

**WMCA / UK Metals Council Metals & Materials Sector
Action Plan
Work in Progress
November 2020**

Black Country *LEP*

1) Introduction

This document is a draft sector action plan for the metals manufacturing sector, as part of the West Midlands' emerging local industrial strategy (LIS) and the region's response to the challenges arising from COVID-19.

Beginning with an assessment of the region's comparative strength in the metals sector, the action plan goes on to link the industrial strategies Five Foundations of Productivity with key opportunities, issues and potential interventions in the metals sector. The agreement of these with government will ensure the metals industry continues to thrive in the West Midlands, providing the base material for many thousands of products used in our cars, aeroplanes and infrastructure. Key ambitions within the sector are to ensure more widespread innovation, a higher skilled workforce and sustainable supply chains. Additionally, the sector is deepening its relationships with other industries, both those with whom it has had longstanding supply chain relationships and new ones, particularly the digital and environmental low-carbon sectors. Action from central and local government with sectoral partners will assist in making these ambitions a reality and delivering productivity gains – a central aim of the LIS. In addition, the plan reflects the thinking underlying the WMCA's *Recharge the West Midlands* publication of June 2020. This document, designed as a business case to Central Government, sets out a three-stage plan of 'Reset, Rebuild and Recharge' and provides a helpful way of structuring our strategic positioning and action planning when it comes to collaborating with the metals and materials sector. This document will, of course, also reflect the industry's own principal strategic document, *Vision 2030*, which focuses on key drivers of success in the shape of: supply chain development, innovation and R and D; regulatory reform and global competitiveness; leading on the circular economy; and transforming skills and training for a modern and specialised workforce.

At the time of writing no additional commitments or funds are attached to this action plan, but through a strategic focus and buy-in from a range of sector stakeholders, we aim to make the case for further investment and intervention in the West Midlands metals sector so that it can fulfil its potential.

The action plan has been developed through:

- Existing available intelligence relevant to the West Midlands metals industry, including headline data (GVA, jobs etc) and supplementary data and analysis (e.g. mapping, location quotients, qualitative research).
- Engagement with the UK Metals Council (UKMC), the trade representative for this sector in the UK, to understand the metals sector locally in terms of successes, issues and opportunities to inform suggested interventions.

The WMCA worked in partnership with the UKMC on this sector action plan. UKMC represents the metal industry sector within the United Kingdom, supporting both regional and national programs for the benefit of the UK Metals Industry. It has representation from the 11 Trade Associations working within the sector:

- Aluminium Federation (ALFED)
- British Constructional Steelwork Association (BCSA)
- British Stainless Steel Association (BSSA)
- Confederation of British Metalforming (CBM)
- Cast Metal Federation (CMF)
- Galvanizers Association (GA)

- Metal Packaging Manufacturers Association (MPMA)
- National Association of Steel Stockholders (NASS)
- UK Steel
- The Welding Institute

Engagement with the central industry organisation has ensured a cross-section of metals sub-sectors have had the opportunity to contribute to the action plan.

This sector action plan offers the opportunity to build on a highly successful and important industry in the West Midlands. In order to continue to enhance excellence in automotive, construction and aerospace across supply chains, and now counteract market shocks caused by the pandemic, a well-supported and resourced metals sector is vital. Given the considerable investment committed to the WMCA, it is even more crucial to ensure a thriving, innovative, and highly skilled industry. Whilst the sector is strong and adaptable, acting upon the suggestions in this document will assist in the region maximising its specialised metals and materials assets and the supply chain journeys taken by the companies and workforce comprising them. Actions are underpinned by the need to provide the industry, led by trade associations like the UK Metals Council, with the capacity required to support greater productivity and business engagement within firms whilst integrating the industry into long-term prospects, especially in: greater supply chain integration prospects for SMEs; all tiers of the sector harnessing R and D; embracing environmental and economic sustainability as both a challenge and opportunity; the Future of Mobility, aka. mobility, digitisation and infrastructure; and improving learning and skills provision. In all of these areas, our metals sector has huge potential to excel as a vanguard of innovation and, thus, present an exciting offering to potential investors, stakeholders and partners, and also prospective company and workforce entrants into the industry.

It is crucial that the action plan is led by the metals and materials industry and that it relates to specific market failures and opportunities that we can aim realistically to address. An overarching feature of the industrial strategy is that it is steered by the public sector, but, importantly, co-led and delivered by the private sector.

This metals and materials action plan initially provides a regional strategy for the sector up until 2025.

Local Industrial Strategy

The Government's Industrial Strategy sets out intentions for building a prosperous and more inclusive country for the long-term.

As shown in the diagram to the right, the national industrial strategy is driven by 5 "foundations of productivity": ideas, people, infrastructure, business environment and places. In this action plan we summarise the importance of these foundations in a metals and materials context, particularly in the West Midlands.

Places does not feature as this has cross-cutting relevance within all aspects of our "local industrial strategy."

The 'local' element is a key part of the Industrial Strategy, with areas across the country in the process of developing local industrial strategies. A trailblazer in developing an industrial strategy, the West Midlands will be among the first to publish a LIS. It will set out the priorities to increase the productivity of the West Midlands and to drive inclusive growth across the region.

Multiple components come together to create the overarching framework that will help drive a successful delivery of the West Midlands LIS. This framework is displayed in the diagram below, demonstrating the relationship between the foundations of productivity, the key West Midlands sectors and four major market opportunities specific to the region:

- The Future of Mobility
- Data-Driven Healthcare and Life Sciences
- Modern Services
- Creative Content, Techniques and Technologies

Our five foundations align to our vision for a transformed economy



Taking advantage of these market-driven opportunities is central to the West Midlands LIS, requiring action across key policy areas, reflected in the inclusion of key foundations of productivity: people, ideas, infrastructure and business environment.

Crucially, the region’s key sectors will ultimately deliver the benefits of the strategic opportunities, including firms of all sizes and from across supply and value chains. Different sectors will have a varying impact on the four opportunities, but it’s vital to recognise sector-led growth in this way rather than the strategic opportunities in isolation. A mix of horizontal policies, through the productivity foundations, and sector-led actions, is the best way to maximise success in achieving the strategic opportunities.

Sector-led actions are being developed within a suite of section action plans such as this one. As depicted in the above framework, the sector action plans sit below the strategic opportunities as their vital delivery vehicles, each within the context of the foundations of productivity and led by the needs and ambitions of industry. The four major market opportunities should be seen as opportunities for all sectors to capitalise on, driven through the sector action plans and eventual implementation of these.

The predominant impact of the **metals and materials sector will be to help deliver the Future Mobility** strategic opportunity. This sector action plan will outline the priorities for maximising the potential of the West Midlands metals and materials sector, ensuring it contributes significantly to the region’s future mobility ambition. Throughout this document we intend to make this link clear, and we provide a summary of this alignment below.

The Impact of Metals and Materials on the Future of Mobility Opportunity

The West Midlands LIS identifies the Future of Mobility as a key opportunity for the region going forward – contributing to the government’s mobility ‘Grand Challenge’. Our region is the centre of transport innovation in the UK, leading the smart, low carbon movement of people and goods. Adapting to the large-scale change within mobility – electric vehicles, connected/autonomous vehicles, 5G – creates huge economic opportunities for the region, of which multiple sectors will drive forward.

Given its central position to supplying multiple mobility-based sectors - automotive, aerospace and rail - the metals and materials industry will play a vital role in delivering the future of mobility opportunity regionally. Metals and materials production is the foundation of supply chains across these industries, and future investment within these wider sectors presents opportunities for the



WMCA metals and materials cluster. This includes major infrastructure investments such as HS2 and the wider adoption of electric vehicle manufacturing, both of which will require large volume of metals in production.

As one of the UK's prime metals and materials manufacturing locations, many metal-based parts in our cars, aircraft and thousands of other products come from companies operating in the West Midlands. The supply of steel from West Midlands based companies (including Tata, ArcelorMittal and Liberty) goes into a sizable proportion of the cars made in the UK, many of which are produced in the West Midlands. It's no accident that strong clusters of aerospace, automotive and rail manufacturing exist in the region, given the excellent supply chain base of metals and materials, a key component to the success of these wider manufacturing sectors.

Mobility modes of the future will remain reliant on metals and materials supply chains in the West Midlands, reflecting the need for a strategic focus on the metals and materials sector when considering how to capitalise on mobility, efficiency and environmental opportunities. A key ambition of the West Midlands LIS is to create and capitalise on new markets such as electric vehicles and CAV: it's essential that metals and materials is a part of this, driven by the interventions in this action plan. For the region to successfully adopt new mobility solutions in both manufacture and use, a careful, balanced approach is required that does not leave industries like metals and materials behind.

Significant action would support the West Midlands metals and materials sector in adapting successfully to new modes of mobility and using digital technologies to track safety, environmental impact and cost; and most of our proposed interventions (outlined on p.6), are relevant to the successful delivery of this opportunity. Boosting the capabilities of metals and materials across key policy areas (e.g. innovation, skills, business support) in the right way will ultimately help the sector diversify and improve productivity. This will help ensure that the West Midlands is well-positioned to capitalise on new mobility technologies and to host the relevant supply chains successfully.

