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Making Scotland's Future:

A Recovery Plan
For Manufacturing

Final - June 2021

Foreword

As we begin to make our way out of the Covid-19 pandemic and look to rebuild and grow Scotland's economy, a successful, vibrant, diverse manufacturing sector has never been more critical to long-term recovery and success.

Manufacturing companies deliver high quality jobs, drive innovation and growth, and boost productivity and wellbeing. Pre-Covid figures (2018) show the sector was worth £12.5 billion in Gross Value Added (GVA) and employed approximately 170,000 people, many in highly skilled jobs.

So the timing of this updated version of *Making Scotland's Future: A Recovery Plan For Manufacturing* is of critical importance. Last December we published the draft plan for consultation, outlining a wide range of proposed actions for public agencies, industry and academia to take forward in order to secure a strong, sustainable future for the sector across four inter-dependent priority areas: collaboration and networks; supply chains and competitiveness; adaptation and transformation; and skills and workforce.

Over 50 consultation responses were submitted with all the proposed actions receiving a favourable response. The importance of promoting collaboration between companies, the alignment of support to enable companies to modernise, and the development of a Skills Partnership Programme were particularly well received.

The interim period between publication of the draft plan and this updated version has been put to good use. We have continued to provide the manufacturing sector with updated guidance on the safe operation of workplaces as Scotland has moved through the Covid-19 Strategic Framework. In addition, over the past few months we have made several announcements that will provide further support for the sector, including:

- the first call for applications to the Scottish Enterprise Green Jobs Fund to help companies in Scotland develop the low carbon products of the future and create high-quality jobs
- additional funding of £120 million for zero emission buses, which will support supply chain companies
- the five-year, £180 million Emerging Energy Technologies Fund (EETF) which over the next five years will drive development of innovative low carbon solutions
- the launch of the Digital Boost fund to help companies invest in their digital capabilities
- the start of construction at the National Manufacturing Institute Scotland.

Now as the economy begins to recover and grow, we collectively need to ensure that the sector is ready to take advantage of the opportunities that will arise as supply chains are rebuilt and international trade opens up again, in both established and new markets. This is particularly important as manufacturing supports over half of Scotland's international exports.

Now more than ever, we need to capitalise on our assets to ensure an inclusive and sustainable economic recovery. Scotland needs to develop its traditional strengths in areas such as textiles, timber, distilling and engineering, as well as its emerging strengths in space, satellites, net zero and healthcare across all of its regions from Shetland to the Scottish Borders. Digital provides a means to move past geographic barriers allowing innovative ways for our sectors to connect, build collaborations and scale, working together to deliver greater outcomes for our communities and for Scotland.

Modernisation, in particular embracing digital transformation and low carbon production, will be key to the future. First and foremost, these changes will boost companies' productivity and profitability, but they will also put the manufacturing sector at the heart of a global green recovery. The sector will help Scotland meet its target of generating net zero emissions by 2045 and increase its international competitiveness by making the country a more attractive place for trade and investment.

Scotland has always been a nation of creators and makers. Now, by harnessing our collective talent, expertise and pioneering spirit, we can once again stand tall as a country known for inventing, designing, developing and building world-leading products and technologies.

Manufacturing is making Scotland's future.



Kate Forbes MSP

Cabinet Secretary for Finance and the Economy

Fair Work commitment

The manufacturing sector, its workers and those tasked with supporting them face the greatest challenge in generations. What began as a public health crisis has become a global economic crisis – growth has stalled, businesses have had to close and there have been many job losses with the likelihood of more to come. The pandemic has also highlighted, and in many cases worsened, the inequalities in our society, with those with the least before the crisis often worst affected by both the health and economic impacts.

That is why Fair Work is more important than ever and must be at the heart of our economic recovery and renewal. The Scottish Government's dedication to this agenda is long-standing and is [shared by partners](#) across the public, private and third sectors, trade unions and others who will help us develop and deliver this recovery plan. The principles of Fair Work will guide us collectively as we focus on the actions set out in this plan.

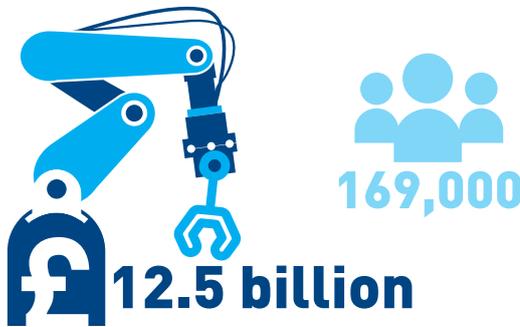
Scottish manufacturing in numbers



16 Scottish firms are manufacturing PPE and hand sanitiser, helping to tackle the Covid pandemic **and** creating jobs



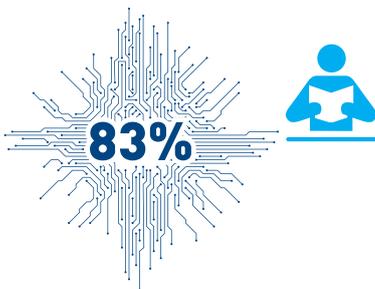
Manufacturing exports were worth **£30 billion** and accounted for **61%** of trade with EU¹



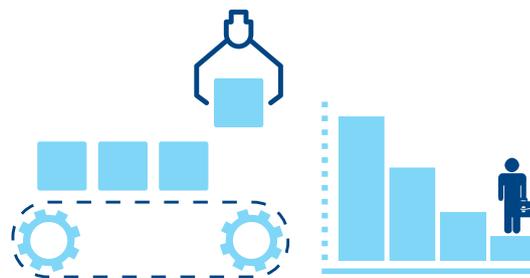
Manufacturing was worth **£12.5 billion** in GVA to the economy¹ and employed **169,000** people²



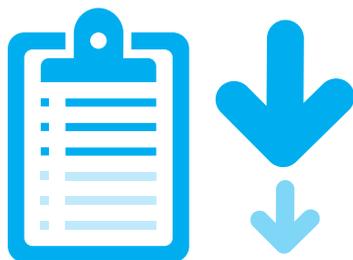
Manufacturing output contracted by **23.1%** over the last year³



83% of manufacturing businesses applied to the furlough scheme



Manufacturing businesses across UK expect sales, investment and employment to all decrease over each of the next four quarters



Nearly half (47%) of all manufacturing businesses have reported a decrease in turnover as a result of Covid-19⁴

