



Llywodraeth Cymru
Welsh Government

POLICY AND STRATEGY, DOCUMENT

A manufacturing future for Wales: our journey to Wales 4.0

How we will improve manufacturing across Wales.

First published: 24 April 2023

Last updated: 24 April 2023

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Ministerial foreword

Wales has a proud heritage in manufacturing and can claim to be the first 'industrial nation'. The 1851 Census showed there were more people employed in industry than in agriculture in Wales, the first time that occurred in any country. Over generations since, it has become critical to our social, economic, environmental and cultural prosperity.

Wales was right at the heart of the first industrial revolution, a centre of global export, leading the way in the development of mechanical production and steam power. And of course, the world's first steam locomotive-hauled railway journey took place on 21 February 1804 right here in Wales, at the Penydarren Ironworks in Merthyr Tydfil. Today, we are embracing technological change brought about by the fourth industrial revolution, with a manufacturing sector that now has around 150,000 jobs ^[footnote 1] and contributes over 16% of our national output ^[footnote 2], notably higher than the UK average.

In addition to the significant direct employment it creates, the sector contributes many thousands more in the extended supply chain. It still exports across the globe as well as contributing significant funding into Research, Development and Innovation (RD&I). Some of the largest manufacturing companies in the world have established substantial operations in Wales, providing a showcase for what we know is a great place to invest.

Manufacturing is as important to Wales today as it has ever been and remains woven into the fabric of our national identity. We have a unique responsibility to protect this vital sector and we must work collaboratively with industry and our social partners, to ensure it continues to thrive long into the future.

Manufacturing can, and often is, defined as a sector in its own right, but it is actually a composition of interconnected sub sectors. This includes food and drink, Information and Communications Technology (ICT), chemicals, electronics, life sciences, construction, metals, energy, automotive, rail,

aerospace, defence and security.

Our initial Manufacturing Action Plan (MAP) ^[footnote 3] was launched in February 2021, following extensive consultation with stakeholders and underpinned by the 7 objectives of the Well-Being of Future Generations Act (Wales) 2015. It has provided a framework which has fostered collaboration and helped coordinate Welsh Government support activity with a focus on manufacturing. It has framed our work to decarbonise industry including establishing Net Zero Industry Wales, underpinned by our Net Zero Skills Action Plan. We have also seen our flagship Advanced Manufacturing Research Centre (AMRC) Cymru thrive and activities like WRAP Cymru and our Toyota Lean Clusters programme help businesses to increase productivity and reduce waste by embedding circular economy and lean principles.

All this is happening during a period where the sector is facing major challenges: global competition, a technology explosion, Brexit and new trading arrangements with the European Union, the COVID-19 pandemic, a Climate emergency, the soaring cost of energy, delays caused by shipping problems which have disrupted global supply chains, raw material shortages, price increases and serious issues with labour availability. Some have called this the ‘perfect storm’.

While there are indeed many challenges, these invariably provide opportunities and the way we address and overcome these together can give Wales a real competitive advantage.

Our commitment to supporting our manufacturing sector remains unwavering. That is why it was right for us to undertake a review of the MAP to ensure we continue to make the most of our collective resources to respond to areas of greatest need. We will, however, do so based on a consistent vision:

“ We must transition and support the transformation of our manufacturing community – including its supply chains – to one which is increasingly

involved in ‘added value’ activities. We need a manufacturing community which consists of companies that have a strong financial performance, that undertake strategically important activities and that make a positive social, economic, environmental and cultural impact on their local communities, their regions and the supply chain in Wales. This is how we define High Value Manufacturing in Wales – not by the sector, its complexity, or its use of technology – but on how it impacts the well-being of the citizens of Wales. ”

The original MAP was developed in the context of how we translate this vision for a wellbeing economy into reality. This approach has not changed and is underpinned by the pursuit of three outcomes:

1. A prosperous economy which requires a steady focus on resilience and a capacity for transformation. We need to strengthen the foundations of the economy with a diverse yet inter-related economic base of outward-looking firms with positive innovation performance, good productivity levels and a workforce equipped with the skills for a changing world.
2. A green economy which demands high levels of circularity, where resources are kept in use adding economic value and where waste is avoided. This economy is integral to a low carbon society, so we need to invest in low-carbon and climate resilient infrastructure, renewable energy projects, whole system thinking/design and sustainable homes.
3. An equal economy which means investing in the productive potential of all people in communities. We need to build ambition, encourage learning for life, improve our understanding of behaviours and attitudes and support people to make the most of their potential. Our regional approach will support a fair distribution of opportunities and we will continue to demand and champion fair work.

We believe that our approach, which supports a more effective balance between the tradeable and the foundational economy, can continue to build on the

priorities in our Economic Resilience and Reconstruction Mission, rooted in our Programme for Government. It also aligns with our place-based model of economic development and the need to tailor our approach to reflect the unique challenges and opportunities faced in different regions of Wales, set out in our Regional Economic Frameworks ^[footnote 4]. We understand that we continue to face challenges. This makes it more important than ever before that stakeholders work in partnership for the benefit of Wales and our vital manufacturing sector, with Welsh Government playing a central role in convening and coordinating activity as well as providing direct support. This builds on our Economic Contract which embodies our ‘something for something’ approach, where those receiving Welsh Government support also outline steps they will take to help us build a strong and adaptable economy, reduce carbon, embed principles of fair work and promote the long-term well-being of our communities, language and cultural heritage.

I would like to again express my gratitude to all those who contributed to the revision of this plan and I look forward to further delivering on our shared commitment to future proof the manufacturing sector in Wales. The development of this plan has been guided by the insight and expertise of leading UK and Wales industry representative bodies, namely Make UK and Industry Wales.

Vaughan Gething MS
Minister for Economy

UK manufacturing sector: the view from Make UK

The UK manufacturing sector must be the engine of UK economic growth. The 20,000 manufacturers represented by Make UK throughout the UK have continued to invest in the new technologies of tomorrow and nurtured the workforces of the future. Manufacturing is a resilient, innovative, modern sector that drives the British economy, delivering over 10% of GDP ^[footnote 5],

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contributing over 50% of all exports, with the UK a top 10 global manufacturing powerhouse.

But the headwinds manufacturers face in the years ahead remain substantial. Hampering manufacturers are the short-term challenges of stifling labour shortages, the rising cost of doing business, and ongoing supply chain disruption. Real action is needed on reducing costs of energy and driving energy efficiencies, tackling the labour shortages and ensuring the UK is a competitive place to do business.

We want to see the sector grow and expand. Make UK analysis shows that supporting the sector to grow to account for 15% of GDP, up from 10%, can add a further £142bn to the UK economy ^[footnote 6], as well as jobs and investment in our regions.

Make UK research shows that 42% of manufacturing leaders expressed a lack of a long term economic plan as one of the primary risks to business confidence in 2023 ^[footnote 7]. And to date, piecemeal policymaking means manufacturers feel there is lack of, and need for, a coordinated, regional approach to long-standing challenges. Make UK strongly believe the pillars of a modern industrial strategy are as follows:

- Driving energy efficiency: Manufacturers recognise the long-term challenge and are increasing their focus on energy efficiency where possible. Measures to reduce energy costs must go hand in hand with measures to drive energy efficiency which will also help us reach our Net Zero ambitions.
- Stimulating greater levels of RD&I: The manufacturing sector accounts for about 41% of all private sector expenditure on RD&I in the UK ^[footnote 8]. However, RD&I projects are innately uncertain and often entail creating new products or solutions without knowing what the exact outcome might be, which is why investment-friendly policies are key to stimulating even a greater level of private investment.
- Tackling labour shortages: Manufacturing is facing an acute skills shortage

with an increasing number of the workforce now defined as economically inactive. Vacancies in the sector are proving hard to fill due to applicants lacking the appropriate skills, qualifications or experience. Make UK's own research estimates (in 2022) the cost in lost output to UK GDP because of these vacancies being unfilled could reach as much as £21 million a day ^[footnote 9] ^[footnote 10] While we must tackle the labour shortage now, we must begin to set out what skills we need within the next decade and act now to prevent a skills crisis in the future.

- Reducing the tax burden: More widely, the tax burden in the UK is currently the highest in 70 years, reaching almost 35% of GDP ^[footnote 11]. Whilst the increasing tax burden will increase costs for many households and businesses, government can balance the scales by improving the quality of targeted support and incentives to ensure businesses are better placed to invest in RD&I, improving their productivity and competitiveness.

Welsh manufacturing: the view from Industry Wales

Industry Wales (IW) represents the views of industry to the Welsh Government, with the ambition to further anchor, develop and grow High Value Manufacturing in Wales. The original MAP sought to re-define 'High Value' as being less associated with the product or service but placing greater emphasis on what the sector brings in terms of wider value to all stakeholders in their community; from employees to neighbours, from a nation's needs to global responsibility.

In line with the strategy of the MAP, IW has reached out to all sectors, regions and trade organisations, establishing dialogue with over 50 trade bodies. Building on the success of the South Wales Industrial Cluster, it has added Net Zero Industry Wales (NZIW) as a new forum for Industry Decarbonisation, crossing sectoral and policy boundaries to ensure that infrastructure, knowledge

transfer and skills are focused on placed-based added value solutions for businesses, building an economically enabled and sustainable future for all.

The Welsh Government established a cross-government Delivery Group, encompassing a range of policy areas and departments to provide a coordinated approach to delivering the ambitions and specific activities set out in MAP. This includes Economy, Health, Transport, Procurement, Housing and Energy and looked at support mechanisms to address supply chain voids, along with policy and project opportunities for Welsh Supply manufacturers. IW has been an active member of this group ensuring that the voice of industry is present as well as providing objective challenge and scrutiny.

Our vision for the future of manufacturing in Wales remains consistent with the definition set out already, namely on how “High Value Manufacturing” activities have a positive social, economic, environmental and cultural impact on the well-being of the citizens of Wales. It is about creating well paid jobs, safe communities, carbon neutral industries and a thriving Welsh culture.

Working with local stakeholders as well as national and international decision makers, it is imperative that capable, competitive, sustainable suppliers of the things we need to fulfil our day to day lives are distributed throughout communities, securing prosperity and good jobs for future generations.

This refresh of the MAP also addresses issues which have developed over the last two years. When the original plan was launched we were in the middle of the COVID-19 pandemic, with little certainty as to what the next cycle of the virus might bring. Issues around international trade unrest continued, major supply chain disruption, energy price escalation and the cost of living were largely unpredicted and we have had to respond to these inflationary issues, which in turn impact income, margins and provide a more difficult environment for investment. Therefore, the refreshed plan needs to focus our limited resources in a way that ‘fast starts’ activity (tactical) and yet in the right things (strategic).

To that end, we have identified the 6 strategic objectives which form the framework of this revised plan, against which specific actions are set. This will enable us to wisely deploy our resources on the nation's fundamental needs, whilst developing our people, supporting our manufacturers and providing infrastructure so that an inclusive and progressive zero carbon community can be built. Getting this balance right will help create wealth and distribute it fairly amongst stakeholders within our communities and supply chains.

It will also ensure that it engages with current and future generations to offer real and appropriate skills, roles and opportunities in Wales and its regions in transforming business and industry for a sustainable future for all.

Working together, we will continue to assist businesses to recover and rebuild both their local and export markets by improving productivity and therefore competitiveness. This requires mapping our use of resources from people to investment, as well as focusing on material and energy resources to remove waste and maximise the yield, including the re-use at higher value of both material and energy by-products. We want the sector to lead the way for Wales, promoting fair work and equality of opportunity for all right across our manufacturing communities, while also ensuring that our language and culture thrive.

The extensive consultation process of the original plan has been supplemented by continued dialogue as well as a series of intensive round tables with Industry sectors, Regions, Trade Unions and academia. It was further enhanced by a "Health check of the Sector" survey, which IW commissioned. This involved an online survey and "deep dive" interviews focusing on areas such as industry decarbonisation and the application of digital technologies. We have used data from this report to inform the refresh and have included excerpts in the introduction to each strategic objective.

The manufacturing industry has been the greatest contributor to the changing social and economic landscape of Wales for many generations. Moving from

field to factory, developing employee recognition to appropriate reward and representation, to enable generations to have choice and opening the doors for future generations. Making things well and sharing the benefit can be seen in the sector today; a sector that not only produces wealth but shares it reasonably.

Today, manufacturing in Wales not only remains significant in terms of GVA and employment ^[footnote 12], but we believe also has a relatively fair distribution of wealth within its workforce. Feedback from companies Industry Wales interacts with on a regular basis suggests that this is the case, with feedback highlighting the modes of scale (i.e. the ratio of senior management to operator) and many organisations being able to provide salaries at, or higher than, the Real Living Wage. Feedback also suggests that this is combined with relatively high employee representation and few cases of poor contractual behaviour, meaning the sector is in many ways already an exemplar. As the biggest contributor to our economy in terms of output, we have real opportunity for the manufacturing sector to be a catalyst to deliver long-term social and economic prosperity in Wales, if we can collectively navigate this fourth industrial revolution, and those that come next. This will require a consistent and collaborative approach to a number of key strategic objectives.