As well as acknowledging the West Midlands metals and materials industry's inter-connectedness with other sectors such as aerospace and automotive, it is important to recognise the independent role of the sector in delivering the regional Future of Mobility opportunity. Our metals and materials sector action plan here reflects this and provides the strategic focus for the industry to maximise its potential across key policy areas.

Other Strategic Opportunities for Metals and Materials

The four strategic opportunities are designed to appeal to all sectors and therefore have broad, wide-ranging definitions. This means that the link between metals and materials and the other three (Note from SG: Realistically, I think that Metals and Materials can only contribute to and interact with the Creative Content opportunity. The Health and Life Sciences heading focuses on a data driven approach, not material components. The Modern Services priority relates to strengthening the Modern Services sectors and not these sectors providing new products and services to or in relation to the Metals and Materials industry.) strategic opportunities may be more apparent than first thought. We intend to link each of our sector interventions to at least one of the strategic opportunities, showing how sector-led action in metals and materials can contribute to the delivery of all of the key West Midlands opportunities identified by the overarching LIS. For example, the supply of metals into the health and life sciences opportunity. In the interventions table below, we indicate the alignment using the following symbols:

Future of Mobility 	Health and Life Sciences 	Modern Services 	Creative Content 
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Full List of Proposed Interventions

Before going into the detail of the full document, the table on the next page lists all of this action plan’s proposed interventions. These have been developed in partnership with industry and are backed up by robust evidence, including that of distinct market strengths and vulnerabilities of the industry, the latter of which have either arisen as a result of the COVID-19 pandemic or were in existence prior to its arrival but have since been exacerbated by it. The proposed interventions are grouped under the industrial strategy Foundations of Productivity and the relevant strategic opportunities that they will help deliver. Some of the proposals arise from government asks, whilst others are industry suggestions and ideas. Importantly, the proposed interventions are not immutable; rather, they are dynamic and ‘live’. They will require further detail, must respond to contemporary situations and will require appropriate business cases where wider stakeholder engagement outside the sector and investment are sought. Developments and updates will feature in future sector action and implementation plans.

We believe that changes in these areas can provide the West Midlands metals and materials industry with the right environment to succeed in the future. **Underpinning all of the actions is the need for a step-change in the capability of the business support function to engage with SMEs.** The current structure is unable to engage with enough businesses to make a significant impact, and this must be addressed through a boost in resources – utilising industry bodies as key expert brokers of support. **The importance of this required action is reflected in its horizontal inclusion below. Delivering all of the action’s below requires raising the capability of communication with businesses, particularly utilising bodies like the UK Metals Council.**

IS Foundation	Proposed Intervention	Strategic Opportunity
Ideas	1 Government should support the Creation of a new type of productivity support, a £xm regional ‘Productivity Factory’, exclusively for the supply chain	  
	2 Government should support the setup of a £xm regional ‘Innovation Factory’ to provide mentoring and strategic support on innovation to supply chain firms	  
	3 WMCA and the sector will work with Innovate UK to increase the share of innovation funding to SMEs, with a greater amount going to the metals & materials sector.	  
	4 Appoint a dedicated West Midlands metals sector Export Champion to link the sector and Department for International Trade, aligning government trade strategy and local sector capabilities.	
	5 Government, the WMCA and the sector to work together to investigate the less favourable treatment of process developments in patent box, to promote innovation that drives productivity growth.	 

IS Foundation	Proposed Intervention	Strategic Opportunity
	6 Utilise the West Midlands Innovation Programme (WMIP) for metals and materials priorities, including the CITEC programme, supporting sustainable technologies, and bidding into national schemes.	  
	7 Provide better matching of skills supply and industry demand – e.g. through extending the Skills Factory and growing a focus on developing and delivering relevant T-level, Apprenticeship and other vocational standards and frameworks required by industry, especially in terms of relevance and workability for SMEs.	
People	8 The UK Metals Council, alongside stakeholders such as LEPs & Chambers of Commerce, to promote relevant metals and materials training provision to local businesses, and to increase accredited technical training where required.	 
	9 Encourage UK Metals Council membership organisations to offer & increase accredited technical training for industry.	 
	10 Work within existing frameworks and create new ones to ensure a more holistic and co-ordinated approach to careers advice and metals and materials engagement with schools.	
	11 Maximise the use of the Elite Centre for Manufacturing Skills and Black Country and Marches Institute of Technology to develop a sustainable skills pool for the future.	  
Business Environment	12 Metals and Materials sector (led by the UK Metals Council) to identify the supply chain capabilities and competitiveness of metals and materials in the region and produce a 'Capabilities Directory'.	
	13 Allow further capacity to appoint a metals sector specialist to work within WMCA's Growth Hubs, providing business support exclusively to metals sector businesses	 
	14 Encourage greater public procurement to British/regional companies down the tiers – not just large companies/contracts.	  
	15 Develop the metals & materials context for the regional 'Productivity Factory' programme (& its delivery models) to support supply chain companies in the region to raise their productivity.	  
	16 Implement emergency safety, employment and financial capacity measures to enable the survival of vulnerable businesses during the COVID period and in COVID recovery.	 
Infrastructure	17 Government should re-assess regulatory decisions on a range of specific areas which are creating inequity within the metals sector.	
	18 The sector supports regional momentum on improving energy infrastructure, e.g. the bid for the regional Energy Innovation Zones.	  
	19 UK Metals Council to work with local partners on making metals and materials firms aware of pre-existing programmes to support energy efficiency and sustainability, and to also develop new programmes and funding for this activity in the local area.	  

2) Sector Summary

Within this work, the Metals and Materials sector comprises the SIC codes 22-25:

- 22 – Manufacture of rubber and plastic products
- 23 – Manufacture of other non-metallic mineral products
- 24 – Manufacture of basic metals, except machinery and equipment
- 25 – Manufacture of fabricated metal products, except machinery and equipment

These divisions include activities of smelting and/or refining ferrous and non-ferrous metals, the manufacture of metal alloys, rolling, drawing and extruding, and the manufacture of “pure” metal products (such as parts, containers and structures).

The below slide shows the main statistics for the sector based on these SIC codes. The SIC codes underestimate the contribution of the sector overall, and the following section will take a more in depth look at the sector strength regionally.

Pre-Covid Summary Statistics: Metals & Materials

- **£5.8bn GVA** attributed to Metals and Materials in WMCA, 5.5% of total. With a **2030 ambition of £6.1bn**
- **67,250 jobs** in the sub-sector locally, 3.6% of WMCA total.
- **£86,100 GVA per employee** in this sub-sector, higher than the average for the WMCA of £56,900.
- **3,985 businesses** in this sub sector.
- Only measuring for SIC codes 22-25 ensures that much activity that is primarily for the metals & materials sector is not recorded.

Sources

- Business Register and Employment Survey (BRES)
- UK Business Counts
- Regional gross value added (balanced) by industry: all NUTS level regions
- Oxford Economic Model

Black Country Consortium
Economic Intelligence Unit

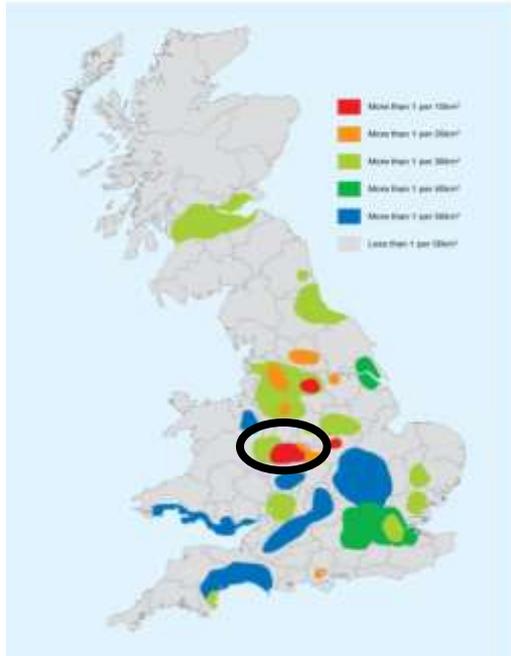


2a) Sector Strength Regionally

The West Midlands Combined Authority (WMCA 3-LEP) geographic area has an historic presence within this sector, becoming one of the most industrialised parts of Britain during the Industrial Revolution, and within this hosting a thriving metals and materials sector base. This has ensured a significant concentration of industrial infrastructure in the region. This includes foundries that remain a crucial foundation of the local metals and materials sector and the local economy. Two separate maps below demonstrate the concentration of such industry infrastructure (foundries) in the region compared to other areas in the UK. Evidence such as this forms part of the in-depth research and

analysis into the sector carried out by the WMCA partners in order to confirm the industry's prominent presence in the region, and to better understand what our competitive advantage is and where our strengths lie. Appendix 1 shows part of this, a WMCA industry profile for the metals sector, leading to an assessment of the region's 'super-strengths': **breadth & flexibility of local metals and materials capability, metals processing & treatment, and innovation assets.**

UK Foundry Concentration



Source: UKCastings.org



Source: UKFoundries.co.uk

Despite common misconceptions, the metals and materials sector makes a substantial contribution to today's UK economy, especially in the WMCA region. The sector contributes **£5.8bn GVA (5.5% of WMCA total) & 67,250 jobs (3.6% of WMCA total)** to the local economy.

