In partnership with

Sage

MAKE uk
The Manufacturers' Organisation

125 YEARS BACKING BRITAIN'S MAKERS

UNLOCKING THE SKILLS NEEDED FOR A DIGITAL AND GREEN FUTURE

MakeUK.org

EXECUTIVE SUMMARY

As we transition to a digital and green future, the UK manufacturing sector has a vital role to play in the move to a net-zero carbon economy. Currently the manufacturing sector is one of the largest greenhouse gas (GHG) emitters in the UK, accounting for 21% of emissions, and the sector itself is responsible for 13% of total UK GHG emissions.

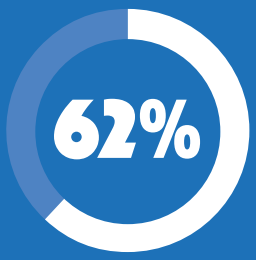
ACTION IS NEEDED URGENTLY, AND AT SCALE

Many manufacturers are already taking steps to cut greenhouse gas emissions, while looking to deliver innovative products, processes, and services as part of the green industrial revolution. The overwhelming majority (98%) of manufacturers are aware of the Government's net-zero target. But being aware is one thing. Achieving it is another. Yet, the manufacturing industry is ready to step-up to the challenge, and 92% say net-zero by 2050 will be achievable in their business. But only with the right support.

Whilst the long-term 2050 goal seems far away still, what we do this next decade will determine whether we will be successful in achieving our target. The 2030s is 'the defining decade' and to achieve what is needed in 2030, we need to take significant action in the next five years.

Turning threat into opportunity will be key to achieving net-zero in the manufacturing industry. Understanding and equipping our business with the green skills needed to complete our transition to a digital and green future, will be fundamental to this. In this report we describe green skills as the effective amalgamation of environmentally conscious knowledge, strategies, and abilities to support a sustainable and resource-efficient manufacturing sector.

Currently only



of manufacturers told us that their workforce is equipped with the skills they need to manufacture goods and products in a more sustainable way.

It's therefore crucial that the Government, the education system, training providers and manufacturers make a collaborative effort to address the current large green skills gap within the manufacturing sector, and reform the skills pipeline to navigate this profound change.

Together with Sage, we have published a set of Green Skills Guiding Principles to guide, inspire, and support manufacturers as the sector seeks to access the skills we need in our transition towards a digital and green economy. The principles are devised to encourage manufacturers to prioritise the green agenda in the months and years ahead, while also providing a framework to identify and accessing green skills now, and in the future.

The principles in summary are:

1. We commit to both understanding and equipping our business with the green skills needed to complete our transition to a digital and green future

2. We will identify the areas of our business in which green skills are needed, now and in the future

3. We will engage and collaborate with the education system and training market to meet the green skills required for my business

4. We will recognise that a green future goes hand in hand with a digital future.

Collectively, we need to, and can do more to be ready and to take advantage of a digital and green future. This report explores which green skills the sector will need, where manufacturers are on their journey to acquiring them, the current barriers to accessing these skills, and proposes a series of recommendations to Government to overcome the barriers.

HELPFUL DEFINITIONS WHEN DISCUSSING GREEN SKILLS

Green skills: Green skills are the effective amalgamation of environmentally conscious knowledge, abilities, values and attitudes to support a sustainable and resource-efficient manufacturing sector.

Green jobs: Green jobs are those involved in areas of the economy which are engaged in producing goods and services to support a sustainable and resource-efficient manufacturing sector.

Green recovery: The UK's 'Green Recovery' is the name given to the Government's proposals to 'build back better' by moving toward a sustainable and economic model for the UK. This is encapsulated by the Government's 10-point plan[1].

Green economy: A green economy is an economy in which a sufficient level of output is generated without producing a level of CO2 emissions that contributes to significantly increasing the risk of raising the Earth's average temperature.

Brown economy: The brown economy refers to is an economy in which we see high carbon emissions and economic practises.

Green sector: The green sector consists of industries producing environmental goods and services with low carbon emissions and lower carbon footprint.

Brown sector: The brown sector consists of industries producing goods and services that rely heavily on fossil fuels, have a high carbon footprint, and do not consider the negative side effects that economic production and consumption have on the environment.

Resource efficiency: Resource efficiency means using the planet's limited resources in a sustainable manner that minimizes the environmental impact.

Low-carbon economy: A low-carbon economy is simply an alternative to our current carbon-intensive economy, based on low-carbon power sources and goods production and services that has a minimal emission of GHG.

"As we lead the world in tackling climate change, we need to invest in the UK's most important asset – its workforce – so that our people have the right skills to deliver a green Industrial Revolution and thrive in the jobs it will create."

Co-chair of the Green Jobs Taskforce Anne-Marie Trevelyan MP

GREEN JOBS TASKFORCE

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

KEY FINDINGS

Awareness of the Governments net-zero target remains high

98% of manufacturers are aware of the UK Government's national target to be net-zero by 2050 and many are optimistic in reaching it too. This coincides with our previous work, Demystifying Net-Zero which highlighted the same overwhelming awareness of the UK Government's net-zero goals. This awareness has subsequently boosted involvement efforts, with over three quarters (77%) intending to set their own net-zero targets for their business within the next 24 months[1].

of manufacturers see the UK Government's net-zero target as achievable within their business by 2050

...AND IMPORTANTLY, GREATER AWARENESS CAN LEAD TO THE DEVELOPMENT OF GREEN SKILLS

Importantly, the growth of net-zero awareness and actions has boosted the awareness and development of green skills in general. This mimic's a similar pattern seen in the increasing awareness of the Industrial Digital Technologies (IDTs) such as Artificial Intelligence (AI), Internet of Things (IoT) and additive manufacturing, with businesses increasingly seeing the benefits of digital adoption and therefore, accelerating plans to ensure they have the skills they need to take advantage of them.

With net-zero awareness now widespread and climate commitments the norm, it is now time to focus our efforts on building these green skills, in the same way in which manufacturers have done so through the acquisition of digital skills.

Our survey shows that progress is well underway. Almost two-thirds (62%) of manufacturers have identified the skills they require in their business to manufacture goods and products in a more sustainable way. And positively, 61% of manufacturers' say their current workforce is equipped with the skills to manufacture goods and products in a more sustainable way.