Our strategic objectives and actions

1. Address the climate emergency by decarbonising the manufacturing sector in Wales, underpinned by circular economy practices and processes

While it is fair to say there is an increased impetus in decarbonising our manufacturing sector, if we instead referred to 'decarbonising' as 'de-costing', with the objective of taking cost out of the system, then everyone would be focused on this. Carbon is Cost in every line of our Profit & Loss accounts. From

supplied materials and energy to factory to transport. We all see and acknowledge the need to improve our competitiveness and productivity, to improve margin to ultimately enable us to invest in our people, plant, and product.

The efficient use of our resources is increasingly critical. However, to drive efficiency we must better understand what resources we use in £s and in Mt CO₂ and understand the interaction and correlation between the two. From such identification it is possible to start the improvement activities prioritised on reducing cost and carbon in the most significant areas for a business. Lean thinking and Continuous Improvement not only enable everyone to understand their role in this activity, but also allows each stakeholder to see the more strategic issues upon which to focus their leadership.

For example, this may include the need to consider Fuel Switching or Carbon Capture Utilisation and Storage (CCUS) for some organisations. A wider discussion on this is then possible to see how parties can collaborate on matters of infrastructure, supply chain co-operation and Circular Economy thinking, where one parties waste can be utilised as another's raw material or energy.

Many of our manufacturing companies are yet to start this journey or are not yet far enough into it, with the most significant focus seemingly around energy. The understanding of Lean and Optimisation is clearly insufficient as a number of businesses are rushing to consider fuel switching and circular economy before mapping their current usage and utilisation. More difficult is likely to be supply chains where a significant amount of carbon is used.

	Measured/ analysed carbon usage and identified targets	Conducted Lean activities	Used optimised processes	Plan to switch fuels	Adopted circular economy approach	No action
Energy	44%	6%	18%	32%	18%	12%
Waste	23%	13%	33%	3%	43%	7%
Buildings	32%	14%	27%	41%	18%	18%
Transport	28%	4%	12%	24%	20%	24%
Product	33%	33%	0%	0%	0%	67%
Equipment	31%	31%	31%	13%	31%	19%
Supply chains	20%	10%	10%	0%	20%	50%

*Source – Industry Wales ‘health check’ survey 2022’

We know that UK Government holds many of the powers necessary to address those asks and we will work in partnership with it, Local Authorities and the industrial base in Wales to take this forward. There are already many activities taking place across Wales and we will seek to build on this to accelerate our journey to Net Zero.

There are also a number of supported programmes from Welsh Government, HE and FE sectors and UK Government bodies such as Innovate UK. Examples

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include the HE Sector's ASTUTE and MAKE Cymru activities and the Welsh Government's SMART Productivity offer.

1.1 Net Zero Wales Carbon Budget 2 (2021 to 2025)

The climate and nature emergency is already upon us. Our ambition is to plan a better, fairer and greener future for us all and in March 2021 the Senedd formally committed Wales to achieving Net Zero emissions by 2050. In October 2021 we published Net Zero Wales ^[footnote 13], our emissions reduction plan focused on how we will achieve our second carbon budget (2021 to 2025) ^[footnote 14]. This also looks ahead towards building the foundations for Carbon Budget 3, our 2030 target, and our Net Zero 2050 target. The Plan contains 123 policies and proposals and more than 100 pledges for action, reflecting the breadth and depth of activity taking place across Wales. The Plan also sets out the wider actions to be taken by others, our calls on UK Government and contains pledges made by our partners. Alongside Net Zero Wales we also published the Working Together to Reach Net Zero which recognises and showcases the all-Wales approach to tackling climate change with pledges and case studies from every corner of the country.

As we transition to Net Zero, we must ensure it is planned effectively and equitably, not simply protecting industries and their employees, but strengthening them, developing skills for future markets, and ensuring the most vulnerable in society are not unfairly burdened with the costs of change.

Therefore, in Net Zero Wales we re-stated our commitment to affect a 'just transition' away from the fossil-fuelled economy of the past to a new low carbon future. Delivering a just transition will mean that as we move to a cleaner, stronger, fairer Wales, we leave no-one behind. We will develop a clear understanding of the impacts of change - positive and negative - and how to make sure these are fairly distributed in society. In doing so, we have committed to learning lessons from the past and building a future for Wales that supports

a wellbeing economy. To support our developing evidence-base and approach for delivering a just transition, in late 2022 we published a call for evidence, with over 100 respondents providing evidence to inform the development of Wales's decarbonisation pathway to Net Zero by 2050.

1.2 Just Transition to Net Zero

A key part of delivering a Just Transition to Net Zero will be working effectively with industry across Wales to develop our current industrial base and create new business opportunities. We acknowledge there are significant challenges in decarbonising our heavy industries in particular, because of the requirement to generate very high heat in production processes and the resultant production of CO₂ as a by-product of the production process.

Our Net Zero Wales Strategic Plan ^[footnote 15] established that meeting Carbon Budget 2 will require actions in several areas including fuel switching and CCUS. For hard to abate industrial sectors and in some modes of transport, we recognise the potential role of hydrogen to support the delivery of the Net Zero target and we continue to engage with stakeholders on the available evidence. Whilst our long-term ambition is to move to green hydrogen, we recognise the potential role of blue hydrogen in the interim which would require CCUS technologies. We will consult further on this to develop policy statements and next steps later this year.

We continue to work with our industrial stakeholders across Wales to develop credible decarbonisation pathways. In March 2022 we announced the creation of Net Zero Industry Wales (NZIW) which will drive essential collaboration between industry, academia and government to accelerate our journey towards Net Zero.

NZIW will take forward the work of the South Wales Industrial Cluster who launched their plan ^[footnote 16] in March 2023. The plan is the culmination of extensive work over two years involving over 30 organisations such as

Rockwool, RWE, Celsa Steel, Dragon LNG, ABP, Tata and Valero. The Cluster Plan sets out a vision and headline steps that offer the potential for industry to transition to a Net Zero future. It also highlights the importance of a range of interventions to help us achieve this, including energy and resource efficiency, fuel switching and CCUS. We will work through NZIW to understand more about the findings of the Cluster Plan and how we can work together on the journey to Net Zero.

In North East Wales, we are engaged with industry, building on the links that area has with the Hynet project; a cross-border hydrogen energy and CCUS project led by a consortium comprising several key partners including Progressive Energy Ltd, Eni UK, Cadent and Hanson Cement. The initial stages of the project focus on hydrogen production in North West England and storage of produced CO2 in repurposed oil and gas fields operated by Eni UK at Liverpool Bay. The expansion phase includes hydrogen pipelines to Connah's Quay for industrial off-takers in North Wales.

Case study: Business Wales Accelerated Growth Programme Carbon Emission Reduction Pilot

Based in Cardiff, TB Davies is a fourth-generation family business founded in the 1940s, employing 21 people and had a turnover of £8m in 2022. Along with selling direct to consumers, its customers include major companies like Screwfix, Arco and Amazon.

The company manufactures and distributes a wide range of climbing products, including steps, ladders, towers, and podiums for professional, trade and domestic users. It has taken pride in staying one step ahead through innovation ever since it became one of the first companies in the UK to introduce a line of revolutionary new aluminium ladders into its product range in the 1960s.

The company recently joined seven other companies to participate in the

Business Wales Accelerated Growth Programme Carbon Emission Reduction Pilot, partly funded by the European Regional Development Fund through the Welsh Government. The three-month immersive programme helped them to develop a better understanding of their direct and indirect carbon emissions and take positive steps to reduce them.

Explaining the company's journey, Director Mat Gray says:

“ "We started by identifying what data we already had and where we could improve. For example, we use solar panels to supply most of our electricity, and we don't use gas on site, so we knew we were very "clean" regarding pollution. Previously, we struggled to measure Scope Three emissions, which we do not create. Instead, they are the emissions from those we are indirectly responsible for, up and down our supply chain.

"The production of aluminium ladders is relatively energy and carbon-intensive. And a lot depends on where the raw materials come from. We were able to compile a significant amount of data on our own activity and our supply chain, including shipping companies. This allowed us to do a detailed analysis which identified areas where we could make the most significant carbon savings in the shortest timeframe.

“ "The first phase of the journey has culminated in a Decarbonisation Plan, with a commitment to become Carbon Neutral by 2050. The plan identifies multiple goals to create company-wide transformation and shift our stakeholders, including suppliers, distributors and end-users, from a 'use-and-dispose' mindset towards one of 'repair and reuse', investing in a circular economy based on founding principles of quality, durability and recyclability." ”

1.3 Low Carbon Energy in north Wales

Over the past 10 years north Wales has seen the successful deployment and maintenance of both offshore and onshore wind, delivering cost-effective, clean renewable energy at scale.

The region has been part of the low carbon energy story since the 1960s with nuclear, large hydropower plants and fixed offshore wind. Today, the collective effort between stakeholders within the public, private and third sectors, working in partnership, continues to put North Wales at the forefront of low carbon energy research, production, and skills development which have the potential to bring significant sustainable economic and social benefits.

Bounded by the sea, with developments in:

- marine energy such as the tidal Morlais demonstration project and potential round 4 offshore wind projects
- Holyhead port
- Holyhead hydrogen transport hub harnessing the vast renewable energy resource, including solar, tidal and offshore wind
- M-Sparc innovation centre and, potential new nuclear,
- Port of Mostyn
- existing and potential new fixed offshore wind projects.

North Wales is ideally placed to manufacture and demonstrate how a future low carbon system which integrates generation, transport and heating can meet community and regional needs through a sustainable integrated smart energy system.

1.4 The role of a circular economy in decarbonising industry

A low carbon economy is a circular economy, given that 45% of global carbon emissions come from the products and services we consume ^[footnote 17].

'Beyond Recycling' ^[footnote 18] is our strategy to make the circular economy in Wales a reality. It sets out our ambition for Wales to become a nation where we avoid waste, keep resources in use as long as possible and reasonably limit our use of the Earth's resources. Moving forward, it is vital we continue to focus on eliminating unnecessary waste in manufacturing. This encompasses single use plastic, further reducing food waste and reducing clothing waste; all of which have a high carbon or greenhouse gas footprint.

There are many examples of how this can be achieved and we must work collaboratively and learn from best practice. A joint programme of work is being undertaken to introduce a UK-wide Extended Producer Responsibility (EPR) scheme for packaging. The scheme will make those responsible for placing packaging onto the market pay the full net costs for waste management activities once the packaging has been used. The intention is for fees to start being raised from businesses in 2024. Wales, along with England and Northern Ireland will also be introducing a Deposit Return Scheme (DRS) for drinks containers in 2025.

We have many businesses here in Wales which are already at the centre of positive changes in manufacturing processes. For example, Seda UK in Blackwood are providing sustainable solutions for McDonald's amongst others, Mainetti in Wrexham is re-using and re-manufacturing a million coat hangers a day and Frugalpac recently opened a manufacturing facility in North Wales to produce a recyclable coffee cup..

It is important to recognise the vital role that Innovation plays in transitioning to a circular economy in manufacturing. The Welsh Government's innovation strategy, 'Wales Innovates' notes that: 'moving to a circular economy is one of

the great innovation opportunities of our time'. The strategy outlines the need for substituting high carbon, energy-intensive materials with sustainable, low carbon, resource- efficient ones. Digital and 'smart' technological solutions can also facilitate resource efficiency within manufacturing. In parallel, with the investment in infrastructure we also need to invest in people to develop and grow the right skills, this includes reskilling current industries to adapt to the transition to a low carbon future.

Case study: Circular Economy Fund, Addis

Addis Housewares is a market-leading, independently owned company with a 230-year history of designing, manufacturing and supplying household products. The Bridgend-based company manufactures a wide range of domestic and commercial products across a diverse range of markets, including waste management, cleaning, laundry, food storage, sink side and storage solutions. Addis planned to expand its range of eco-friendly products using 100% recycled polypropylene (PP) plastic by manufacturing a 40-litre pedal bin.

For Addis to commit to an expansion of its 100% recycled PP range, the company needed to find ways to offset some of the capital costs associated with the creation of new products. Support from the Welsh Government's Circular Economy Fund, administered by WRAP Cymru, enabled Addis to do just that.

The 40 litre pedal bin is an addition to Addis' eco range, rather than the replacement of an existing product. As a result, any recycled plastics used represents additional tonnage of secondary materials consumed. The product will be manufactured from 100% recycled PP, which avoids the:

- use of virgin plastics derived from fossil fuel,
- extraction and unsustainable use of fossil fuels,
- associated environmental damage these processes involve.

The increased use of recycled plastic will also encourage the collection and reprocessing of waste plastics and ultimately will support the creation of additional reprocessing capacity in Wales.

As a result, the company:

- will increase the use of 315 tonnes of recycled polypropylene over 3 years.
- is projected to save the equivalent of 182.7 tonnes of CO2 over a 3-year period.
- has forecast a significant increase in revenue.