When looking specifically at the metals element of the sector, the employment location quotients (LQ's) show that for SIC 24: Manufacture of basic metals, the WMCA (7MET) area scores 2.9 - the fourth largest of all comparative UK areas, and for SIC 25: Manufacture of fabricated metal products, scores 2.5 - the largest LQ of all comparative UK areas. This tells us that the **WMCA has the largest concentration of fabricated metal products manufacturing employment of 40 NUTS2 areas of the UK**. The two SIC codes above also have the 2nd and 3rd largest LQ's of all SIC codes in the WMCA, suggesting that there's only one economic activity with a greater employment concentration compared to the UK average than metals manufacturing.

Similar research drills deeper into the area's metals specialism, particularly displaying the comparatively high employment concentration within the metals industries in the Black Country. Black Country local authorities have particularly high LQ's in some more specific SIC codes, such as 36 in Sandwell for the manufacture of other products of first processing of steel, and 17.1 in Walsall for the casting of metals. The latter is prevalent across the WMCA, which is the reason for such a concentration of foundries (see some examples on the table to the right).

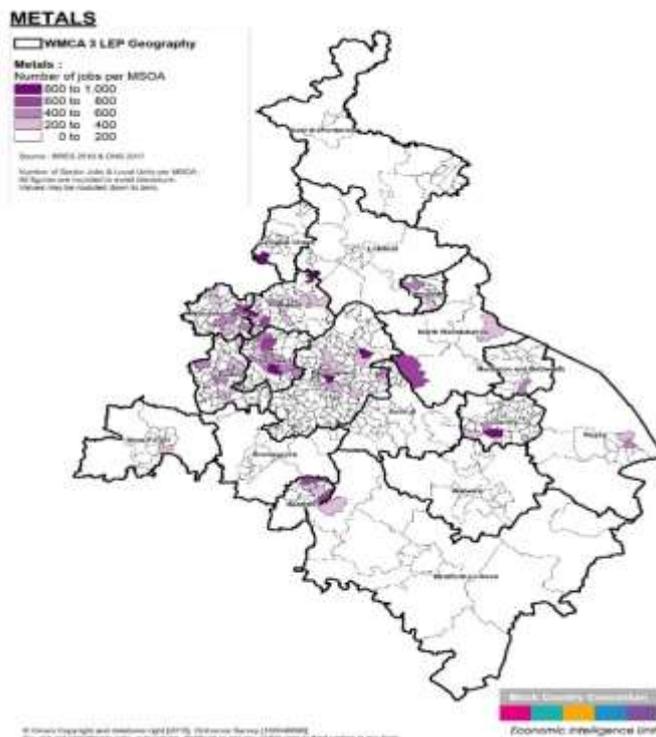
The strengths of metal processing, foundries, forgings, presswork, metal treatment and metalforming are most prevalent in the Black Country and Birmingham, with continued growth in materials manufacturing (within the Materials sub-sector) around Coventry, utilising the array of innovation and research assets in this area.

The map below gives some spatial indication of the above, with clear clusters of activity in the Black Country, and some areas of Greater Birmingham. This is based on the number of jobs within local areas.

Black Country Comparative Industrial Advantage				
SITC Code & Description	Local Authority	UK Rank	Location Quotient	
35: Electricity, gas, steam and air conditioning supply	Sandwell	1	9.9	
24: Manufacture of basic metals	Sandwell	5	6.6	
24: Manufacture of basic metals	Walsall	8	5.9	
31: Manufacture of furniture	Dudley	7	7.1	
101: Processing and preserving of meat and production of meat	Sandwell	9	5.7	
141: Manufacture of wearing apparel	Sandwell	10	4.8	
232: Manufacture of refractory products	Dudley	4	7.7	
233: Manufacture of clay building materials	Walsall	9	6.4	
233: Manufacture of clay building materials	Dudley	10	2.8	
241: Manufacture of basic iron and steel and of ferro-alloys	Sandwell	2	4.2	
241: Manufacture of basic iron and steel and of ferro-alloys	Dudley	5	3	
242: Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	Dudley	2	10.9	
242: Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	Wolverhampton	3	8.7	
242: Manufacture of tubes, pipes, hollow profiles and related fittings, of steel	Walsall	8	5.9	
243: Manufacture of other products of first processing of steel	Sandwell	1	36	
243: Manufacture of other products of first processing of steel	Wolverhampton	4	18.2	
244: Manufacture of basic precious metals and other non-ferrous metals	Walsall	6	2.9	
244: Manufacture of basic precious metals and other non-ferrous metals	Dudley	10	0.8	
245: Casting of metals	Walsall	1	17.1	
245: Casting of metals	Sandwell	3	14.4	
245: Casting of metals	Dudley	6	9	
251: Manufacture of structural metal products	Sandwell	8	4.3	
255: Forging, pressing, stamping and roll-forming of metal; powder metallurgy	Wolverhampton	5	8.8	
255: Forging, pressing, stamping and roll-forming of metal; powder metallurgy	Dudley	6	7.9	
255: Forging, pressing, stamping and roll-forming of metal; powder metallurgy	Sandwell	9	7.1	
256: Treatment and coating of metals; machining	Walsall	2	4.8	
256: Treatment and coating of metals; machining	Sandwell	6	3.8	
257: Manufacture of cutlery, tools and general hardware	Walsall	1	21.8	
257: Manufacture of cutlery, tools and general hardware	Sandwell	4	8.1	
259: Manufacture of other fabricated metal products	Sandwell	5	7.7	

Source: ONS & WMEF

Source: West Midlands Economic Forum, Black Country Perspectives (2013)



Source: Analysis carried out by Black Country Economic Intelligence Unit (EIU)

Wages in the metals sector regionally are higher than that of the whole economy average, though lower than the UK average for this sector.

A similar sector to metals, materials manufacturing is also profoundly important in the West Midlands, supplying key products to industries such as automotive, construction and aerospace. The sector is underpinned by leading innovation from the region's universities, with key assets including the **Automotive Composites Research Centre** at the University of Warwick, and the **Rolls-Royce University Technology Centre** in Birmingham. Without the supply of quality material and products from both metals and materials, many of the area's better-known industries (e.g. automotive, construction) would be less successful. Metals and materials supply is the bedrock of the West Midlands' manufacturing economy and should therefore be considered at key stages of sector strategy development. Whilst suggestions made in this document often refer to the metals sector, they also apply to wider materials.

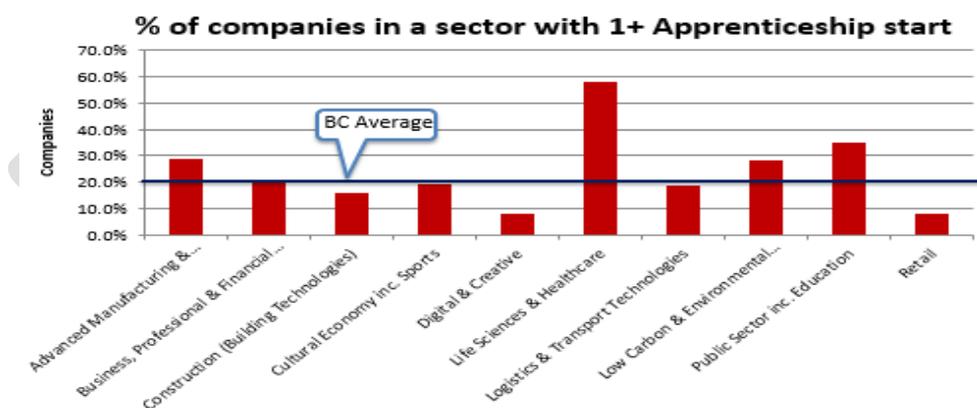
The data presented indicates a clear and obvious metals (& wider materials) manufacturing specialism in the WMCA, based upon a strong history in these industries that continue to be important in a modern economy. This sector is underpinned by the significant presence of wider advanced manufacturing industries, particularly automotive, aerospace and rail, and construction. Significant activity takes place in all these sectors locally, ensuring a continually strong base of metals firms to feed products into. Metals production is the foundation of supply chains across these industries, and future investment within these wider sectors presents opportunities for the WMCA metals cluster. This includes major infrastructure investments such as HS2 and an accelerated rate of housebuilding, both of which will require large volume of metals in production.

Many well-known products originate from the West Midlands' metals industry, every day items that may not be recognised immediately. For example, Precision Chains in Dudley make the chains on the London Underground's escalators, Zaun supplied fencing to the 2012 Olympics and our region also

hosts the world’s largest lock manufacturer (Assa Abloy) and Hadley Industries’ production of UltraSTEEL® is internationally patented. As one of the UK’s prime metals manufacturing locations, many metal-based parts in our cars, aircraft and thousands of other products come from companies operating in the West Midlands. The supply of steel from West Midlands based companies (including Tata, ArcelorMittal and Liberty) goes into a good proportion of the cars made in the UK, many of which are themselves produced in the West Midlands. It’s no accident that strong clusters of aerospace, automotive and rail manufacturing exist in the region, given the excellent supply chain base of metals, a key component to the success of these wider manufacturing sectors.

