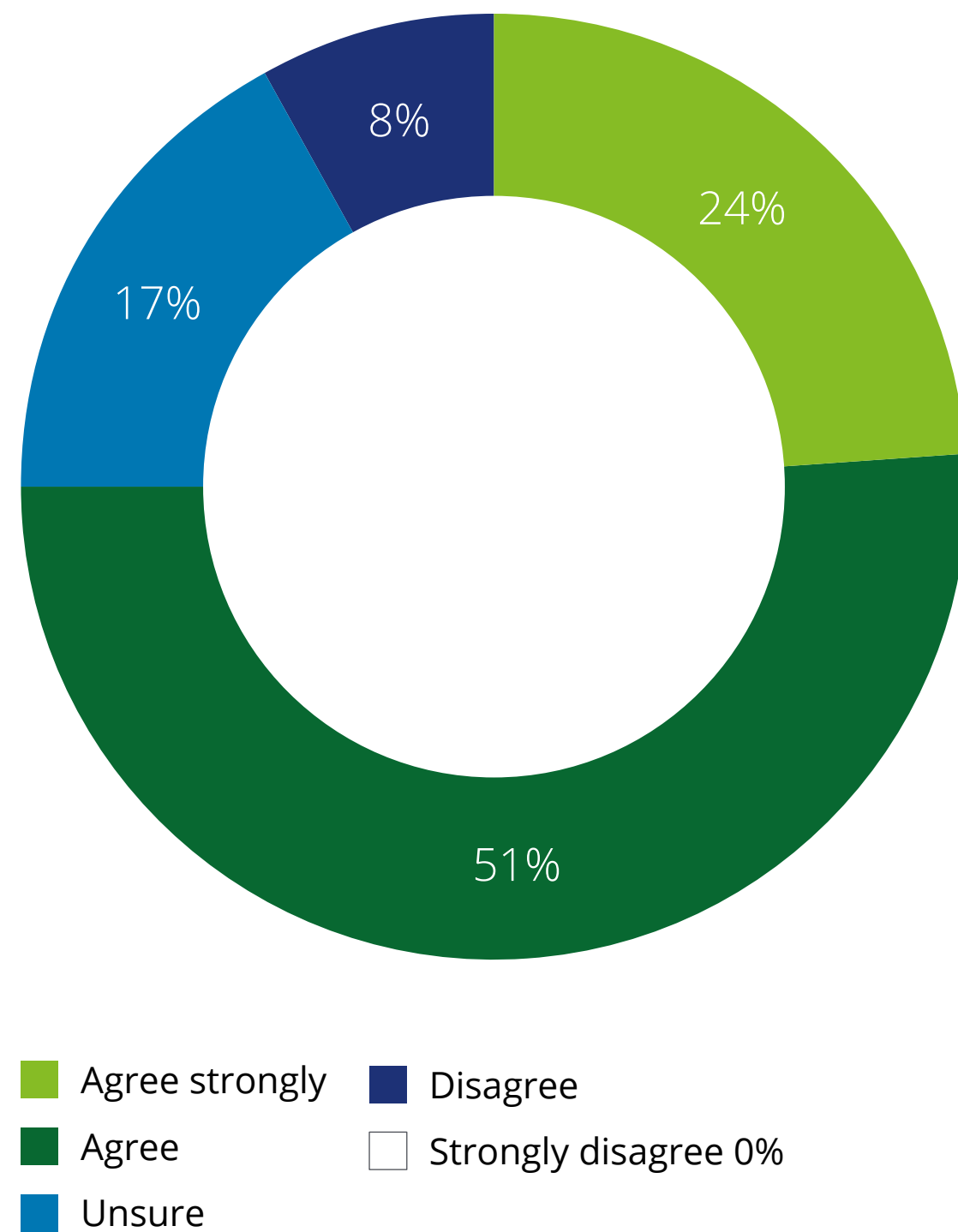
While there has been a big increase in appointments of senior sustainability leaders, interview feedback consistently suggested that green skills are still largely confined to limited functions and teams within organisations. Numbers are concentrated particularly within sustainability or HSE functions.

In many organisations green skills are located in silos, with sustainability functions often responsible for ensuring that other parts of the organisation are acting sustainably in accordance with organisation policy, and that they are equipped to do so.

In the private sector, responses to the IEMA stakeholder survey indicated that green skills are being developed in R&D/product design functions and at leadership levels above dedicated sustainability roles. In public sector organisations, survey respondents indicated that green skills are particularly strong in policy and estate/property management functions. Respondents viewed finance, which is likely to take responsibility for non-financial reporting and understanding of environmental sustainability in the context of investment and business cases, as the function where skills gaps were most prevalent.

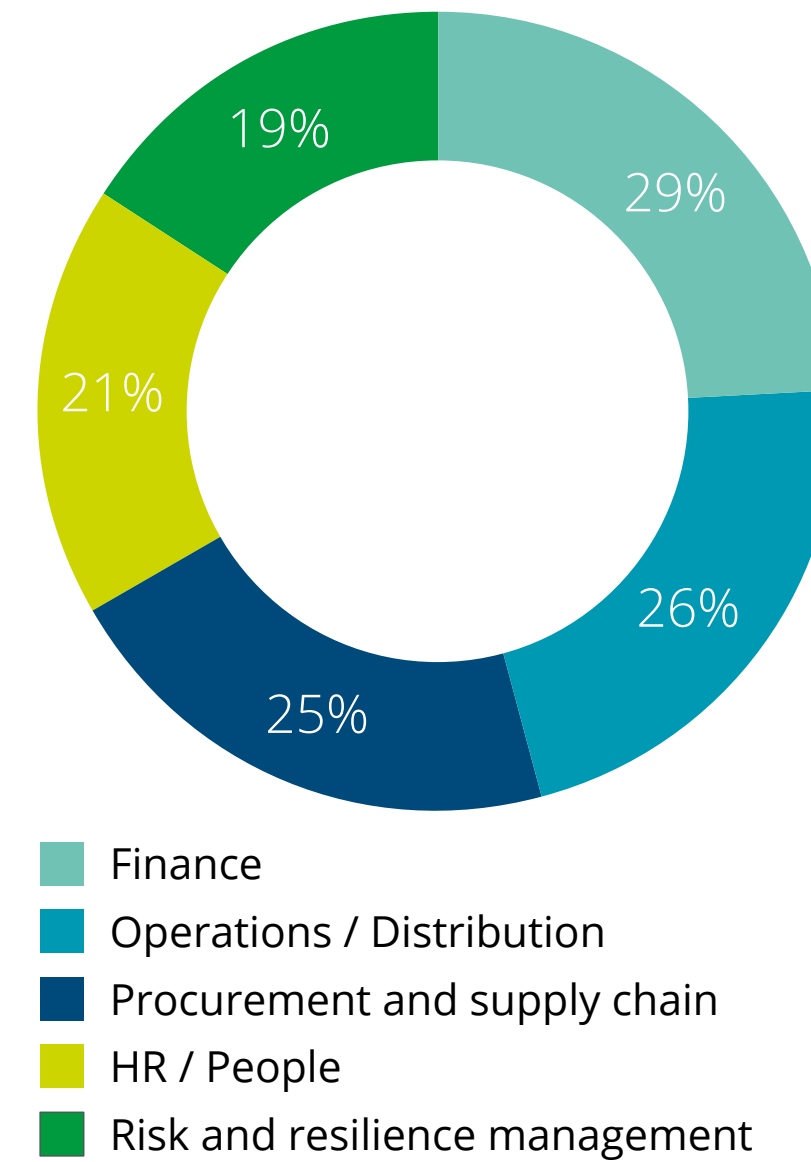
Respondents and interviewees also pointed to the core workforce responsible for day-to-day operations (e.g. store workers in the retail sector or nurses in the health and social care sector) as a key area requiring transformation, which represents a large proportion of the total workforce in many organisations.

**Figure 3. Percentage of respondents stating that by 2050, all jobs will require green/sustainability skills<sup>23</sup>**



Source: IEMA stakeholder survey, November 2021

**Figure 4. Types of roles where green skills gaps are currently most prevalent<sup>24</sup> [% of survey respondents that selected the indicated role type in their top 3]**



Source: IEMA stakeholder survey, November 2021

A 2019 study commissioned by the Greater London Authority found that over a quarter of jobs in the capital were in occupations facing increased demand for green skills or enhanced green skills in existing jobs, or were new emerging green roles (new jobs). Of these, 71 per cent were in managerial, professional, and associate professional and technical groups, and 14 per cent in skilled trades. Jobs in green occupations, such as those in a low-carbon circular economy, grew by 4.1 per cent on average between 2015-2019, compared to just 0.6 per cent in non-green occupations.<sup>25</sup>

**“Sustainability is not a department: it is fundamentally a cultural change.”**

CEO of a manufacturing business

This is not the first time a radical shift has taken place in the economy. A recent shift many have experienced is the transformation to a digital economy. Some organisations initially introduced Chief Digital Officers (CDOs) and digital functions to begin exploring how to create value through digital and continue to operate in this manner. However fully mature digital businesses embed digital skills within all functions. This level of assimilation across the workforce enables mature digital businesses to operate in fundamentally different ways including agile responses to change.<sup>26</sup> Organisations may be starting to seek a similar level of maturity in their green transition as illustrated by the emergence of Chief Sustainability Officers, with responsibility for implementing a strategy for green skills and products/services, and to deliver on these ambitions.

**The similarities between digital and sustainability do not end there.**

### Digital and green

A report by the World Economic Forum, *Bridging Digital and Environmental Goals* found that organisations are recognising the importance of digital skills and tools in achieving sustainability. For example, Artificial Intelligence (AI) and Internet of Things (IoT) sensors are being used to optimise resource usage and determine where improvements can be made in processes.<sup>27</sup> Another report by BT, *The future in 2021: emerging technologies paving the way to a brighter business future*, found that leaders are looking to build teams that combine digital skillset with knowledge about environmental sustainability.<sup>28</sup> However, many organisations still report that a lack of digital skills is hindering achievement of their business objectives.

Some of the industries with the greatest challenges are those with significant potential to improve environmental outcomes for the UK, such as construction and manufacturing.<sup>29</sup> Although the coronavirus pandemic accelerated the transition to digital, it also exacerbated the divide between those with digital skills and those without them.<sup>30</sup> The number of young people taking IT subjects at GCSE, A Level, Further Education and in Apprenticeships has been in decline since 2015. Only 48 per cent of employers believe that young people are leaving full-time education with sufficiently advanced digital skills.<sup>31</sup>

### More meaningful employment

Our interviews highlighted that another driver of the incorporation of green skills in non-specialist roles is personal motivation and enthusiasm among workers. The COVID-19 pandemic has enhanced people's desire to make purposeful contributions through their jobs, with 40 per cent of the UK workforce (across all age groups) indicating that they are 'somewhat likely' to change jobs in the next six months, even without another job to go to.<sup>32</sup> One of the main reasons given was a desire for meaning.

A Deloitte report, *The worker-employer relationship disrupted*, found evidence that younger generations of workers are actively seeking roles which incorporate green skills.<sup>33</sup> An interview with a further education provider also revealed that students are putting pressure on institutions to deliver courses that include green skills training.



*In addition to food science and engineering, we will be training our colleagues in data management and improving their IT skills. Machines will be analysing data sets and adjusting to be more resource efficient. Our teams must be comfortable gathering and interpreting that data and using technology to maximise efficiencies."*

Rachel Hackett, Group Sustainability Director,  
2 Sisters Food Group



### Shift 3: Transition of jobs from non-sustainable sectors to new roles

The UK labour market is already experiencing workforce transition from high carbon to low carbon industries. Workers from many sectors are concerned that their roles are being disrupted. An integrated programme of support from government, employers and educators to assist upskilling and reskilling will be required.