“ The Circular Economy Fund grant allowed us to expand our eco range and offer a new product to our customers even during a time of great uncertainty. The grant has helped us further our commitment to the environment and enabled continued growth for our business.” ”

Martyn Lee-Smith, Managing Director Addis Group Ltd

1.5 Zero Emission Transport Infrastructure

Scope Emissions from the transport sector include those from cars, trucks, buses, taxis and railways in Wales, along with our share of emissions from international aviation and shipping. How we tackle these will have a significant impact on helping Wales reach Net Zero and support wider benefits across health, air quality, accessibility and the economy as whole. Our Transport Strategy for Wales, ‘Llwybr Newydd’ ^[footnote 19] sets out how we will put people and Climate Change at the forefront of our transport system.

Firstly, we will plan for better physical and digital connectivity, more local services, more home and remote working and promote more active travel to reduce the need for people to use their cars daily. Secondly, we need an

integrated transport system that works for everyone, where people and goods can move easily from door-to-door through accessible, sustainable and efficient transport services and infrastructure. This means significant investment in sustainable modes, such as bus, rail and active travel, to create services that people want, can and do use. Thirdly, we will encourage people to make the change to more sustainable transport by making it more attractive and more affordable through innovations that make it easier to use for everyone.

We aim to reduce emissions from passenger transport by 22% in 2025 (from 2019) and 98% in 2050 through demand reduction, modal shift and the uptake of low carbon technologies. We are also targeting a 10% reduction in the number of car miles travelled per person by 2030 and to increase the proportion of trips by sustainable travel modes to 35% by 2025 and reaching 39% by 2030.

We have also funded the Wales Automotive Forum to undertake a low carbon mobility supply chain mapping exercise. This will identify new entrants to the market, highlight actions for those who need to change business models and create a critical mass by collaboration of cohorts. The intelligence gathered will provide a holistic understanding of the challenges being faced by the sector.

1.6 Optimised RetroFit Programme

Through the Optimised RetroFit Programme (ORP) ^[footnote 20], we are supporting Registered Social Landlords (RSLs) and those Local Authorities with retained housing stock by retrofitting existing homes to improve their energy efficiency, reducing their impact on the environment and make them more cost effective to heat. Funding is available to procure products and services which include insulation, ventilation, cooling, fossil free heating and storage solutions.

Funding from ORP is targeted to be £270 million over the current government term, with around £70 million invested to date. The grant is offered to all RSLs and Local Authorities with more than 200 units of housing stock. In 2022-23 we

made £60m available via grant funding to social landlords and have provided indicative funding for the following two financial years based on £70 million funding.

This demonstrates the importance of working together not only with industry but with our social partners to tackle the climate emergency. Our funding support through ORP is helping facilitate collaboration, enabling RSLs and Local Authorities to take practical actions to decarbonise existing housing stock, providing opportunities for Welsh manufacturing supply chains and ensuring we go on the journey to Net Zero together.

Case study: Foundational Economy approach to ORP

Pilot work has been undertaken to identify approaches to engage local businesses, particularly those previously unknown to contracting clients, on the ORP. The Foundational Economy team engaged a small Welsh business, Simply Do, and undertook an exercise to establish capacity and capabilities within the construction trades in Wales, directly linked to the delivery of the ORP. The decarbonisation of homes is a key part of the Welsh Government commitment to Net Zero.

The pilot recruited hard-to-find and hard-to-reach suppliers. This pilot worked in partnership with Caredig Housing Association and identified over 200 suppliers capable of supporting ORP delivery. From this long-list, 15 suppliers submitted expressions of interest and 7 completed the qualification process to undertake work for Caredig. These suppliers were not previously known to Caredig. The success of the pilot means that this can now be scaled up across Wales to enable supplier engagement in decarbonisation and support the delivery of ORP.

Where we will focus:

- Embed low carbon and climate resilience within the Economic Contract and expand consideration into all other aspects of Welsh Government spend including grants and procurement.
- Use the Circular Economy Fund as a mechanism to drive forward more recycling and less landfill, including utilisation of new technologies and processes within manufacturing.
- Alongside Net Zero Industry Wales we will work with industrial clusters and hubs across Wales as they develop their pathways and build a solid evidence base to better understand the potential role that fuel switching and CCUS can play in decarbonising manufacturing.
- Work with Net Zero Industry Wales, the South Wales Industrial Cluster and stakeholders in North Wales including Hynet to understand the infrastructure necessary to decarbonise industry and maximise the benefits from relevant initiatives.

2. Develop the conditions to anchor key manufacturing companies in Wales, including provision of modern infrastructure and resilient supply chains.

Answering the key question as to what anchors a business in a place is critical to developing increasingly added value businesses in Wales. Whether they are entrepreneurial startups, existing SMEs seeking to break through the next level of growth or major inward investors responding to supply chain voids, it is critical that we learn the lessons of history and ensure we anchor them for future generations.

The historical view of anchorage has always been that retained ownership in a location increases decision making and strategic re-directions are therefore

possible. The market view also remains significant as businesses locate and are anchored where there is a market demand that initiates, maintains and can develop a business. Whilst the UK exit from the EU has changed our relationship with the Single Market, there are still significant opportunities for Welsh companies to grow in Wales and the rest of the UK, with EU potential. This remains true not only for the Foundational Economy but also tradable goods and services when excellence and competitiveness is achieved.

However, we have to consider that both ownership and market may not be enough to anchor companies within major supply chain voids identified as priorities and we need to attract major investors into areas where the capability and capacity in Wales or the UK is not sufficient. The lessons of the Foreign Direct Investment (FDI) activity in the past, from companies investing here from Europe, Asia and America shows us that those who remain are those who not only placed operations within Wales but increased the level of jobs with significant roles across Corporate, Finance, Sales, Purchasing and R&D. Not only do such higher-level jobs increase skills and reward but they become important in the development of leadership and critically, part of the decision-making processes and influence Wales-based companies have at global level.

Key criteria remain access to Market, infrastructure development, resilient supply chains and skills. We already have several levers to enable these conditions and the 'Team Wales' offer needs to be clear to do this.

2.1 Property Delivery Plan

A key factor in developing the conditions to anchor companies here in Wales is property. While this forms just part of the 'Wales offer' to the economy, the availability of the 'right' sites or premises is usually fundamental to an overseas business deciding to invest and locate in Wales, or an indigenous business deciding to stay and grow here. The timescale for occupation is a key factor in the decision-making process of businesses and a balanced portfolio of

investment ready sites and premises can give Wales a competitive advantage.

There is widespread evidence that industrial supply is limited, relative to demand. A lack of appropriate commercial property not only restricts businesses' opportunities to boost employment but slows productivity growth. We know that investment in modern property infrastructure offers existing businesses the opportunity to improve

productivity, by relocating from outdated or inefficient premises into a more suitable space. New commercial building stock can also play an important role as a catalyst, encouraging occupiers to invest in new plant and machinery to improve productivity.

To help address these challenges, the Welsh Government's Property Delivery Plan targets delivery of 300,000 sq ft per annum of new employment floorspace and investment ready employment sites in priority locations across Wales. Over 800,000 sq ft of new premises and 125 acres of investment ready sites are either completed or in progress through a combination of direct intervention, grant support to the private sector and collaborative working with public sector partners.

In addition to the availability of the 'right' sites or premises, we must consider how companies can expand and diversify from their current sites as well as adapt premises to become more energy efficient, reduce carbon and support our wider aspiration to achieve Net Zero by 2050. [Future Wales](#) and [Planning Policy Wales](#) set out our national approach to supporting sustainable growth in all parts of Wales.

Case study: Ty du development

Ty du is a development site owned by Welsh Government and is south of Nelson (Caerphilly, South Wales) with direct access from the A470 onto the

A472 which connects Abercynon and Ystrad Mynach. A major scheme to undertake enabling highways infrastructure works, including installation of services and estate roads was successfully completed on the site in 2019. This prepared the whole estate for residential and commercial development, including the provision of affordable homes and was funded through the Welsh Government's Strategic Employment Sites programme and the European Regional Development Fund (ERDF).

The second phase of the wider development at Ty Du site is Whitebeam Court which was completed in 2021 a Joint Venture partnership between Caerphilly County Borough Council and Welsh Government. The units were part-funded by ERDF through the Welsh Government and the JV partners Caerphilly County Borough Council. The 11 units at Whitebeam Court, located in four terraces have attracted quality businesses and are all occupied. This development is an example of creating the necessary infrastructure businesses need, as set out in the Property Delivery Plan. The units are of high quality, low maintenance set within a landscaped environment. They are built to BREEAM standards of excellence and are managed by CCBC.

The remaining useable land allocated for employment use (c4.1 acres/ 1.7 hectares) is marketed by Knight Frank on behalf of Welsh Government and has been marketed as three plots with the option of splitting the larger plot into two smaller plots. Sales are currently agreed on 2 plots.

2.2 Our digital infrastructure

Responsibility for telecommunications is not devolved and rests with the UK Government. However, we continue to step in to improve digital connectivity across Wales. Our current full fibre deployment with Openreach will provide gigabit speeds to around 40,000 businesses and homes across Wales. The Access Broadband Cymru scheme provides grants to fund or part fund businesses and homes to install broadband. The Local Broadband Fund

provides funding to local authorities and social enterprises to connect whole communities to fast and reliable broadband. We are also working to address the barriers to the deployment of broadband and mobile phone infrastructure through a taskforce. We know that digital technologies will be vitally important and access to appropriate digital infrastructure is a prerequisite if our manufacturing sector is to be able to fully adopt Industry 4.0 technologies in the future.

2.3 Supply chains

Within our first MAP we recognised the potential vulnerability of many of our manufacturing operations due to their often-complex global supply chains. This came into sharp focus during the COVID-19 pandemic which critically exposed not only how reliant our businesses are on these supply chains, but the impact that disruption has to society as a whole. In fact, we saw many companies experience disruption that had sometimes critical implications, particularly those employing a 'just in time' production methodology. Since the pandemic, we have seen other significant changes in the global landscape with the impact of the war in Ukraine, soaring energy costs and the real economic consequences of Brexit becoming a reality.

This has made it clearer than ever that in tandem with other factors, delivering sustainable social and economic prosperity for Wales requires more resilient, localised supply chains that are able to absorb sudden shocks around the world. In response to this we commenced the first phase of an extensive exercise to map supply chains in Wales to better understand the existing capability and capacity across sectors including Renewable Energy, Housing, Healthcare & Life Sciences, Construction, Food & Drink, Transport and public procurement.

Activity like this will provide a valuable tool to businesses in Wales by affording greater visibility and helping to identify opportunities to re-shore existing supply chains. It also has the potential to help shape future government policy by

enabling targeted support on areas of greatest need. In the next phase, we will progress this work by creating an online platform for supply chain data and work with industry and other stakeholders to mobilise supply chains to respond to areas of future opportunity. For example, this will help us double down on our commitment to electric vehicle charging infrastructure by increasing capacity of supply chains to deliver against our challenging targets for rollout.

2.4 Electric vehicle charging infrastructure

In 2021, as part of our wider aspiration to achieve Net Zero by 2050, we set out our **Electric Vehicle (EV) Charging Strategy for Wales**. Specifically, how we can ensure that all users of electric cars and vans in Wales can access EV charging infrastructure when and where they need it.

We have commenced work to develop a Welsh Government led EV infrastructure procurement framework that can be used across the Welsh public sector. This will enable us to influence the future development and deployment of EV infrastructure more effectively, as well as promoting opportunities for Welsh manufacturers to take advantage of this relatively new supply chain.

We are working with key stakeholders to take this forward with the framework anticipated to launch during 2023, signalling our clear intent and progress in zero emission transport infrastructure in line with Llwybr Newydd: The Wales Transport Strategy 2021.

2.5 Foundational Economy

The services and products within the foundational economy provide those basic goods and services on which every citizen relies. Care and health services, food, housing, energy, construction, tourism and high street retailers are all examples of the foundational economy. In some parts of Wales this basic

'foundational economy' is the economy. It has more strategic significance than ever before and the principles of how we embed this 'foundational' thinking is present across the six strategic priorities of this Plan.

We can apply this thinking to develop more localised supply chains and drive more social and economic value for communities, tapping into larger investment programmes such as ORP and bus decarbonisation. A challenge to achieving this is that many of the businesses who may have the required capabilities, or who could be supported to engage in such activities, are not known and can be difficult to locate. We are already working to develop a detailed understanding of future spend on these programmes, along with greater visibility of existing and potential suppliers. Using this information, we will help companies mobilise more effectively to take advantage of future contract opportunities that could have a significant benefit to them and the local supply chain.

We have already committed over £4.5m through the Foundational Economy Challenge Fund which supported a range of projects that will enable us to learn valuable lessons about how we can best support the foundational economy and which Government interventions work best.

2.6 Timber strategy

Another example of where we can look to localise supply chains is timber, specifically how we move towards higher value timber products being produced here in Wales from Welsh wood. In 2021, 81% of the timber used in the UK is imported ^[footnote 21] and only 4% of the 1.5 million m³ of harvested Welsh timber is processed to be used as construction graded timber ^[footnote 22]. A lower proportion of timber is used in all forms of construction in Wales than in Scotland or Ireland. There is real opportunity for timber processors and manufacturers in Wales to contribute to a 'wood economy', creating new jobs in rural areas and building an innovative supply chain for high value added, longer life uses.