To support industry, key research and innovation assets exist within the WMCA: Warwick Manufacturing Group (WMG), Manufacturing Technology Centre (MTC), and Institute for Advanced Manufacturing and Engineering among others have expertise within metals and related activities. Furthermore, businesses are supported by a strong network of industry bodies based locally – these include the UK Metals Council, which itself includes the Cast Metals Federation (CMF), and the Confederation of British Metalforming (CBM).

In addition to this, there’s considerable apprenticeship activity occurring locally within metals and related sectors. Data for the Black Country suggests that an above average percentage of companies in the Advanced Manufacturing sector employ at least one apprentice (29%). As the graph below shows, this puts this sector above all but two sectors for this measure (Life Sciences/Healthcare & Public Sector including Education). Whilst not all Advanced Manufacturing & Engineering can be attributed to the metals sector, many of these apprenticeships in the Black Country will be metal related, given the high concentration of this activity locally. This further education provision will be strengthened further by the new Elite Centre for Manufacturing Skills (ECMS) in Wolverhampton, which includes a National Foundry Training Centre.



Source: Black Country Skills Factory

2b) Sector Strength in the UK

A ‘Vision 2030’ document produced by the metals industry in 2015 asserts that there are **11,100 companies in the UK metals industry, employing around 230,000 people and directly contributing nearly £10.7bn to UK GDP.**¹ The report also suggests that the industry’s indirect impact is another 750,000 workers and £200bn GDP. Regional clusters are broadly identified in the Midlands, the North of England and in Wales, and GVA per employee is found to be £46,700, higher than the UK average.

¹ ONS Annual Business Survey

Much like the sector locally, metals in the UK continues to be a crucial foundation industry at the heart of local communities, providing considerable employment and links to other key sectors.

The vision for 2030 is of a “modern and progressive UK Metals Industry” that is “supplying high quality, innovative and competitively priced products to a wide range of customers.” Particularly through a collaborative approach to R&D, a long-term commitment to education and training, action on sustainability and energy efficiency, and the supply chain, the **aim of sector is to increase its GVA 50% by 2030**. Whilst this strategy document is reflective of the UK industry overall, it can be easily translated to fit the specific needs of the West Midlands metals sector. Many of the opportunities for the sector outlined in the Vision 2030 document are relevant to the sector locally, and these are outlined in the core of this document.

The Impact of COVID-19 on the Metals and Materials Sector

As a fundamental enabler of key product-based sectors, the metals and materials industry’s fortunes are closely tied to those of its demand side. This presents a highly complex picture in terms of the impacts of COVID- 19 upon it in the immediate to medium-term. As well as the pandemic situation posing challenges, the complexity of the ecosystem in which the sector resides may afford it opportunities to innovate in order to create highly marketable products, services and approaches. Furthermore, the lull before any potential storm (as the industry waits to see how its demand side sectors fair and how healthy order books may or may not be) may provide a welcome hiatus to make a number of game-changing moves. These comprise: collaborating closely with demand side sectors on their current and anticipated needs; establishing new business relationships and building strategic links; and adapting and delivering the industry’s own blueprint strategy, *Vision 2030*, into one that responds with agility to uncertainty and change brought about by the pandemic.

The industry continues to fulfil orders placed before COVID-19 and has several quarters to a year to predict accurately the size and shape of the wave of decline and change. It is safe to say that industries such as aerospace and automotive, having each been dealt a crippling blow to their revenues and their workforces, are unlikely to call upon the metals and materials sector to supply the volumes of the pre-pandemic era for some years, yet. However, as major infrastructure projects continue, buildings and vehicles require COVID- safe adaptations, and the health sector and its physical and technological infrastructure will be relied upon with increasing intensity and volume, demand on the industry is likely to be transformed. Handled well, these opportunities could present long-term avenues to success, particularly for the West Midlands region with its extremely high density of metals and materials firms.

The dual ambiguities surrounding production volumes and the nature of the products and services needed in this new normal require some rethinking around some of the industry’s current markets. However, the cross-sector and multidisciplinary supply chain in which this industry sits affords it a luxury uncommon in other sectors. Neither it nor the sectors on which it depends for business can exist in siloes. In order for the latter to reset, rebuild and recharge, they must share intelligence with metals and materials businesses for them to respond with apt new or adapted product and service solutions. Companies urgently in need of solutions not already addressed by their existing supply chains are, in these precarious times, much more likely to look wider afield than the usual suspects for help. Problem solving together, in a context where efficiencies, precision and quality count more than ever, may indeed open up market niches for many metals and materials companies. For many it may propel them increasingly into the long tail of high-value manufacturing. With industry and R and D assets and institutions converging and proliferating increasingly within the West Midlands region,

as our Action Plan highlights, the ground is fertile for the metals and materials sector to innovate for its own stability and prosperity whilst enabling the very same for the sectors it partners.

The above considerations cannot obscure the challenges that the sector faces in terms of COVID-induced issues and risks, especially in financial terms. As with all other sectors, reduced productivity-as a result of social distancing, necessary redundancies, furlough and reduced availability of European labour and expertise (following Brexit)- is a strickening reality. Notably, within certain types of metals and materials manufacturing, some firms, particularly those making critical components, cannot furlough. They may need, variously, the full complement of their workforce (depleting already stretched coffers) or require staff to be put on shorter hours (damaging productivity), all whilst maximising employee safety. Whatever their predicament, many businesses have been pushed to the brink of their cash reserves and some require emergency cash injections, urgent credit and liquidity solutions, and insurance renegotiation to stay afloat. Moving forwards into the medium term, some financial changes are required to stabilise the sector as a whole, particularly those relating to taxation/business rates. These will need government- instigated reforms. COVID- 19 has, indeed, exacerbated the need to reconfigure the financial levers necessary for making the sector more robust, most productive and more environmentally sustainable. This is a delicate balance that our regional Action Plan addresses, as we realise that, for this sector, market forces, serendipity and business and technological innovation alone will not provide answers.

The metals and materials sector and government will need to work together to bring major infrastructure programmes forward rapidly and carve out new niches into other sectors. Those mentioned by industry leaders involved in forming this regional Action Plan include: infrastructure projects noted in the last UK budget; the building of new health infrastructure and equipment such as hospitals and ventilators; the construction of affordable homes; and the electrification of the railways. From these examples it is clear that the sector in the region is keen to take a long-term view at the new normal and so wishes to maintain connections with larger scale strategic programmes as well as more niche market opportunities. Regional transformations such as the construction of HS2 and the pursuit of the region's £350m Housing Deal could represent openings of the former kind.

The UK metals sector strategy, *Vision 2030*, remains relevant even five years after its publication and with a pandemic in train. Its ingredient themes are, in sum:

- Supply chain development
- Innovation and R and D
- Regulatory reform and global competitiveness
- Leading on the circular economy
- Transforming skills and training for a modern and specialised workforce

These are reflected amply in our regional sector Action Plan and integrate comfortably into the way in which our Local Industrial Strategy is evolving. With this noted, some current priorities, including risks, that will manifest into the long-term, have been brought to the fore by the regional and national industry leaders with which we have engaged. Their top priorities are summarised as follows:

- **Purchasing and Procurement.** Purchasing and procurement opportunities are a fundament of survival and success for the sector. However, the way in which these are delivered presently requires substantial changes to be made to enable the demand side to harness the best resources of the industry, particularly at the lower tiers which sector leaders see as a rich source of untapped or under-tapped potential. Entry of SMEs into new supply chains remains an issue. Leaders note that, moving beyond lowest cost principles to quality of products and

services will drive up standards, encourage product and service diversity and so increase healthy competition and innovation. The region's metals and materials sector is keen to find openings for its SMEs. It has taken a distinct two-pronged approach to move this agenda forwards: prioritising work in changing public procurement whilst also pursuing close active alignment with the West Midlands Innovation Programme and supply side innovation and consortium-building initiative, CITEC. These demand and supply side moves are represented in two separate actions within the sector's Action Plan