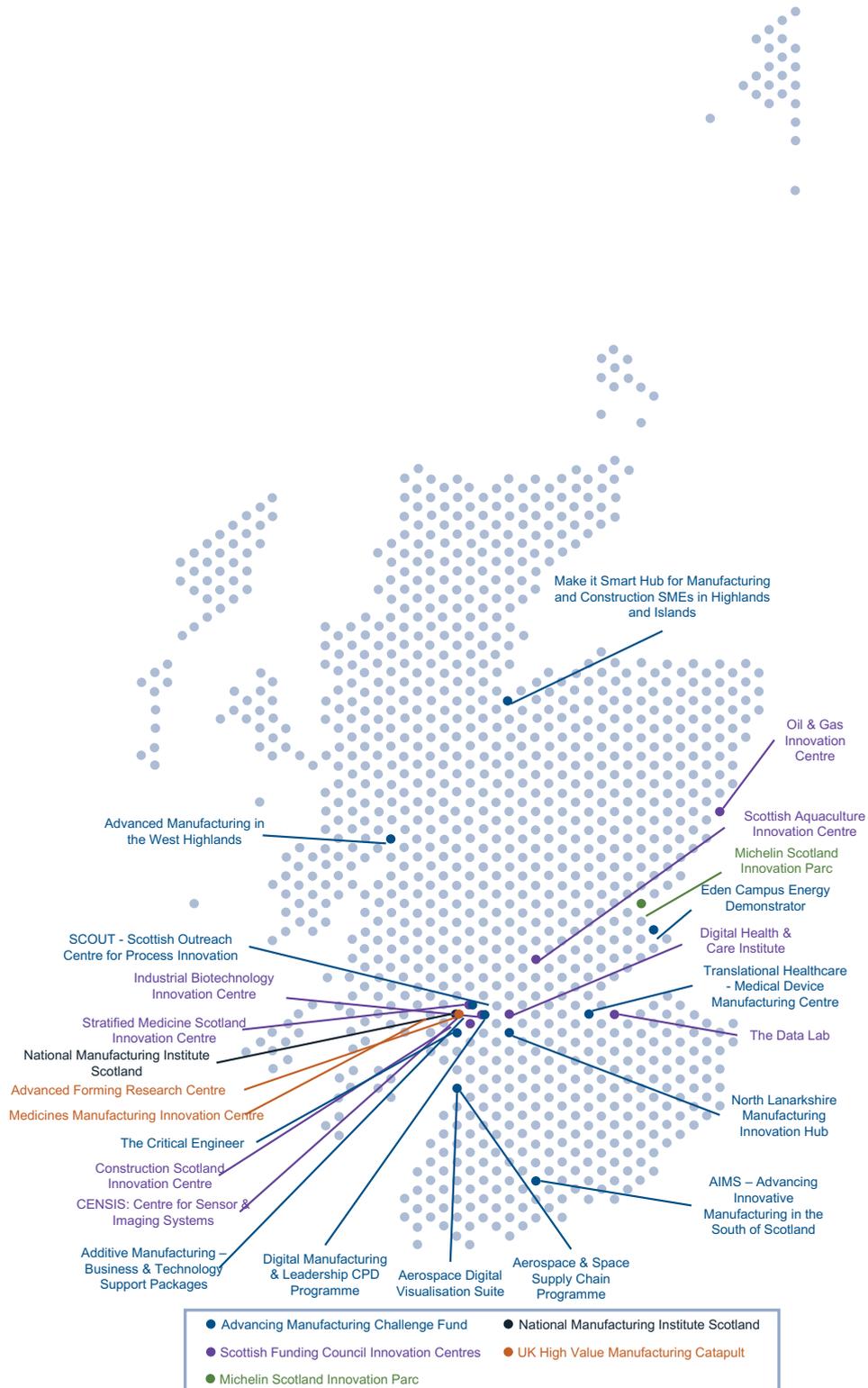
Notes:

- 1. 2018 figures
- 2. 2019 figures
- 3. 2019 Q2 vs 2020 Q2
- 4. Expected turnover vs actual turnover.

Sources: Scottish Government Quarterly GDP Index; Business Register and Employment Survey; Scottish Annual Business Statistics; Export Statistics Scotland; ONS Business Impacts of Coronavirus Survey (BICS) update for Wave 15 (5 and 18 Oct) published on 30 Oct 2020; Scotland level results. The manufacturing sector is defined by the Standard Industrial Classification (SIC 2007) section C. Bank of England: Monthly Decision Maker Panel data (Sept 2020).

Scotland's manufacturing support infrastructure

A large network of support is available to manufacturing companies across Scotland, including those illustrated here.



Priority areas and identified actions

Making Scotland's Future: A Recovery Plan For Manufacturing has been developed by sub-groups focusing on four priority areas.

1. **Collaboration and networks** – promoting collaboration across the sector in Scotland and beyond to maximise sales, particularly exports, and building networks to support the sharing of knowledge, ideas, capability and best practice.
2. **Supply chains and competitiveness** – supporting businesses of all sizes to develop stronger and new supply chains and to access new opportunities.
3. **Adaptation and transformation** – identifying transformative solutions that enable the sector to be more resilient, productive, digitally enabled, sustainable and competitive, and to become truly world-class.
4. **Skills and workforce** – in line with Fair Work and Just Transition principles, enhancing workforce development to respond to the emergence of new technologies, whilst safeguarding and creating high-quality, green jobs.

The sub-groups have brought together expertise from the public and private sectors (a full list of those involved is at Annex 1) and identified actions to be taken forward by the end of 2021.



Paul Sheerin, Chief Executive, Scottish Engineering

“The scale and speed of the downturn this global pandemic has brought to our economy has been startling, and Scotland’s engineering manufacturing sector has been no different in experiencing the impact as demand fell and international supply chains ground to a halt overnight. A challenge of this magnitude demands a response that is ambitious, coordinated and uses all the available existing expertise whilst actively seeking new pathways to turn adversity into opportunity.

“This manufacturing recovery plan aims to fulfil that ambition by concentrating on four key pillars that the sector will recognise as critical in normal times, and even more so in our current challenging situation. By focusing and coordinating Scotland’s excellent matrix of support organisations, and working in partnership with industry, the actions of this plan will enable manufacturers to do what they do best: adapt, transform and continuously improve to ensure sustainable recovery of a sector that is critical to Scotland’s economic wellbeing.”