These products will be those that make the greatest contribution to helping us to meet the 2050 Net Zero target and to growing the value of the sector in Wales and we are focussing on how we can achieve this. We will consider, amongst other issues, how we develop a robust understanding of the sector, markets and volume requirements and ensure we have the right skills training for the future.

There is clear potential for growth in this sector which could provide increased job opportunities across the entire supply chain along with development of a range of skills in areas like the agroforestry, processing, manufacturing and construction sectors.

Where we will focus:

- Produce detailed supply chain maps for critical products including current capability and capacity. We will use this to identify opportunities to localise supply chains, increase the capability of indigenous businesses and attract targeted inward investment to address supply chain voids.
- Address the undersupply of premises for manufacturing and related sectors by investing in strategic employment premises, delivering 300,00sq ft per annum of new floorspace across Wales through the Property Delivery Plan (PDP).
- Improve anchorage of manufacturing companies and encourage greater decision making in Wales. We will do this through direct support levers such as the Economic Contract and capital investment, for example, opportunities provided by the transition to zero emission transport.
- Work with developers and other stakeholders to understand and promote the supply chain potential from the offshore marine energy both in North Wales and in the Celtic Sea.
- Support Welsh manufacturers to supply goods and services in response to the Optimised RetroFit Programme, adopting a foundational economy procurement approach focused on engaging with and where appropriate supporting Wales-based suppliers.

3. Identify and develop the necessary leadership and workforce skills required to achieve Wales 4.0

A recent survey conducted by Hult International Business School found that only 6% of senior managers believe that their organisations develop leaders effectively.

This is an area that has seen a significant amount of focus and support over the years, so there is an important question to answer as to why our confidence remains low regarding the effectiveness of our leadership and workforce skills.

Good leadership is essential, more so now than ever given the challenges we face. However, while we have seen many good examples of leadership and supporting training provision, it has too often been fragmented. A more holistic approach is needed in order to drive successful transformation in businesses, and we must develop the right context based on global evidence and trends, deliver the right support in response and ensure our businesses are fully engaged.

Leadership development quite rightly places an emphasis on people, with training often based around cultural and behavioural change. However, this needs to be done in tandem with development of leadership in areas such as digital, lean and Continuous Improvement, to equip our business leaders now and for the future for an increasingly technological and sustainability focussed age. It is vital that the workforce is involved to drive effective cultural change, embedding leadership at every level and engaging everyone in training activities. This enables businesses to harness the innovation and enthusiasm of their workers while also building consensus and momentum for sustainable change.

It is important that leaders are developing within the broader context of the changing landscape of their industry and not in isolation. Wales has invested in

many developmental activities over the years, but it is important to have a strategic approach based on global trends and best practice. Join up across Public and Private Sector with Third Sector in common language, syllabus and training develops not only current leaders but delivers future generations of leaders, equipped to lead our organisations into a future where they, their workers and Wales can prosper.

Crucially, the industry must show leadership in skills demand. The view from Industry Wales, based on feedback from a range of businesses is that 40 years ago a typical medium size automotive company would have up to 5% of its workforce every year in skills development including their own training school with high levels of apprenticeships, sponsorship, internships and graduate programmes. Today, this would average at only about 1% and therefore the demographic shows that we are heading towards a situation where we have major gaps as more and more reach retirement. Businesses that commit to achieving 3-5% should be rewarded and recognised as they raise the tide on skills. These traditional routes should be supplemented by specific training for entry level roles, degree apprenticeships and mid-career re-skilling of current employees.

- Low number of applicants with required skills: 69%
- Too much competition from other employers: 54%
- Lack of qualifications the company demands: 49%
- Low number of applicants generally: 49%
- Number of applicants with required attitude / motivation / personality: 38%
- Not enough people interested in doing this type of job: 31%
- Lack of work experience the company demands: 28%
- Remote location / poor public transport: 21%
- Poor pay offered for the post: 8%
- Change in government living wage policy / labour costs 8%
- Unreasonable travel to work times: 5%
- Seasonal employment: 3%
- Job entails shift work / unsociable hours: 3%

- Poor career progression / lack of prospects in specific role: 3%

*Source – Industry Wales ‘health check’ survey 2022’

We see our businesses struggle to attract enough people with the right skills, qualifications or experience, with significant competition in the marketplace for those who meet the requirements. ‘Poor pay’ is seen as much less of an issue, showing that the sector typically continues to offer good quality and well-paid employment. This tells us that we need to not only support development of our industry leaders, but also help to contextualise in terms of global trends for their sector and skills requirements. We already have a range of support activities at our disposal that are delivering value to our businesses, their workers and our communities right across Wales. We must ensure we deploy these in a targeted way that maximises the impact to our manufacturing sector.

3.1 Careers Wales

At the heart of our skills offer, the **Careers Wales Strategic Vision: ‘Brighter Futures’ 2021-2026**, outlines the ambition of creating a brighter future for all young people and adults and ensuring no one is left behind. Careers Wales (CW) provides professional, impartial careers guidance and coaching to people across Wales.

CW work with schools and colleges to support young people to become more effective at planning and managing their careers in an ever changing and complex job market. This includes helping them better understand how their choices impact their future career, encouraging them to plan ahead and supporting them in taking the necessary steps to unlock their chosen career path. The support is wide ranging and is supplemented with learning opportunities for teachers, support for parents and those with additional learning needs to ensure equality of opportunity for all.

CW works with thousands of businesses across Wales and plays a vital role in bringing schools and employers together to inform, inspire and motivate young people while also giving businesses an opportunity to engage directly with potential future employees. This includes employer engagement events (virtual and face to face), an education business exchange to deliver curriculum enhancing programmes for pupils and a range of careers fairs and similar activities. This is all underpinned by a comprehensive digital offer that ensures information and support is available through digital services that are accessible and easy to use.

Working Wales (WW) is a complementary free service delivered by CW, available to anyone aged 16 and over, providing expert advice and coaching to help people find meaningful employment. This includes CV writing, redundancy support and referrals to other appropriate provision including Welsh Government programmes like ReAct+, Jobs Growth Wales+ and Personal Learning Accounts.

WW is also the access route for our Young Persons Guarantee, our key commitment to support everyone under the age of 25, living in Wales, to gain a place in education or training, and help to get into work or become self-employed. This comprehensive package brings together a range of programmes to provide the right support at the right time for the diverse needs of young people across Wales.

It is vital that we continue to engage closely with manufacturers to promote the wide range of services available through CW and WW, and to identify any areas where there is opportunity to do things differently to benefit the manufacturing sector.

Case Study: Caerdav Ltd STEM activity supported by Careers Wales

Vale of Glamorgan firm, Caerdav Ltd, helps girls take off in STEM. The aviation

specialist started working with Careers Wales business engagement advisers to encourage more female pupils to consider engineering as a career. Caerdav Ltd provides maintenance, repair and overhaul, and training services for airlines across the world and aims to employ more women. A visit was arranged for a group of 17 female year eight pupils from Llantwit Major School to visit the company's site. There was an introductory talk about Caerdav, including what the company does and how it operates. In addition to a tour of the site and speaking with engineers and apprentices, they were set practical tasks, one of which involved learning how metal plates are joined together in a way that prevents loosening due to vibrations during take-off.

Lyndsay Gallo, a teacher at Llantwit Major School, said:

“ “It was amazing. Caerdav really went out of their way to make it such an informative experience. The pupils got to see first-hand the type of roles in aviation engineering and speaking to female employees at Caerdav helped them realise how accessible such a career was. It's so important to expose young females to careers that have historically been male-dominated - particularly within STEM industries. Speaking to women who are already in these roles can be inspirational and helps young women to visualise that career path as a realistic goal for them.” ”

3.2 Flexible Skills Programme

Our Flexible Skills Programme (FSP) is a skills development programme which is open to employers in Wales who wish to upskill or reskill their existing workforces. Successful applicants will qualify for a subsidy of up to 50% towards privately procured training, using a provider(s) of their own choice. FSP comprises two distinct strands: 1. Partnership Projects (PPs), which have been developed by industry representative bodies in response to skills challenges faced by businesses across a sector, and 2. Business Development, which

helps an employer to develop its workforce in order that they attain either new or enhanced skills, which will aid the successful completion of a significant business development project.

Welsh Government offers an Advanced Engineering and Manufacturing Partnership Project to help drive Wales's skills economy, focusing on priority skills needs identified by Welsh employers and industry representative bodies in the sector. PPs offer a streamlined application process for employers which enables them to quickly address skills needs within their business, whilst also helping Wales to either overcome a specific skills challenge, or develop the skills needed to support future economic development. This is an example of where we are already responding directly to the needs of our manufacturing companies, and we will continue to actively promote this offer to our manufacturing companies to get maximum benefit.

Case Study: Energizer Auto UK

Energizer Auto UK was established in 1997 and now employs 50 skilled staff producing more than 700 automotive fragrance and appearance products ranging from fuel additives to car wash products across 43 different countries.

The company has a long-standing partnership with the Welsh Government and is benefitting from the Flexible Skills Programme which helps employers to develop their staff's technical, professional and leadership skills.

Energizer has also strong established links with the Valleys Innovation Showcase for Technological Advancement (VISTA) where the company shares best practice with other local employers and Coleg Gwent to promote and create new work experience and job opportunities in the local area.

Plant Manager Mark Thomas from Energizer Auto UK said:

“ “With so much uncertainty and volatility in the current economic climate it’s great to be celebrating this significant milestone. The team in Rassau have worked hard to increase efficiency while becoming more responsive to fluctuations in demand, this has led to considerable growth over the last 2 years.

“ With the advent of this growth the plant has had to adapt and change. The Welsh Government’s Flexible Skills Programme has been an important part of upskilling and preparing the workforce.” ”

3.3 Curriculum for Wales

As a nation, we need to equip all our learners for the world ahead. They face a future of rapid technological, social and economic change where adaptability, creativity and digital skills will be vital. Work evolves, technology is different, society is changing, and we aim, through the four purposes of the **Curriculum for Wales**, to nurture ambitious, capable, creative and enterprising individuals ready to lead fulfilling ethical lives and play a full part in society.

This is also why we have embedded Careers and Work-Related Experiences (CWRE) as a cross-cutting theme within the Curriculum for Wales from the age of 3. Embedding STEM within the CWRE guidance, focuses on the communication of STEM career opportunities and expands employer engagement in primary schools – broadening understanding of STEM opportunities from a young age. This is particularly important in the context of the manufacturing and related sectors where STEM related skills are so vitally important and are likely to become even more so.

As technology continues to evolve, a diverse and adaptable workforce is essential to meet Wales’s future economic needs. However, it is equally important that we equip our future generations with these skills and ensure that

we remove barriers, stereotypes, and inequalities from an early age. We will continue to engage with industry and support CW in recognition of the key role they play in matching supply of skills to industry need, promoting STEM careers and skills, ensuring that young people understand career paths in STEM and are inspired and motivated to pursue these.

3.4 Support for STEM

The Welsh Government supports the delivery of science and STEM initiatives in schools, through grant funding programmes totalling almost £1.5m for 2022-23. Grant funding at both learner and practitioner level cover the breadth of subjects which come under the STEM heading. Digitally, and in person, through facilitated employer activities and career fairs, CW provide a wide range of up-to-date information relating to STEM careers.

We have also made significant investment (more than £1m per year in recent years) in STEM programmes, including the Massachusetts Institute of Technology (MIT) – ‘Global Teaching Labs in Wales program, which since 2019 has funded tutors from MIT to deliver STEM workshops for three weeks per year in schools and colleges across Wales.

3.5 Tech Valleys STEM Facilitation Project

The Tech Valleys Programme has worked in collaboration with schools in the Blaenau Gwent (BG) area with the aim of stimulating an increase in science achievement across all schools in BG. Key performance indicators showed a significant improvement in 2021/22 when compared to results from the 2018-19 Academic Year. In December, we extended the STEM Facilitation Project for a further two financial years (2023/2024 and 2024/2025).

To date the Tech Valleys STEM Facilitation Project has established a new era of

partnership between industry and Schools and Settings in the Ebbw Fawr cluster in Blaenau Gwent. The project has raised awareness of career opportunities emanating from Industry 4.0 amongst Learners. This focus on education has proven key to improving the job prospects of learners, to help them understand the value that employers have for STEM subjects. Consequently, businesses will be able to recruit from within the locality and the skills gap will be addressed.

3.6 Qualifications Wales

Qualifications Wales carried out a sector review of qualifications, and the qualifications system, in Engineering, Advanced Manufacturing and Energy between 2018 and 2020. As a result, they committed to several actions which have been implemented over the past two and a half years. For example, they have worked with awarding bodies to oversee the introduction of new pre-16 and post-16 vocational qualifications in Wales. This includes a practical-based engineering qualification for 14–16-year-olds and a new suite of post-16 motor vehicle qualifications with up-to-date content on electric vehicle maintenance. Qualifications Wales are also developing criteria for a new GCSE in Engineering which will form part of the new suite of ‘Made for Wales’ GCSEs to support the new Curriculum for Wales from 2025.