- **Addressing skills and training in a way that enables SMEs to offer top- quality apprenticeships and other vocational and professional training.** SMEs wish, as much as their larger counterparts, to maximise support for new entrants, giving them a high quality experience whilst training them in specialist skills. This promotes two- way benefits affording the smaller companies a boost in productivity whilst often creating and developing niche products and services that are not available in larger firms. However, current limitations around the use of the Apprenticeship Levy, the application of industry standards and lack of framework agreements challenge rather than encourage such recruitment and retention for small firms. This means that vital skillsets may eventually be lost, leaving supply chain gaps for the industry and damaging its national competitiveness. This point is particularly relevant to the West Midlands given the large amount of metals and materials SMEs in our geography. So it is a strong underling consideration behind the sector's approach to the Business Environment, People and Ideas Foundations of Productivity.
- **Reviewing taxation and energy pricing.** There is a pressing need to reform emissions and energy taxation, pricing, policy and legislation. Current UK emissions rules stifle the progress of manufacturing industries to decarbonise, as they compare industries generically rather than on sector-specific and peer-to-peer benchmarking bases. Manufacturers, being high emitters, are penalised automatically with high taxation and those we spoke to wish that some of these monies could be channelled into R and D for technologies and methods that reduce pollution. Moreover, manufacturers are burdened with high energy prices. So there must be progress on influencing energy price reform to ensure that the UK government balances energy consumption with increasing or at least maintaining productivity, so as not to dampen the latter. Our Metals and Materials industry leaders have made environmental sustainability the focus of their Infrastructure Foundation of Productivity actions, emphasising commitment to promoting R and D and business support in this area, along with playing a very active part in the region's Energy Innovation Zones.
- **Circular Economy innovation.** As metals are 'endlessly recyclable' the metals and materials industry is a prime candidate to lead on the **Circular Economy** agenda. More work on this front will help in the reduction of the UK's industrial CO₂, Green House Gas (GHs) and other pollutant emissions. Work by the sector may also enable it to create product, service and advisory niches to aid other (particularly manufacturing) industries improve their environmental performance. Our regional industry partners are particularly keen to pursue opportunities in this field given the number of metals and materials firms and their dense concentration in areas of the West Midlands creating a natural cluster within which innovations and networks can form.
- **Collaborative Innovation and R and D.** The sector is ripe for innovation as it is technology-reliant and increased digitisation can boost efficiency, productivity and quality. With these elements being required throughout the entire supply chain, our local industry leaders wish to maximise connectivity of SMEs to innovation support and finance incentives and to unique centres of excellence in R and D in the region. They have articulated that these links are

necessary for the survival and competitiveness of these businesses and fundamental contributors to a successful long tail business strategy.

- **The Future of Mobility.** The metals industry would miss a huge opportunity if it did not play a key role in the Future of Mobility agenda. Infrastructure, mobility, digitisation, decarbonisation and cost-effectiveness are vital for shifting materials, components and products around the region, the UK and abroad. The sector as a major supplier can help itself and its demand side sectors by rethinking and redesigning the end-to-end journey and supply chain relationships along the way. With regional plans afoot to harness multi-model transport innovations and digitally enhanced mobility services for citizens and business, this canvas is ripe for the sector's participation.

DRAFT

3) Foundations of Productivity in the Context of Metals & Materials

3a) Ideas

Opportunity

An Open, Collaborative and More Inclusive Approach to R&D

- Tackling SME risk aversion to innovation through a direct support within supply chain firms.
- Maximising Industry 4.0 potential, especially within Additive Manufacturing
- Opening up the opportunities of exporting and intellectual property within local metals firms.

Product and process innovation is vital if the UK Metals Industry is to regain ground against its rivals, many of whom can currently produce basic products more cheaply. The Vision 2030 outlook is of a forward-thinking, collaborative approach to R&D that will have embedded innovation throughout the industry.

Overview of Current and Planned Work

There are various innovation support services available to metals sector companies within the region. A number of innovation assets exist within the WMCA area which can potentially be tapped into by industry, including two High Value Manufacturing Catapult centres (at Warwick Manufacturing Group and the Manufacturing Technology Centre at Ansty Park). In addition to this, the region hosts the National Transport Design Centre, the MIRA Technology Park and the Institute for Advanced Manufacturing and Engineering. None of these are exclusive to the metals sector as they work across manufacturing industries, but they do have capabilities that can support metals activity.

Issues

Research within the sector shows that most companies in metals do not see R&D as important, often due to the cost and perceived high rate of failure. Rapid payback from investments is demanded by many metals firms so R&D tends to lose out to other business improvements. Furthermore, smaller firms have a restricted view of the demands of OEMs and Tier 1 suppliers and feel unable to engage with larger firms and Catapult centres. The sector generally feels that the Government's attempt to support innovation are patchy and poorly co-ordinated, with a disproportionate focus on large businesses. A strong base of metals sector trade organisations locally provides a real opportunity for greater interaction with manufacturing SMEs.

Many metals firms have difficulty in knowing exactly what innovation to undertake and a lack of understanding of how to innovate. Whilst some industries hold a view that supporting innovation in large OEMs, or Tier 1s, will inevitably result in innovation trickling through the supply chain, in metals this appears not the case with SMEs reporting they feel unable to engage with large firms. Given that this sector has a heavy reliance on SMEs, this is particularly pertinent. Existing initiatives do not comprehensively penetrate early stage supply chain companies, with many admitting ignorance of such initiatives, or even Government agencies, such as Innovate UK. Since 2010, there have been 509 Materials & Manufacturing Innovate UK awards to WMCA based companies, and whilst this is a respectable 11% of all awards in this sector, only 37% of these went to micro companies and SMEs in the WMCA.² Whilst this represents the wider manufacturing sector and not just metals, this figure

² Innovate UK data - <https://www.gov.uk/government/publications/innovate-uk-funded-projects>

should be higher given the high reliability of the manufacturing sector locally (and particularly metals) on small and medium sized suppliers.

Connectivity with SMEs is a core challenge for the sector, including linking up SMEs within the sector to increase the diffusion of innovation and drive productivity growth, as well as connectivity throughout the supply chain, to provide products and services for Tier 1 and OEM companies. Overall, a greater degree of joining up of efforts from different areas is required.

Both process and product innovation are vital if the metals industry is to maximise its potential. Risk aversion to innovation within the sector arises from not knowing the nature, content and scale of innovation to pursue (a lack of market and supply chain intelligence) and not knowing how to innovate (a lack of information and skills). It is also likely that many metals companies locally are innovative in their process and product development but are not explicitly recognised as carrying out innovation activities. The definition of “innovation” should be understood in a broader sense to capture this activity. However, it is acknowledged that the creation of an industry-wide culture that understands and is receptive to innovation is required.

Furthermore, innovation support mechanisms have been too supply-side focused in the past, and the local industrial strategy provides us with an opportunity to boost demand-led approaches as well. We will need more innovation pull to complement successful local idea/technology push approaches in order to optimise the impact of innovation on productivity. This will particularly help SMEs in industries like metals which often find ideas falling in the so-called ‘valley of death’; de-risking this through extended innovation pull initiatives will be vital for increasing the region’s innovative capacity across sectors, including metals. A proposed Framework for Leading Innovation through Challenge (FLIC) (through Innovation Alliance WM) offers an enhanced and joined up approach to stimulating demand for and pull through of innovation into public and private markets in the West Midlands, stimulated by market and societal challenges.

Whilst data on the level of innovation activity in the sector is sparse, anecdotally the sector is aware that many firms have a risk aversion to innovation (as above). It is proposed that a better local assessment of metals sector innovation is sourced in order to track success of future interventions.

Potential Solutions

Productivity Factory

The Bank of England has previously stated that the greatest productivity gains for the UK could come from bringing the long tail of companies with average productivity up to the level of the high productivity companies. This can be applied to the West Midlands’ metals sector. A clear mechanism for achieving this productivity uplift is to share the knowledge of how such productivity improvements can be achieved and disseminate innovation more widely.

A new type of productivity support provision is proposed; namely a regional ‘Productivity Factory’ to support supply chain companies in the region raise productivity. This would ideally be a resource dedicated to helping the supply chain improve productivity through various activities such as the use of modern technology/practices and improving skills. £million worth of investment is proposed over a three-year period for a 12-month programme of activity to support small businesses with a potential to grow through: initial benchmarking & diagnostic, masterclasses, one-to-one coaching from industry experts, peer-to-peer mentoring and support, and a final evaluation. Initial benchmarking with an expert will identify the most effective ways of achieving growth. These will be realised either directly with the coach or through the masterclasses which will be on general topics such as management

processes, accessing new markets (including overseas), finding efficiencies through suppliers, access to finance and sector-specific topics.

By creating a working interface to properly support firms, local and national targets will be more easily achieved. The new service would need to be reinforced by an effective communications channel and connected directly with metals sector trade associations (members of the Metals Council). This executive capacity would produce a combined unit of expertise for businesses of all sizes and sectors to tap into; similar programmes of practical support have been successful in the past.

Innovation Factory

Exm programme to support West Midlands businesses to innovate greater. Companies (identified by the region's Growth Hubs) would undertake a free initial 2-day assessment to establish potential cost-savings, and then choose whether to proceed in paying up-front for the support. Support would include developing an R&D strategy over 6 months (through workshops with external partners like the Design Council or Autodesk); working with a mentor to embed the strategy over a longer-period; undertaking of a follow-up diagnostic. Companies that do not make any cost savings/increased revenue would receive reimbursement. Firms selected will be small (<50 employees), UK/family run businesses that don't export (but who could) and mention 'design' on their website. This should include the consideration of metals companies - particularly those lower down the supply chain – to boost innovative capacity in the industry locally. The Innovation Factory should work closely with the proposed 'Productivity Factory.

Another potential solution would be to utilise the West Midlands Innovation Programme (WMIP) for metals and materials priorities, including the CITEC programme, supporting sustainable technologies, and bidding into national schemes. This will:

- Increase opportunities for the sector in what it can contribute to consortia across sectors to give businesses maximum opportunities to win funding, investment and contracts via collaborative challenge-based innovation
- Turn pain points of the 'new normal' into opportunities. e.g. using the sector to create and enhance safety/infection control products, social distancing infrastructure and mobility solutions, and health infrastructure
- Explore and develop the role of the industry in rolling out the region's Future of Mobility plans through exploring transportation, logistics and infrastructure in particular.
- Provide opportunities for the sector to develop vanguard status as a leader in the circular economy and energy systems transformation, linking with the Infrastructure and Place Actions within the Metals and Materials WMLIS and LIRS Plans.