#### Oil and gas, a breeding ground for green skills

While offshore oil and gas employs directly only an estimated 25,700 people, an additional 91,500 are indirectly employed in the wider ecosystem of businesses and workforces supporting the sector.<sup>34</sup> According to the UK Oil and Gas Authority, the numbers are diminishing over time due to reduced investment in oil and gas and increased reliance on foreign imports.<sup>35</sup> It is predicted that we will have reduced our gas consumption by over 40% by 2030 (though this is expected to rise in 2022 before resuming a downward trend).<sup>36</sup> Workers are likely to move to other roles based on their specialist skillsets and transferable skills.

The 2016 HM Government Oil and Gas Workforce Plan, which addressed the falling demand for jobs in oil and gas, suggested that redundant oil and gas workers have skills applicable in many industries. For example, oil rig engineers can use their experience of deep-water support structures in jobs in the offshore wind sector; and electrical engineers in the oil and gas industry could switch their skills to installing wind turbines or in cable jointing at wind and solar farms.<sup>37</sup>

Acceleration towards clean and affordable British energy for the long term as set out in the British Energy Security Strategy, will depend on the ability to invest in green jobs within the renewables sector and equipping the current workforce to effectively transition to working in them. The government's Ten Point Plan for a Green Industrial Revolution, together with its Net Zero Strategy, is already driving £100 billion of private sector investment by 2030 into new British industries, including offshore wind, and supporting around 480,000 green jobs in renewables by the end of the decade.<sup>38</sup>

#### The automotive transition

Car manufacturing is another sector facing disruption. There are currently 150,000 people involved directly in the industry in the UK. Some will experience minimal transition as the focus shifts from manufacturing internal combustion engine (ICE) cars to battery electric vehicles (BEVs). The UK government's Net Zero Strategy predicts that by 2030, 74,000 jobs will be supported by decarbonising the transport sector.<sup>39</sup> However, parts of the existing workforce will require retraining or upskilling.

A report by Platform for Electronic Mobility and Boston Consulting Group, examining the European automotive workforce, estimates that up to 42 per cent of workers in the core and adjacent industries will have specific training needs by 2030.<sup>40</sup> For example, the production of BEVs requires multi-skilled engineers who are comfortable with chemistry as well as mechanical and electrical engineering.<sup>41</sup> The disruption also affects car maintenance and servicing.<sup>42</sup> The car maintenance workforce, which numbered a quarter of a million people in the UK in 2020, will require new skills to service BEVs.<sup>43</sup>

However, the extent to which new UK jobs are created by BEV manufacturing depends on the extent of growth in EV manufacturing in the UK. Transport & Environment, the clean transport campaign group, suggests several UK factories are only committing to modest increases in manufacturing hybrid or BEV.<sup>44</sup> In addition, the creation of new jobs may be constrained by the continued import of batteries from overseas. According to The Faraday Institution, the global BEV shift is already pressuring domestic vehicle manufacturers to consider moving production of BEVs offshore.<sup>45</sup>

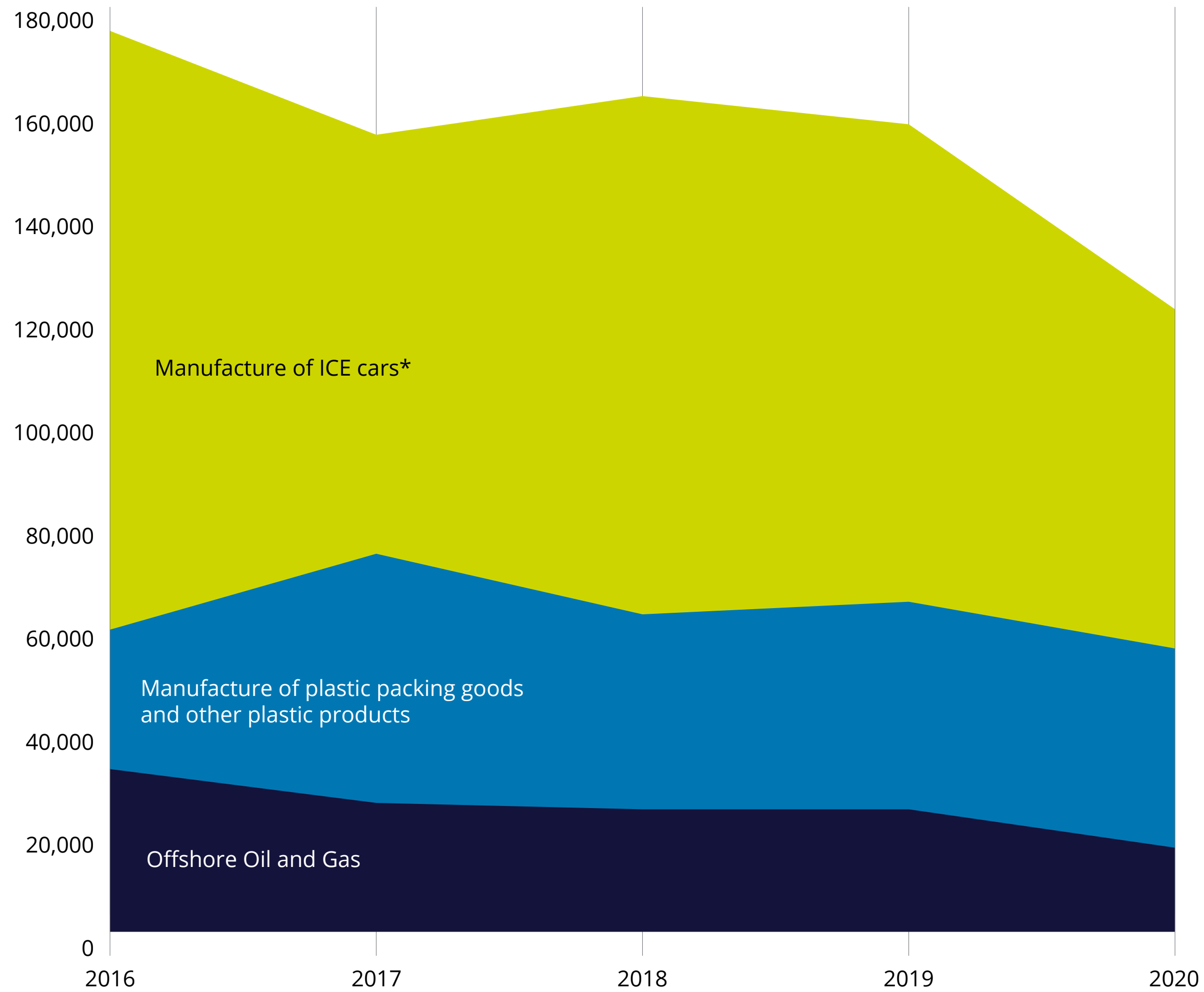


**Other industries facing transition**

Plastics is another sector undergoing transition, due to regulation of plastic packaging and single-use plastic items. From April 2022 a UK tax on plastic packaging will penalise companies if they produce or import packaging which does not contain at least 30 per cent recycled content. The aim of the tax is to provide a clear economic incentive for businesses to use recycled plastic in the manufacture of plastic packaging. At the global level the trend towards stricter regulation is partly driven by negotiations at the United Nations Environment Assembly for an international treaty on plastic pollution. This will have both predictable and less foreseeable impacts on the workforce shifts required across plastics and sectors currently linked heavily to plastic use.

Government communication on heat pumps, insulation and retrofitting is shifting awareness and demand for these products and services. The Greater Manchester Combined Authority is training over 1,000 workers in green skills, including domestic retrofitting, insulation and building treatments, external wall insulation, fenestration and cladding.

**Figure 5. Employment in select UK sectors, 2016-2020 (number of employees)**



\*ICE = Internal combustion engine  
 Source: Deloitte analysis of ONS labour force data and UKOG Workforce Report 2021

**“**  
*We need to be retrofitting 60,000 homes a year in Greater Manchester, so we need people doing things pretty quickly. We're upskilling job seekers and career switchers to get new people into the sector in order to meet this need.*  
**”**  
 Joe Crolla, Skills Intelligence Lead, Greater Manchester Combined Authority

#### Shift 4: Demand for green skills in new green sectors and organisations

Just as the digital revolution led to the emergence of new organisations and sectors based on novel technologies, the shift to a green economy will create jobs within new emerging sectors. Innovate UK, a national innovation agency, includes net zero as a key tenet of its most recent strategy *Building the future economy: Plan for action for UK business innovation*. Respondents to the IEMA stakeholder survey also expect additional new roles to emerge, such as community biodiversity managers, pollution remediators and carbon sequestering experts.

#### Hydrogen and carbon capture

Two emerging sectors are hydrogen and carbon capture usage and storage (CCUS). Hydrogen has been included as a key part of the government's *Net Zero Strategy: Build Back Greener* plan for a transition to a green economy, with the sector expected to support up to 8,000-10,000 jobs by 2030 and potentially up to 100,000 jobs by 2050 (in a high hydrogen net zero scenario).<sup>46</sup> The sector will require technical green skills that may be in limited supply currently or employed in adjacent sectors. For example, the hydrogen sector may need project management, Health, Safety and Environment (HSE) or engineering skills typically found in oil and gas.<sup>47</sup>

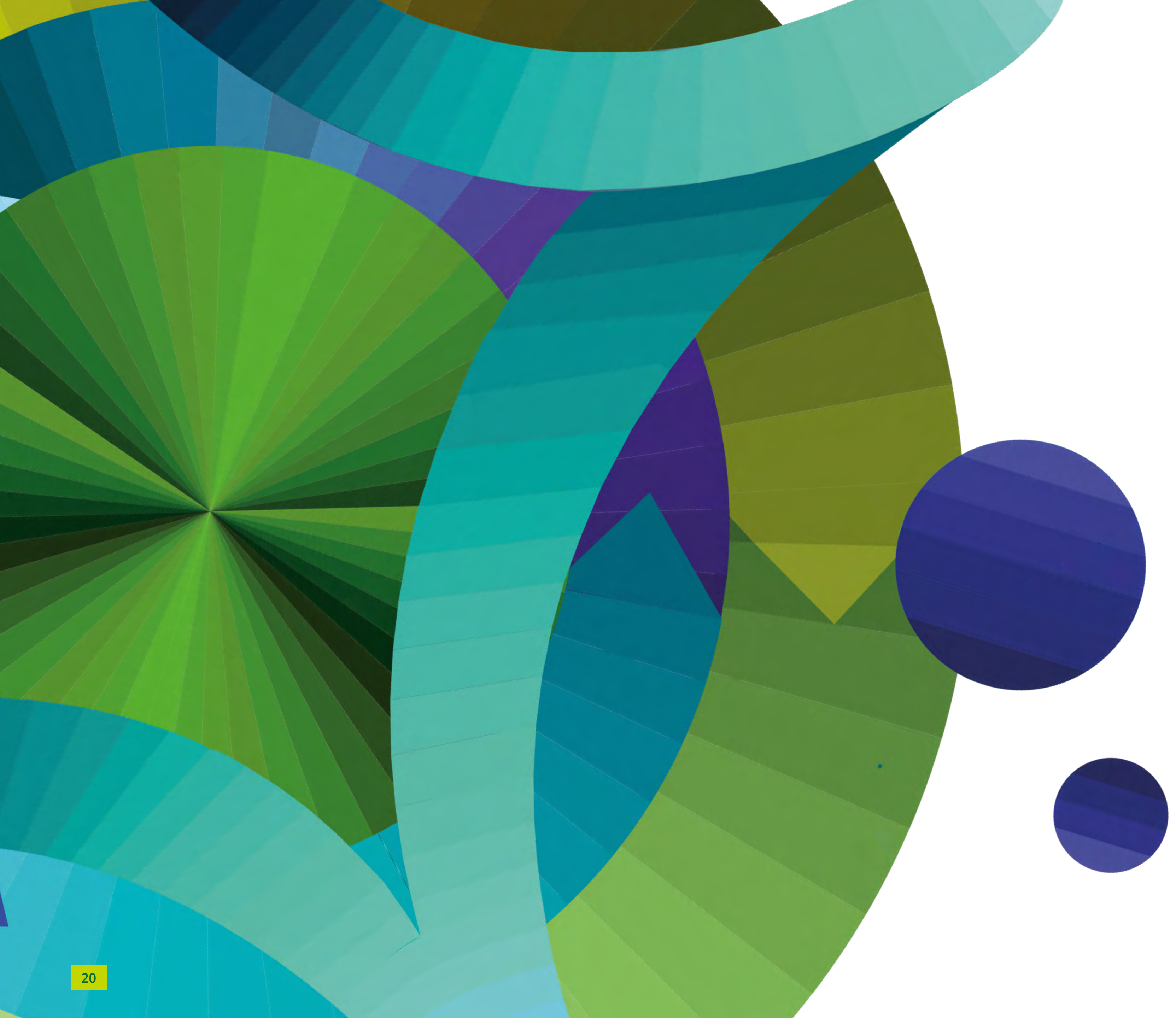
CCUS is set to create green jobs in regional clusters, probably in four locations across the North East, Humber, North West, Scotland and/or Wales, with the potential for it to support up to 54,000 jobs by 2030.<sup>48</sup> As with hydrogen, existing skillsets held by workers in non-renewable energy and resource sectors (oil and gas, and non-renewable energy generation) will be transferrable to CCUS projects, provided there is suitable retraining.<sup>49</sup>