3.7 Future Generations Leadership Academy

We see a range of initiatives right across Wales that play a key role in developing skills, and importantly leadership skills in our young people who will ultimately lead Wales into the future. The Future Generations Commissioner will begin recruiting young people aged 18-30 for the next **Future Generations Leadership Academy** following a successful pilot programme in 2019 and 2021. The programme will launch in September 2023 for seven months, ending in March 2024, combining virtual and in person sessions across 60-70 hours in total. A diverse group of 30 participants will be selected and will learn leadership

skills and good practice around implementing the Well-being of Future Generations Act 2015 and its seven well-being goals, as well as the five ways of working required to achieve the goals.

Half of the participants will be recruited through individual organisations, which will agree to sponsor the academy. The remaining participants will be selected through an open all-Wales recruitment programme. Once participants graduate from the academy, they are invited to join the alumni network, where the Future Generations Commissioner's team continues to facilitate leadership development opportunities and where alumni members can continue to support each other through sharing best practice.

Organisations from public, private and third sector have sponsored the academy including Ove Arup, Costain, Transport for Wales and Capital Law. Each sponsor typically recruits one participant to join the programme on each cohort.

3.8 Net Zero Skills Action Plan

While it is important we recognise the short and medium-term skills requirements of employers and equip our future generations accordingly, we also know the right skills are vital in achieving our just transition to Net Zero. In February 2023 we launched our [Net Zero Skills Action Plan](#).

Our Net Zero ambitions include a better, fairer and greener future for us all. Skills are a key enabler to deliver these ambitions, ensuring the transition is fair and the most vulnerable in society are not unfairly burdened with the costs of change. The Plan is an important first step in understanding the role of skills in making a just transition to Net Zero. The challenge to meet our Net Zero commitment is huge and our future skills needs will require a collaborative approach across the whole economy. In shaping the plan, we have worked cross-government, with external stakeholders and key partners to gain a picture of the Net Zero skills landscape against the 8 emission sectors set out in Net

Zero Wales.

The Plan prioritises 7 key areas and contains 36 actions. It sets out this Government's commitment to support our just transition to Net Zero through a more co-ordinated approach. Our skills plan recognises the importance of engaging with business leaders and other key stakeholders to ensure that industry and government are aligned and mobilised in a coordinated way.

3.9 MIT: Industrial Liaison Program (ILP)

MIT is one of the world's top research and academic institutions, renowned for excellence in technology, engineering and sciences, boasting more than 90 Nobel laureates amongst many other accolades. Wales has established a strong relationship with MIT over many years including membership of the MIT Industrial Liaison Program (ILP). Around 800 leading businesses around the world form long-term strategic relationships with MIT through the ILP, helping them confidently horizon scan and develop business strategy based on global best practice in areas like Industry 4.0, decarbonisation and climate resilience.

Through Wales's membership, Welsh manufacturing companies can access the extensive 'MIT-Knowledge base' online portal, gain free access to a MIT conferences, attend private workshops and briefings and explore opportunities to collaborate with MIT and other ILP members. Wales also hosts prominent MIT academics who have given keynote presentations and delivered bespoke workshops to Welsh companies on a range of subjects.

Where we will focus:

- Benchmark our manufacturing performance against best practice of comparable regions in the UK and globally. Use this data to best utilise our support mechanisms to improve productivity and competitiveness.
- Enable Welsh companies, particularly our manufacturing base to learn from

global best practice through engaging directly with world leading programmes like the MIT Industrial Liaison Program (ILP).

- Establish a mechanism to communicate with leaders from across the manufacturing ecosystem to collaborate, identify opportunities to learn from global best practice and target specific support such as our Flexible Skills Programme.
- Implement a new GCSE in Engineering through Qualifications Wales which will form part of the new suite of 'Made for Wales GCSEs to support the new Curriculum for Wales from 2025.
- Work in partnership with manufacturing sector stakeholders to create an action plan that identifies priorities to support industry in accelerating its' adoption of digital and data innovation, including cyber and AI.

4. Strengthen collaboration between stakeholders to embrace technological change and deliver more commercial Innovation at pace

We often hear the saying 'we don't know what we don't know', which is why fostering an ecosystem that enables organic and informal dialogue between stakeholders is as important in driving more innovation and collaboration as direct support or intervention is.

Investing in more RD&I and attracting more private and public investment to Wales remains important. However, the co-creation of challenges and potential solutions via collaboration within Wales and across the UK and Europe will be game changing and has potential to deliver significant outcomes in commercialising more research at pace.

The lack of anchored high-level functions within business has stalled co-creation with Academia and restricted our potential to land major Innovation programmes. This is important as we see the very tangible benefit to Wales

where we have been successful in driving major investment from UK level and private investors, with the likes of the Semiconductor cluster and industry decarbonisation programmes. And we have the Advanced Manufacturing Research Centre (AMRC) Cymru, delivered by the University of Sheffield and a member of the UK High Value Manufacturing Catapult.

These are examples of the impact in targeted development of magnet projects which has opportunities for Wales, UK or even EU. Looking to the future, the Global Centre of Rail Excellence (GCRE) is another prominent example where not only Transport, but Infrastructure, Energy, digital, technology and Construction can focus development activities. We also have several other opportunities such as Nuclear at Ynys Mon and Trawsfynydd and the growing Renewables Industry.

	Fully adopted	Pilot project running	Thinking about its use/ plant to start a pilot project	Not currently used
Computer Aided Design (CAD)	65%	4%	13%	19%
Process Monitoring	36%	8%	16%	40%
Digital Models	30%	11%	13%	47%
Sensor Technologies	28%	2%	12%	58%
Robotics and Automation	25%	15%	17%	44%

	Fully adopted	Pilot project running	Thinking about its use/ plant to start a pilot project	Not currently used
Data Analytics Tools	20%	5%	15%	60%
Additive Manufacturing / 3D Printing	18%	14%	8%	59%
Connectivity (IOT)	11%	0%	22%	68%
Machine Learning / AI	9%	2%	11%	77%
Augmented Reality	0%	5%	9%	86%
Virtual Reality	0%	5%	5%	91%
Blockchains	2%	2%	95%	0%

*Source – Industry Wales ‘health check’ survey 2022’

The combination of a connected and integrated innovation ecosystem with leading infrastructure is powerful. We understand the strategic imperative of improving productivity, energy efficiency, supply chains and driving more collaboration and innovation. Much of this will be underpinned by new technologies and processes, but many of the Industry 4.0 technologies which have transformational potential for the manufacturing sector are currently under adopted and we must go further to improve this.

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Case Study: Optical collusion, Developing the future of hyperspectral technology

The challenge

It's not only commercial specialists who prove to be vital partners for Airbus. Academic institutions play important roles in all kinds of projects, from developing cleaner fuel technology to understanding composite manufacturing.

At Wrexham Glyndŵr University in North Wales, a long-term partner of Airbus, cutting-edge research and development of precision optics and optical systems led to the creation of a commercial arm, Glyndŵr Innovations, providing both bespoke fabrication of large and challenging optics and the design of specialist optical systems. Among its areas of expertise is hyperspectral imaging.

In simple terms a hyperspectral imager allows you to image a scene using many narrow spectral bands (colours) simultaneously. This allows the detection of very small changes in colour across within the scene. These colour changes can indicate anything from the presence of skin disease in humans, to blight in crops or even the presence mineral deposits in landscapes. The resulting data can therefore provide powerful forensic information for fields including medicine, agriculture, mining and defence.

Given the potential applications for Earth Observation, it made perfect sense for Glyndŵr Innovations to join forces with Airbus and others to maximise this opportunity – which is what happened in 2018.

The approach

Having a partner in Airbus has enabled Glyndŵr to be involved in development it

might otherwise have difficulty in achieving.

“Glyndŵr Innovations is a small, very specialist team,” says Paul Rees, Professor of Optics – Technology and Metrology at Glyndŵr. “While we could build a hyperspectral imager on a bench in a laboratory, we couldn’t launch one into space!

“Airbus provided the deployment context for the programme and has assisted in the procurement of some specialist test equipment – which is very important to our continued growth as a technical team.

“Fundamentally, we like working with Airbus. Their team is very accessible, and this is crucial for projects like these that need open discussion of some left-of-field ideas. We could all bounce ideas around and be taken seriously. You can only do that if you feel comfortable with your collaborators.” ”

The solution

The partnership has produced a laboratory based ‘breadboard’ system, or technology demonstrator – currently undergoing system testing – with a strategic objective to further develop the system for flight trials. Funding has now been obtained to extend the development programme to include flight trials. For Glyndŵr University though, partnership with Airbus is as much about developing the next generation of aerospace innovators as it is about building instrumentation.

“Over the years the university has developed a high level of expertise in this area but partnerships like this give a real purpose for the direction of our research and commercial reach,” says Caroline Gray, Professor of

Enterprise, Engagement and Knowledge Transfer, and Director of the OpTIC Technology Centre.

“ “Modern universities are undertaking research activities that deliver for the economy by enabling these new and innovative ideas to become commercially viable. It enables us to build our reputation, build other partnerships and fund our work.

“ “At the same time, as a University, Wrexham Glyndŵr University is able to provide industry relevant training and education platforms to support the growth of skills and knowledge needed within UK industry. In many ways this partnership is a shining example of how the relationship should work.” ”

4.1 Wales Innovates: Creating a Stronger, Fairer, Greener Wales

In February 2023 we launched **Wales Innovates: Creating a Stronger, Fairer, Greener Wales**, the result of extensive consultation across government, industry, social partners and wider stakeholders.

It represents a fresh approach to innovation in Wales in which we recognise that we cannot do everything and must prioritise those things that will have the biggest impact for Wales, targeting our support in line with specific ‘missions’. In this regard, our approach will focus on four key areas:

1. Education: an education system that provides the skills and knowledge across our schools, colleges, universities and research organisations, enabling the commercialisation of ideas to create social and economic prosperity.
2. Economy: an economy that innovates for growth, collaborates across sectors for solutions to society’s challenges, adopts new technologies for

efficiency and productivity, uses resources proportionately, and allows citizens to share wealth through fair work.

3. Health and Well-being: a coherent innovation ecosystem where the health and social care sector collaborates with industry, academia and the third sector to deliver greater value and impact for citizens, the economy, and the environment.
4. Climate and Nature: optimise our natural resources for the protection and strengthening of climate and nature resilience. We will focus innovation efforts of the ecosystem towards tackling the climate and nature crises simultaneously ensuring a just transition to a well-being economy.

An Innovation Action Plan will be developed, setting out a small number of goals in each mission area, actions we will take along with partners, short, medium and long-term milestones and measures.

This mission-based approach will enable Welsh Government to play a convening role, supporting our innovation ecosystem to develop larger, more coordinated and compelling RD&I propositions. This will help make the most of funding available to us as Wales competes for UK funding to replace previous support from EU Structural Funds. Welsh Government will provide targeted support where there is a particular need or opportunity for Wales.

Case Study: Optical collusion, Developing the future of hyperspectral technology

The challenge

It's not only commercial specialists who prove to be vital partners for Airbus. Academic institutions play important roles in all kinds of projects, from developing cleaner fuel technology to understanding composite manufacturing.

At Wrexham Glyndŵr University in North Wales, a long-term partner of Airbus, cutting-edge research and development of precision optics and optical systems led to the creation of a commercial arm, Glyndwr Innovations, providing both bespoke fabrication of large and challenging optics and the design of specialist optical systems. Among its areas of expertise is hyperspectral imaging.

In simple terms a hyperspectral imager allows you to image a scene using many narrow spectral bands (colours) simultaneously. This allows the detection of very small changes in colour across within the scene. These colour changes can indicate anything from the presence of skin disease in humans, to blight in crops or even the presence mineral deposits in landscapes. The resulting data can therefore provide powerful forensic information for fields including medicine, agriculture, mining and defence.

Given the potential applications for Earth Observation, it made perfect sense for Glyndwr Innovations to join forces with Airbus and others to maximise this opportunity, which is what happened in 2018.

The approach

Having a partner in Airbus has enabled Glyndwr to be involved in development it might otherwise have difficulty in achieving.

“Glyndŵr Innovations is a small, very specialist team,” says Paul Rees, Professor of Optics –Technology and Metrology at Glyndwr.

“ “While we could build a hyperspectral imager on a bench in a laboratory, we couldn’t launch one into space!

“ “Airbus provided the deployment context for the programme and has assisted in the procurement of some specialist test equipment – which is

very important to our continued growth as a technical team.