But despite many manufacturers feeling confident in having the skills to manufacture goods and products in a more sustainable way, 61% of manufacturers are still looking to change their skills strategy to access and develop these skills. This will be critical as the need, as well as type, of green and digital skills required is rapidly changing as technology evolves.

INNOVATION AND MANAGEMENT SKILLS ARE THE TOP IN-DEMAND SKILLS

72% of manufacturers ranked innovation skills as the most needed additional skill to achieve sustainable manufacturing. This underlines the need for manufacturers to embrace both digital and green skills when attempting to make a green transition. The adoption and diffusion of new technologies, which are constantly changing, can support manufacturers to explore different ways of reaching their own net-zero targets. But effective leadership and management skills are also key to the green transition, and this is why it is no surprise to see that almost 6 in 10 manufacturers require management skills in order to manufacturer goods and products in a more sustainable way.

[1]Make UK, Demystifying net zero, 2021

...BUT MANUFACTURERS ALSO KNOW THE SPECIFIC GREEN SKILLS THAT ARE NEEDED

A key part of our work was to identify which technical skills manufacturers need, in which parts of their business, and at what level. To date there is little data available on the exact green skills required in the manufacturing sector. The Green Jobs Taskforce highlighted project management, change management and leadership, education management and communication skills as vital non-STEM green skills required.

However, our own survey shows the top three green skills that will see the biggest increase in demand are:

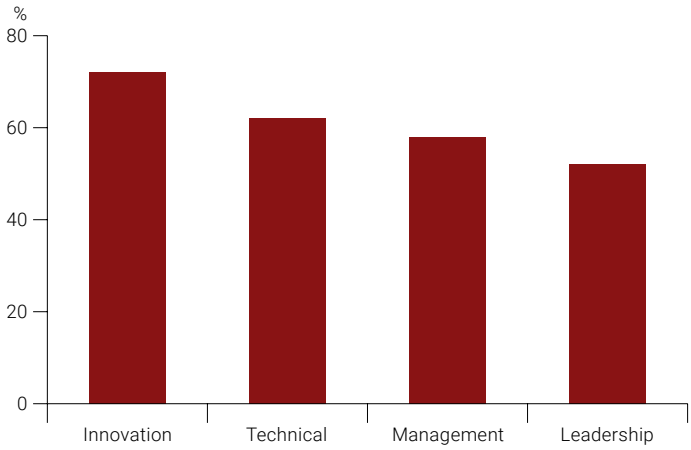
- **Resource efficiency, e.g., carbon accounting, lean manufacturing**
- **Low-carbon economy, e.g., nuclear and renewable energy generation, carbon emission minimisation**
- **Development or new or amended products, e.g., design and production of electric vehicles.**

REFLECTED BY A CLEAR SHIFT TOWARDS HIGHER TECHNICAL QUALIFICATIONS

Whilst the confidence from manufacturers to acquire the skills they need is clear, it still remains that approximately only two-thirds (62%) of manufacturers believe their workforce is equipped with the skills need now – almost a third are still experiencing a skills gap.

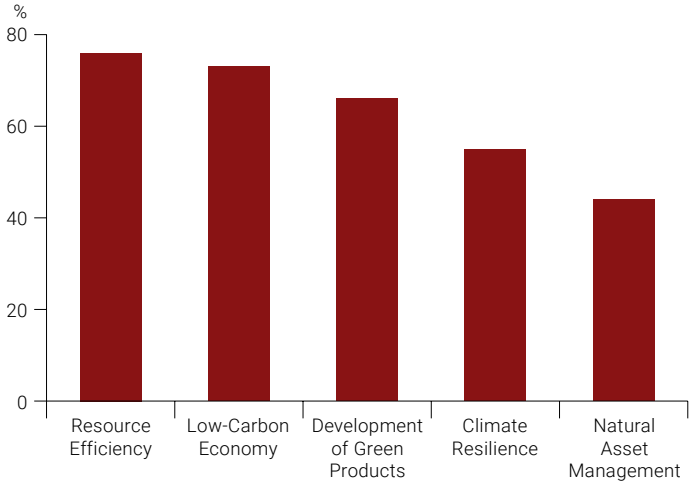
Part of the reason behind this green skills gap is that many of these skills are at a higher level. Almost half (45%) of manufacturers believe green skills needed are generally Level 4 and 5 qualifications and almost a third (30%) believe those skills needed will be at Level 6 and above, i.e., degree level.

Chart 1: Additional skills manufacturers need to manufacture goods and products in a more sustainable way



Source: Make UK Green Skills Survey, August 2021

Chart 2: Where manufacturers expect to see skills demand changing in the next five years to ensure their business is, or in the future, operating in a sustainable way



Source: Make UK Green Skills Survey, August 2021

ALMOST
THREE-QUARTERS
OF **MANUFACTURERS**
SEE **GREEN SKILLS**
AS NEEDED IN
LEVEL 4 AND ABOVE

EXPLANATION OF UK QUALIFICATION LEVELS

Level 1 = GCSE - grades 3, 2, 1 or grades D, E, F, G, level 1 national vocational qualification (NVQ)
Level 2 = GCSE - grades 9, 8, 7, 6, 5, 4 or grades A*, A, B, C, level 2 national diploma
Level 3 = A level, advanced apprenticeship, applied general
Level 4 = higher apprenticeship, higher national certificate (HNC)
Level 5 = foundation degree, higher national diploma (HND)
Level 6 = degree apprenticeship, level 6 NVQ

This demonstrates the technical nature of green skills, both in greenifying existing jobs which will require people to be upskilled, and the creation of new, green jobs. In fact, research by Onward shows there is a significant skills gap in the UK among both high level STEM skills and low and medium level technical qualifications. They estimate that the average skill level of net-zero jobs is 26% higher than the current average occupational skill level in the UK[2].

WHAT ARE MANUFACTURERS DOING TO OPERATE MORE SUSTAINABLY?

Green Skills aren't simply isolated to manufacturing's production, but necessary across every process within the manufacturing sector. This includes how businesses operate.