A UK Net Zero Strategy objective is for the UK to be a leader in hydrogen and other sustainable technologies. Sustainability executives expressed hope that lessons could be learned from the growth of the wind power industry. The UK was slower than other European economies to build manufacturing capability and is now more reliant on imports for many of its turbines (despite having the world's largest offshore wind energy market).<sup>50</sup> UK businesses have significant expertise in power-to-liquid and carbon capture technologies. Government intervention to create large scale, export-focused manufacturing industries from these innovative starting points would be a strong creator of high-quality jobs across the UK.

Speed, support for, and clear communication from government to the private sector will be required to position the UK economy to reap the benefits from green technologies and sectors. Interviewees from the education and private sectors indicated that early government guidance would provide confidence to alter curricula and to invest in training. Both will be required will be required to provide enough skilled workers for these emerging sectors in order to minimise the need to import skilled workers or product from abroad.



Speed, support for, and clear communication from government to the private sector will be required to position the UK economy to reap the benefits from green technologies and sectors.



Unlocking

the future

# Characteristics of a winning organisation in the green economy

To unlock success in the green economy, sustainability leaders pointed at the need for organisations to have certain winning characteristics that will be critical for establishing an environmentally conscious culture focused on value capture.

## Courageous leadership that takes calculated risks

Private sector attendees at our roundtables said that being an early adopter in the green economy can mean taking a leap of faith. This may yield high rewards but may also be destabilising, particularly if there is a shift in political will and direction. Early adoption of sustainable strategies and practices requires courageous strategic decision making. Organisations that want to transition successfully to the green economy must have strong leadership with sufficient foresight and awareness of the opportunities that environmental sustainability can bring to their industry.



*Someone has to have the courage to make the first move, to be visionary and brave in leading their organisation to the future."*

Kay Barker, UK Environmental Lead at Wienerberger



*Sustainability is viewed as another thing to do, whereas it will just be part of a process integrated into our daily systems and roles. Some teams will have more new learning to do than others. We want to give our people the skills and tools to help them integrate sustainability."*

Rebecca Harris, Environmental Sustainability Team at Network Rail

### Intentional enterprise-level transformation, design and management

Superficial changes in fragmented pockets of an organisation will not be sufficient for the transformational change required to prosper in the green economy. Organisations that embed environmental sustainability into their corporate vision, strategy and objectives will be better placed to deliver enterprise-wide business transformation.

### Environmentally sustainable mindset as the norm for everyone

Organisations that operate sustainably cannot rely solely on a sustainability department to meet their diverse needs. Instead, all employees will need to have strong environmental awareness. Examples of where sustainability leaders have identified potential opportunities for mindset shifts include procurement teams making commercial decisions based on embedded carbon and impact across the whole product lifecycle, and sales staff incentivised to offer the sustainable option as the standard.



*We need a systems approach to change that connects the new products we produce to the building industry and then to homeowners. For example, builders know how to lay a regular brick, but don't know how to lay a lower-carbon brick that is thinner. We need to help bricklayers adapt to using different materials and to educate everyone in the construction system about the benefits they bring so they buy more environmentally-friendly materials and homeowners live in more sustainable homes."*

Daniel Caborn, Talent and OD Manager at Wienerberger

### Mission based teams that solve for the unpredictable

To tackle complex challenges such as climate change, resource scarcity and biodiversity loss, organisations will need to consider whether their structures are fit for purpose, utilising the right talent to solve urgent problems rapidly within short timescales.<sup>51</sup> Some organisations are already reorganising their hierarchies and team structures to mobilise multidisciplinary teams to collaborate around a common mission. Bringing together sustainability experts with experts in other areas such as digital, product design, change management and customer service, can unlock systems thinking and enable holistic problem solving across teams, functions and processes.

### Investment in a diverse and inclusive workforce

Organisations will need to think through their sustainability values and offerings to attract and retain talent and customers. Organisations with sustainable values are increasingly sought after by younger generations coming into the workforce and those looking to switch to a more purpose-driven career. A commitment to diversity and inclusion is not only the right thing to do but also good business - organisations where employees' diverse perspectives are heard and stimulated are more productive and have higher employee satisfaction.<sup>52</sup>

### Engagement in an ecosystem of strategic partnerships

Winning organisations will interact with their supply chains and unlikely partners to accelerate green transformation and value capture. Large organisations that have seized the opportunity to work with their suppliers to reduce carbon emissions will be ahead of the curve with regard to regulatory standards and opportunity capture. Partnerships with other organisations provide opportunities for mutual upskilling and training, and to enable a systems thinking approach to problem solving.



*Improving workforce diversity mean a greater wealth of ideas and approaches around how we tackle the big issues and challenges and will help to drive positive change."*

Ben Goodwin, Head of Policy, IEMA



*Our marketing team worked with the sustainability and product development teams to understand products' impact in the world. They are using this as part of their strategy to sell a story of what they can do for the customer and the world."*

Karen White, Global Health, Safety & Environment, TT Electronics

## Case study

# Unilever and SUEZ operate as ecosystem partners to share upskilling of apprentices

Unilever and SUEZ partnered to launch an Apprentice Exchange Programme in 2021 to improve knowledge of product lifecycles. Over a three-month programme, a group of apprentices spend one half-day a week with the partner organisation. The aim of these sessions is for apprentices to understand the other's operations from the ground up.

Apprentices learn the challenges and opportunities that exist in creating a more circular economy. The programme, which includes a packaging project, is an example of cross value chain collaboration as apprentices see the larger impact of their work. John Scanlon, Chief Executive Officer for SUEZ Recycling and Recovery UK, said in a press release that through the programme, "we can inspire the next generation of packaging and waste management professionals to place the circular economy at the heart of their work."

**"We can inspire the next generation of packaging and waste management professionals to place the circular economy at the heart of their work."**



# A toolkit to activate green skills in organisations

This report not only aims to provide an overview of the prevailing trends towards green skills but also give practical insights and tools that can be used by organisations to capture and retain value in the green economy.

To help organisations mobilise green skills across their workforce, we have developed a standalone toolkit. The toolkit was developed on the basis of pre existing experience and application, and was further developed through our roundtables, interviews and feedback gathered from stakeholders.

There are two parts to the toolkit, each part can be used either in isolation or together as a set to help design a tailored journey at an organisation level or within individual teams or projects.



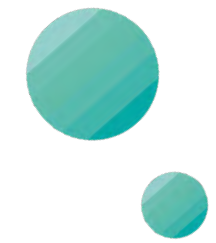
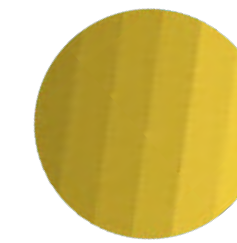
ORGANISATION 'GREEN' MATURITY MATRIX: DOMAIN THEMES (1 OF 2)

An organisation's propensity to address 'green' challenges may influence the skills and jobs required.

Maturity example indicators:

Theme:	Understanding	Developing	Performing	Leading
<b>Climate change</b>	<ul style="list-style-type: none"> <li>Has engaged and continues to engage with suppliers/landlords to assess feasibility and cost of purchasing Renewable Energy (RE) at owned/ leased sites.</li> <li>Baseline scope 1 and 2 greenhouse gas emissions and includes these in annual public reports (where relevant).</li> <li>Has developed understanding of cross-organisation mobility and where the greatest opportunities are.</li> </ul>	<ul style="list-style-type: none"> <li>Set up contracts to purchase 100% renewable energy where available.</li> <li>Identified potential for on-site renewables e.g. solar panels.</li> <li>Developed roadmap to reach net zero emissions in own operations.</li> <li>Created low-to-zero carbon mobility strategy.</li> <li>Introduced requirement that suppliers share their emissions data.</li> </ul>	<ul style="list-style-type: none"> <li>100% renewable energy in office and operations where available.</li> <li>Measures scope 1, 2 and 3 emissions and reports on this regularly.</li> <li>Operates a 100% hybrid/electric/ fuel cell fleet.</li> <li>Tracks strategic suppliers' emissions targets and progress.</li> <li>Invests in technology and innovations to reduce emissions from hard-to-abate processes.</li> <li>Purchases 100% carbon removal offsets, covering operations and value chain.</li> </ul>	<ul style="list-style-type: none"> <li>Contracts acquire 100% renewable energy for any remaining sites.</li> <li>Has explored feasibility/cost for green gas.</li> <li>Works with strategic suppliers on their Net Zero target.</li> <li>Is transparent over emissions of all purchased goods and services.</li> <li>Purchases 100% carbon removal offsets that also drive innovation, e.g. biodiversity benefits or seed finance for scalable long-term carbon removal solutions.</li> </ul>
<b>Nature and natural resources</b>	<ul style="list-style-type: none"> <li>Complies with biodiversity laws and regulation.</li> <li>Documents the direct and indirect impacts each site/location has on surrounding nature and environment.</li> </ul>	<ul style="list-style-type: none"> <li>Created an action plan including targets to protect and enhance surrounding biodiversity e.g. regenerative agriculture, green roofs, improved recycling/processing of hazardous waste.</li> <li>Developed innovation portfolio of processes and technology to reduce impact on natural resources, e.g. materials science, remanufacturing.</li> </ul>	<ul style="list-style-type: none"> <li>Meets biodiversity targets by restoring nature that has been impacted by organisational operations.</li> <li>Assigns accurate value to natural services used by the organisation and factored into investment decisions.</li> <li>Developed metrics to measure the impact of the organisation's services on the natural environment.</li> </ul>	<ul style="list-style-type: none"> <li>Created an ecosystem to accelerate the enhancement of biodiversity via alliances with partner organisations, suppliers and customers.</li> <li>Actively implements actions to minimise value chain impact on the natural environment.</li> <li>Tracks and reports on a number of KPIs that demonstrate the impact of</li> </ul>
<b>Pollution and waste</b>	<ul style="list-style-type: none"> <li>Has set up governance, procedures and appropriate infrastructure to drive resource efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Produced resource efficiency plan to tackle significant sources of waste; recycle &gt;50% of our waste; and divert 100% of total waste from landfill.</li> </ul>	<ul style="list-style-type: none"> <li>Created to enable product &gt;75% a single-u</li> </ul>	

**1** The first part of the toolkit contains a maturity matrix to identify gaps and possible option to activate and elevate green skills within an organisation.



The second part of the toolkit sets out a simple blueprint of a 'model organisation' in the green economy by showcasing the type of green skills that each function or job family might need.

**CUSTOMER SERVICE/SUPPORT**  
Gives customers information about products and services, takes orders, and process returns.