1 Collaboration and networks

Pulling together as one modern, dynamic and integrated manufacturing community is crucial to building our capability here in Scotland as well as being more outwardly focused on new sources of business, innovation and investment. Partnerships and collaborations are an increasingly important way of effecting change with greater ease and speed.

We need to promote collaboration across the sector in Scotland and beyond, build networks to support the sharing of knowledge, ideas, capability and best practice, and connect companies with strong propositions into relevant investment networks. This requires mechanisms for faster, better, digitally-led exchanges across industry with appropriate support from the public sector and academia. The goal is to form clusters around the best opportunities for Scottish manufacturing and stronger supply chain competitiveness.

While collaborative and open innovation often delivers cutting-edge research and development, there are many other ways companies can work together, for example, by sharing equipment, facilities, contacts and expertise. This is particularly important for smaller companies.

Collaboration is also critical to our low carbon ambitions. The net zero manufacturing we are working towards requires upfront capital investment to upgrade premises and equipment over time but costs can be reduced through clustering and economies of scale.

This is a great opportunity to attract investment into Scotland. To bridge this gap, companies are working to develop better-evidenced business cases and investors are deepening their understanding of the manufacturing industry so they can accurately appraise the risks and opportunities over the long term. There is also an opportunity to work collaboratively to promote Scottish low carbon strengths, including through our trade and investment levers and raising Scotland's profile at international events including COP26 in November 2021.



Linda Hanna, Interim CEO, Scottish Enterprise

“The recovery plan for manufacturing brings together industry, the public sector and academia to focus on future skills, transformation and growth, and goes beyond recovery to lead a manufacturing renaissance that is sustainable in every sense.

“The adaptability of the industry was clear to see as it rose to the challenges of COVID-19 by changing working practices, producing PPE and maintaining essential supplies, highlighting just how resilient the sector is.

“What is important is that Scotland has an outward and forward-looking, innovative manufacturing sector. A sector where collaboration and talent are key, where there are future trade, investment and supply chain opportunities, and where manufacturing and the valuable jobs it supports are at the heart of the Scottish economy.”

Actions

- Develop a manufacturing 'network of networks' to pool and coordinate the resources of the variety of public and private networks already in operation. As well as improving impact and alignment during a time of rapid change, it will help to raise awareness of Scottish manufacturing and help with the development of new relationships between the Scottish manufacturing community and other UK and international stakeholders.
- Build a programme of activity designed to stimulate demand for investment in manufacturing small and medium-sized enterprises (SMEs) through the development of stronger business cases. This will involve a Manufacturing Investment Forum for bringing the manufacturing and investment communities together. It will also involve the more widespread promotion of tools and resources available to help SMEs win external funding.
- Develop a manufacturing start-up accelerator facility in Scotland drawing on international best practice and linking with Scotland's wider entrepreneurial system. This will cater for the fact that manufacturing companies can have significant early stage capital investment requirements.
- Build a programme of activity to increase the use of external funding by Scottish manufacturing, including City and Growth Deals, UK Sector Deals, UK Industrial Strategy funds and other competitions. This will involve shaping and raising awareness of new opportunities at the UK level, increasing participation from industry in Scotland and influencing the success of bids.
- Promote collaboration between companies around sharing resources, costs and risks, including bidding jointly for contracts, sharing facilities and equipment, and joint approaches to exporting and marketing. This will involve the consideration of cooperative business models.
- Build a programme of international collaborations, leading to increased levels of manufacturing-related research funding and international trade and investment.

Case Study



Japan-Scotland partnership delivers £20m investment in subsea innovation

Subsea is an area where Scotland has developed a world-class capability, driven by the needs of the North Sea oil and gas industry.

As the North Sea fields decline, the Scottish subsea industry is increasingly looking to international markets for growth.

Recognising this, Scottish Enterprise and Subsea UK developed a strong relationship with key subsea actors in Japan and developed the Japan-Scotland Subsea Partnership.

Over £20 million is being invested in collaborative innovation projects which will help both Scottish and Japanese companies to work and grow together in the coming years.

Twelve Scottish businesses from Aberdeen, Inverness, Edinburgh, Coatbridge and Livingston will partner with Japanese firms on six projects.

These include: an £8.3 million project to develop an offshore and subsea 'internet of things' infrastructure; and a £3.3 million venture to build a digital system which monitors floating structures.

Mitsuyuki Unno, Executive Director of the Nippon Foundation, which ran a competitive research and development fund with Scottish Enterprise, said:

"These projects will promote multisectoral collaboration, global partnerships and develop the new ocean development market."

2 Supply chains and competitiveness

When global supply chains were disrupted in March 2020, businesses and governments realised the risks of decades of increasing supply chain complexity and disaggregation. Disruption of international trade flows, combined with the availability of low-cost digital technology, the low carbon agenda and the fact that highly productive manufacturing sectors drive economic productivity, have created a compelling rationale to revitalise Scottish supply chains.

'Industry 4.0' – the utilisation of automated processes – is revolutionising manufacturing and location decisions. The traditional wisdom of moving production to low-cost economies as a way of improving productivity is becoming less valid and the use of adaptable, affordable, automated solutions is reversing years of horizontal integration. The price of labour continues to increase as the living standards in these low-cost economies rise. In addition to this, larger inventories, unresponsive lead times and the environmental impacts from transportation emissions, are also diminishing the perceived productivity gains from 'offshoring'.

In the last decade, manufacturing has transformed from a business model of low cost and low value. Through the application of leading-edge technical knowledge and expertise to create products, production processes and associated services, manufacturing is now considered a strong contributor to sustainable growth and of high economic value.

During this time many advanced economies shifted their focus to developing high-value manufacturing sectors to create the products of the future in areas such as: low carbon transport; health and extended living; the circular economy; and smart data-driven products. As demand for these products in global markets grows, Scotland could be well placed to compete as well as attract inward investment – a priority in the [Inward Investment Plan](#).

As supply chains regroup and businesses 'build back better', putting in place a resilient business model will be key to recovery. Evidence suggests that, broadly speaking, businesses that prior to COVID-19 adopted digital technology or invested in new machinery and in their people, have weathered the storm comparatively better. By innovating and collaborating with supply chain partners they are better placed to take advantage of this new future, particularly given the expected adverse consequences of the UK's exit from the EU.

For businesses that have yet to make the adoption leap, the time is now. Scotland has a network of technology and innovation centres, including the National Manufacturing Institute Scotland (NMIS), that can de-risk the next vital investment decision in productive technology.