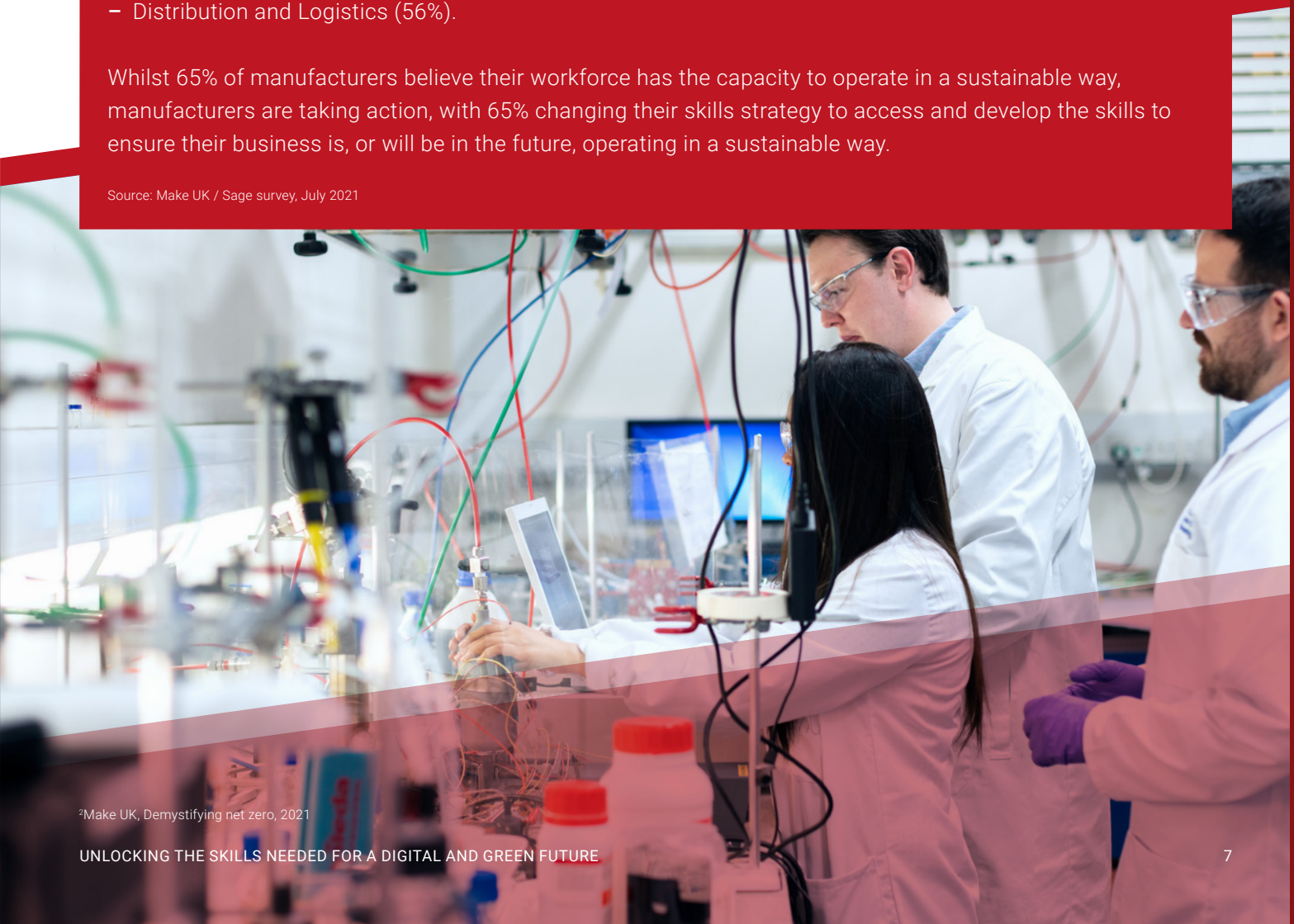
Just over half (56%) of manufacturers have identified the skills required to operate their businesses in a sustainable way. This is a smaller proportion compared to the identification of skills needed to sustainably manufacture goods.

The top five skills manufacturers have identified to be able to operate more sustainably are:

- Designing and Engineering (75%)
- Research and Development (74%)
- Production and Manufacturing (73%)
- IT (57%)
- Distribution and Logistics (56%).

Whilst 65% of manufacturers believe their workforce has the capacity to operate in a sustainable way, manufacturers are taking action, with 65% changing their skills strategy to access and develop the skills to ensure their business is, or will be in the future, operating in a sustainable way.

Source: Make UK / Sage survey, July 2021

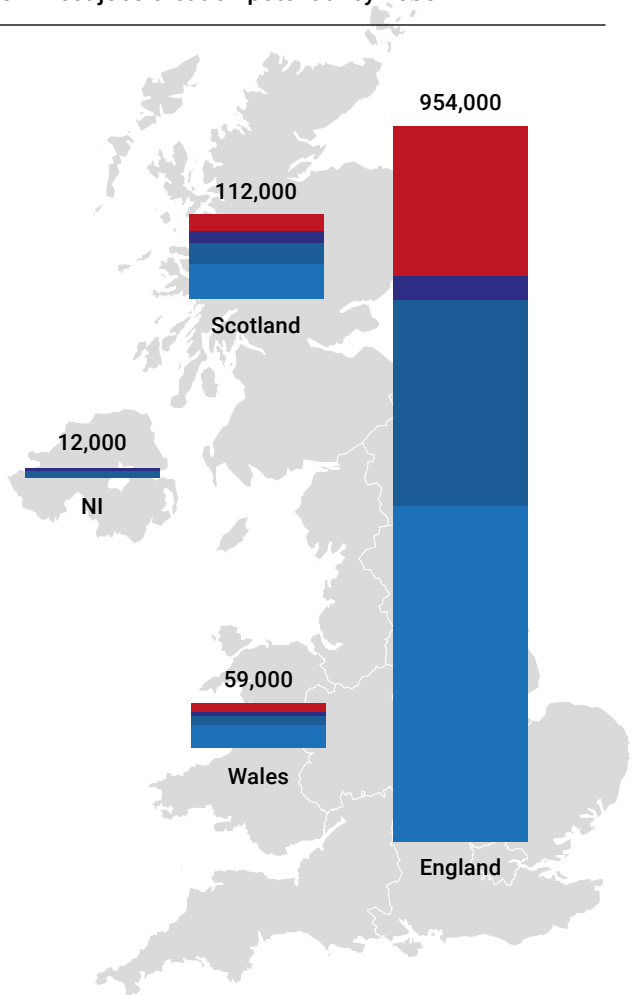


[2]Make UK, Demystifying net zero, 2021

CURRENT PROGRESS TOWARDS UNLOCKING THE SKILLS NEEDED

As the UK initiates the green industrial revolution and a prompt transition to a net-zero economy, it is crucial that the manufacturing sector takes the lead in this revolution by investing in its workforces through the development of green skills. So far, the progress that has been made in the manufacturing sector regarding current emission levels, is evident. But the progress in terms of acquiring green skills is mixed.