Key: ▲ Current state ■ Transition to 2030 ● Final state by 2050

Green skills:	Knowledge	Technical skills	Behaviours	Competencies
<b>Leadership</b>	<ul style="list-style-type: none"> <li>Understands the importance of sustainability credibility and transparency.</li> </ul>	<ul style="list-style-type: none"> <li>Ability to analyse customer feedback to identify sustainability-related product/organisational opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>Mindset shift from transactional to experiential customer service (enhancing service and advice across whole product/service lifecycle).</li> </ul>	<ul style="list-style-type: none"> <li>Inspires customers to lead more sustainable lifestyles.</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>Deep understanding of low carbon product ranges and alternatives.</li> <li>Understands product lifecycle, supply chain impacts and carbon labelling.</li> </ul>	<ul style="list-style-type: none"> <li>Ability to diagnose fixes, offer sustainable alternatives and offer advice on products from cradle to grave.</li> </ul>	<ul style="list-style-type: none"> <li>Highly collaborative across internal teams, driving toward climate positive solutions for customers.</li> </ul>	<ul style="list-style-type: none"> <li>Combines problem-solving, and commercial awareness to work with adjacent teams to address customer sustainability concerns.</li> </ul>
<b>Operational</b>	<ul style="list-style-type: none"> <li>Knowledge of company sustainability vision, credentials and sustainability related product information.</li> </ul>	<ul style="list-style-type: none"> <li>Ability to fix and repair modular parts and show customers how to keep/ maintain products for longer.</li> </ul>	<ul style="list-style-type: none"> <li>Engages and supports customers to fulfil their sustainable lifestyle needs.</li> </ul>	<ul style="list-style-type: none"> <li>Strong communicative skills and empathy to engage with customers on sustainability queries or issues.</li> </ul>
<b>States:</b>	Low ▲ — ■ — ● High	Low ▲ — ■ — ● High	Low ▲ — ■ — ● High	Low ▲ — ■ — ● High
<b>Variance by sector:</b>	The knowledge and support customer service teams provide to their customers will vary based on the product and customer base. For example, in a B2B transaction, showcasing standardised sustainability metrics, KPIs and certificates will be vital for sales. Whereas in a B2C transaction, more storytelling and customer friendly metrics (e.g. carbon labelling) will be used to sell to customers. The <b>type of product will also dictate the level of sustainability knowledge and advice</b> teams will need to provide e.g. across food, fashion, tech, travel etc.			
<b>Experience:</b>	Low ▲ — ■ — ● High			



# Using the toolkit

## Mapping your green skills maturity

Take our interactive green maturity quiz to find out where you and your organisation is in relation to your readiness to address green challenges and mobilise green skills in your organisation.



A tailored summary of your responses and indicative next steps will be provided.

The maturity matrix is in two parts. It helps organisations consider where they stand in terms of:

**ORGANISATION 'GREEN' MATURITY MATRIX: DOMAIN THEMES (1 OF 2)**

An organisation's propensity to address 'green' challenges may influence the skills and jobs required.

Maturity example indicators:				
Theme:	Understanding	Developing	Performing	Leading
<b>Climate change</b>	<ul style="list-style-type: none"> <li>Has engaged and continues to engage with suppliers/landlords to assess feasibility and cost of purchasing Renewable Energy (RE) at owned/leased sites.</li> <li>Baseline scope 1 and 2 greenhouse gas emissions and includes these in annual public reports (where relevant).</li> <li>Has developed understanding of cross-organisation mobility and where the greatest opportunities are.</li> </ul>	<ul style="list-style-type: none"> <li>Set up contracts to purchase 100% renewable energy where available.</li> <li>Identified potential for on-site renewables e.g. solar panels.</li> <li>Developed roadmap to reach net zero emissions in own operations.</li> <li>Created low-to-zero carbon mobility strategy.</li> <li>Introduced requirement that suppliers share their emissions data.</li> </ul>	<ul style="list-style-type: none"> <li>100% renewable energy in office and operations where available.</li> <li>Measures scope 1, 2 and 3 emissions and reports on this regularly.</li> <li>Operates a 100% hybrid/electric/fuel cell fleet.</li> <li>Tracks strategic suppliers' emissions targets and progress.</li> <li>Invests in technology and innovations to reduce emissions from hard-to-abate processes.</li> <li>Purchases 100% carbon removal offsets, covering operations and value chain.</li> </ul>	<ul style="list-style-type: none"> <li>Contracts acquire 100% renewable energy for any remaining sites.</li> <li>Has explored feasibility/cost for green gas.</li> <li>Works with strategic suppliers on their Net Zero target.</li> <li>Is transparent over emissions of all purchased goods and services.</li> <li>Purchases 100% carbon removal offsets that also drive innovation, e.g. biodiversity benefits or seed finance for scalable long-term carbon removal solutions.</li> </ul>
<b>Nature and natural resources</b>	<ul style="list-style-type: none"> <li>Complies with biodiversity laws and regulation.</li> <li>Documents the direct and indirect impacts each site/location has on surrounding nature and environment.</li> </ul>	<ul style="list-style-type: none"> <li>Created an action plan including targets to protect and enhance surrounding biodiversity e.g. regenerative agriculture, green roofs, improved recycling/processing of hazardous waste.</li> <li>Developed innovation portfolio of processes and technology to reduce impact on natural resources, e.g. materials science, remanufacturing.</li> </ul>	<ul style="list-style-type: none"> <li>Meets biodiversity targets by restoring nature that has been impacted by organisational operations.</li> <li>Assigns services factored on the r</li> <li>Develop impact on the r</li> </ul>	<ul style="list-style-type: none"> <li>Created an ecosystem to accelerate the enhancement of biodiversity via alliances with partner organisations.</li> </ul>
<b>Pollution and waste</b>	<ul style="list-style-type: none"> <li>Has set up governance, procedures and appropriate infrastructure to drive resource efficiency.</li> </ul>	<ul style="list-style-type: none"> <li>Produced resource efficiency plan to tackle significant sources of waste; recycle &gt;50% of our waste; and divert 100% of total waste from landfill.</li> </ul>	<ul style="list-style-type: none"> <li>Created to enable product &gt;75% a single-u</li> </ul>	

1a

**Readiness to address green challenges** e.g. climate change, nature and natural resources, pollution and waste.

1b

The ability to capture value from green skills through **internal capabilities** e.g. the ability of for example, HR, IT, finance to leverage green skills in their specific role to create value for the organisation.

**ORGANISATION 'GREEN' MATURITY MATRIX: DISCIPLINE THEMES (2 OF 2)**

An organisation's maturity of internal capabilities may influence the green skills and jobs required.

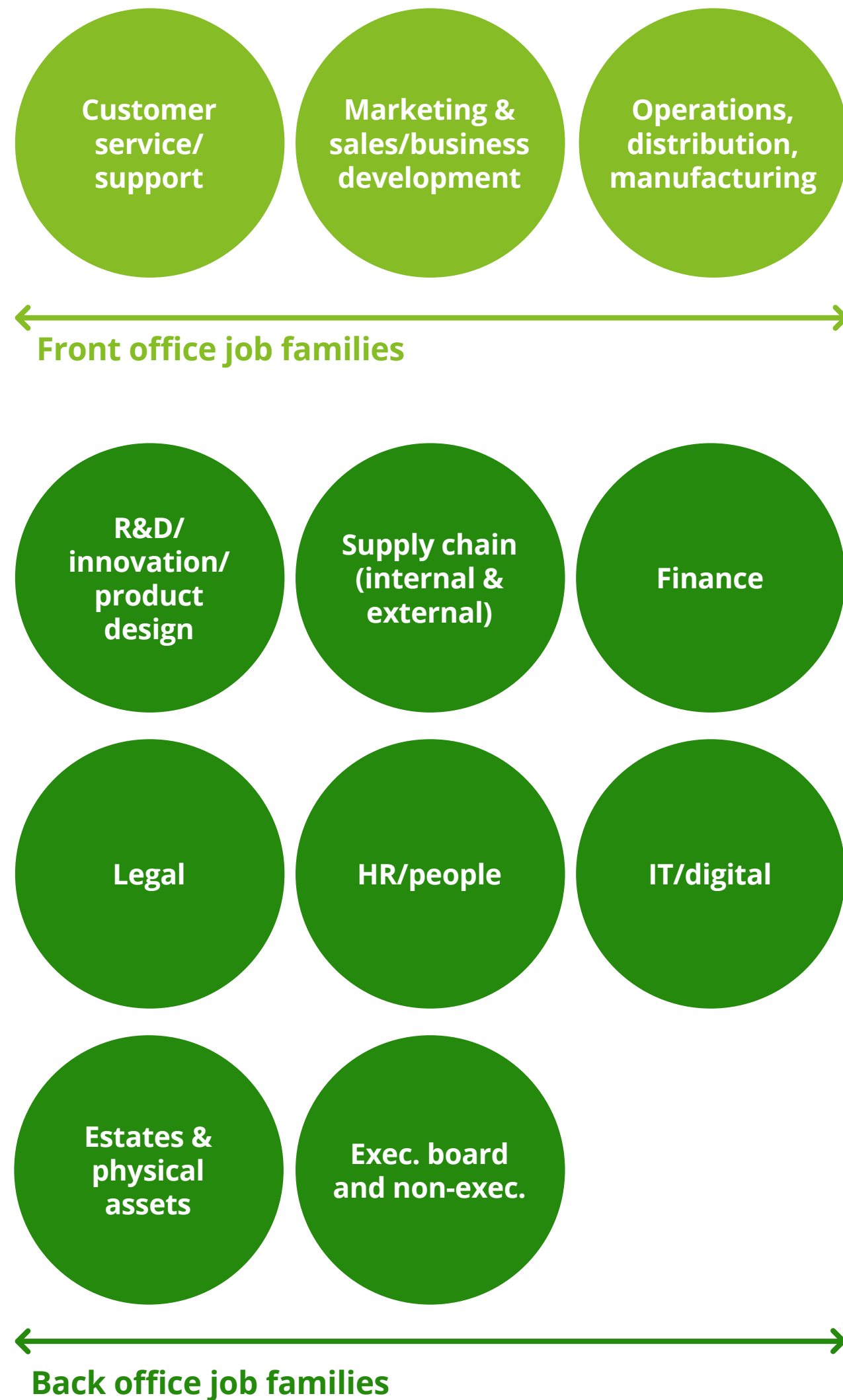
Maturity example indicators:				
Theme:	Understanding	Developing	Performing	Leading
<b>Management</b>	<ul style="list-style-type: none"> <li>Has set a commitment to reduce carbon emissions in line with 1.5°C pathway and identify wider sustainability goals.</li> <li>Identified executive sponsor to be accountable for delivery of firmwide strategy.</li> </ul>	<ul style="list-style-type: none"> <li>Identified climate-related risks and physical and transition risks over short, medium and long term.</li> <li>Embedded risk management processes into business operations and create a governance structure to oversee.</li> <li>Identified sustainability initiatives.</li> </ul>	<ul style="list-style-type: none"> <li>Utilises performance management system to incentivise actions in support of sustainability commitments</li> <li>Certified internal procedures against relevant local and international standards.</li> <li>Planned and tracks sustainability actions.</li> </ul>	<ul style="list-style-type: none"> <li>Has set out and obtained more ambitious targets e.g. gross zero emissions.</li> <li>Recognised as a leading organisation for championing acceleration towards low-carbon sustainable future.</li> </ul>
<b>Procurement</b>	<ul style="list-style-type: none"> <li>Engaged and continues to work with procurement team to embed sustainability requirements/KPIs into processes.</li> <li>Identified sustainability risks associated with each procurement category.</li> </ul>	<ul style="list-style-type: none"> <li>Requires that suppliers share their emissions data.</li> <li>Established and implemented process to ensure minimum standards are met and include compliance function.</li> </ul>	<ul style="list-style-type: none"> <li>Included supplier requirement to set net zero/sustainability strategy commitment.</li> <li>Developed and tracks supplier sustainability KPIs for further monitoring and analytics.</li> </ul>	<ul style="list-style-type: none"> <li>All new strategic contracts meet set requirements.</li> <li>Built capacity for training suppliers on building sustainable supply chains.</li> </ul>
<b>IT</b>	<ul style="list-style-type: none"> <li>Understands negative environmental impacts of IT across end-to-end use</li> <li>Educated employees on digital pollution and mitigation.</li> </ul>	<ul style="list-style-type: none"> <li>Developed procedures to manage impacts and promote circularity.</li> <li>Developed long-term data storage and legacy hardware/software policies.</li> </ul>	<ul style="list-style-type: none"> <li>Inserted sustainability requirements into all major IT contracts.</li> <li>Demonstrated that 100% of eWaste has been re-used or recycled.</li> </ul>	<ul style="list-style-type: none"> <li>Migrated on-site storage and services to a cloud-based solution.</li> <li>Built eminence and alliances by sharing best practices across the industry.</li> </ul>
<b>Finance</b>	<ul style="list-style-type: none"> <li>Reviewed *ESG credentials of pension fund providers and ensured these are clear to employees.</li> <li>Understands the role ESG plays in investment decisions.</li> </ul>	<ul style="list-style-type: none"> <li>Ensured that employees have the option to invest in ESG specialist funds.</li> <li>Created an investment framework that integrates ESG targets into the decision-making criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Ensured that ESG specialist funds are available as default options to all employees.</li> <li>Assessed and reflected on investments made via ESG framework.</li> </ul>	<ul style="list-style-type: none"> <li>ESG pension fund divested fully from fossil fuel extraction.</li> <li>Further enhanced and refined the ESG investment framework, including best practices and learnings.</li> </ul>
<b>HR/people</b>	<ul style="list-style-type: none"> <li>Understands where sustainability/green skills capability gaps exist in the workforce.</li> </ul>	<ul style="list-style-type: none"> <li>Ensured that employees are offered training to develop base level of understanding of sustainability.</li> <li>Built plan for developing future green skills aligned to the needs and strategy of the organisation and external macro trends.</li> </ul>	<ul style="list-style-type: none"> <li>Uses incentives against green/sustainability metrics for performance management of leadership and some management roles.</li> <li>Embedded technical sustainability training in *L&amp;D and career pathways for specific job roles.</li> </ul>	<ul style="list-style-type: none"> <li>Leveraged incentives and messaging at all levels to fully internalise the principles of sustainability in organisational culture.</li> <li>Offered specialist and relevant green skills/sustainability training programmes for employees in all job families.</li> </ul>