This is the moment for businesses to reassess their supply chain proposition and to plan for the new orthodoxy.

Actions

- Deliver an engagement programme for manufacturing companies to maximise opportunities and increase Scottish content, helping businesses boost resilience and access new or existing supply chains in priority sectors.
- Increase the economic impact of public sector procurement, by combining our knowledge and understanding of the market. Identify and help equip new and existing Scottish supply chains to anticipate and respond to public sector demand.
- Support inward investors to identify opportunities for Scottish manufacturers that are created by new and emerging supply chains to bring more business to Scotland.
- Deliver webinars and provide remote support tools to ensure manufacturers stay competitive using recognised business improvement tools such as Lean through to supply chain excellence models.



James Withers, Chief Executive of Scotland Food and Drink

“Scotland’s entrepreneurial and innovative food and drink manufacturers are the lifeblood of our industry and make our sector truly world-leading.

“Our industry has been hit hard by Covid-19, with around £3 billion of sales lost. However, the pandemic has also shown the importance of resilience, innovation and collaboration. Our manufacturers have worked tirelessly to ensure the food and drink supply chain has kept moving, whilst at the same time protecting their workforce and changing their routes to market.

“We are at a crucial juncture for Scotland’s economy. We have to chart a recovery from a pandemic and navigate Brexit. The themes of innovation and collaboration have never been more important. They lie at the heart of the manufacturing recovery plan and define how our sector will move forward in playing a central role in driving a smart recovery for Scotland’s economy and communities.”

Case Study

How Scottish manufacturers responded to PPE demand

COVID-19 created opportunities to develop new supply chains as a result of increased global demand for vital personal protective equipment (PPE).

Contracts between NHS Scotland and several companies located in Scotland helped strengthen and expand the supply of protective gowns, securing long-term stock levels. NHS Scotland established an entirely new supply chain, from start to finish, within the space of a month during the spring of 2020.

Forfar-based Don & Low played an essential role in a collaboration to manufacture gowns. This was made possible by the strong partnership the company has with its workforce and employee representatives, underlining the benefits of fair work practices, which have never been more important than during these challenging times.

Don & Low supplied around 2.8 million square metres of the base material which was then converted into around one million non-sterile gowns by Keela and Redwood TTM, based in Glenrothes and Wigan respectively. Keela also worked with manufacturers Transcal and Endura, both based in Livingston, to deliver these Scottish supplies.

Keela and Redwood each ramped up production to a combined output of 40,000 gowns per week which represented over 50% of NHS Scotland's weekly requirement of 70,000 gowns during summer 2020.

Collaborative working between NHS Scotland, Scottish Enterprise and the Scottish Government made possible this new supply chain for gowns. In particular, Scottish Enterprise's Scottish Manufacturing Advisory Service (SMAS) worked closely with both Don & Low, and the converters, to establish garment specification requirements and required production schedules.

The new supply chain formed part of the Scottish Government's two-pronged 'make and buy' strategy, fulfilling the priority of establishing a supply chain for gown production in Scotland. Gowns for NHS Scotland can now be produced and supplied in Scotland through this established chain, with the potential to add more Scottish suppliers if required.

Prior to COVID-19, all PPE sourced by NHS Scotland came from manufacturers outside of Scotland. Between March and August 2020, this began to shift as production was established in Scotland and the rest of the UK, and existing capabilities increased capacity. Between October 2020 and March 2021, the balance will shift again, with nearly half of all PPE being supplied from Scotland. When gloves are removed from the count, over 90% of PPE required by NHS Scotland is manufactured in Scotland.

3 Adaptation and transformation

Transformative solutions that enable manufacturing to become more resilient, productive, digitally enabled, sustainable and competitive will help companies not only recover to their pre-COVID-19 state but, in the longer term, to thrive in a post-COVID-19, post-Brexit, net zero economy, and put the sector on the path to being truly world-class.

The biggest opportunities lie in the adoption of digital and data-led solutions (sometimes referred to as 'Industry 4.0') that speed up, simplify and automate processes and in low carbon practices that are embedded across product lifecycles and can save costs by enabling resource and energy efficiencies. Innovative business models have been proven to result in new sources of revenue.

Scottish manufacturing has a strong mix of large, including some global companies, and SMEs. However, SMEs account for a significant part of the mix – 97% of companies have fewer than 100 employees – so transformative solutions must be applicable to this community and need to be achievable if they are to be adopted on a large scale.

Actions

- Roll out a digital adoption campaign to communicate the benefits of digital transformation and offer real-life examples of companies that have successfully adapted processes. Case studies and evidence from existing digital adoption/development loans and grants should be used to help businesses see the potential benefits of integration.
- Accelerate the rate of decarbonisation of Scottish Manufacturing to establish sustainable products and to contribute to meeting our policy targets.
- Any Scottish manufacturing company looking for public sector assistance for digital transformation should be aware of the need to be resilient to the growing cyber threat. As a minimum, this awareness should be demonstrated by the completion of the [IASME Cyber Essentials self-assessment](#) no later than 31 March 2022. This is aligned with the Scottish Government's Strategic Framework for a Cyber Resilient Scotland.

- Align support mechanisms such as the Digital Development Loan, that enable companies to pilot and then implement capital modernisation solutions such as automation and robotics.
- Build on expertise gained through existing Scottish clusters, such as the manufacture of PPE, and develop new clusters. The focus should be on building and onshoring new supply chains and encouraging clusters to undertake collaborative environmental and digital transformations.



John Reid, CEO, National Manufacturing Institute Scotland

“The manufacturing sector in Scotland has rarely, if ever, faced such a profound degree of uncertainty and disruption. The COVID-19 pandemic, Brexit and the challenge of transforming to face the climate emergency have created an extreme environment. Like all points of adversity or crisis this one comes with significant threats but at the same time huge opportunities.

“This is a critical moment for manufacturing in Scotland. We all – government, agencies, academia, innovation centres and companies – need to be bold, decisive and innovative if we are to develop the resilience to deal with these threats and maximise the potential of the opportunities. The way we used to do things won’t be good enough or fast enough.

“This recovery plan lays out a series of clear, focused, ambitious actions and goals. They offer an unprecedented level of coordinated thinking and support for manufacturers. Making them happen will deliver a step change transformation that will not only get us through the crisis but will build a bigger, stronger and more sustainable manufacturing sector into the future.