Chart 3: Direct jobs creation potential by 2030



Analysis by the Green Jobs Taskforce estimates that over 1.2 million jobs could be created within the manufacturing and construction sectors in a green economy by 2050[3]. The Independent Green Jobs Taskforce announced that beyond this, every UK job has the potential to be green- including those within the entire manufacturing sector. This is supported by evidence from Green Alliance, demonstrating the growing low carbon and resource efficient industries which will create new jobs across the country.

This change is likely to impact the manufacturing sector more so than others – in particular when considering the upskilling challenge, the sector faces.

Transport
(integrated urban transport, rail expansion, manufacture of electric trains, electric buses, electric vehicle supply and infrastructure)

Natural infrastructure
(peatland restoration, afforestation, flood defences)

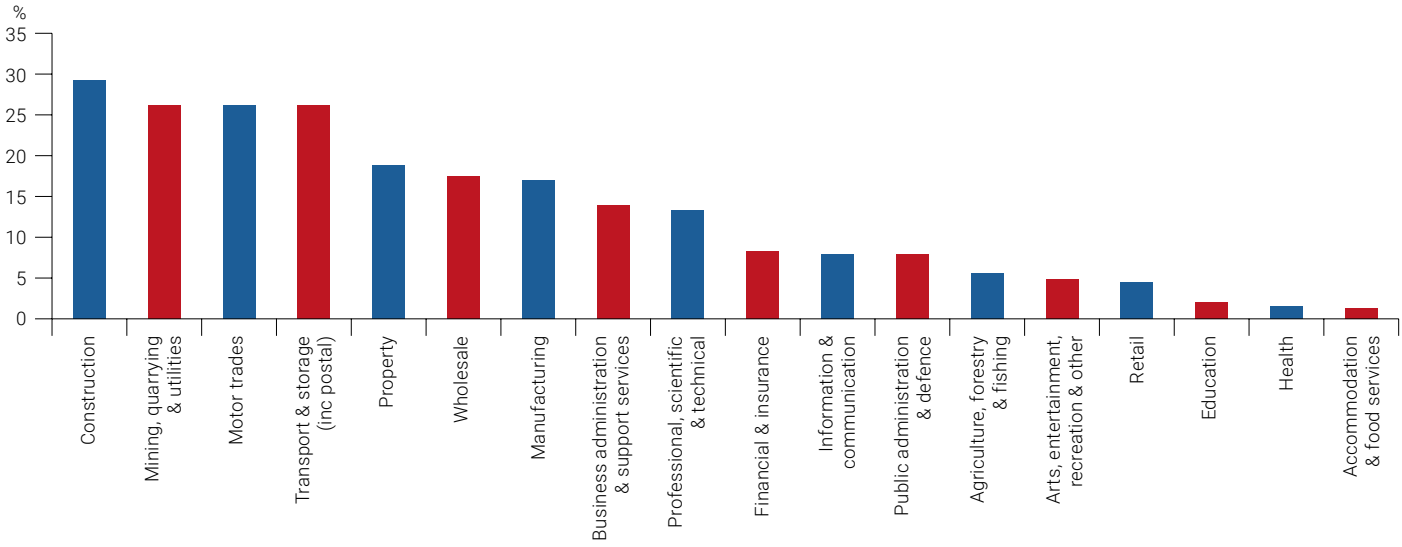
Buildings
(energy efficient retrofits, heat pumps, heat networks)

Circular economy
(recycling, remanufacturing, servitisation, repair, bioeconomy)

Source: Green Alliance, How to fast track innovation for a green industrial revolution, 2021

[3]Green Jobs Taskforce Report, July 2021

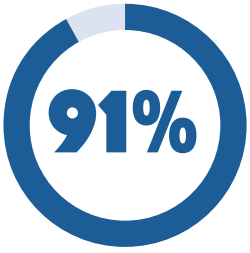
Chart 4: Proportion of jobs needing upskilling by industry



Source: Onward, Getting to net-zero, 2021

However, green jobs aren't just an attractive option to ensure manufacturing's long-term growth but also to ensure its survival against the rising unsustainability of current practices. This unsustainably isn't isolated to its creation of an unemployment problem - but an industry wide challenge. The manufacturing industry is one of the largest greenhouse gas emitters in the UK, accounting for 21% of emissions, only slightly less than surface transport, and with the manufacturing sector representing 50% of industry's emissions, the manufacturing sector itself is responsible for 3% of total UK GHG emissions[4].

In April of this year, the Government enshrined in law a new target to slash UK emissions by 78% by 2035 and bring the UK more than three-quarters of the way to net-zero by 2050. These targets align with the ultimate goal of creating a green economy in the UK, with 98% aware of this target and an overwhelming 92% seeing it as an achievable task.



of manufacturers said they benefitted from adopting new digital technologies during the pandemic crisis[5].

In order to fulfil this ambition, the manufacturing sector must undergo a significant green transition, and this will undoubtedly require green skills, but also digital skills. Manufacturers have made significant efforts to develop their digital and green skills - 70% businesses have trained their employees in the last 12 months to improve their digital skills and an overwhelming 86% of manufacturers already have plans to further training for digital technologies to boost productivity.