### Exploring the model organisation blueprint

This blueprint takes a deep dive into what a thriving organisation in the green economy looks like at a job family/function level.

To develop our 'model organisation' blueprint, we took a view of a typical organisation and identified 11 common job families (e.g. marketing, finance, HR, IT etc.).

For each job family, the potential green skills were categorised in terms of knowledge, technical skills, behaviours and competencies.



 To see the full model organisation blueprint, including a breakdown of green skills for each job family, download the standalone toolkit **here**.

OPERATIONS, DISTRIBUTION AND MANUFACTURING				
Processes raw materials, manages activities to produce and deliver products and services.				
<b>Operations, distribution and manufacturing</b>				
<b>Core competencies:</b>	Complex planning, attention to detail, engineering, technical machinery/equipment operation.			
<b>Key external drivers for the change:</b>	<ul style="list-style-type: none"> <li>Gig economy and universal basic income.</li> <li>Globalisation, nationalisation and 'mutualisation'.</li> </ul>		<ul style="list-style-type: none"> <li>AI, automation, robotics and blockchain.</li> <li>Ageing workforce and pensions.</li> </ul>	
<b>Green skills:</b>	<b>Knowledge</b>	<b>Technical skills</b>	<b>Behaviours</b>	<b>Competencies</b>
<b>Leadership</b>	<ul style="list-style-type: none"> <li>Awareness of upcoming sustainability standards and how they might pose as risks or opportunities for business.</li> </ul>	<ul style="list-style-type: none"> <li>Utilises real-time data for scenario planning and modelling to inform decisions on operations and production.</li> </ul>	<ul style="list-style-type: none"> <li>Leads a continuous improvement culture that minimises impact on the environment from project delivery.</li> </ul>	<ul style="list-style-type: none"> <li>Drives their teams and organisation to capitalise on opportunities to operate in an innovative and sustainable way.</li> </ul>
<b>Management</b>	<ul style="list-style-type: none"> <li>Knowledge of health, safety and sustainable standards.</li> </ul>	<ul style="list-style-type: none"> <li>Sustainable project management, ability to track and report on sustainability risks and opportunities in real-time.</li> </ul>	<ul style="list-style-type: none"> <li>Engages with internal and external teams and champions sustainable change management.</li> </ul>	<ul style="list-style-type: none"> <li>Identifies opportunities to conduct operations more sustainably, highly adaptable to change.</li> </ul>
<b>Operational</b>	<ul style="list-style-type: none"> <li>Knowledge of new materials, techniques, tools and standards to deliver sustainable solutions according to their specialism.</li> </ul>	<ul style="list-style-type: none"> <li>Retro fitting.</li> <li>Re-engineering.</li> <li>Use of digital or operational tools.</li> </ul>	<ul style="list-style-type: none"> <li>Compliant with best practice and is responsive to new sustainable ways of working.</li> </ul>	<ul style="list-style-type: none"> <li>Builds in efficiency and minimises waste.</li> <li>Able to deliver sustainable solutions.</li> </ul>
<b>States:</b>	Low —  — High	Low —  — High	Low —  — High	Low —  — High
<b>Variance by sector:</b>	Within the logistics and operations sector, management and leadership will <b>require strong data and analytics capabilities</b> . Whereas in engineering and manufacturing, managers will need more <b>technical ability to work with innovative materials and new equipment/tools</b> . At the operational level the technical skills required will be significant and vary drastically between roles (e.g. heat pump engineer vs recycling truck driver) and sector (e.g. energy and utilities vs consumer goods). <b>Specialist training for these skills will be significant.</b>			<b>Experience:</b> Low —  — High

### Breakdown of green skills for each job family

Taking each job family in turn, we mapped the potential green skills that each job family might have and benefit from in the green economy.

Use this **blueprint to identify gaps in green skills across your organisation**. Consult existing skills maps, job descriptions and competency frameworks in your organisation. Consider working with HR or L&D Teams to mobilise training needs analysis.

JOB FAMILY

**Key:**  
▲ Current state   ■ Transition to 2030   ● Final state by 2050

🗂️ Job family

<b>Core competencies:</b>	The standard abilities and characteristics required to perform the role, these are non-sustainability related.			
<b>Key external drivers for the change:</b>	A summary of trends that are shifting the requirements for this role and how it will be performed in the future.			

Green skills:	<span style="font-size: 1.2em;">🧠</span> Knowledge	<span style="font-size: 1.2em;">⚙️</span> Technical skills	<span style="font-size: 1.2em;">👤</span> Behaviours	<span style="font-size: 1.2em;">✅</span> Competencies
<span style="font-size: 1.5em;">👤</span> Leadership	Describes the sustainability knowledge, awareness and understanding required to fulfil the job role based on level of seniority. E.g. awareness of the Sustainable Development Goals.	Describes the technical skills capabilities required to drive sustainability in a job role based on level of seniority. E.g. carbon footprint analysis.	Describes the behaviours, attitudes and mindset required to embed sustainability in a job role based on level of seniority. E.g. championing sustainability initiatives across the organisation.	Describes the sustainability competencies required to effectively perform a job role based on level of seniority. E.g. horizon scanning for the latest sustainability trends and solutions.
<span style="font-size: 1.5em;">👜</span> Management				
<span style="font-size: 1.5em;">⚙️</span> Operational				

The scale below shows the level of knowledge technical skills, behaviours and competencies required to transition from current state to future state.

<b>States:</b>	Low ————— <span style="color: blue;">▲</span> <span style="color: green;">■</span> <span style="color: blue;">●</span> ————— High	Low ————— <span style="color: blue;">▲</span> <span style="color: green;">■</span> <span style="color: blue;">●</span> ————— High	Low ————— <span style="color: blue;">▲</span> <span style="color: green;">■</span> <span style="color: blue;">●</span> ————— High	Low ————— <span style="color: blue;">▲</span> <span style="color: green;">■</span> <span style="color: blue;">●</span> ————— High
<b>Variance by sector:</b>	An indication and example of how the role of the job family may vary from sector to sector, organisation to organisation.			<b>Experience:</b> Low ————— <span style="color: blue;">▲</span> <span style="color: green;">■</span> <span style="color: blue;">●</span> ————— High

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**Blockers and enablers to green transition**

Blockers and enablers for developing green skills were discussed in a series of interviews and round tables that we held with a range of sustainability professionals. A number of proven enablers for overcoming them were also identified. In the following table, we map the blockers and potential enablers to different levels of ‘green’ maturity to guide thinking about potential next steps to take.

Click on the **mouse symbol** to be taken to more detail about each blocker and case study of a potential enabler.

*Please note that when organisations have been listed alongside a maturity level as a case study, this reflects their actions to enable change, not their level of maturity.*

Maturity	Blocker	Description	Potential Enablers
 <p><b>Level 1: Understanding</b></p>	 <p><b>Establishing a base level of knowledge</b></p>	Employees have limited understanding of the green transition, why sustainable practices are important, and how they will affect their day-to-day roles, business, sector, and the UK economy generally	<ul style="list-style-type: none"> <li>Employee engagement campaigns with clear and consistent messaging on sustainability</li> <li>Role-specific training</li> <li>Interactive Environmental Management System (EMS) that shows environmental performance and impact</li> </ul> <p> <b>Case study: 2 Sisters Food Group</b></p>
	 <p><b>Leadership understanding of the value of green skills</b></p>	Leaders have limited understanding of how sustainability and green skills could add value in their organisation and are unclear on the business case for change	<ul style="list-style-type: none"> <li>Presenting the business case for green skills</li> <li>Showcasing quick wins with job families that are already changing</li> </ul>
 <p><b>Level 2: Developing</b></p>	 <p><b>Limited strategy, planning and investment</b></p>	Organisations are not sure where the gaps in green skills are, or how to measure and prioritise them. Lack of a clear strategy and plan of action means investment is hard to secure	<ul style="list-style-type: none"> <li>Use the  <b>model organisation blueprint</b> to identify green skill gaps across job families in your organisation</li> <li>Work with Learning and Development functions to create development plans</li> </ul>
	 <p><b>Rigid processes and structures inflexible to change</b></p>	While governance is important for supporting change, bureaucracy and red tape can hinder the ability to flex ways of working in order to adopt new green behaviours and develop a green culture	<ul style="list-style-type: none"> <li>Forming mission-based teams to focus on outcomes</li> <li>Utilise green networks which may sit across organisation structures, to share learning</li> </ul> <p> <b>Case study: TT Electronics</b></p>
	 <p><b>Competing priorities and time management challenges</b></p>	<p>Green skills training is seen as time-intensive</p> <p>Competing priorities mean that sustainability practices are seen as less important or as an additional ask on top of busy schedules</p>	<ul style="list-style-type: none"> <li>Blended learning in the form of modular training and on the job learning</li> </ul> <p> <b>Case study: Deloitte</b></p> <ul style="list-style-type: none"> <li>Prioritisation of work based on company values</li> <li>Reorganisation of team structures to reflect priorities</li> <li>Adoption of agile working</li> </ul>