“It represents ‘Team Scotland’ at its best by showcasing a determination to be innovative, a capability to be agile and the leadership to make things happen.”

Case Study



The world's first 100% electric fire engine - made in Scotland

A Scottish manufacturer has produced the world's first battery-powered electric fire engine.

Launched in October 2020, the new fire engine has been developed by Emergency One, the UK's leading manufacturer of fire, rescue and emergency vehicles, and uses battery power for both its engine and water hose pump.

Established in 1989, Emergency One employs around 210 staff with the majority based at its factory in Cumnock, Ayrshire.

There are currently no other electric fire engines available anywhere in the world, with this new vehicle a direct result of significant innovation work by Emergency One.

Scottish Enterprise's innovation teams worked closely with the company to develop the project and awarded a £500,000 R&D grant in 2019 as a contribution towards the company's £1.7m R&D investment in the new vehicle development.

This new zero carbon vehicle demonstrates the innovation and market agility that Scottish manufacturers are renowned for globally.

Emergency One has brought a 'first in class' product to market during a global pandemic, capitalising on the growing appetite for lower-carbon public services as countries around the world seek a green recovery from COVID-19.

4 Skills and workforce

COVID-19 has disrupted the economy in many different ways: placing strains on business continuity through the disruption of supplies and supply chain relationships; distorting traditional demand for products; and creating levels of uncertainty which in resource planning terms has had a significant impact on workforce planning and the wider labour market.

While the Coronavirus Job Retention Scheme has supported the wages of many employees on furlough, the environment for employers to navigate remains challenging. Traditional recruitment methods, travel to work patterns, safe physical distancing in the workplace, and training and development methods have all had to adjust to the new dynamic environment created to cope with the pandemic.

And yet we know that as recovery gains momentum the pressures that existed within the labour market pre-COVID-19 will resurface, with skills shortages exacerbated by redundancies and restrictions on skilled labour from the European Union and by the need to recruit or reskill workforces to deliver a just transition to net zero.

Some sectors and their associated supply chains such as aerospace and oil and gas have been disproportionately impacted by current economic conditions. These sectors will require targeted support measures to help displaced workers to reskill, or to put their highly transferable skills to use in other sectors and other parts of Scotland, and secure alternative employment. This workforce and its expertise are fundamental to meeting Scotland's ambitious climate change targets and ensuring people are supported to benefit from the transition to net zero, whilst protecting those at risk in the transition.

We need to respond to these factors now and in the future. In the short term, we need to ensure that employers are fair and mitigate potential detrimental behaviour. In the medium-to-long term we need to provide a platform for strong and confident recovery through the provision of agile and effective labour market interventions. We need to harness our available resources and provide confidence to increase investment in recruitment and workforce development that will aid recovery and strengthen organisational resilience. We will work in collaboration with businesses to support workforce skilling and training as part of a just transition to a more resilient sector.

Actions

- Encourage employers to utilise the range of available incentives to retain, adopt and recruit apprentices, to mitigate the current disruption, maintain a robust future skills pipeline and promote progressive Fair Work practices across the manufacturing sector.

- Develop a strategic support programme for regions and sectors adversely impacted by the pandemic, ensuring that measures to incorporate diversity are included.

- Work collaboratively with all partner bodies and agencies across Scotland to inform the skills priorities for the Climate Emergency Skills Action Plan (CESAP).

- Establish fast-track employment models to address emerging skills shortages and jobs growth.

- Initiate actions to mitigate the debilitating impact of graduate unemployment, creating meaningful work experience, education, training and employment opportunities across the manufacturing sector to optimise graduate talent.

- In partnership, develop learning experiences to promote and enhance commercial awareness, foster enterprising behaviours and encourage progressive leadership practice within our manufacturing sector.

Case Study



The appliance of science gives Borders employment a boost

Kelso-based Scotmas has taken on ten modern apprenticeships to support its business growth and boost local employment.

The disinfection specialists received a grant from South of Scotland Enterprise through the Pivotal Enterprise Resilience Fund in the summer of 2020 which allowed the firm to retool and adapt their business to supply the growing demands for high-level disinfectants.

As a result, ten additional jobs were created within the company – all of which were filled by local people recently made redundant.

Scotmas is working with Forth Valley College to place all the new starts on a two-year Modern Apprenticeship in Scientific, Technical and Formulation Technology. The qualification – developed with support from Skills Development Scotland and in partnership with industry – allows new employees to develop specialist skills and knowledge, whilst at the same time gaining vital in-work experience.

The apprentices will benefit from using new remote learning tools and a bespoke training suite with full videoconferencing and digital connectivity capabilities, thanks to recent investments made by the company.

Alistair Cameron, CEO at Scotmas, said:

“Thanks to the latest technology, we have been able to partner with Forth Valley College to deliver world-class, SQA-accredited training to our staff entirely on-site.

“The commitment shown by our workforce – especially in the last six months to meet the demands from customers such as the NHS and social care providers – has been first class. At Scotmas we have a responsibility to ensure that they have access to opportunities to upskill and develop their careers.

“The support from South of Scotland Enterprise and partners has been key in helping us adapt and retool our business and create these new jobs at a crucial time for the South of Scotland economy.”

Consultation

Following the consultation exercise launched on 4 December 2020, the [consultation analysis](#) was subsequently published on 24 March 2021. The results of that consultation have been considered by the partnership with the following activities being taken forward in response:

- feedback used to support and enhance the planning of action delivery; and
- actions being amended to reflect suggestions where appropriate.

Some actions have also been combined or removed. This is to reflect activity within the policy and delivery environment as the Scottish Government and partners have continued to respond to the pandemic's impacts since the original publication resulting in proposals being superseded.

The revised suite of actions below focuses on identifying opportunities for both recovery and growth, and complements the range of business support measures that has already been made available to help the Scottish sector.

In the interests of transparency, Annex 3 - "You said/Our response" provides a table of key points raised in the consultation exercise to give clarity on where the Manufacturing Recovery Plan has incorporated or considered these asks within its planning as well as highlighting existing support that is currently available.

The annex reflects the four sub-groups' responses to some of the specific points that were raised or, where appropriate, wider themes that emerged from the consultation.

A record of responses received to the consultation (where permission by respondees to do so was given) will also be published on the Scottish Government Consultation Hub.

Any further comments on the contents of the Manufacturing Recovery Plan or these supporting documents are welcomed and should be sent via email to MIDAMP@gov.scot.