This is because digital solutions, such as IOT, remote sensing, distributed ledger technology, data analytics and AI are integral to the creation of a green economy in manufacturing. It can:

- **Accelerate the deployment of clean technologies.** Digital technologies allow for the adoption and mobilisation of clean innovations to make manufacturing fit for net-zero. For example, smart technologies, including energy storage and demand-side response, will be critical to integrating renewables and low carbon energy into manufacturing.
- **Increase productivity and reduced use of resources.** Digital technologies can help to mobilise efficiency, through optimising productivity and the use of resources, with a quarter of manufacturing companies agreeing so last year[6].
- **Measuring sustainable progress.** Digital technologies allow manufacturing to measure its sustainable progress, a cornerstone for a reliable business strategy capable of ensuring business growth. Analytics and forecasting solutions also help to identify both opportunities and risks, such as potential system faults, hardware failures, unexpected changes in energy demand to mitigate costly errors.

[4]Department for Business, Energy, Industrial Strategy, Industrial Decarbonisation Strategy, 2021
[5]Make UK / Sage, Digital Skills for a Digital Manufacturing Future, 2020
[6]Make UK / Sage, Digital Skills for a Digital Manufacturing Future, 2020

"Embracing new technology is essential to ensuring the future of Britain's manufacturing sector. Technology is rapidly accelerating for manufacturers and this pace is likely to grow. The use of data analytics, robots, multi-purpose production lines and intelligent machines will change the landscape."

Stephen Phipson, Make UK CEO

"Digital technology could transform the environmental agenda."
"Digitally enabled energy efficiency could save UK businesses £6 billion a year by 2030."

Green Alliance, Smart and Green Report

"Skills in digital and data analytics will be required for the net-zero energy workforce across all areas."

Green Skills Taskforce Report

ACTION TAKEN BY MANUFACTURERS TO DATE

The mission of West Yorkshire-based **Redtronic** is to provide exceptional quality UK-manufactured, visual and audible warning systems for emergency and rescue services worldwide. As a UK manufacturer with ambitious growth plans and global customers, Redtronic has transformed their works order processing. The biggest efficiency gain has been a huge reduction in Redtronic's product lead times.

"We needed visibility of what was going on in each department, and to know our exact stock holding position at any one time. The integration of Sicon within Sage 200 has escalated our ability to scale the business in line with demand. We are becoming the company we always desired to be" - Steve Redfern, Technical Director, Redtronic

The Sicon integration with Sage 200 has enabled Redtronic to let the system control every aspect of the manufacturing process and its production has now become the efficient machine the directors always wanted it to be. The Sicon MRP module scours information within live sales orders, live purchase orders and correlates with stock levels (reorders levels and buffer levels) in order to 'suggest' recommendations of works orders and purchase orders.

CNC Robotics, the UK's leading robotic integrators, are known for embodying the ideal that 'productivity goes hand in hand with sustainability' and are one of the leading pioneers behind the 'digital revolution'.

CNC Robotics is a leader of digitalisation assisting their consumers with fulfilling technology requirements, and recently installed and trained staff on a machine tending system in order to assist an optical equipment manufacturer's latest Mazak Integrex machine to triple production and sustainability benefits- whilst maintain continuous training of their own digital knowledge.

AJ Wells & Sons Ltd are a stellar example of the benefits of digital technology. Beyond investing in fibre laser technology to reduce energy consumption by over 500kWh per day in their metal cutting facility, AJ Wells & Sons Ltd have developed BluTM technology for their stoves, decreasing their emissions by over 90% and increasing their efficiency to over 70%, with latest products utilising microprocessor technology to monitor and adjust settings to further these gains.

AJ Wells & Sons Ltd efforts have earned them 'Green Business of the Year', as well as being ISO 14001 accredited for their environmental management, and Fors Bronze accredited for their operating practices. AJ Wells & Sons Ltd are therefore not only on track to reach their commitment to a 50% reduction in emissions by 2050 but have earned projects that shape long-term sustainability and contribute to the green economy, ultimately showcasing that prioritizing sustainability and net-zero carbon is the future of business.

BIG CHALLENGES REMAIN

DISTINGUISHING BETWEEN THE CREATION OF NEW JOBS, AND THE IMPACT ON EXISTING JOBS, REMAINS CHALLENGING

In the same way that digital adoption, and in particular automation, led to conversations regarding the impact on jobs, and therefore skills, there is a similar conversation to be had on green skills need. While our transition to net-zero and a sustainable economy will be no mean feat and require significant changes to our economy, industries, and jobs, it does not always mean that jobs will fundamentally change, or skills will become obsolete overnight. Many of the skills required that we have identified through our survey are already in existence, or require additional training, knowledge and experience. Rather than the creation of new jobs, what we are seeing is more of a 'greening' of current jobs. In the same way we are seeing the 'greening' of manufacturing processes.

But there remains a mismatch between what employers need and what the training market supplies. There is a need for both parties to act. Employers have a responsibility to articulate their green skills needs to the education and training market. And education and training providers must reach out to businesses, of all sizes, to understand the constantly evolving skills needs of all industries and offer relevant and flexible forms of delivery.