Innovate UK

Process innovation is acknowledged as crucially important in the metals sector because of the way this can combine aspects of both productivity improvement and product development. To ensure that the role of processing is properly supported by the work of the Productivity Factory and to give businesses in the sector the support they need to drive both productivity and product development, it is further requested that Innovate UK create specific, regular and competitive calls targeted at process improvement (e.g. an SME call on metals processing). Further to this, ring-fencing of Innovate UK money to the WMCA area and exclusively for the metals sector would ensure innovation funding flows into the local sector.

These interventions would produce a greater number of innovative, R&D intensive metals businesses, increasing the regional productivity of the sector which will have a positive effect on GVA, employment and wages in the long-term, both locally and for the UK overall.

Increasing Exports

Exporting offers additional advantages to companies in the WMCA metals sector, including participation in international supply chains and access to information through wider networking. Following the departure of the UK from the EU the imperative to increase exports to non-EU companies will be experienced through UK industry.

In order to break into new markets overseas, WMCA metals companies will need to innovate their product range, their processing capabilities and their customer service. Many local firms in the sector lack the understanding of the market needs in some overseas markets, and how to find out this information. A solution is proposed whereby the Metals Council will work closely with the Department for International Trade (DIT) and overseas trade officials in markets of interest, to support the dissemination of UK metals sector capabilities abroad. It is suggested that an 'Export Champion' be appointed by DIT to cover the West Midlands metals industry, acting as the connection between the sector and local and central government. It is intended that government support overseas trade officials in the promotion of the West Midlands metals sector and the collection of market specific information that will enable companies within the sector to direct their R&D activity towards developing the right products, processes and customer service offerings, to be successful in specific overseas markets. As with the Productivity Factory, the provision of sufficient communications infrastructure will be vital to ensure successful access to West Midlands metals companies.

The positive impact on a business of exporting is widely agreed. Increasing the number of metals firms who export will provide a stronger, more sustainable and successful set of outward-looking metals firms in the WMCA. This can be achieved through the appointment of a sector export champion.

Intellectual Property

Knowledge of the Patent Box system is low in the metals sector in the WMCA area. It is proposed to utilise the Metals Council to increase general awareness of Patent Box and to promote its use within the sector.

Due to the importance of process innovation within the metals sector, it's also proposed that the sector works with government to develop policy options that will treat process developments more favourably through the Patent Box system, thereby promoting innovation relating to productivity improvement.

A wider issue faced by companies in the sector is the expectation from government supported agencies, such as universities, that the benefits of intellectual property will be shared to access innovation support. This stance leads to some innovations not being commercialised at all, either because the business case is weakened, or due to the legal and administrative burden of such contracts. The sector proposes to work with government to explore options for reducing the barriers to working with government funded innovation agencies from an intellectual property perspective.

Greater connection is needed between WMCA metals firms and intellectual property. Protecting innovative technology and processes is a crucial part of maintaining a sustainable business and industry locally. This will ensure a more innovative sector within a protected environment.

Ideas – Proposed Interventions by Type

Super-charge	Build	Maintain	Consolidate
Creation of a new type of productivity support, a £xm regional 'Productivity Factory', exclusively for the supply chain	WMCA and the sector will work with Innovate UK to increase the share of innovation funding to SMEs, with a greater amount going to the metals & materials sector.		Investigate the less favourable treatment of process developments in patent box, to promote innovation that drives productivity growth.
The setup of a £xm regional 'Innovation Factory' to provide mentoring and strategic support on innovation to supply chain firms	Appoint a dedicated West Midlands metals sector Export Champion to link the sector and Department for International Trade, aligning government trade strategy and local sector capabilities.		
Utilise the West Midlands Innovation Programme (WMIP) for metals and materials priorities, including the CITEC programme, supporting sustainable technologies, and bidding into national schemes.			

3b) People

Opportunity

Creation of a Modern and Specialised Workforce

- Filling gaps in local provision through an employer-led approach.
- Increasing employer awareness of training opportunities.
- Improving the supply of candidates from the local area.

The regional metals sector has a long-term commitment to, and involvement in, education and training which will have created a modern, specialised workforce. Becoming a desirable employer able to attract the highest calibre recruits is the sector's ambition.

Overview of Current and Planned Work

Much work has been carried out in the recent past in an attempt to raise the skills levels of employees within advanced manufacturing and engineering in the WMCA. The Black Country Skills Factory is a LEP initiative aimed at addressing skills shortages in the High Value Manufacturing (HVM) sector in the Black Country. It has been a highly successful project aimed at addressing skills shortages in advanced manufacturing companies, including those operating within the metals sector. The Skills Factory team have a detailed understanding of training provision in the HVM sector in the Black Country and can offer employers impartial and independent advice on up-skilling training courses, apprenticeships and funding opportunities in the Black Country. The main strands of the project are:

- Upskilling the existing workforce
- Increasing the number of SMEs taking engineering-based apprentices
- Schools engagement

The key success factors of the Skills Factory's model are its employer-led nature, an understanding of the granularity of the training requires, and its independence (& of impartiality) of training providers. Black Country Skills Factory has significantly improved the ability of advanced manufacturing businesses to access the training provision they require. The Skills Factory has provided bitesize courses for local metals companies, supplying them with the skilled workforce they require.

Additionally, a new £12.36m Elite Centre for Manufacturing Skills (ECMS) opened for business recently in Wolverhampton, providing specialist training in Toolmaking; Foundry; Patternmaking; Metalforming / Forging; Advanced CNC; Manufacturing Management, Leadership and Project Management. The Black Country LEP brought together partners from the HVM sector (with large representation from metals) and education including the University of Wolverhampton, Dudley College, Confederation of British Metalforming, Cast Metals Federation and the Institute of Cast Metals Engineers. The Centre functions as an employer-led training facility for the Black Country and neighbouring areas; the skills taught at the ECMS were identified as current skills barriers to growth by the Skills Factory following extensive consultation with businesses across the Black Country. Whilst the main site is located at the Springfield Campus site in Wolverhampton, there will be a 'foundry and patternmaking spoke' in Dudley Port and a 'toolmaking spoke' principally located in West Bromwich.

Issues

A skills shortage exists across the sector, due to a number of factors, including an ageing workforce, competition for skilled staff and a lack of STEM trained graduates and school leavers entering the industry. This shortage could potentially be exasperated by Brexit. Current skills provision is focused heavily on apprenticeships and, whilst of value, they're not currently available for all the technical needs of the metals sector and therefore not always suitable for upskilling the sector's workforce. Investment is required in productivity-related skills and training and training solutions that can be delivered at or near SME locations.

The breadth of knowledge (and training expertise and equipment) required to cover all the topics required by employers across key sectors is impossible for a single provider to maintain. As the training providers (including FE colleges) are all competitive and do not share employer contacts, there is often a perceived lack of demand and viability from the providers viewpoint and so the training is not offered. The marketing of the bite-sized training from individual providers becomes sporadic and covers only small elements of the range of training an employer may be seeking - this is then difficult for employers to access with a host of providers advertising

Also, the metals sector is not seen as an attractive career choice for young people and there has been an erosion of vocational education and training in the last few decades. There has been little or no focus on practical skills in schools, with a huge decline in young people taking practical subjects, together with the downgrading of diplomas, many of which are relevant to the metals sector.

Training for school leavers is fragmented, often uncoordinated and does not meet companies' needs – this is especially true for smaller companies. Provision relevant to the metals sector has suffered as a result of some training providers not being responsive to industry demands. Some of the skills the sector requires are generic, leaving the metals sector competing with not only other industrial sectors but those outside of the industrial sector. Where more specific skills-sets are required, for example metallurgy, degree-level provision and therefore students are in short supply.

As identified by the Vision 2030 report, the metals sector has a number of general skills targets. There's a need for an increased number of graduates, apprenticeships and technicians: in the UK overall 2,300 graduates and 9,200 apprenticeships and technicians are thought to be required each year by 2025 if the sector is going to achieve its growth ambitions. More specifically, metals needs more engineers and STEM students in education, and with particular skillsets such as metallurgy to degree level.

Potential Solutions

Black Country Skills Factory Extension

The Black Country Skills Factory has proved to have a very successful model in ensuring that flexible, bite-sized training courses are delivered by providers and are driven by the specific skills needs of employers. The Black Country Skills Factory has so far focused on the Advanced Manufacturing and Engineering sector and has therefore already experienced working with the metals sector locally. There's opportunity for an extension of this work, to make available easy access courses delivering real value on skills across the whole of the region's metals sector and across wider industries.

The focus here will be on successfully maintaining and extending the effective Black Country Skills Factory model to address skills shortages across all key sector and, including that of metals, and across the WMCA region as a whole. Facilities such as the ECMS and Dudley's IOT will be crucial in delivering the skills employers need, and this capacity will help maximise their potential. Employer-led training provision for manufacturing skills will be a crucial part of developing the skills needed by firms in the West Midlands. Developing appropriate apprenticeships and T-levels for West Midlands' companies across sectors will be another important activity, as well as transforming the perception of careers in sectors such as automotive.