Final Actions

- Develop a manufacturing 'network of networks' to pool and coordinate the resources of the variety of public and private networks already in operation. As well as improving impact and alignment during a time of rapid change, it will help to raise awareness of Scottish manufacturing and help with the development of new relationships between the Scottish manufacturing community and other UK and international stakeholders. [Action Code CN1]
- Build a programme of activity designed to stimulate demand for investment in manufacturing small and medium-sized enterprises (SMEs) through the development of stronger business cases. This will involve a Manufacturing Investment Forum for bringing the manufacturing and investment communities together. It will also involve the more widespread promotion of tools and resources available to help SMEs win external funding. [Action Code CN2]
- Develop a manufacturing start-up accelerator facility in Scotland drawing on international best practice and linking with Scotland's wider entrepreneurial system. This will cater for the fact that manufacturing companies can have significant early stage capital investment requirements. [Action Code CN3]
- Build a programme of activity to increase the use of external funding by Scottish manufacturing, including City and Growth Deals, UK Sector Deals, UK Industrial Strategy funds and other competitions. This will involve shaping and raising awareness of new opportunities at the UK level, increasing participation from industry in Scotland and influencing the success of bids. [Action Code CN4]
- Promote collaboration between companies around sharing resources, costs and risks, including bidding jointly for contracts, sharing facilities and equipment, and joint approaches to exporting and marketing. This will involve the consideration of co-operative business models. [Action Code CN5]
- Build a programme of international collaborations, leading to increased levels of manufacturing-related research funding and international trade and investment. [Action Code CN6]
- Deliver an engagement programme for manufacturing companies to maximise opportunities and increase Scottish content, helping businesses boost resilience and access new or existing supply chains in priority sectors. [Action Code SCC1]

- Increase the economic impact of public sector procurement, by combining our knowledge and understanding of the market. Identify and help equip new and existing Scottish supply chains to anticipate and respond to public sector demand. [Action Code SCC2]
- Support inward investors to identify opportunities for Scottish manufacturers that are created by new and emerging supply chains to bring more business to Scotland. [Action Code SCC3]
- Deliver webinars and provide remote support tools to ensure manufacturers stay competitive using recognised business improvement tools such as Lean through to supply chain excellence models. [Action Code SCC4]
- Roll-out a digital adoption campaign to communicate the benefits of digital transformation and offer real-life examples of companies that have successfully adapted processes. Case studies and evidence from existing digital adoption/development loans and grants should be used to help businesses see the potential benefits of integration. [Action Code AT1]
- Accelerate the rate of decarbonisation of Scottish Manufacturing to establish sustainable products and to contribute to meeting our policy targets. [Action Code AT2]
- Any Scottish manufacturing company looking for public sector assistance for digital transformation should be aware of the need to be resilient to the growing cyber threat. As a minimum, this awareness should be demonstrated by the completion of the [IASME Cyber Essentials self-assessment](#) no later than 31 March 2022. This is aligned with the Scottish Government's Strategic Framework for a Cyber Resilient Scotland. [Action Code AT3]
- Align support mechanisms such as the Digital Development Loan, that enable companies to pilot and then implement capital modernisation solutions such as automation and robotics. [Action Code AT4]
- Build on expertise gained through existing Scottish clusters, such as the manufacture of PPE, and develop new clusters. The focus should be on building and onshoring new supply chains and encouraging clusters to undertake collaborative environmental and digital transformations. [Action Code AT5]

- Encourage employers to utilise the range of available incentives to retain, adopt and recruit apprentices, to mitigate the current disruption, maintain a robust future skills pipeline and promote progressive Fair Work practices across the manufacturing sector. [Action Code SWF1]

- Develop a strategic support programme for regions & sectors adversely impacted by the pandemic, ensuring that measures to incorporate diversity are included. [Action Code SWF2]

- Work collaboratively with all partner bodies and agencies across Scotland to inform the skills priorities for the Climate Emergency Skills Action Plan (CESAP). [Action Code SWF3]

- Establish fast-track employment models to address emerging skills shortages and jobs growth. [Action Code SWF4]

- Initiate actions to mitigate the debilitating impact of graduate unemployment, creating meaningful work experience, education, training and employment opportunities across the manufacturing sector to optimise graduate talent. [Action Code SWF5]

- In partnership, develop learning experiences to promote and enhance commercial awareness, foster enterprising behaviours and encourage progressive leadership practice within our manufacturing sector. [Action Code SWF6]

Annex 1

Priority areas – sub-group membership

Collaboration and networks

- Alistair Longmuir, Lifescan (Industry Co-Lead)
- Steven Halliday, Rolls-Royce (Industry Co-Lead)
- Caroline Cantley, Scottish Research Partnership in Engineering (SRPe)
- Karen Craig-Hunter, Scottish Enterprise
- Andrew Henderson, Scottish Enterprise
- Scott McClelland, Scottish Government
- Lynne O'Hare, National Manufacturing Institute Scotland operated by the University of Strathclyde
- Arthur Rennie, South of Scotland Enterprise
- Mark Western, Scottish Enterprise

Supply chains and competitiveness

- Nick Shields, Scottish Enterprise (Lead)
- Andrew Gallagher, Murray & Wright Ltd (Industry Co-Lead)
- Ian Collinson, Scottish Enterprise
- Benoit Fernandez, National Manufacturing Institute Scotland operated by the University of Strathclyde
- Andy McLaughlin, Scottish Enterprise
- Jillian Moffat, Scottish Enterprise
- Dermot Rhatigan, Scottish Government
- Stuart Thomson, South of Scotland Enterprise
- Morag Watt, Scottish Government
- Remi Zante, National Manufacturing Institute Scotland operated by the University of Strathclyde

Adaptation and transformation

- Paul Winstanley, CENSIS – Centre for sensing, imaging systems and IoT (Lead)
- Robert Orr, Howden Compressors (Industry Co-Lead)
- Mark Atherton, Superglass (Industry Co-Lead)
- Scott Bradley, Scottish Government
- Chris Dungey, National Manufacturing Institute Scotland operated by the University of Strathclyde
- Steven Hutcheon, Highlands and Islands Enterprise
- Sarah Jardine, National Manufacturing Institute Scotland operated by the University of Strathclyde
- Shrawan Jha, CENSIS – Centre for sensing, imaging systems and IoT
- David McIntosh, Scottish Futures Trust
- Nick Young, Scottish Government