“Fundamentally, we like working with Airbus. Their team is very accessible, and this is crucial for projects like these that need open discussion of some left-of-field ideas. We could all bounce ideas around and be taken seriously. You can only do that if you feel comfortable with your collaborators.” ”

The solution

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growth of skills and knowledge needed within UK industry. In many ways this partnership is a shining example of how the relationship should work.” ”

4.2 Advanced Manufacturing Research Centre (AMRC) Cymru

Another key component of driving RD&I in Wales is how we get the most from our assets such as the Advanced Manufacturing Research Centre (AMRC) Cymru which has been incredibly successful in fostering more collaborative research and embedding Industry 4.0 technologies and processes within our manufacturing companies. AMRC has supported Airbus’s world leading future wing technology programme and more than 30 SMEs across 16 projects. A major SME digital enablement program is currently in the pipeline that will support a further 60 manufacturers over the next 18 months. One example of the real value this support is delivering, is the ‘Ffatri 4.0’ project which is a collaboration between AMRC Cymru, Airbus and Welsh food and drink companies (The Pudding Compartment and Hensol Distillery), using digital tools to create the ‘factory of the future’, improving efficiency in production and reducing energy costs and carbon footprint to deliver the Welsh Government funded BITES programme.

AMRC Cymru is operated by the University of Sheffield’s renowned AMRC, part of the High Value Manufacturing Catapult and serves as a powerful magnet for inward investment and skills development which drives regional economic growth. The AMRC is a hub of world-leading research directly supporting 120 global industrial partners of all sizes to be more productive, develop better products, utilise better processes and shift to a low carbon economy. This includes the likes of Boeing, Rolls-Royce, BAE Systems and Airbus, as well as SMEs across the country critical to global supply chains.

Case study: AMRC Cymru

The Advanced Manufacturing Research Centre (AMRC) Cymru turns world-leading research into huge practical improvements for industry, helping to boost their productivity, sharpen their competitive edge and save time, money and energy.

The focus of expertise includes artificial intelligence and machine learning, additive layer manufacturing, robotics, virtual and augmented reality, human assisted assembly, industrial internet of things (IIoT) and digital twins, advanced metrology, digital simulations, design and prototyping and many more.

AMRC Cymru has supported Airbus' world-leading future wing technology programme, which is progressing the advancement of next-generation wing technologies, Rolls-Royce with the machining of turbofan engines and Toyota with the development of future propulsion systems. AMRC Cymru has also helped more than 50 small-to-medium sized enterprises across a broad spectrum of Welsh manufacturing businesses and is set to support a further 60 manufacturers over the next 18 months.

One of its ground-breaking projects was the Digital Manufacturing Support (DIMAS) programme. In partnership with Denbighshire County Council, AMRC Cymru supported ten local businesses through a range of manufacturing innovation activities. These included new product development, improving manufacturing processes and other innovation initiatives.

The team at AMRC Cymru helps foster collaborations and partnerships between industry, academia and government, to deliver cutting-edge research, development and innovation for better products and processes; and helps drive forward sustainable manufacturing technologies for net zero, creating the vital step-changes needed in the low-carbon transition.

4.3 Digital Strategy for Wales

AMRC Cymru is also helping to realise some of our core ambitions identified in our [Digital Strategy for Wales](#), which sets a clear vision and ambition for a coordinated digital approach across sectors. It outlines how we will use digital and data to make a transformational change across 6 Mission areas – digital services, inclusion, skills, economy, infrastructure and data. At its heart, is our commitment to develop digital services that are agile, collaborative, inclusive, and, crucially, designed around user needs.

It also outlines how we want to grow inward investment, develop a commercial and academic ecosystem and work with industry to increase Wales's digital offering to the international market place. One of the outcomes for the Strategy's Digital Economy mission is that: "digital innovation in Wales stands out in global competition for new markets and industries and attracts new talent to Wales". We have built strong and collaborative partnerships with industrial clusters, academia and the broader business community to capitalise on the opportunities that a digital economy can provide on a national and international stage. An effective digital strategy is critical in enabling Wales to take advantage of the opportunities brought about through new Industry 4.0 technologies like Artificial Intelligence, Internet of Things and Machine Learning.

4.4 Cyber in Wales

As outlined in our Digital Strategy, we are developing a Cyber Action Plan for Wales which will bring together a coherent national statement of ambition and activity on cyber. The purpose of the is to define a vision for cyber in Wales with a set of actions to deliver a coordinated approach to developing the cyber ecosystem, building on strong existing partnerships across government, academia and industry and to maximise investments through collaboration.

We can already see this happening through the Cardiff University-led Cyber Innovation Hub (CIH) which will support and drive the transformation and growth of a cybersecurity cluster in South Wales. CIH aims to support over 25 cyber security start-ups and upskill 1,750 individuals with cyber expertise to help enhance cyber security skills in Wales. With co-funding from Welsh Government and the Cardiff Capital Region, the CIH will work closely with their partners and businesses to bring together market-driven cybersecurity challenges to help drive the transformation and growth of cyber innovation. This is an area of increasing significance to manufacturing and other industry sectors as they transition to a more digital way of working.

4.5 City and Growth Deals

One of the fundamental principles of the new MAP is promoting a more collaborative way of working, pooling our resources and expertise to make a transformational impact by recognising the unique opportunities of different Regions. Our City and Growth Deals are examples of such an approach, offering Wales and our Regions an opportunity to maximise Welsh and UK Government funding to support interventions that can deliver sustainable economic growth, focussed on regional priorities.

They are ultimately led by the ambition of our Regional Delivery Partners (Local Authorities) who identify their priorities based on their unique understanding of their respective regional landscape. The Welsh and UK Governments are co-signatories, but the key principle is that the Regional Delivery Partners are responsible for the vision, objectives, governance and the successful delivery of meaningful outcomes for each City and Growth Deal.

There are 4 City Region/Growth Deals in Wales; **Cardiff Capital Region**, **Swansea Bay Region**, **north Wales** and **mid Wales**. Between them, these will see public sector investment in a diverse range of programmes and projects amounting to some £1.7bn. This will be supplemented by private sector funding

making the overall investment notably higher over the lifetime of the Deals. While the specific objectives are unique to each Region, they are all focussed on supporting transformational programmes, projects and infrastructure that will support our Net Zero aspirations, create significant new employment, equip our future generations with world leading skills and contribute significant uplift in GVA across all parts of Wales.

4.6 Welsh Government 'Tech Valleys' Programme

Tech Valleys is a ten-year £100 million Programme for Government commitment to create a physical environment where high-tech manufacturing companies of all sizes can thrive. This includes sub sectors like digital, cyber, AI and robotics. The programme aims to encourage digital adoption and develop high value advanced technologies that support innovative industries such as 5G, battery technology and research into automotive and autonomous vehicles. We have also seen significant investment in the National Digital Exploitation Centre (NDEC), a partnership between Welsh Government, Thales and the University of South Wales. And Blaenau Gwent Council led a successful bid in collaboration with Tech Valleys, Coleg Gwent and industry stakeholders to develop the High Value Engineering (HiVE) facility, a world-leading training and education establishment based in Ebbw Vale.

The vision statement is for the South Wales valleys to be recognised globally as a centre for the development of new technologies that support cutting-edge industry. To do this, we will capitalise on the opportunities arising from the Industry 4.0, support high value sustainable jobs, attract inward investment and create a learning and skills development environment tailored to what businesses actually need, now and into the future. To date, the Tech Valleys programme has committed £40 million to projects and we are continuing to work with partners to identify and develop new projects.

4.7 Deeside Decarbonisation Forum

At the other end of Wales, we see another great example of collaboration and joined

up thinking. The Deeside Decarbonisation Forum in North Wales is a Business-to-Business forum to enable open discussion around the decarbonisation opportunity for Deeside and the surrounding area. It provides a platform for leadership, networking, knowledge dissemination and project facilitation across more than 30 organisations representing the full value chain.

Uniper are a founder of the Forum which has attracted circa 30 members from within the Deeside Industrial Park including Tata, Toyota, Eni, WWU, Triton Power, Essity and ICT's new paper mill, Bangor University, AMRC and Ambition North Wales. There is future potential to expand the forum to include the Wrexham area.

Where we will focus:

- Support the ecosystem of Wales (including forums and trade events) to create a stronger, fairer and greener Wales with increased collaboration and research, development and innovation activity in line with the commitments and priorities in our Innovation Strategy, "Wales Innovates".
- Use the Advanced Manufacturing Research Centre (AMRC) Cymru as a focal point to drive collaborative research, where complementary support levers converge for maximum value (including wider Welsh Government Innovation offers such as SMART).
- Work to secure more UK research and innovation funds.
- Continue to develop the capability and capacity of research in Wales and facilitate international collaboration opportunities through the Sêr Cymru Programme.

- Promote the performance of the Welsh Research base and key benefits of science, technology, engineering, Maths and Medicine funding in Wales, UK and internationally.
- Develop a detailed map of key stakeholders to understand the current ecosystem and identify opportunities to drive future collaborations – linked to priority areas in supply chain mapping (i.e. which TUs/universities are involved in each area).
- We will encourage and support manufacturers in Wales to adopt ‘open innovation’ practices to manage their approach to collaboration.

5. Embed ‘Fair Work’ employment principles in Wales, promoting inclusivity, security, and protecting our cultural heritage.

Manufacturing is not only significant in terms of the number of people it employs or the contribution the sector makes to our national output, but it also has a strong track record for ‘Fair Work’ and potential to be a true champion for Wales. This does not ignore some of the major changes that are still required, particularly in balancing the rewards gained through new technologies fairly between employer and employee. We need to recognise that the sector has a high GVA which enables fair distribution of reward for workers in this regard ^[footnote 23]. Examples of this are the ratio of highest paid to lowest paid. For example, Operation Director’s pay at four times that of shop floor operators whereby comparison in newer industries and some low-cost countries, this disparity can be up to twenty times.

It extends beyond just a fair wage and includes fair conditions of contract for employees which, in high value manufacturing industries, is vitally important given the challenge in attracting and retaining highly skilled people who are engaged in continuous improvement. The sector provides great entry level opportunities, not necessarily requiring high academic accreditation, with career

pathways that include recognised National Vocational Qualifications (NVQs) that are rewarded with contracted security.

Manufacturing has transformed throughout previous industrial revolutions, with factory environments a microcosm for changes in the working environment, mechanised production, Health and Safety, Occupational Health and automation. The sector will once again be the epicentre for transformational change in the form of industry which will require partnership working with strong employee representation and Trade Union recognition.

Ensuring everyone is valued and championing inclusivity will not only improve the workplace but also engage and develop much wider participation than today. This is critical for industry. The Economic Contract is one of the mechanisms we will use to drive this change and monitor our progress.

The eyes of the world have previously focused on Wales's Industrial leadership and if we work collectively, inclusively, fairly and at pace, we can again promote Wales and our manufacturing sector as a global leader.

5.1 Fair Work

Fair work is the presence of conditions which means workers are fairly rewarded, heard and represented, and can progress in a secure, healthy and inclusive working environment, where their rights as workers are respected. In practical terms, this means a working environment which:

- Enables workers to meet their living costs and delivers wider benefits such as sick pay and pensions.
- Offers workers the opportunity and choice to be represented collectively through a Trade Union, ensures workers are informed about proposed decisions that may affect them and provides workers with the means to participate in and influence those decisions.

- Provides work and income security which includes hours worked, earnings and affords workers the opportunity to work flexibly to secure a good work-life balance.
- Delivers inclusive opportunities to obtain work, to acquire and develop skills and learning and to progress careers.
- Requires work to be carried out within a safe and healthy environment, where bullying, harassment and all forms of discrimination are dealt with.
- Guarantees that rights and obligations are always recognised and adhered to.

We have produced a short Welsh Government guide: [A guide to fair work](#), that provides further information on what fair work means in practice; why promoting fair work is beneficial for organisations, workers, and wider well-being; and how organisations can implement fair work.

We are clear on the values that we are prepared to stand behind and support and that is why fair work is now such an important part of how we frame our relationships with businesses through our Economic Contract. In addition to the hundreds of businesses that have engaged with us in the Economic Contract so far, more than 400 employers have signed up to the Welsh Government's [Code of Practice on Ethical Employment in Supply Chains](#).

Signatories to the Code agree to comply with its commitments to support ethical employment practices and tackle modern slavery. We want to raise awareness of the Code and encourage as many manufacturing businesses as possible to become signatories so that the benefits can be felt right across their supply chains.

The [Social Partnership and Public Procurement \(Wales\) Bill](#) which has now completed its process of legislative scrutiny in the Senedd will, primarily through its socially responsible procurement duties, have an indirect impact on manufacturers in Wales. The procurement duties are closely linked to the Well-being of Future Generations (Wales) Act 2015 and place a particular focus on

contract management and supply chain management. Work is already underway to develop regulations and statutory guidance to support the legislation.

We recognise that employers are in competition to recruit, develop and retain the workforce they need. Fair work is part of any business' armoury in that endeavour. Part of that requires a genuine commitment to workforce equality, diversity and inclusion and the use of the Welsh language. We continue to promote the Social Model of Disability, the ambitions set out in the [Cymraeg 2050: Welsh language strategy](#) and the [Anti-Racist Wales Action Plan](#), and we encourage the manufacturing sector, which is so key to the fabric of Wales, to support our ambitions.

Put simply, harnessing fair work delivers for employers, with more and more discovering the benefits of fair work to them and their workforce. These include many firms in the manufacturing sector. We want many more manufacturing businesses in

Wales to join them and be at the forefront of the progressive employment practices that drive productivity and fairness.