The overall Skills Factory project aims to continue to expand and grow the bite-sized and apprenticeship provision to upskill the regional workforce, including within metals as a key sector locally. In particular the future Skills Factory should be closely integrated with the new Productivity Factory and the upskilling offered by the Skills Factory should especially be tailored to help SME's become more productive.

Further education is a crucial tool for supplying the skills required by the sector locally, and partners in the West Midlands have already made significant interventions to improve metals skills, with the soon to be open Elite Centre for Manufacturing Skills (ECMS), including a National Foundry Centre. Working with providers, the development of further provision to suit the needs of industry will be vital in supplying the sector for years to come, and the Skills Factory will have a key role to play within this.

Industry Training

Improving overall awareness of local skills and training opportunities in the sector is another important activity going forward. Alongside other partners (such as LEPs and Chambers of Commerce), the UK Metals Council will commit to greater promotion of relevant metals training provision to local businesses. This will ensure that the SME base in particular are aware of the available provision and its affordability, localised nature and relevance to their businesses. Further to this, Metals Council member organisations should be encouraged to continue and advance their offer of accredited technical training to industry. Whilst trade associations such as the British Constructional Steelwork Association and the Galvanizers Association do offer training, the standard and quality of this across similar organisations is inconsistent. ‘MetSkill’, the former sector skills agency for metals, was an effective model for sector-specific training and a similar setup would drive training excellence across all metals sub-sectors.

It will be important also to maximise the use of the Elite Centre for Manufacturing Skills and Black Country and Marches Institute of Technology to develop a sustainable skills pool for the future. This will enable the continuation of the industry’s heritage of local job opportunities for local people, but adding a special competitive high-value and high-skilled edge, whilst promoting equality of opportunities and keeping talent in the region by making access to learning, skills and research easy and affordable for students and the workforce.

Careers

Perception of the metals sector remains an issue. The sector needs to work with government to refocus parts of the school curriculum to place a greater emphasis on metals – and to provide improved, relevant and timely (early) careers advice. Providing clarity regarding the potential for careers within the sector and the different routes that might apply is crucial in convincing young people that a good career can be achieved in metals. Through channels such as the Careers & Enterprise Company, Metals Council UK will commit to creating local metals careers resource in order to help facilitate more effective working in this space.

People – Proposed Interventions by Type

<i>Super-Charge</i>	<i>Build</i>	<i>Maintain</i>	<i>Consolidate</i>
Provide better matching of skills supply and industry demand – e.g. through extending the Skills Factory and growing a focus on developing and delivering relevant T-level, Apprenticeship and other vocational standards and frameworks required by industry, especially in terms of relevance and workability for SMEs.	Work within existing frameworks and create new ones to ensure a more holistic and co-ordinated approach to careers advice and metals and materials engagement with schools.	Promote relevant metals and materials training provision to local businesses, and to increase accredited technical training where required.	<i>Encourage UK Metals Council membership organisations to offer & increase accredited technical training for industry.</i>

<i>Super-Charge</i>	<i>Build</i>	<i>Maintain</i>	<i>Consolidate</i>
	Maximise the use of the Elite Centre for Manufacturing Skills and Black Country and Marches Institute of Technology to develop a sustainable skills pool for the future.		

3c) Business Environment

Opportunity

Reshoring & Increased Production in Other Sectors

- Increased production in the UK's automotive sector (vital within the region) is expected to provide around £2.5bn/year of additional opportunities for the metals sector.
- Continued growth of other sectors, particularly locally, such as aerospace and rail.
- An industry which supplies high quality, innovative and competitively priced products into a wide range of customers.

Infrastructure Investments

- Major infrastructure investments in the region, including HS2, Midland Metro and motorway improvements.
- Major upgrade of UK energy and transport infrastructure, creating extra demand for metals and thus WMCA supply chains.
- The products supplied by the West Midlands metals industry will be crucial to the success of these investments, and others across the country.

Overview of Current and Planned Activity

The three Growth Hubs within the WMCA are key business support organisations. Growth Hubs provide impartial and transparent guide for businesses to ensure they find the appropriate support, whatever their needs. Growth Hubs cover all sectors, so all metals sector companies within the WMCA can be signposted to various types of business support and funding by the region's Growth Hubs.

UK Metals Council includes a number of smaller trade associations (including the Aluminium Federation, the Cast Metals Federation etc) that provide more specific support and representation to their member companies. Many of these are located locally, giving West Midlands metals firms a local point of contact to utilise.

Issues

The metals supply chain is the bedrock of the local economy, providing the basis of production across many sectors. Given the importance of metals locally as a foundation industry to automotive,

aerospace and rail amongst others, it's vital that local metals supply chains remain strong. This is particularly important given the potential opportunities of greater re-shoring in the post-Brexit period and the considerable investments that are currently taking place, particularly in the region (HS2, Midland Metro, motorway improvements), but also across the country.

There's currently a lack of knowledge of the capability of West Midlands metals companies – there is no central place for which to identify the quality and consistency of the local supply chain and individual metals companies. This can sometimes hinder competitiveness if potential customers obtain their metals from abroad due to a lack of visibility of local suppliers.

Local metals firms themselves also need greater visibility of the support available for access to finance, exporting, skills and innovation and better knowledge of support organisations such as Growth Hubs, Chambers, and DIT.

Potential Solutions

In the area of supply chain connectivity, there are key technology gaps, leading to holes in UK capacity and capability that will need to be addressed. It is envisaged that some form of co-funded industry scheme would fulfil this requirement, creating vertically integrated supply chain consortia, addressing the key sector and infrastructure challenges. However, the first step will be to determine where these capability gaps exist and what the priority technology areas should be. It is therefore proposed that the metals sector utilises the UK Metals Council, LEPs and Growth Hubs to identify the supply chain capabilities in the region, especially in relation to current and forecast demand of industrial and infrastructure supply chains. This “mapping and gapping” of the supply chain will provide visibility of the sector locally and help simplify the mapping of metals capabilities. The Midlands Aerospace Alliance have successfully produced a directory of aerospace capability within the region and the metals sector should follow this good example. A potential stage two of this in the longer-term would be for a sector fund to support integrated supply chain innovation projects to improve the supply chain competitiveness of WMCA metals firms.

Furthermore, in order to combat the many issues within business support for the metals sector (including access to finance, innovation and skills development), a metals sector specialist could be used to cover the three Growth Hubs. This individual would be available exclusively for metals sector firms, ensuring better visibility of available support, such as for skills, exporting, access to finance and innovation. Effective business support would provide metals firms with the opportunity to improve particular aspects of their business which might be holding them back, allowing them to maximise their potential for the good of the local industry and overall economy.

Other useful proposed interventions include:

- Encourage greater public procurement to British/regional companies down the tiers – not just large companies/contracts.
- Develop the metals & materials context for the regional 'Productivity Factory' programme (& its delivery models) to support supply chain companies in the region to raise their productivity.
- Implement emergency safety, employment and financial capacity measures to enable the survival of vulnerable businesses during the COVID period and in COVID recovery.

Business Environment – Proposed Interventions by Type

<i>Super-Charge</i>	<i>Build</i>	<i>Maintain</i>	<i>Consolidate</i>
Metals and Materials sector (led by the UK Metals Council) to identify the supply chain capabilities and competitiveness of metals and materials in the region and produce a 'Capabilities Directory'.	Allow further capacity to appoint a metals sector specialist to work within WMCA's Growth Hubs, providing business support exclusively to metals sector businesses	Encourage greater public procurement to British/regional companies down the tiers – not just large companies/contracts.	
Develop the metals & materials context for the regional 'Productivity Factory' programme (& its delivery models) to support supply chain companies in the region to raise their productivity.		Implement emergency safety, employment and financial capacity measures to enable the survival of vulnerable businesses during the COVID period and in COVID recovery.	

3d) Infrastructure

Opportunity

Sustainable & Energy Efficient

- A highly energy efficient industry locally, ensuring strong competitiveness remains.
- Circular economy business models can give WMCA metals firms a competitive edge by helping them build closer relationships with customers.

Only with a central focus on sustainability can a modern local industrial strategy meet the long term needs of resource efficiency and carbon reduction. The metals sector is an excellent fit with the current agenda to move towards a "circular economy" because metals are well-suited to reuse, remanufacture and recycle, amortising the initial energy used in their extraction over many generations of products. This also ties in with the government's inclusion of 'clean growth' as one of the industrial strategy's 'grand challenges'.

The properties of metals, supported by an efficient recycling industry, already support major elements of a circular economy. Promotion of end of life re-use and more efficient reuse of waste streams within manufacturing could further extend this agenda. The metals industry has a tried and tested, and therefore low risk, approach to re-use and recycling, with a proven track record of innovation. If the local sector was freed of legislation, much more could be done on creating and reinforcing sustainable processes. Greater uptake in energy efficiency schemes from local metals companies would help boost sector productivity as well as contributing to an improved environment. On energy prices, the

ambition is for a more competitive environment for heavy local industry, who continue to be plagued with high prices.