Skills and workforce

- Gordon McGuinness, Skills Development Scotland (Lead)
- Selma Hunter, Chair of Engineering Skills Leadership Group (Industry Co-Lead)
- Sylvia Halkerston (Industry Co-Lead)
- Brian Boyle, East Kilbride & District Engineering Group Training Association Ltd
- Allan Colquhoun, Leonardo
- Mary Jane Connelly, Scottish Government
- Callum Grigor, Scottish Government
- Jim Hannigan, National Manufacturing Institute Scotland operated by the University of Strathclyde
- Stewart McKinlay, National Manufacturing Institute Scotland operated by the University of Strathclyde
- Eileen Russell, Ricardo Rail
- William Scott, Skills Development Scotland
- Paul Sheerin, Scottish Engineering

Annex 2

Progress on *A Manufacturing Future for Scotland*

In 2016, the *Manufacturing Action Plan: A Manufacturing Future for Scotland* was published setting out how the Scottish Government would work with industry, the enterprise agencies and other key stakeholders to increase investment, innovation and productivity in the sector. Since then considerable progress has been achieved, creating the foundations on which *Making Scotland's Future: A Recovery Plan For Manufacturing* will build. This includes:

- The National Manufacturing Institute Scotland (NMIS), based at the new Advanced Manufacturing Innovation District Scotland (AMIDS) at Netherton Farm, Renfrewshire.
- The opening of a Lightweight Manufacturing Centre as a part of the NMIS Group.
- The Medicines Manufacturing Innovation Centre (MMIC) which will be based next to NMIS, launched by Scottish Enterprise and Innovate UK, in partnership with the University of Strathclyde, the Centre for Process Innovation and two major UK pharmaceutical companies (GSK and AstraZeneca).
- The launch of the Advancing Manufacturing Challenge Fund with up to £15.8 million being invested in 12 innovation projects over the next three years.
- Manufacturing best practice visits (the 'smart excellence programme') for over 300 leaders.
- A review of the Skills Investment Plans by Skills Development Scotland and the development of a new skills plan as part of NMIS.
- An enhanced Circular Economy Support Service from Zero Waste Scotland.
- An advice and support service for energy-intensive manufacturers.
- Capital asset reviews for over 550 manufacturers.
- A 'supply chain experts programme' was piloted over a two-year period and is now being used to inform a new service offering from the Scottish Manufacturing Advisory Service (SMAS).
- 180 'Industry 4.0' audits carried out by SMAS.

Annex 3

You said/Our response

YOU SAID...	OUR RESPONSE
COLLABORATION AND NETWORKS	
No change to action descriptors	
Leverage existing support services rather than create new ones and ensure the possibility of linking into a diverse range of networks, extending beyond Scotland. Provide more effective signposting of alternative sources of support with “no wrong door”.	This is captured under action CN1. The aim is to simplify the broad manufacturing landscape and to bring to one place, the broad range of networks in Scotland and the UK.
Provide access to capability, expertise and facilities to prove products and help de-risk the production process. Host themed accelerator programmes at relevant facilities, for example: medicines at the Medicines Manufacturing Innovation Centre; or renewables at the Michelin Scotland Innovation Parc.	This is captured under action CN1 and CN3. The aim is to simplify the process of identifying and engaging with existing organisations that can support specific activities.
There is a need for real engagement with local government to maximise ‘on the ground’ knowledge within regions.	This is captured under action CN1.
Create a manufacturing ecosystem that encourages more business collaboration, maximises access to support and provides better visibility of supply chain opportunities.	This is captured under actions CN1 and CN5.
Use membership bodies to facilitate sharing and collaboration opportunities.	This is captured under actions CN1 and CN5.
Utilise strengths of Scotland’s investment community and ensure alignment with the Scottish National Investment Bank.	This is captured under actions CN2.
Undertake ‘investment readiness’ activities with a focus on ‘company journey’.	This is an existing enterprise agency service.

YOU SAID...	OUR RESPONSE
Incentivise sustainable/circular finance, particularly for SMEs.	This will be considered within action CN4 through engagement with public sector investment banks.
Increase the impact of the Manufacturing Investment Forum by focusing on sectors critical to delivering a green economy.	This is captured under action CN2.
Consider the market need for a start-up accelerator since limited public funding is available and a range of accelerators already exist or are planned, for example, through City and Growth Deals. Suggest the establishment of a pan-Scotland virtual accelerator to draw on best practice.	This will be considered under action CN3.
Develop a clear picture of existing public and private funding opportunities including clarity in eligibility and the different features of each source.	This is captured under action CN4.
Encourage consortia formation for funding bids, with support for SMEs to participate and simplify the funding process.	This is captured under action CN4.
Enable access to advice on effective models and best practice for collaboration, for example, through demonstrator projects.	This is captured under action CN5.
Ensure alignment with focus areas in Scotland's Inward Investment Plan.	This is captured under action CN6.
Ensure consideration on a balance between collaboration and Intellectual Property protection/competition law.	This is captured under action CN5.
Create a resource to allow business to seek and identify opportunities for collaboration.	This is captured under action CN5.

YOU SAID...	OUR RESPONSE
Ensure selection criterion for attracting inward investment includes a focus on high value manufacturing and associated research and development.	This will be captured under action CN6.
Establish effective domestic and international collaborations that accelerate product delivery, emphasising specialisation, collaboration and sharing best practice. This should be led by manufacturers.	This is captured under action CN6.
Ensure better working with Scottish academia and deliver interventions through collaboration with university and colleges to support innovation, skills and digital transformation.	This is being considered under action CN1.
We can help to develop, enhance and establish your action to create a Network of Networks.	This is relevant to action CN1 and partners will follow up on any offers made to help.

YOU SAID...	OUR RESPONSE
SUPPLY CHAINS AND COMPETITIVENESS	
Actions SCC4 and SCC5 have merged. Overlapping activities identified within these which can be delivered more efficiently as a single action. Numbering of actions have been updated accordingly to reflect the removal or merging of any of the original. Any superseding action is not intended to be a direct replacement of the original action with that action code.	
Respond to the emerging sectoral supply chain opportunities delivered in increasing areas of importance such as Net Zero.	This is captured in actions SCC1 and SCC3. Supply chain resource will be aligned appropriately to areas of prioritisation such as zero emission vehicle, space and heat decarbonisation to maximise the economic opportunities from these emerging sectors.