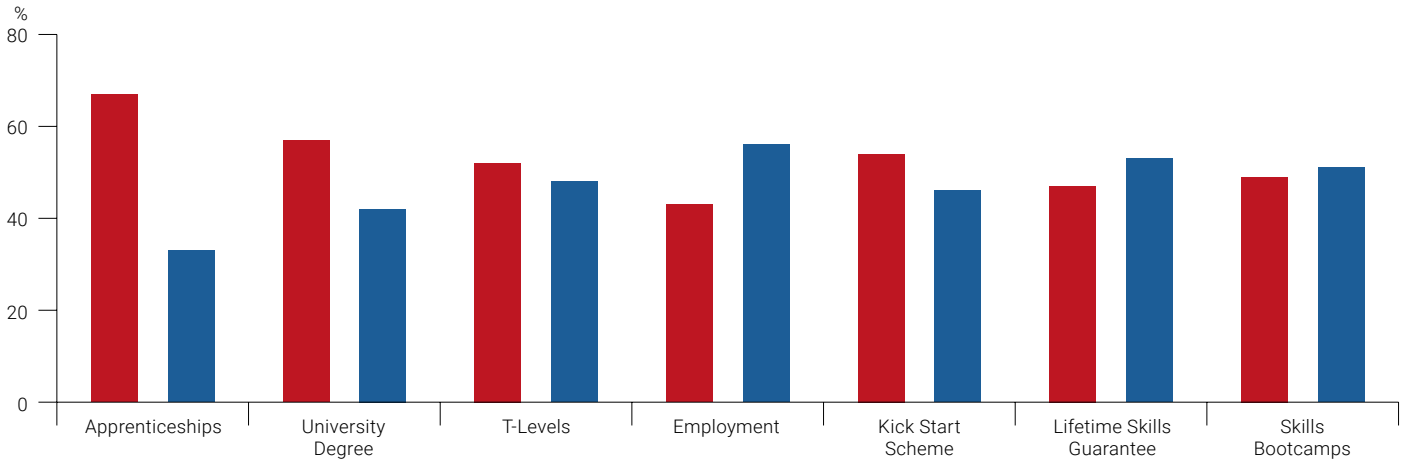
THE EDUCATION AND SKILLS MARKET IS NOT YET GEARED UP FOR THIS PROFOUND CHANGE

One of the biggest challenges to overcome is the need for our education and skills training market to adapt to deliver the skills businesses need now, and in the future. Less than half (49%) of manufacturers are confident that the current education and training market can deliver the skills they need to manufacturer goods and products in a more sustainable way.

To meet our green skills need, Government will need to transform the local education and training market, and manufacturers will need to engage with it through this process. In practice this means collaborating with local stakeholders to ensure that the provision for the green skills they need, are provided, and to a high quality.

Manufacturers are looking to use existing routes to acquire these skills, from a mixture of retraining and upskilling of existing employees, as well as inspiring and training the next generation through apprenticeships, T Levels, and in-work experience. The top three routes manufacturers intend on using to acquire green skills via new jobs are; apprenticeships (67% of manufacturers agree), university degrees (57%) and Kick Start schemes (54%). In addition, the top three routes to greenify existing jobs are to boost employment and learn green

Chart 5: The education and training routes best suited to supporting businesses acquire the skills needed to manufacture goods and products in a more sustainable way



Source: Make UK Green Skills Survey, August 2021

skills on the job (56%), ensure a lifetime skills guarantee (53%) and through green skills bootcamps (51%). The latter options demonstrate the need for flexible, shorter forms of training demanded by manufacturers to acquire additional green skills.

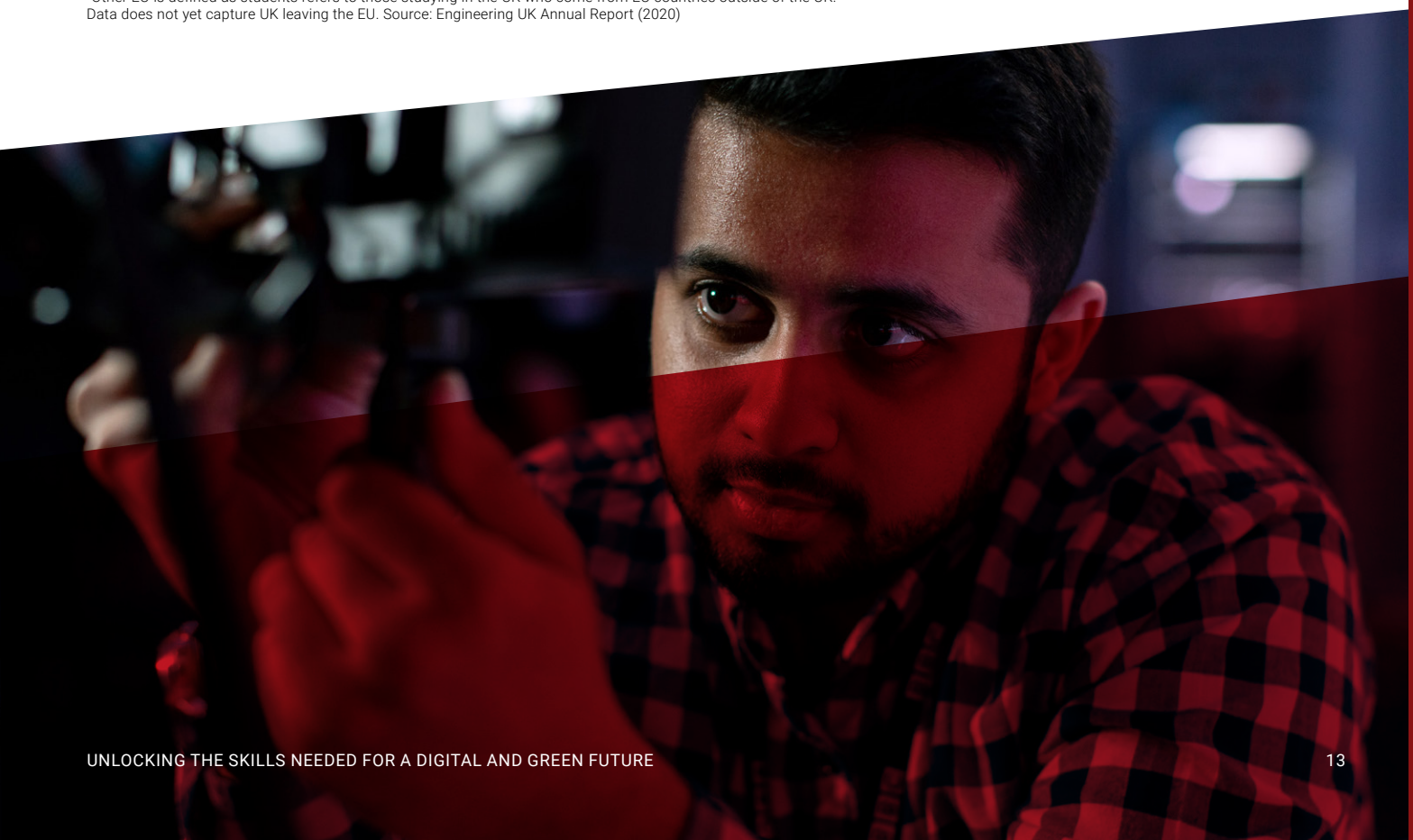
AN EXISTING SKILLS GAP IN THE MANUFACTURING SECTOR

The manufacturing sector already faces a growing skills gap. The limited supply of STEM graduates is an undeniably consequence of a longstanding pipeline issue at secondary school level. In 2019, just 36,000 students took physics at A Level while 85,000 took maths, equivalent to 14.7% and 34.7% of school leavers. This compares to 47,000 for History and 39,000 for Art. Despite there being a 6.4% increase in uptake of STEM subjects at secondary school, the shortfall of interest at this age leads to a well-documented leaky pipeline through A Levels and University.