We understand the importance of new technologies and how we must embrace Industry 4.0 to shape a manufacturing sector fit for the future. But we must not lose sight of the importance of getting the balance right, where new technologies are introduced in a way that benefits workers and not just the profits of employers. Key to this will be working closely with our Union colleagues and wider social partners to engage with businesses to promote the mutual benefits of fair work principles.

5.2 Welsh Government commitment to Equality and Inclusion

Beyond fair work specifically, we place equality and inclusion at the heart of all

public policy making here in Wales. We have several plans at various stages of development that encompass our complete commitment to this pursuit of equality, these include:

Strategic Equality Plan 2020 to 2024: Under the Specific Duties contained within the Equality Act 2010, the Welsh Government is required to produce a Strategic Equality Plan (SEP). Within this are 8 Equality Objectives, underpinned by several measurable actions relating to the 6 domains of 'Is Wales Fairer?' (2018).

Advancing Gender Equality in Wales Plan: Published in March 2020, the Plan aims to address systemic gender inequalities. This helps deliver against the vision and recommendations for achieving gender equality in Wales set out in '**Deeds not Words**' by Chwarae Teg.

Anti-Racist Wales Action Plan: Formerly known as the 'Race Equality Action Plan', the Anti-Racist Wales Action Plan (ARWAP) was published in June 2022 and sets out our vision for an anti-racist Wales. The Plan was co-constructed with Black, Asian and Minority Ethnic researchers, policy officials, communities and other key race stakeholders. An external 'Accountability Group' and an internal 'Support and Challenge Group' have been established to deliver the plan and monitor its outcomes.

LGBTQ+ Action Plan for Wales: The Plan was published in February 2023 after an extensive consultation and sets out how we intend to advance LGBTQ+ equality and inclusion, to make a real difference to the lives, prospects, and outcomes for LGBTQ+ people, today and in the future. We want to make Wales the most LGBTQ+ friendly nation in Europe.

Disability Rights Taskforce: The very real impact of the COVID-19 pandemic on disabled people was made clear through a report originating from discussions at the Welsh Government's Disability Equality Forum: **Locked Out: Liberating disabled people's lives and rights in Wales beyond COVID-19**. The Report is

structured around 5 main chapters, namely the Social versus the Medical Model of disability; Human rights; Health and Well-Being; Socio-economic disadvantages and Exclusion, Accessibility and Citizenship.

In response to the findings: **Locked out: liberating disabled people's lives and rights in Wales beyond COVID-19: the Welsh Government's response**, we have established a Disability Rights Taskforce, to determine what further action needs to be taken to remove the inequalities faced by disabled people. Priority areas have been identified and these include access to services, affordable and accessible housing, employment and income, independent living (including health, well-being and social care) and increasing understanding of the Social Model of Disability.

5.3 Social Model of Disability

The Social Model of Disability was first adopted by the Welsh Government in 2002 and is enshrined in the **United Nations Convention on the Rights of Persons with Disabilities (CRPD)**. The UN Convention states that “disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others”.

In other words, it recognises that disabled people are disabled by the actions of our society and not by their impairments. It is people, and the systems they make and implement, that disable people. These disabling actions can be driven by organisational culture, ignorance, prejudice, or simple indifference. They result in disabled people being excluded or marginalised from many areas of life.

If fully realised, the Social Model would transform society, removing barriers and meaning that disabled people would be able to participate fully in society. We are committed to working with all stakeholders in Wales to make this a reality, and as our biggest economic contributor, the manufacturing sector has the

potential to help drive a real step change in Wales and we will collaborate with industry and our social partners to seek out, celebrate and promote best practice.

Case Study: Dow Silicones UK Ltd, Project SEARCH

Dow Silicones UK Ltd is a highly technical and modern silicones production plant. It deals with potentially hazardous materials and needs extensive health and safety procedures. Health and safety is often used as a reason for not employing disabled people but Dow Silicones UK Ltd don't, using the social model of disability in their daily work. The company makes reasonable adjustments to remove barriers as a matter of course. It is on their 4th cohort of supported interns with Project SEARCH. The interns are young people with learning disabilities and / or autism and over 70% of interns enter employment after their internship.

Dow Silicones UK Ltd can do it safely and effectively, any manufacturing company can.

5.4 The Welsh Language

The Welsh language is uniquely ours and represents a fundamental part of our national identity and cultural heritage here in Wales. We must ensure the long-term vitality and legacy of our language and this requires leading by example and setting ourselves challenging ambitions. It also requires us to be systemic in our approach, ensuring we consider Welsh language in everything we do from policy creation, to business support, to legislation and even how we collaborate with our stakeholders. **Cymraeg 2050: a million Welsh speakers sets out our vision to achieve a million Welsh speakers by 2050**, and the steps that we are taking, and will continue to take to achieve this challenging goal. Broadly, we are focussed on three strategic aims: Increasing the number of Welsh speakers,

Increasing the use of the Welsh language and creating favourable conditions – infrastructure and context.

We want to build on the strength of our Welsh-speaking communities, ensuring that people have good quality jobs with businesses increasingly promoting and using the Welsh language. It also means expanding learning provision across Wales so that more people can learn Welsh and use it in their daily lives. We want to see an increase in language transmission in the family, early introduction of Welsh to every child, an education system that provides Welsh language skills for all, and greater appreciation of Welsh language skills in the workplace.

We acknowledge that the economy is an integral factor in creating the right conditions for the language to thrive. This is especially important within our Welsh-speaking communities - enabling Welsh-speakers to stay in their communities or return to those communities. Some of the steps we are taking include investing £11m in the **ARFOR Programme**. Delivered by local authority partners in Anglesey, Carmarthen, Ceredigion and Gwynedd to help strengthen the economic resilience of Welsh-speaking communities. The ARFOR Programme includes a range of economic interventions that can provide us with a better understanding of how economic activity can support the Welsh language. In turn, we will use the findings of the ARFOR evaluation and lessons learned to seek opportunities to mainstream the language into other economic programmes.

We also acknowledge the importance of supporting young people to continue develop their bilingual skills. To this end we are investing in the Coleg Cymraeg Cenedlaethol and the National Centre for Learning Welsh to increase the proportion of Welsh-medium apprenticeships and further education courses available as well as providing free Welsh language learning for 16 to 25 year olds. In line with the Welsh Government and Plaid Cymru Co-operation Agreement we are also consulting on a new Welsh Language Education Bill, which will help all pupils in Wales become confident Welsh speakers by 2050. Welsh language is also a key part of our Economic Contract whereby any

recipients of Welsh Government support set out the steps they will take in support of our national ambitions around Welsh language.

We know that achieving a thriving Welsh language by 2050 is a national effort and will take a coordinated approach and we will work with industry and social partners to collectively ensure we preserve and grow what is truly one of our more treasured national assets.

Case study: Bragdy Mona Brewery

Bragdy Mona brewery located in Gaerwen, Anglesey was established in 2018 by a group of friends who shared, amongst other things, an interest in fine craft beer. The brewery has now grown significantly, and the beer produced is sold across Wales and beyond. Despite the growth, the original ethos of producing in small batches to ensure quality and consistency, being sustainable and providing a platform for the Welsh language remains central to the business.

The Welsh language and culture play a prominent role in the brewery, from the names of the beers, the bilingual labels to a fully bilingual marketing strategy. The language has been a way of ensuring that the product stands out in a highly competitive field. The language isn't just about making the brewery stand out in the market, Welsh is the natural, day-to-day language of the business, and with the brewery continuing to grow and evolve and now offering work opportunities locally, the crew are pleased to see that Bragdy Mona is giving something back to the community.

Where we will focus:

- Establish a baseline and on-going monitoring of underrepresented groups in the manufacturing, with progress against key metrics.
- Use our networks to identify and promote best practice and the advantages

of social partnership, fair work, equality and inclusion across manufacturing sectors.

- Embed the Ethical Employment in Supply Chains Code of Practice in the Welsh Procurement Policy statement so that all public sector organisations give it due regard in its procurement activity.
- Work with major contractors to the public sector to ensure that requirements relating to the Ethical Employment in Supply Chains Code of Practice flow through the supply chain.
- Work with stakeholders to increase awareness and participation amongst people from diverse backgrounds in STEM related careers.
- Support the delivery of Cymraeg 2050: a million Welsh speakers by building on the strengths of our Welsh-speaking communities.
- Work with Coleg Cymraeg Cenedlaethol and the National Centre for Learning Welsh to improve access to learning provision across all parts of Wales.

6. Mobilise business support to equip Welsh manufacturers to meet future demand for products of strategic importance

Now more than ever and in the context of a challenging global environment with the impact from the war in Ukraine on supply chains, the cost of leaving the EU and soaring energy prices, we know we cannot do everything. We must instead take a more targeted approach to how we deploy our resources on what matters most to Wales, addressing our biggest challenges and capitalising on our biggest opportunities.

The deployment of our business support and use of public procurement as levers, will respond across the breadth of all the strategic objectives set out in this Plan. Within this, we particularly recognise the importance of supporting the foundational economy, securing and localising supply chains, tailoring our

approach to the uniqueness of different parts of Wales across such foundational sectors as Health, Food and Drink, Energy, Housing, Transport and Security.

The key message underpinning our approach is that simple metrics like job creation or investment are not enough in their own right. Intervention that supports these must ensure that they are the right jobs, that deliver the right skills, embed the principles of fair work and deliver sustainable long-term investment in areas that we prioritise. We are proposing a more nuanced set of criteria that balances quality of jobs and growth with a consideration of the level of Added Value beyond the mere economic numbers. These must consider for example how we take more responsibility for carbon, not only within our shores but within a global supply chain. This can be extended to consideration of longer-term skills and innovation development or anchorage of high-level skills.

This is a shift in our thinking, but it is already embodied within our Economic Contract and will help ensure we get the most from our interventions, whether for specific projects, direct support to companies or investment in infrastructure.

6.1 Business Wales

Business Wales provides information, advice and guidance to support individuals to progress opportunities to start a business, along with support for existing entrepreneurs, micro and SMEs to develop their business practices, improve productivity and stimulate business growth, in an inclusive and sustainable way. Since 2016, Business Wales has supported over 6,500 individuals to start a business and helped existing businesses create over 30,000 jobs, of which 16% are categorised in the advanced manufacturing and food manufacturing sectors.

Through dedicated resource efficiency and employment and equalities support, 4,700 businesses have improved practices or adopted new approaches to sustainability and equalities. Business Wales provides support to manufacturing

businesses through five core mechanisms:

1. Digital and helpline service provides a fully bilingual, accessible point of contact offering a full range of information and guidance for businesses. This provides impartial tailored information and resources to help navigate business support. The Sell2Wales procurement portal promotes opportunities for businesses to access and win public sector contracts.
2. Business Wales Supporting Entrepreneurs and Business Start-Up inspires and develops the capability of entrepreneurs by promoting a culture of entrepreneurship and business start-up in Wales, reaching out to young people in education and those under 25 years, adults who are considering starting their own business, and targeted outreach for individuals underrepresented in business start-up and society.
3. Business Wales Development and Advisory Support provides advice, specialist support and focussed relationship management to help businesses create opportunities for employment, access finance, seek new markets and improve business practices and their productivity.
4. Business Wales Accelerated Growth Programme provides tailored business support, relationship management and specialist coaching for selected pre-revenue and established businesses that can demonstrate the aspiration and potential to achieve high growth.
5. Social Business Wales provides a dedicated, collaborative specialist service for social enterprises focused on achieving the outcomes as set out in the ten-year Vision and Action Plan, “**Transforming Wales through social enterprise**”. This includes one to one business support to eligible new start and growth social businesses, dedicated Employee Ownership Support and peer mentoring support.

Moving forward, Business Wales will continue to deliver on policy priorities and provide specialist support relevant to the manufacturing sector in Wales, including:

- Improving supply chains by working with public sector purchasers to enable

businesses to secure a greater proportion of public sector spend. This includes procurement advice to assist businesses to bid for contracts both in the public and private sector, with a particular focus on the foundational economy, grounded firms and business clusters.

- Strengthening employment practices, workplace equality, promoting the business benefits of Fair Work and connecting with the Welsh Government skills offer “Business Wales Recruit and Train”. Business Wales will provide employment and HR advice, promote awareness and understanding of the Fair Work principles and actively engage businesses to improve approaches and practices to take pro-active steps to developing an inclusive, fair and diverse workforce.
- As part of our commitment to the Net Zero Wales Plan, Business Wales will work with businesses in Wales (particularly SMEs) to incorporate energy efficiency, resource efficiency and new low carbon technologies into their workspaces and manufacturing facilities and develop new ways of working.
- Promoting a culture of creativity and enterprise with the next generation, Big Ideas Wales, part of the Business Wales service will strengthen its approach to helping young people learn about business and enterprise, supporting them to start a business as part of the Young Person’s Guarantee.

6.2 Development Bank of Wales

The **Development Bank of Wales** is a key part of our economic strategy and plays a pivotal role in financing businesses who have sound business plans but struggle to access finance from the market. Providing access to finance means businesses can start-up, develop and grow, working in tandem with Business Wales and co-investing alongside private finance providers.