<p>Support the reshoring of supply chains and demonstrate its wider value.</p>	<p>This is captured within action SCC1. A formalised approach has been developed to assist large manufacturing businesses in Scotland to identify opportunities to reshore production to increase resilience, improve operational effectiveness whilst maximising in-country supply chain content.</p>
<p>Develop internal capabilities for critical supply chains and combat broader issues such as Brexit for sectors such as food and drink.</p>	<p>This is captured under actions SCC1 and SCC4.</p>

YOU SAID...	OUR RESPONSE
ADAPTATION AND TRANSFORMATION	
Actions AT2 and AT3 have been amended as a response to consultation feedback.	
<p>The environmental activity within the actions is too narrow and does not match the ambitions to support a green recovery being made in the recovery plan.</p>	<p>Action AT2 has been re-developed. This aims to produce a more comprehensive environmental solution for manufacturing in response to the consultation feedback to generate an activity which could have more substantial impact. The action has been widened to address broader environmental activity that includes sustainability through reduced environmental impact across manufacturing facilities, infrastructure, product and waste streams.</p>
<p>Ensure barriers are not being created for businesses trying to access support, especially SMEs, where a requirement is being made for Cyber Essentials accreditation. Cyber Essentials is a large ask for manufacturing companies who are looking to recover economically post-pandemic.</p>	<p>Action AT3 has been re-developed. Rather than accreditation, this aims to create a development “journey” through a redefined approach to increase the potential level of cyber resilience in the manufacturing sector. A coherent approach has been established for the delivery of this action with the Scottish Government Cyber Resilience Unit which is aligned to the Cyber Resilient Scotland: Strategic Framework.</p>
<p>Help businesses to understand the benefits of digital adoption by demonstrating success through the use of case studies and show the correlation between investment or change with improved outcomes in efficiency and profit.</p>	<p>This is captured under actions AT1 and AT4.</p>
<p>Better educate businesses on what constitutes net zero carbon and encourage a better understanding of how to “do the right thing”.</p>	<p>This is captured under action AT2.</p>

YOU SAID...	OUR RESPONSE
Incentivise decisions for manufacturers that support the transition to net zero and a circular economy.	This is captured under action AT2.
Tailor messaging for digital development and low carbon integration to take account of size and maturity levels of businesses to provide a clear route and relevant understanding of available support.	This is captured under action AT1, AT2 and AT4.
Support cross-sectoral collaboration and clustering activity to draw upon experience and innovation from a wider range of sources.	This is being considered under action actions CN1 and AT5.
Consider how to appropriately introduce conditionality in relation to net zero planning and the incorporation of circular economy principles for Scottish companies accessing public support.	This is being considered under action AT2.
Provide support to help improve monitoring of the condition of assets, allowing businesses to optimise maintenance and increasing the lifespan of equipment.	This is an existing enterprise agency service. The Scottish Manufacturing Advisory Service can assist with a review of the current provision and recommend different approaches which can include signposting on to a technology specialist such as the National Manufacturing Institute Scotland.
Expand on the Digital Development Loans and the Digital Boost Fund by maximising awareness through the utilisation of multi-sectoral channels and developing clearer objectives around enabling/piloting innovation, advancing manufacture and automation.	This is being considered under action AT1. Alignment has been made with Scottish Government Digital Economy Unit to capture future opportunities for manufacturing within this policy area.
Consider a longer term intervention to support clustering activity. The lifespan of the Recovery Plan creates a challenge to delivering the support needed for clustering to be successful.	This is captured under action AT5. The aim is to establish a direction and to take forward activity by the end of the lifespan of the Recovery Plan.

YOU SAID...	OUR RESPONSE
SKILLS AND WORKFORCE	
<p>Action SWF2 has now been removed as a proposed action as existing systems have adapted and new incentives have been incorporated into SWF1. SWF3 and SWF6 have been merged to reduce duplication and deliver a programme which addresses both sectoral and regional impacts of the pandemic. Numbering of actions have been updated accordingly to reflect the removal or merging of any of the original actions. Any superseding action is not intended to be a direct replacement of the original action with that action code.</p>	
<p>Ensure the continued alignment of skills supply with areas of demand and planning for emerging pressures.</p>	<p>This is captured under all areas of the Skills and workforce actions.</p> <p>Skills Alignment continues to be a priority for the Enterprise Skills Strategic Board and its partners and there is a progressive programme of work in place. The Recovery Plan partnership will continue to consult with the Engineering Skills Leadership Group on course curriculum and delivery methods.</p>
<p>Consider how to better align apprenticeships with business demand and simplify the process of recruitment. Look to focus apprenticeship pathways towards emerging areas such green manufacturing and digital.</p>	<p>This is being considered under actions SWF1 and SWF4. Skills Development Scotland has an ongoing programme of work guided by the Scottish Apprenticeship Advisory Board (SAAB) to review and update Apprenticeship Frameworks. The Recovery Plan partners have worked closely with SAAB to provide input into the Apprenticeship Programme.</p>
<p>There is a need for collaboration at scale to reflect the growing importance of upskilling and reskilling to tackle the emerging needs of new technologies.</p>	<p>The collaborative work being led by the National Manufacturing Institute Scotland will address future skill needs driven by new technologies across manufacturers and supply chains.</p>

YOU SAID...	OUR RESPONSE
<p>Consider graduates and apprentices from disadvantaged backgrounds who will be more vulnerable in the pandemic context.</p>	<p>Support already exists in this space. The Scottish Young Persons Guarantee, which is heavily geared to support individuals with multiple barriers to employment will provide financial support and is specifically designed to help disadvantaged individuals. It will take a Fair Work First approach.</p>
<p>Ensure targeted training and curriculum inclusion as options to raise awareness of just transition, sustainability, and supporting transition via products, production methods and the end user. Behavioural and leadership training was also noted in this context.</p>	<p>This is being considered under action SWF3.</p>
<p>Allow for regional economic nuances and coordinate skills activity with both the strengths and needs across Scotland whilst being sure to coordinate activity and minimise duplication.</p>	<p>This is captured under action SWF2.</p>
<p>Utilise public support and procurement opportunities as a driver for Fair Work.</p>	<p>All public sector procurement now adopts a Fair Work First approach.</p>
<p>Ensure a more explicit emphasis to equality and diversity issues within the sector and more tangible outcomes should be targeted to find opportunities to support these underlying challenges.</p>	<p>This is being considered within all Skills and workforce actions. The 21/22 programme of the National Transition Training Fund will include a number of specific Equality and Diversity programmes, which will be developed and delivered in partnership.</p>



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