Maturity	Blocker	Description	Potential Enablers
 <p><b>Level 3: Performing</b></p>	 <b>Leaders wary of acting first</b>	<p>Future uncertainty and cautious risk management mean that leadership is unwilling to pursue sustainability innovation</p>	<ul style="list-style-type: none"> <li>• Clear policy and regulatory direction from government</li> <li>• Green grants and investments into early-stage innovation</li> <li>• Leadership peer-to-peer networks and sharing of lessons learned</li> </ul>
	 <b>Green skills are not embedded for the long term</b>	<p>Investment in green skills and initiatives consists of one-off activities, with limited focus on maintaining green capabilities and behaviours across the organisation</p> <p>It is difficult to track and measure the value green skills bring to job families and the organisation as a whole</p>	<ul style="list-style-type: none"> <li>• Climate related financial disclosure, science based targets and social value objectives set at the organisational level</li> <li>• Role-specific incentives, performance reviews and KPIs linked to environmental and wider sustainable practices</li> <li> <b>Case study: Speedy Services</b></li> <li>• Continuous green skills learning and development e.g. conferences, professional networks, peer-to-peer learning</li> <li>• Management and leadership role modelling of green behaviours to instil a positive culture</li> </ul>
 <p><b>Level 4: Leading</b></p>	 <b>Supply chain and partners maturity</b>	<p>Suppliers and partners are not so advanced in their green skills journey, causing misalignment in ways of working</p>	<ul style="list-style-type: none"> <li>• Supplier forums and engagement to collaboratively improve, supplier upskilling, and certification</li> <li>• Building social value KPIs into the lifecycle of contracts to enable monitoring and measurement</li> <li> <b>Case study: Deloitte</b></li> </ul>
	 <b>Lack of specialist talent</b>	<p>Limited specialist talent with technical green skills, and the organisation struggles to attract or access specialist talent</p>	<ul style="list-style-type: none"> <li>• Government and industry working together to develop early career learning pathways and apprenticeship routes for new talent</li> <li>• Government and industry run green jobs and careers fairs and school outreach programmes</li> <li> <b>Case study: National Grid</b></li> </ul>

# Organisational blockers and enablers

## Level 1: Understanding

### Establishing a base level of knowledge

Sustainability leaders interviewed by Deloitte said that their workforce had mixed levels of sustainability knowledge and a limited understanding of how green skills can be applied in their job. This meant that opportunities for improvements in sustainable ways of operating were not recognised. Generational differences in environmental awareness were often mentioned in discussions. Millennials and younger generations entering the workforce were seen to be more motivated by environmental awareness. However, awareness of environmental issues did not always translate into an understanding of how to apply green skills in the workplace.

### Example enabling initiatives:

**Organisation-wide training integrated:** A number of the organisations in our interviews had launched, or were in the process of launching, environmental sustainability awareness training in order to build a base level of knowledge among their workforces.

**Establishing an Environmental Management System (EMS):** An EMS consists of processes and practices that enable an organisation to reduce its negative environmental impacts whilst increasing operating efficiency. Some organisations made their EMS interactive and accessible to employees through apps, dashboards and tangible metrics. Building understanding around environmental actions and impacts via an EMS can be a good first step towards improving sustainability practices.

**“It is essential that we mainstream climate action so that it becomes business as usual.”**

IEMA stakeholder survey respondent



Understanding



Developing



Performing



Leading

## Case study

# 2 Sisters Food Group's Environmental Management System provides a central knowledge hub

Environmental management controls at 2 Sisters Food Group (2SFG) used to be on an individual site-by-site level, with sites having limited access to best practice across the group.

A central Environmental Management System (EMS) was put in place in 2019 to create a central knowledge hub for environmental policies, procedures and records.

The EMS provides a live platform that enables sites to host their own systems and ways of working in addition to the group level approach, and it encourages networking between sites and the sharing of best practice. The EMS is hosted on the company's intranet and is the go-to place for any environmental information. Since the implementation of the EMS there has been a notable improvement in environmental performance, such as reductions in energy use and pollution, and an improvement in relations with regulatory authorities.



### Leadership understanding of the value of green skills

Among respondents to the IEMA stakeholder survey, 41 per cent indicated that 'Lack of experience/knowledge among leaders' is a key blocker to developing green skills in their organisation. Sustainability leaders interviewed by Deloitte suggested that some leaders did not understand the urgency for change or the value that green skills can bring to the organisation's performance and workforce satisfaction.


#### Example enabling initiatives:

**Share quick wins:** Increasingly, we heard in interviews that organisations are investing in systems and methods to monitor and report on their environmental performance and impacts. This can reveal where environmental improvements are being made and value added, contributing to the business case for green workforce transformation.

In a number of organisations procurement teams were identified as an early win with this tactic. They reportedly now have strong green skills in a number of organisations due to the communicated quick wins of embedding **social value frameworks** and sustainability considerations in commercial decisions.

**Develop a clear business case:** Among our interviewees, Chief Human Resources officers (CHROs) focused on the need for a clear business case to secure buy-in from leadership. Leaders want to see clear benefits from investment in green skills and the risks that arise by not acting.

A number of interviewees commented on the work they were doing on formation of business case for green transformation. Most considered that it was important to start the business case with the organisation's strategic priorities and objectives as the anchor, rather than focusing on environmental compliance and risk alone.



**Among respondents to the IEMA stakeholder survey, 41 per cent indicated that 'Lack of experience/knowledge among leaders' is a key blocker to developing green skills in their organisation.**

**Level 2: Developing**

**Limited strategy, planning and investment**

A number of our interviewees said they were unsure how to begin systematically identifying the green skills gaps across their organisation. They pointed to an absence of universal standards or competency frameworks for the green skills required in each type of job. The lack of frameworks added to the task of mobilising required green skills development.

Planning and funding cycles were also considered restrictive when it comes to building long term organisation-wide green skills capabilities. Some interviewees identified restrictions imposed by departmental budgets and annual timeframes; others felt that their approach to planning was outdated in view of the speed of change experienced over the past ten years.

Interviewees also feel that uncertainty around policy, technology and economic trends is a further barrier to green skills development. It was felt that the absence of a holistic business strategy on green skills was restricting decision-making related to the training and the resources required.

**Example enabling initiatives:**

**Model organisation blueprint:** A model organisation blueprint can be used to identify green skill gaps across jobs. A structured approach to mapping green skills gaps by means of comparison with a model blueprint is included within our **toolkit**.

**Embed green skills in HR-led learning and development:** Some organisations are now including green skills as a pillar of their HR team remit. Continuous upskilling will be required for both sustainability professionals and non-specialists. An understanding of commercial potential was seen by interviewees as a key enabler for sustainability professionals; and providing an understanding of environmental issues and their implications for the business model was seen as a key enabler for employees in other functions, particularly finance and operations.

**Model the impact of green programmes to show value:** Two of our interviewees were using or setting up a modelling capability to demonstrate how their organisation and its financial performance would be affected in the short, medium and long term by investments in green programmes and environmental changes.

**Rigid processes and structures inflexible to change**

Some interviewees from large organisations commented on the size of their business as a blocker to wholesale transformation. The perceived underlying causes included the sheer number of staff, 'red tape and bureaucratic processes' and legacy governance approaches in need of redesign. Consideration of the environmental impact is often seen as a separate and additional lens through which to view investment and decision-making. Interviewees felt that fundamental changes were needed to integrate environmental considerations into decision-making, rather than seeing them as separate issue.

**Example enabling initiatives:**

**Green networks:** Some interviewees commented on the value of green networks, such as office-wide programmes to reduce plastic, food waste and energy use. These grassroots movements can build up interest and appetite within the organisation for sustainable behaviours, and they often operate outside rigid organisational structures. However, the most impactful green networks were seen to be those endorsed and empowered by the leadership.

*“We’re not a nimble, agile fintech... It takes two to three years to get anything done.”*

Operational head of department, UK Financial Services business

*“We receive a huge amount of scrutiny on our figures from leadership when making business cases. Because we’re asking for investment that will pay off in the long-term, we need to prove that it is worthwhile by modelling impact.”*

Rebecca Harris, Environmental Sustainability Team at Network Rail

# Case study

## TT Electronics' green network supports carbon reduction

In 2019, at the TT Electronics site in Bedlington a purchasing manager led an initiative to use reusable bags and water bottles and identify single-use plastic items on-site that could be replaced. With CEO sponsorship the 'pass on single-use plastics' initiatives spread organisation-wide to 23 sites.

This is just one example of the initiatives provided by TTE's Environmental Champions network. Organisation-wide recognition and good practice sharing in company newsletters. Strong support from TT Electronics Leadership is at the heart of how we think about the future to continue to motivate and fund additional initiatives.

A Sustainability Council links Environmental Champions across all sites globally to share, learn, and implement improvements. The cumulative impacts of all initiatives were demonstrated in TT's 2021 annual report, which noted a 31 per cent reduction in CO2e emissions from 2019 (Scope 1 and 2 emissions), the recycling more than 59 per cent of waste from 16 sites with 3 manufacturing sites achieved zero waste to landfill in 2021, and a 16% reduction in the weight of single-use plastics purchased in 2021 vs 2020.

### TT sites pledge to Pass on Plastics

Inspired by our October HSE event, we're immensely proud to see so many sites actively working to reduce their reliance on single-use plastic.



PERRY, US

Many colleagues collected and segregated waste, and everyone at the site was given a reusable shopping bag, branded with the Pass on Plastics logo.



KUANTAN, MALAYSIA

Colleagues took part in a two-day environmental search for single-use plastics on site. Their final haul weighed in at 2.8kg!



DONGGUAN, CHINA

Employees signed the pledge and reaffirmed their commitment to the site's 3R (Reduce, Reuse and Recycle) policy.



BEDLINGTON, UK

Visitors to the Logistics Office at our site in Bedlington, UK, can't fail to miss the striking 'Welwyn Whale' wall art, which has become the focal point of the site's 'Pass on Plastics' sustainability project. Site colleagues Paula McSparron and Olivia Maddison extended the 'Pass on Plastics' message to students at St. Benet Biscop Catholic Academy along with Karen White, VP Global HSE, and Stephanie Walker, Enterprise Advisor for the school. They also shared ideas on reducing single-use plastic.



JUÁREZ, MEXICO

The site organised a variety of activities to promote the 'Pass on Plastics' message, including awareness presentations, competitions and brainstorming sessions. Operations Director Salvador Arellano followed CEO Richard Tyson's example by signing the pledge.



#### Juárez turns green

All waste water generated by our plant in Juárez, Mexico, is being reused as a result of the Green Desert Project. The water now irrigates green areas on the site. A newly formed Green Team aims to deliver the site's commitment to protecting and improving the environment. One of its first initiatives is the 'Adopt a Tree' project – team members have already been out and about, planting trees in the local area to improve the environment for everyone.



#### Mexicali artists paint the future

In Mexico, our Mexicali site organised an art competition for colleagues and their families as part of its recent HSE event. The environmental awareness theme inspired many excellent, thought-provoking entries.

### Competing priorities and time management challenges


The time dedicated to train employees in green skills is still seen as lost productivity or a challenge to business continuity. Sustainability leaders interviewed by Deloitte felt that it would be particularly difficult to dedicate their time to the training required, given their sense that other things are more pressing priorities.

In addition to the investment of time in training, another challenge mentioned by interviewees was day-to-day workload. To embed sustainability across the organisation some employees may be required to take on additional responsibilities alongside their normal roles. For some, this may require changing the way they work and becoming familiar with new standards or IT software. This initially puts pressure on workloads. Several interviewees observed that their finance teams struggled to take on the now mandatory climate-related financial disclosures, which then fell to the sustainability teams to deliver.

#### Example enabling initiatives:

**Prioritisation of work based on company values:** Some interviewees highlighted cases where, in organisations committed to green transformation, green skills development was an explicit qualifying factor in prioritising work. Where a proposed initiative had the potential to develop green skills capabilities, it was 'upweighted' against business-as-usual work.

**Tailored and blended learning:** To minimise the time spent on training, bite-size training, on the job development and learning by doing can be utilised. Knowledge boosters and tailored information can be shared through emails, posters, lunch-and-learn sessions, speakers at company meetings, or start-of-shift briefings. A strong sense of personal/professional learning and development can be encouraged by certification, tailored learning and KPIs for each role.