With skills at Level 4, 5 and 6, i.e. graduate level or equivalent, increasing, this immediately begs the question of whether the UK is supplying the required numbers of graduates, or equivalents (e.g., Degree Apprentices) to meet this demand. Analysis by Engineering UK found there has been a small but steady growth in the number of higher education students who had chosen to study engineering and technology, but as a proportion of all higher education students, that share has been slowly decreasing in recent years.

Moreover, when we look at the breakdown of engineering and technology higher education entrants, we see that 32% are non-EU nationals and a further 8% are outside the EU[7]. This leads to wider concerns the sector has with the UK's immigration system. When the domestic market cannot supply the skills needed, employers will look to overseas talent. However, since the start of 2021 a new points-based system has been put in place that employers must use to access labour from both the EU and outside of the EU. While there is some degree of flexibility when it comes to non-UK graduates, for example the Graduate Visa allows graduates to seek employment for up to two years upon finishing their studies, it is some way off the more welcoming systems that our global competitors offer. In addition, while the wider point-based system allows employers to recruit graduate level roles, and indeed technician-level roles, employers face significant costs in doing so. Not least paying a minimum salary threshold but also additional costs including a health surcharge, immigration skills charge and visa costs. For many businesses, particularly SMEs, this will deter them from engaging with the system.

[7]Other EU is defined as students refers to those studying in the UK who come from EU countries outside of the UK. Data does not yet capture UK leaving the EU. Source: Engineering UK Annual Report (2020)



PRIORITY ACTIONS AND MILESTONES FOR GOVERNMENT NOW UNTIL JULY 2022

NOV 21

Net Zero Strategy published by November 2021. This should set out how government levers will be used to deliver job quality in green economy.

DEC 21

Action to improve quality of diversity data and agree diversity targets by the end 2021.

...BY JAN 22

Related progress reports in place by January 2022.

Launch of Green Careers Launchpad and green careers marketing campaign.

Announcement of additional funding for adult green skills, and strategic development funding for FE hubs of expertise as part of the Comprehensive Spending Review for delivery from 2022/23.

The Comprehensive Spending Review should allocate sufficient funding to support accelerated decarbonisation.

APR 22

Government should set out how it will provide funding equivalent to the EU's Just Transition Fund to support communities to diversify and develop alternative industries.

MAY / JUN 22

The national body should be launched Spring 2022 and supported by local transition bodies to ensure effective place-based strategies for the workforce transition.

Share existing resources (e.g. developingexperts.com) on curriculum, knowledge and skills required for green jobs. and establish a working group of relevant stakeholders.

Employers and industry bodies to review and report on existing routes to retraining and upskilling in their sectors.

Employers and unions to consult with workers to identify barriers to reskilling / retraining and action needed to address these barriers.

Match G7 levels of green stimulus investments by June 2022 (the next G7).

...BY JUL 22

Skills and Productivity Board (SPB) to publish first net zero skills report.

Government should set out how its net zero policy and funding are promoting investment in good green jobs, skills and competitive supply chains in its annual report to the Climate Change Committee.

Build on unemployment schemes as a springboard to target green apprenticeships.

Establish framework to understand the quality of work in the green economy.

Track the quality of work in the green economy by commissioning qualitative and quantitative research.

Using its supportive analytical capability the national body should report on progress by July 2022, and thereafter on an annual basis.

Schools, local government and employers should co-create modular programmes to maximise accessibility.

Support to promote the importance of net zero-alignment in the existing curriculum at all ages.

The government should have expanded its review of green apprenticeships to cover all other training pathways and set out how it will ensure these align with the net zero transition.

The government to work with all stakeholders to review and publish by July 2022 opportunities available and action agreed to address barriers to upskilling.

Employers and sector bodies should set out business and skills plans for the net zero transition, engaging unions and workers.

Source: Green Skills Taskforce, 2021

RECOMMENDATIONS

It's crucial that the Government, education, training providers and manufacturers make a collaborative effort to address the green skills gap we face. Collectively, we need to do more to be ready and to take advantage of a digital and green future. To take advantage of this an opportunity, and to promote sustainability, we must prioritise education and skills policies crucial for our long-term economic growth.

We are recommending Government to:

Implement a green skills tax credit to encourage manufacturers to prioritise the acquisition of green skills in the race to reach net-zero. Manufacturers who are actively taking steps to acquire the skills they need to manufacturer their goods and products, as well as operate more sustainably, should be rewarded through a green skills tax credit. It would apply to a defined list of green skills manufacturers need in order to become net-zero, and would incentivise businesses to begin making the transition towards acquiring green skills through the different education and training routes available.

Prioritise rapidly increasing provision of training at Level 4 and 5 to meet the green skills demand. We are beginning to see the skill level required in manufacturing shifting towards higher-level skills, 45% of manufacturers believe green skills needed are generally Level 4 and 5 qualifications and almost a third 30% believe those skills needed will be at Level 6 and above- degree level. To meet this demand, provision across the education and skills training market will need to rapidly increase so that business can meet their skills need. Government should prioritise engagement with the manufacturing sector through its Higher Technical Qualifications consultation process to better understand the critical skills businesses will need to make the green transition a success.

Institute for Apprenticeships and Technical Education (IfATE) and Skills Productivity Board should work in partnership with the National Manufacturing Skills Taskforce. Currently IfATE engage with businesses via the green apprenticeships advisory panel (GAAP), and the Skills Productivity Board remains in its infancy. However, given the fundamental change required in high emission sectors such as manufacturing, both Boards should work closely with the National Manufacturing Skills Taskforce to identify the right skills are in place for the future workforce to deliver the green technology shift the UK needs, and how best they can be achieved. The Taskforce can also act an independent evidence base to ensure the green skills that businesses need are being delivered in the places needed most.