The Development Bank has an established track record of working with and supporting the manufacturing sector in Wales. Operating a wide range of funds relevant to businesses at different stages of their development and growth, the bank can provide loans or equity investments ranging from £1,000 to £10 million

with repayment terms up to 15 years. Within this offer the Green Business Loan Scheme offers a package of support to enable Welsh businesses to tackle energy efficiency and decarbonisation action.

Since 2018, the bank has made more than 320 distinct investments in manufacturing companies totalling more than £62m, creating or safeguarding over 4,300 jobs.

6.3 Economy Futures Fund (EFF)

In May 2018 we launched the Economy Futures Fund (EFF) which consolidated several existing funding schemes into one Fund to offer a consistent approach. It simplified the process for business and allowed us to be more flexible in how we use the resources at our disposal to best meet business need.

The schemes that were consolidated were Capital Investment and aid for job creation; Environmental Protection Scheme; Creative Production Funding; Tourism Investment Support Scheme (now closed), replaced by Wales Tourism Investment Fund (WTIF), Repayable Fund for SMEs, and SMART Cymru (now closed).

6.4 Economic Contract

Our Economic Contract remains the cornerstone of Welsh Government support for Welsh businesses. The Contract is underpinned by our Economic Mission and seeks to drive socially responsible business practices.

Since its introduction it has been the most recognisable embodiment of our 'something for something' approach to business support and is a requirement of such support, including EFF. We continue to improve the Contract and make it an even more powerful and valuable tool to drive social value from public

investment. A refreshed Economic Contract was rolled out in January 2022 with revisions to the four key pillars that support our wider ambitions for a well-being economy. Businesses receiving Welsh Government support must provide detail on the steps they will take to support our wider objectives for the benefit of the whole of Wales across the four pillars: economic strength and adaptability; fair work; promotion of well-being and low carbon and climate resilience.

6.5 Export Action Plan for Wales

Manufacturers account for a significant proportion of our exports and our **Export Action Plan for Wales** sets out the measures we are taking to promote the benefits of International Trade. This includes delivering a comprehensive range of export programmes to support businesses on their export journey, under four key themes: inspiring businesses to export; building export capability; finding customers and getting to market.

During 2022-23, twenty-four successful exporters across Wales ('Export Exemplars') have been showcased to inspire other businesses to take up exporting; whilst the second cohort of the New Exporter Programme culminated in a successful market visit to the Netherlands. We have also supported our businesses through the signature Explore Export Wales conferences in North and South Wales. To assist in building capability, we have enhanced our online support for exporters through the **Export Hub**, a fully funded digital platform hosted by Business Wales, offering companies access to comprehensive resources and information. In addition, our International Trade Advisor team continues to work with companies to build their export capability. During the period to the end of February 2023, more than 1,200 meetings were held with companies to develop their export business and six export clusters with over 280 member companies were fully operational, developing businesses' export knowledge, enabling peer to peer support and building effective networks in key sectors.

To support companies to find new overseas customers and get to market, we have supported over 230 export projects through the International Trade Development, International Trade Opportunities and Overseas Business Development Visit Programmes as well as delivering 24 overseas trade missions from San Francisco in the west to Japan in the east. We are also proactively connecting Welsh businesses with export opportunities through our overseas office network and our in-market partners, including the Department for Business and Trade and Chambers of Commerce.

6.6 Toyota Lean Clusters Programme

Through the Toyota Lean Clusters Programme we are developing leadership capability and supporting companies in making measurable improvements in productivity, through the sharing and coaching of lean management principles. This programme is being delivered in partnership with the Toyota Lean Management Centre at Deeside.

During 2022, ten companies (38 participants) went through 'Eye Opener' awareness sessions, and we have started the third 'Lean Start' cohort with eight companies, eight projects and 24 participants in total. Ten companies have just concluded 11 projects as part of their engagement on the 2nd cohort of Lean Start. Three companies have taken the opportunity to extend the depth of the support through to next stage of the programme: 'Lean Plus'. In 2023, over 80 participants attended the first South Wales Network event, the Eye Opener course in February was full, with four companies represented. This means more than 160 participants and 50 companies have been through this current programme.

Case study: Rototherm Group

Rototherm Group sustainably design and manufacture precision instrumentation

solutions for flow, level, temperature, and pressure.

They operate within highly certified and demanding industries including energy, defence, beverage, water, and pharmaceuticals.

Through the Toyota Lean Cluster Program, their aims were to:

- Improve the robustness of their system to deliver high customer service levels within a high-growth environment.
- Advance their problem-solving capabilities
- Create standard procedures for newly acquired technology.
- Improve the level of fact and data driven decision making to improve workflow.
- Scale up production 5 times to meet demand.

Through the Lean Cluster programme, Toyota spent the time to understand Rototherm's business and people, and tailored their learnings to enable Rototherm to be able to achieve their aim. The sessions together were very energising for the team members, helped support the leadership and managers better, and resulted in clear actions to work on which were then followed up at the forthcoming session.

New tools were implemented with the team that helped them better manage their productivity and quality and provided the depth of understanding to ensure the new foundation to be maintained long after the course finished. Rototherm developed a special tool that slowed timings but improved quality, which led to fewer defects in products. The daily meetings were revamped and improved to be data driven so action is taken with facts not opinions.

As result of these actions, Rototherm realised a 300% increase in outputs due to time savings in production and organisational structure, and a 50% decrease in defects. The company has seen:

- more effective leadership and team member support team members are calm and comfortable in their roles as there is a better structure to each day.
- to further their lean journey, Rototherm have now signed up the Lean Plus programme (This programme follows Lean start and allows for the instigation and guidance towards larger, transformational lean projects).

6.7 Supporting Wales at Trade events

We provide opportunities to promote Wales through supporting companies to attend key UK Trade events, amplifying our key propositions and messages to relevant audiences and helping to start conversations with investors and key partners. Companies can use their presence on the Wales pavilion to launch new products, gain market intelligence and develop business in the UK and International markets. It also provides a unique opportunity for Wales to promote some of our best assets, these have included the likes of AMRC Cymru, the National Digital Exploitation Centre (NDEC), Life Sciences Hub Wales and Tech Valleys.

In 2022-2023, we delivered nine UK events, hosting and supporting over 40 companies who are following up on around £22m of business opportunities. These events were in a variety of sectors, including aerospace, space, low carbon, marine and rail. There is a similar programme of events planned for 2023-2024 which will continue this support to companies and promote Wales in key sectors globally.

6.8 Public Procurement Policy Statement

Public sector procurement can play a central role in the delivery of progressive policy priorities ranging from decarbonisation to social value and community benefits, the Circular Economy and the Foundational Economy. Delivery of these ambitions is reliant upon a procurement profession with the skills and

capacity needed to make our goals a reality.

Following the UK's departure from the EU, Welsh Ministers consented to the UK Government legislating on our behalf on public sector procurement regulations. This was to support a consistent approach, ensuring continuity for suppliers that cross-border business with England can continue without confusion or additional costs. A key aim of the UK Procurement Bill is to simplify the current Procurement Regulations and create a system which is more simple, transparent, fair and competitive.

Welsh Government officials engaged with Welsh stakeholders to ensure their views were represented and continue to engage regularly across Wales via guidance documents, regular email updates, virtual webinar sessions and in-person presentations. The UK Government Cabinet Office is providing a comprehensive funded L&D programme to support everyone operating within the new procurement regime. Learning and bilingual guidance is being made available to Welsh contracting authorities and suppliers, including face-to-face deep dive sessions.

We also commissioned research across the Welsh public sector with the purpose of reviewing the social value landscape and providing recommendations for taking the practical implementation of social value forward. A working group is focussing on the delivery of the recommendations that were published in the [Cwmpas Social Value Report \(2022\)](#). This confirmed that from a procurement perspective, Welsh social value needs to be clearly defined in a Welsh context and this definition should contain social (including fair work), economic, environmental and cultural elements. It further confirmed that in Wales, the Well-being of Future Generations (Wales) Act 2015 is the legislative driver rather than the Social Value Act (in England) and this is the lens that social value must be viewed through, aligning with the Social Partnership and Public Procurement (Wales) Bill.

Focussing on opportunities for the Welsh manufacturing sector in the supply

chain can help us realise our ambitions for public sector procurement and this will be one of the key areas for the work we are undertaking on supply chain mapping.

Where we will focus:

- Analyse existing public sector spend in Wales to identify opportunities to localise supply chains for critical items as identified through detailed supply chain mapping.
- Develop a clearer definition for 'Social Value' in a Welsh context alongside a consistent methodology to measure and report social value within the Welsh public sector.
- Mobilise our business support for manufacturing around a targeted number of critical products that have strategic significance to the long-term prosperity of Wales.
- Aligned to the Export Action Plan for Wales we will work with Welsh manufacturers to create a strong, vibrant and sustainable exporting sector through a range of business support programmes and advice to build export capacity and capability for Wales.
- Build on the success of the Toyota Lean Clusters Programme, embedding lean management principles and sustainable improvements in competitiveness.

Monitoring the impact of this plan

Monitoring the impact of this plan

Our approach to how we support and future proof the manufacturing sector in Wales requires true collaboration with industry, public sector and our social partners including Third sector and Trade Unions. In line with our vision for our

manufacturing sector, this means we must transition and support the transformation of our manufacturing community around 'added value' activities. Specifically, that the sector contributes to such activities that make a positive social, economic, environmental and cultural impact locally and nationally. This means we cannot define 'progress' in simple terms of job creation or increased GVA but must consider how manufacturing as a sector contributes to our national aspirations under the Well-being of Future Generations (Wales) Act 2015.

Our approach is not about supporting the manufacturing sector in isolation. Rather, understanding the role the manufacturing sector plays in delivering our aspirations for Wales as a nation and focussing our interventions and wider support on those areas which add the most value in delivering those outcomes. The six strategic level objectives set out will form the basis of a consistent and continuous dialogue with industry and partners to ensure that we continue to assess not only the impact of this plan on the sector, but the impact of the sector on Wales.

These objectives are also structured in a way that maps across many of the ten well-being objectives set out in our Programme for Government:

1. Provide effective, high quality and sustainable healthcare.
2. Continue our long-term programme of education reform, and ensure educational inequalities narrow and standards rise.
3. Protect, re-build and develop our services for vulnerable people.
4. Celebrate diversity and move to eliminate inequality in all of its forms.
5. Build an economy based on the principles of fair work, sustainability and the industries and services of the future.
6. Push towards a million Welsh speakers, and enable our tourism, sports and arts industries to thrive.
7. Build a stronger, greener economy as we make maximum progress towards decarbonisation.
8. Make our cities, towns and villages even better places in which to live and

work.

9. Embed our response to the climate and nature emergency in everything we do.
10. Lead Wales in a national civic conversation about our constitutional future and give our country the strongest possible presence on the world stage.

Going forward, the contribution of the manufacturing sector in supporting these objectives will be tracked through our **National Well-being Indicators**. But this is not enough. It is vital that we build an even more vibrant, connected and collaborative ecosystem that enables our manufacturing community to thrive. We will consider the most appropriate mechanisms to do so.

Footnotes

[1] [workforce jobs by industry - Nomis - Official Census and Labour Market Statistics \(nomisweb.co.uk\)](#)

[2] [Gross Value Added by area and industry \(gov.wales\)](#)

[3] [Manufacturing future for Wales: framework | GOV.WALES](#)

[4] [Regional economic frameworks | GOV.WALES](#)

[5] [GDP output approach – low-level aggregates - Office for National Statistics \(ons.gov.uk\)](#)

[6] [Levelling Up: Bridging the gap between policy and progress | Make UK](#)

[7] [Executive Survey 2023: Cost, Competitiveness and Confidence | Make UK](#)

[8] [Business enterprise research and development, UK \(designated as](#)

official statistics) - Office for National Statistics (ons.gov.uk)

[9] VACS02: Vacancies by industry - Office for National Statistics (ons.gov.uk)

[10] Regional gross value added (balanced) by industry: all ITL regions - Office for National Statistics

[11] Briefing: sustained tax burden at highest level since 1951 - TaxPayers' Alliance (taxpayersalliance.com)

[12] Gross Value Added by area and industry (gov.wales)

[13] Net Zero Wales | GOV.WALES

[14] Net Zero Wales Carbon Budget 2 (2021 to 2025) | GOV.WALES

[15] Welsh Government Net Zero strategic plan | GOV.WALES

[16] SWIC | South Wales Industrial Cluster

[17] Ellen MacArthur Foundation (2019) Completing the Picture: How the Circular Economy tackles Climate Change

[18] Beyond recycling | GOV.WALES

[19] Llwybr Newydd: the Wales transport strategy 2021 | GOV.WALES

[20] Optimised RetroFit Programme | GOV.WALES

[21] Ch3_Trade_2022.pdf (forestresearch.gov.uk)

[22] Microsoft Word - HGH Project Report (LG).docx (woodknowledge.wales)

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[23] **Gross Value Added in Wales by industry (gov.wales)**

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