**The time dedicated to train employees in green skills is still seen as lost productivity or a challenge to business continuity.**

## Case study

# Deloitte pursues a global climate learning programme

Deloitte is committed to engaging all employees in its sustainability strategy and to building the skills of practitioners who support clients on their own sustainability journeys. In August 2021 Deloitte rolled out its climate learning programme, developed in collaboration with the World Wildlife Fund, to all its 330,000 staff worldwide. A first of its kind among major global organisations, the programme aims to inform, challenge and inspire Deloitte employees to learn about the impacts of climate change and make responsible, sustainable choices at home, at work, and in giving client advice.

Deloitte is committed to engaging all employees in its sustainability strategy and to building the skills of practitioners who support clients on their own sustainability journeys.

**Level 3: Performing**  
**Leaders wary of acting first**

Private sector sustainability professionals interviewed said that being early adopters of environmental sustainability practices and innovations is difficult for leaders because of the degree of uncertainty caused by rapid technology advancement, evolving policies and legal/compliance obligations.

Some interviewees recognised that their organisations have entrenched views on what makes a good investment, based on historical good performance and limited reflection on the changing external context of a shift to a green economy.

Some organisations reflected on how some past government incentives that signalled strong backing for sustainability initiatives were later scrapped, resulting in hesitancy by leaders to make commitments.

**Example enabling initiatives:**

**Clear government incentives:** Sustainability professionals called for clear policy and regulatory direction from government to encourage organisations to act.

**Green innovation programmes:** Establishing an incubation platform to accelerate green innovation and the development of complementary green skills. For example, the West of England Combined Authority are collaborating with residents, businesses, academic institutions and research organisations to drive innovation and enhance green skills as part of their Climate Emergency Plan.

Dedicated programmes and funding are being rolled out to improve retrofitting, provide local businesses with green grants and test approaches to inspire school leavers to take up green jobs.<sup>53</sup>

To encourage investment into green skills, grants, tax incentives and subsidies were considered beneficial. Especially government commitments to more green apprenticeships in key sectors, green skills funds that employees could tap into to reskill and investment in a green skills curriculum.

**Green skills are not embedded for the long term**

Maintaining green skills and behaviours across the organisation is seen as a long-term challenge for more mature organisations. Interviewees felt that one-off organisation-wide learning can deliver immediate awareness of sustainability but can be a ‘tick box’ exercise that is short-lived in its impact on employee skills.

There is also a constant evolution in the nature of green skills required, resulting in the need for a concerted long-term effort to embed and sustain learning.

**Example enabling initiatives:**

**Establishing a set of internal sustainability metrics or KPIs:** A link between green skills and organisational performance can bring clarity and a common purpose for employees to get behind. At the organisational level, a focus on meeting and exceeding net zero objectives, science based targets, social value objectives or driving climate related financial disclosure can show long-term ambitions for sustainability.

Coupled with incentives, symbols and role modelling clear signals can be sent to the workforce about how the organisation chooses to operate; what behaviours and practices are valued and rewarded; and where employees have autonomy to create a wider impact.

For example, BT Group plc told the Goal 13 Impact Platform that ten per cent of bonuses for eligible managers are linked to BT’s performance in carbon reduction and digital skills.<sup>54</sup>

Designing and realigning incentives will be vital in motivating a shift towards green skills uptake and recognising the value/benefits that these skills bring to the organisation.



## Case study

# Speedy Services embeds sustainability across job functions

Speedy Services aims to disrupt traditional norms in the construction sector through a focus on innovative practices, technology and digitisation. It is working to include sustainability requirements in all job descriptions and its business-wide ESG programme rolled out in 2022. The company aims to ensure that employees have a good level of understanding of what ESG is and its impact on the company and the construction sector as a whole. A company representative said, "I think it's really important when you're rolling out an ESG strategy... that people have that education programme behind them to upskill. You cannot have a strong strategy without a strong education and training programme behind it."

**"I think it's really important when you're rolling out an ESG strategy that people have that education programme behind them to upskill. You cannot have a strong strategy without a strong education and training programme behind it."**

**Level 4: Leading**

**Supply chain and partners maturity**

Organisations' supply chains are often long and suppliers may not have made as much progress in developing their green skills and practices. This is a problem for large organisations, compromising their own sustainability performance. A Director of Procurement interviewed mentioned the lack of green practices at smaller supplier companies as a particular problem.

**Example enabling initiatives:**

**Upskilling suppliers:** Leading organisations can take an active role by sharing the lessons they have learned and helping to upskill suppliers in order to drive progress towards a net zero supply chain. Dedicated supplier forums and recognised certification can help to show ambition and the extent of progress by suppliers.

**Procurement and contract management approaches:**

Supplier contracts might be used as enablers in two ways: first, by including environmental requirements in tender documents for the award of contracts; and second, by extending the length of contracts for standard items to longer terms, enabling buyers and suppliers to build relationships, share training across teams, and increase the focus on mutual benefits.

Organisations' supply chains are often long, and suppliers may not have made as much progress in developing their green skills and practices.



Understanding



Developing



Performing



Leading



## Case study

# NHS decarbonising its supply chain

The NHS set itself the bold ambition **to be the world's first 'net zero' national health service**. As part of this overall goal, it set a net zero target for its supply chain. To meet the targets, the NHS Commercial Directorate developed a supplier engagement strategy and strategic programme.

A framework was developed to assess the sustainability maturity of suppliers, together with a net zero supplier roadmap. This framework enabled the NHS to set clear requirements with suppliers and give greater visibility of how suppliers are meeting the net zero ambition.

The NHS set itself the bold ambition to be the world's first net zero national health service. As part of this overall goal, it set a net zero target for its supply chain.

### A lack of specialist talent

Some interviewees said that their organisation struggled to find specialist talent with technical green skills, such as carbon lifecycle analysis. These skills are increasingly in demand, and the shortage could result in missed commercial opportunities and lower long-term growth.

Individuals with transferable skills in STEM subjects (science, technology, engineering and maths) are generally attracted to working in sectors that offer higher salaries, such as finance and technology.

Organisations that need specialist advice are turning to external advisors and consultants to fill gaps. Sustainability leaders who attended the roundtables commented that some decarbonisation advisors are overwhelmed with work and may not always have the capacity to meet the demand for expertise.

### Example enabling initiatives:

**Develop specialist talent from within:** Some interviewees from organisations with long-term skills gaps said that they were looking to grow specialist talent from within by investing in continuous professional development, secondments and targeted external training. It was hoped that this would avoid involvement in talent wars and provide a steady supply of skills.

Partnerships between government and industry to target specialist talent development were seen as key. There was unanimous acknowledgement among interviewees that this would be a long-term strategic solution, rather than something to alleviate current skills and talent gaps.

School outreach programmes and careers fairs that encourage green skills from a young age were also seen as options, which some organisations were already taking, especially in engineering.



*We want to use apprenticeships and graduate schemes to attract people into the industry.*  
*We have training and development opportunities within the organisation and have the right professional networks to help attract and retain talent in the industry.*

Lynne Malpass, Head of Environment and Industrial Risk at SUEZ

## Case study

# National Grid builds workforce infrastructure through outreach programmes

National Grid noticed that the energy sector was struggling to recruit and retain top talent. A proportion of its workforce was reaching retirement age, only a limited number of students were choosing STEM qualifications, which other sectors were competing for, and there was also a lack of diversity in the talent pool. National Grid therefore decided that was essential to inspire the next generation to join their net zero energy workforce.

One of its programmes works in partnership with the Prince's Trust. It aims to support 5,000 people from disadvantaged communities over the next five years to gain employment in a net zero-related industry.

In addition, employees visit local schools to educate students on energy projects in their area and on various career routes into the sector, including apprenticeships. They also provide grants for STEM equipment, allowing over 250,000 school children to learn about STEM-related activities. In Northumberland, which will be a landing point for the North Sea Link interconnector, it opened an Energy Education Centre. The free community space has education initiatives on climate change and changing energy usage behaviour. National Grid hopes that by educating children around key infrastructure projects, the next generation will be inspired to join the net zero energy workforce.

National Grid hopes that by educating children around key infrastructure projects, the next generation will be inspired to join the net zero energy workforce.

Unlocking the future:

regional and national initiatives

Action by individual organisations is critical. However, a number of regional and national UK government initiatives, some already underway, will be needed to contribute to the green workforce transformation.

### Regional enablers

#### Regional education providers

Interviewees suggested that educational establishments might tailor courses based on local natural resources, as well as government commitments for the area. For example, the University of Aberdeen leverages its location in an energy hub to offer courses that include MSc programmes in Energy Transition Systems and Technologies, and in Renewable Energy Engineering.

Our interviewees also suggested that partnerships between education providers and local industry could inform workforce planning at the local level. While government commitment and signalling play a huge role in decisions about which courses education providers should offer, student bodies and staff enthusiasm can accelerate change in the higher educational programmes.

**“Climate literacy is improving all the time. The graduate students I work with have an implicit understanding of environmental sustainability.”**

IEMA stakeholder survey respondent

## Case study

# EKC Group instills green skills for the future generation

The EKC Group, an alliance of colleges in East Kent, aims to be the leader among Further Education providers in delivering education sustainably and equipping students with green skills and resources for their lives and careers.

EKC's CEO, Graham Razey OBE, said that students' passion was a driver for the group's efforts: "Responding to the significant voice of our student body, EKC Group has permanently changed its way of thinking. We are making real progress in reducing our carbon footprint and, most importantly, incorporating green skills into our education provision to assist our students to enter jobs that improve our environment."

**"We are making real progress in reducing our carbon footprint and, most importantly, incorporating green skills into our education provision to assist our students to enter jobs that improve our environment."**

### Local councils and combined authorities

Interviewees welcomed local council plans and priorities. Some councils and combined authorities have declared climate emergencies and are outlining their priority areas to drive change. Climate Change UK has tracked 334 councils that have declared climate emergencies, of which 290 have climate action plans.<sup>55</sup> These plans allow organisations to identify areas in which retraining and upskilling are necessary, and help them to consider how this training might be delivered.

For example, the West of England Combined Authority (WECA)'s Climate Emergency Action Plan has a target of achieving carbon neutrality by 2030. It has identified five challenge areas it wants to address with national and local government, local businesses, and its residents: low carbon transport, low carbon business, renewable energy, low carbon buildings and places, and the green environment. In its Action Plan, WECA has outlined a set of steps it will take to support local people to develop skills and access green jobs.<sup>53</sup>