Introduce a Help to Grow Green program for managers and leaders to support training in sustainability. 6 in 10 manufacturers said they require management skills in order to manufacturer good and products in a more sustainable way. Government should work with industry, through the Green Jobs Taskforce, to develop, introduce and fund a Help to Grow Green sustainability and leadership programme, enabling managers to attend quality training courses on net-zero awareness. This includes private finance and the literacy and confidence of companies using financial services should be built up to understand and request climate-aligned financial products.

CALL TO ACTION FOR MANUFACTURERS

We want to guide, inspire, and support manufacturers as the manufacturing sector seeks to access the skills to transition towards a digital and green economy. Together, our green skills guiding principles are devised to encourage manufacturers to prioritise the green agenda in the months and years ahead. These principles can support the manufacturing industry by providing a framework to identify and access green skills now, and in the future.

We are calling on manufacturers to adopt these four guiding principles:

1. We commit to both understanding and equipping our business with the green skills needed to complete our transition to a digital and green future
2. We will identify the areas of our business in which green skills are needed, now and in the future
3. We will engage and collaborate with the education system and training market to meet the green skills required for my business
4. We will recognise that a green future goes hand in hand with a digital future.

You can read more: **www.makeuk.org/insights/publications/green-skills-guiding-principles**

COMMITMENT FROM MAKE UK

Make UK is already at the forefront of delivering world-class engineering apprenticeships and skills training via our start of the art training centre. As the manufacturing industry's skills needs evolve, so will our skills delivery. We commit to continuing to align our offer to meet the needs of our current and future customers.

As part of our commitment to engage and collaborate with the education system, Make UK will update its guide – *Making School Engagement Manufacturers' Business* – to support employers to engage with schools and articulate how our industry is evolving towards a digital and green future.

COMMITMENT FROM SAGE

At Sage, our Sustainability and Society Strategy – 'Knocking Down Barriers' demonstrates our commitment to investing in education, technology, and environmental change to give individuals and business across all sectors, including Manufacturing, and most importantly, our planet, the opportunity to thrive. Our goal is to use our technology, time, and experience to back a generation of diverse and sustainable businesses.

By supporting Make UK, we align to help Manufacturing tackle the climate crisis, and meet the goal to be Net-Zero by 2050–while, pledging ourselves to be net-zero by 2040 across our operations and supply chain, with an interim step to reduce carbon emissions by 50% by 2030.

SAGE VIEWPOINT

UK Manufacturing wants to perform with impact. However, the industry is facing increasing pressure from customers, supply chains and government to provide high quality reasonably priced goods, while becoming more sustainable, and contributing to their communities. It's time Manufacturing harnesses digital transformation to unlock its potential.

As you've read in this report, the one key target Manufacturing must achieve is to be net-zero by 2050; but reaching this goal will be a significant challenge. At Sage, our global research identified 91% of SMEs believed there will be barriers preventing them from prioritising and making the changes required to meet these demands. The challenges faced by Manufacturers and other businesses vary significantly and in complexity. However, there are three major categories that are shared:

Cost
First is the cost associated with making changes, which can impact profitability and business continuity. These costs can be aligned to procurement of resources, supply chain, distribution, workforce, and other fluctuating market influences. Therefore, it's not simply a question of cashflow, it is the unknown financial risk often associated with change.

Skills
To overcome the skills gap, Manufacturing needs access to digital and green skills within their workforce. Management and technological innovation are recognised as core skills needed to support the manufacturing of goods in a more sustainable way. However, the identified technical nature of 'green skills' has led to a significant skills gap in the UK.

Time
Time is a precious commodity and businesses are always challenged to implement changes, improve efficiencies, and enhance productivity, while maintaining current production. Releasing the already limited skilled workforce to focus their 'time' on implementing environmental changes, is perceived as time taken away from 'their day jobs,' which circles back to the financial 'cost' implications of becoming 'green.'

Supporting Sustainability
Many Manufacturers are committed to embedding green and sustainable policies across their businesses. Yet achieving these targets will require significant changes to their manufacturing practices and business systems. Such changes can be difficult to implement and are often hindered by the lack of technical and green skills within the UK workforce.

At Sage, our Sustainability and Society Strategy is built with the view and aspiration to help our customers become sustainable.

We are committed to investing in education, through papers such as the Make UK Green Skills report – and the identification of the Government led action needed to transform and provide a future-ready green workforce.

We also believe digital transformation can help Manufacturers unlock their potential and in turn become more sustainable and meet the goal to be net-zero by 2050. Our mission is to support UK Manufacturers through the use and continued development of the right technologies. Such technologies can deliver business-critical benefits, such as; data analytics, automated production lines, supply-chain insight reducing costs, provenance and traceability, improved supplier and customer relationships, and improved business management. All of which aid and enhance a sustainable business performance.

Now is the time for British Manufacturers to maximise the support and technology available to help drive sustainability as a core value.

MAKE uk
The Manufacturers' Organisation

Make UK is backing manufacturing – helping our sector to engineer a digital, global and green future. From the First Industrial Revolution to the emergence of the Fourth, the manufacturing sector has been the UK's economic engine and the world's workshop. The 20,000 manufacturers we represent have created the new technologies of today and are designing the innovations of tomorrow. By investing in their people, they continue to compete on a global stage, providing the solutions to the world's biggest challenges. Together, manufacturing is changing, adapting and transforming to meet the future needs of the UK economy. A forward-thinking, bold and versatile sector, manufacturers are engineering their own future.

www.makeuk.org
@MakeUKCampaigns
#BackingManufacturing

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Sage

Along with comprehensive multi-national business management, Sage offers support for 18 different industry verticals ranging from food & beverage manufacturing through to industrial machinery manufacturing and FMCG distribution. This ability to support multiple adjacent specific manufacturing micro verticals, allows Sage to support the entire value chain from seed to sale or farm to fork.

Find out more about how Sage 200 and Sage X3 solutions can make your manufacturing business transform, adapt and grow.

www.sage.com/en-gb

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The Manufacturers' Organisation

MAKE VENUES

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