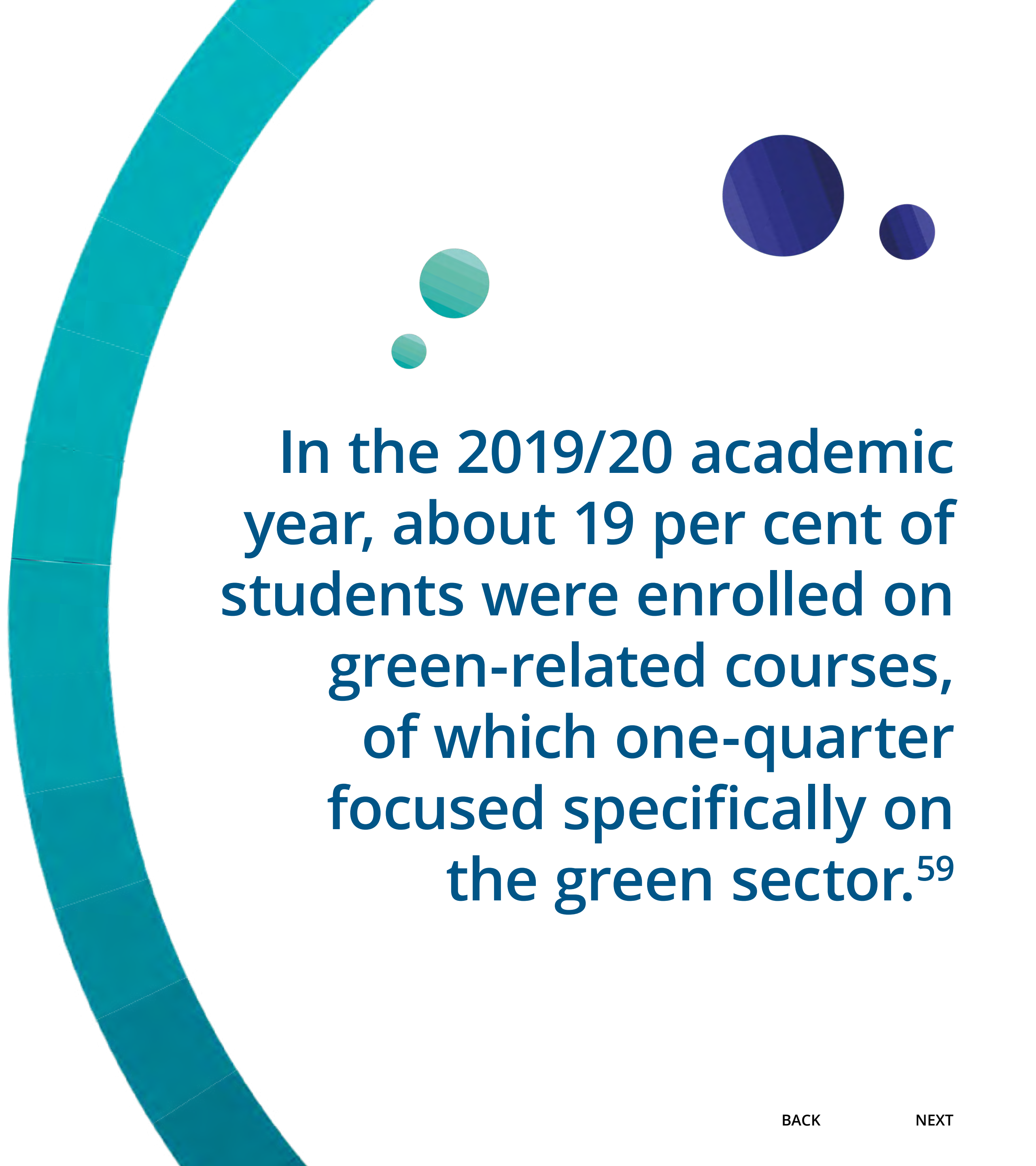
These commitments, action plans and charters provide regionally tailored routes to achieving greener communities. For example, Southampton's Greener City Plan identifies staff training in the circular economy and waste reduction as a key action for the city and its businesses.<sup>56</sup> And Northumberland's Climate Change Action Plan expects jobs to be created in carbon sequestration (e.g. data analysis and mapping of the natural capital in the region and ecological managers).<sup>57</sup>

Greater Manchester Combined Authority is preparing its workforce to become retrofitters. A study by the Green Finance Institute and Bankers for Net Zero found that the UK retrofitting sector will need to grow by a factor of at least ten to deliver the required levels of retrofits for the UK to achieve its net zero target by 2050.<sup>58</sup> The Greater Manchester Conduct Authority is partnering with local educators to help fill this gap.

The Greater London Authority's Adult Education Budget also provides funding for green skills training. In the 2019/20 academic year, about 19 per cent of students were enrolled on green-related courses, of which one-quarter focused specifically on the green sector.<sup>59</sup>

### Devolved administrations

An enabler frequently mentioned by interviewees was the effort by devolved administrations to direct individuals towards green training and career opportunities. For example, the Green Jobs Workforce Academy, developed for the Scottish Government by Skills Development Scotland (SDS),<sup>60</sup> aims to provide avenues to training and jobs for Scottish residents, to contribute to its goal of reaching net zero by 2045.<sup>60</sup> Its website, [greenjobs.scot](https://www.greenjobs.scot), provides information on career prospects, pathways to entry, and available courses in five sectors: transport; industry; construction and the built environment; engineering; and agriculture and land use. It also has a search function for looking for available job roles and training courses.<sup>61</sup>



In the 2019/20 academic year, about 19 per cent of students were enrolled on green-related courses, of which one-quarter focused specifically on the green sector.<sup>59</sup>

## National enablers

### Education frameworks

At the UK level, putting the right education frameworks in place is considered by our interviewees to be essential for driving the green skills and jobs agenda. 20 per cent of respondents to IEMA's stakeholder survey viewed secondary education as the most important enabler for the green skills agenda over the next five to ten years.

The Department for Education's draft strategy for sustainability recommends changes to the national curriculum, including earlier teaching and greater integration of sustainability, as well as the introduction of an Environmental Science A Level.<sup>62</sup>

### Careers advice

Better and earlier careers advice about green skills and jobs was also called for. However, some interviewees suggested that the language used to describe green jobs should be changed, to ensure skills and jobs have more appeal.

### Apprenticeships

Apprenticeships were also mentioned as another way in which organisations from different sectors can recruit and develop staff with a focus on green skills. Existing policy initiatives include the Apprenticeship Levy<sup>63</sup> which requires organisations with an annual wage bill of more than £3million per year to put 0.5% of this amount towards funding apprenticeships.

The Green Apprenticeships Advisory Panel (GAAP)<sup>63</sup> is working on identifying how apprenticeships can be made 'greener'.

### Provision for lifelong learning

80% of individuals who will be in the UK's workforce in 2030 are already in work today. This points to the need for urgent action to upskill the current workforce to acquire green skills. And as green skills evolve and become more specialised, national provision of continuous professional development will be vital for topping up knowledge.

The National Skills Fund aims to invest £2.5 billion in adult education and training by providing adults aged 19 and over with access to fully funded Level 3 courses (equivalent to an advanced technical certificate or diploma, or A level).<sup>64</sup> Green skills in the form of an environmental conservation course have been included alongside traditional courses such as digital, engineering, health and construction. These courses have been specifically selected to help adults improve their job prospects, as they have good wage outcomes and can provide skills that are needed in the economy.

### Government influence

Beyond policy initiatives like the Apprenticeship Levy and the National Skills Fund, there are other legislative requirements that sustainability leaders we interviewed recognise as enablers of the shift towards a greener society and economy. They include the UK's 2050 net zero emissions target and the Environment Act that received the Royal Assent in November 2021. The net zero target places an onus on all sectors of the economy to decarbonise, while the Environment Act specifies long-term targets in the areas of air quality, biodiversity, water, resource efficiency and waste reduction.



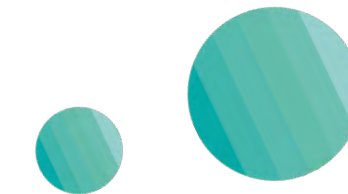
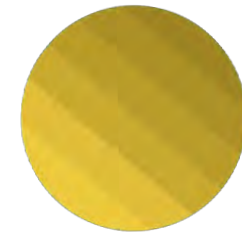
Attendees at our roundtable for the public sector hoped these policies would be helpful, but many interviewees from the private sector suggested that additional support and central government signposting is necessary. One interviewee in financial services said, "There seems to be a reliance by government to let markets sort it out themselves without necessarily providing pricing or signals for that to happen. We're not on target to hit our decarbonisation targets. For example, agriculture desperately needs to decarbonise, but I've seen zero progress or government intervention to make it happen."

Strong government signposting is seen as a key enabler for change. One such enabler is the government response to the Environmental Audit Committee's (EAC) report on Green Jobs. Key elements of the response include:

- commitment to capture data to track growth of green jobs.
- reaffirmation of the Net Zero Strategy's commitment to establish a cross-department Green Jobs Delivery Group.
- commitment to reform the skills system, including housing retrofit, through existing programmes and the development of new training offers.

The transition to the green economy is driving a fundamental change in how organisations will operate in the future. Some organisations are already taking steps to enhance and extend green skills across their organisation, although few are taking a holistic strategic approach to this.

A green workforce transformation faces a number of blockers, but proven enablers are already emerging. If you are thinking about embarking on this journey or improving your approach, we encourage you to look at our accompanying **toolkit** to consider the maturity of the green skills of your organisation, your team or you personally.





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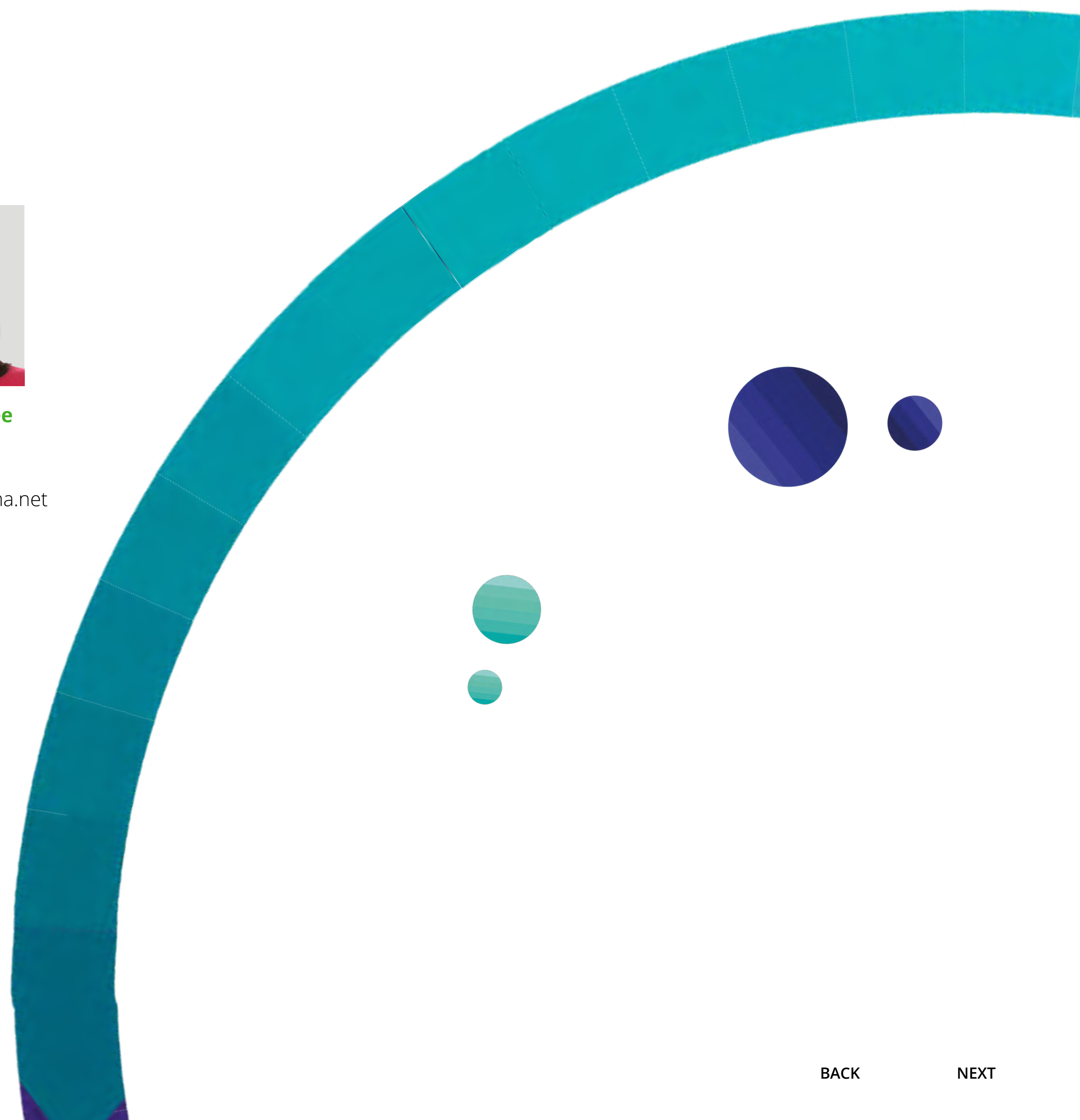
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