Overview of Current and Planned Activity

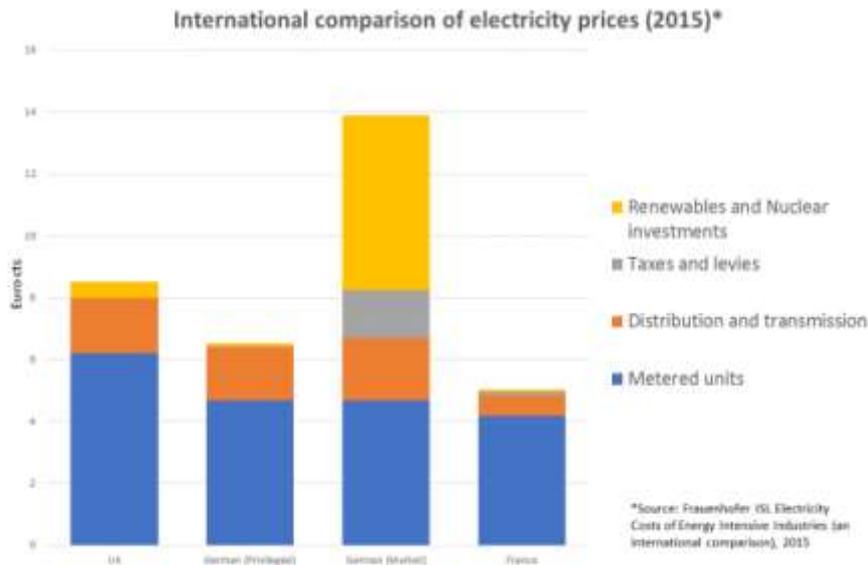
Much recent work has been carried out on the energy agenda in the West Midlands, largely through the Energy Capital partnership and through 'Energy Innovation Zones' (EIZs). EIZs are a powerful concept because they enable energy infrastructure planning and investment to be managed locally coupled with regulatory simplifications appropriate to local needs. The region asked Sir David King to chair an independent commission on regional energy, which reported to central government in March 2018, and has framed the regional energy strategy around the concept of EIZs. There is a strong partnership supporting this activity in the form of Energy Capital, which brings energy infrastructure providers together with customers including major industries, local authorities and LEPs and reports into the Regional Industrial Strategy (SEP) Board.

Issues

With the ability to burn oils and tyres in blast furnaces, the metals sector can repurpose and recycle waste from society at large but is hampered by regulatory constraints that class these materials as hazardous waste; this prevents them from being used as fuel in the proves. Given that blast furnaces have significant environmental controls and are closely monitored, this regulation is acting as a barrier to a cheap alternate fuel to coke, less carbon into the atmosphere and the removal of tonnes of waste directly from society.

Another significant issue is that of energy prices. Without secure and affordable energy, metals companies cannot exist, wherever they're located. The current high price of energy, particularly for heavy industry (much of which we have in the WMCA area) is proving to be a burden on competitiveness for metals industry companies. Dieter Helm's review of energy prices correctly asserts that "the cost of energy is too high", citing that prices for energy intensive users in particular have increased rapidly since 2011. Recent research commissioned by the Black Country LEP confirms that UK energy costs in many sectors are up to 40% higher than those of competitor economies.

Within the same report, a breakdown of electricity costs for a medium-size Black Country manufacturer is presented, showing that around half of costs are the apportioned costs of regional and national infrastructure investments. Because of their magnitude and impact, the way these costs are apportioned between sectors is treated as an industrial strategy decision in many other economies. For example, in Germany there is a 'privilege' system which allocates network and renewables costs variably between industrial sectors, favouring some sectors (such as metal processing) and penalising others. Thus, although average industrial energy costs in Germany often appear on face value higher than the UK, in practice they are significantly lower in many manufacturing sectors and even higher in other sectors (including the domestic sector) to ensure that the overall numbers balance (see figure below). The costs are creating a competitive disadvantage for metals companies in the UK, which particularly affects areas with clusters of this activity like the West Midlands.



Source: Black Country LEP, Energy as an Enabler report (2018)

An estimated £6.7bn is spent annually on energy by West Midlands businesses and households, and within this £960m is spent by the industrial and manufacturing sectors.³ This spend has a direct impact on productivity and GVA; if this could be reduced significantly then the GVA and productivity of the local economy would improve hugely. This would in part be driven in particular by energy-intensive industries such as metals manufacturing via a reduction in costs, providing spare resources for re-investment.

There are other, more specific issues within government policy on energy compensation procedures and other energy-based policy. Particularly problematic for the metals sector are:

- The Government's compensation procedures for the indirect costs of the EU Emissions Trading System (EU ETS) and the Carbon Price Support (CPS) mechanism are creating competitive distortion within the metals industry
- The 5% filter test makes use of GVA, which for a number of reasons, can result in competitive distortion through the creation of winners and losers.
- BEIS' eligibility criteria for the renewables obligation (RO) and feed-in-tariffs (FiT) is inconsistent and creates inequity within the metals sector.
- The proportion of GVA that businesses need to show (for the RO & FiT) that electricity costs make up is too high at 20%.
- The UK has wrongly excluded metalforming from the energy intensive sectors at risk of carbon leakage

However, the metals sector understands that it itself can make changes to improve its competitiveness and cannot put all issues down to central government policy. Many metals companies in the WMCA area need to evolve and innovate in order to upgrade their facilities, equipment and processes to make themselves more energy efficient. There are programmes that can help firms with this – more engagement with these will be important for the energy efficiency of the metals industry locally, and part of this is about the visibility of existing support programmes. However, the development of more

³ Black Country LEP, Energy as an Enabler (2018)

energy efficiency/sustainability programmes and funding tailored to the metals sector would certainly advance this agenda.

Solutions

Sustainability

Government policy in a sustainability context has a huge part to play in maximising metals sector competitiveness & promoting a wider environmental impact on the local area. Specific regulatory decisions, such as hazardous waste classifications, outlined above should be re-considered in order to both create a fair, competitive metals market, and to allow West Midlands metals firms to create and reinforce sustainable processes.

Energy

More widely, a more effective energy system locally can be produced through flexible regional energy policy, put forward via ‘Energy Innovation Zones’ (EIZs) in the recent West Midlands Regional Energy Commission. EIZs would enable energy infrastructure planning and investment to be managed locally coupled with regulatory simplifications appropriate to local needs, and the metals sector supports this approach to regional energy policy and suggests this could be an effective way of improving energy policy for local industry.

Whilst the metals sector recognises the national issues of current energy policy that affect the industry greatly, it also seeks to advance its own activity locally to engage with the opportunity of greater sustainability and energy efficiency. The UK Metals Council will work with business support and funding partners, including Growth Hubs and Chambers of Commerce, to create better visibility of the pre-existing programmes that deal with energy efficiency. In addition to this, a greater quantity of programmes and funding support needs to be made available locally to ensure that metals sector firms are encouraged to make steps towards being a more energy efficient business. In doing so, metals businesses will improve their competitiveness through price reductions whilst also contributing to a positive environment.

Infrastructure – Proposed Interventions by Type

Super-charge	Build	Maintain	Consolidate
The sector supports regional momentum on improving energy infrastructure, e.g. the bid for the regional Energy Innovation Zones.	Government should re-assess regulatory decisions on a range of specific areas which are creating inequity within the metals sector.		Work with local partners on making metals firms aware of pre-existing programmes to support energy efficiency, and to also develop new programmes and funding for this activity in the local area.

4) Proposed Interventions/Actions

4a) Metals/Materials Supercharge Actions across Foundations

Ideas	Build	Maintain	Consolidate
Creation of a new type of productivity support, a £xm regional 'Productivity Factory', exclusively for the supply chain	Provide better matching of skills supply and industry demand – e.g. through extending the Skills Factory and growing a focus on developing and delivering relevant T-level, Apprenticeship and other vocational standards and frameworks required by industry, especially in terms of relevance and workability for SMEs.	Metals and Materials sector (led by the UK Metals Council) to identify the supply chain capabilities and competitiveness of metals and materials in the region and produce a 'Capabilities Directory'.	Government should re-assess regulatory decisions on a range of specific areas which are creating inequity within the metals sector.
the setup of a £xm regional 'Innovation Factory' to provide mentoring and strategic support on innovation to supply chain firms	The UK Metals Council, alongside stakeholders such as LEPs & Chambers of Commerce, to promote relevant metals and materials training provision to local businesses, and to increase accredited technical training where required.	Allow further capacity to appoint a metals sector specialist to work within WMCA's Growth Hubs, providing business support exclusively to metals sector businesses	The sector supports regional momentum on improving energy infrastructure, e.g. the bid for the regional Energy Innovation Zones.
Utilise the West Midlands Innovation Programme (WMIP) for metals and materials priorities, including the CITEC programme, supporting sustainable technologies, and bidding into national schemes.	Encourage UK Metals Council membership organisations to offer & increase accredited technical training for industry.	Encourage greater public procurement to British/regional companies down the tiers – not just large companies/contracts.	UK Metals Council to work with local partners on making metals firms aware of pre-existing programmes to support energy efficiency, and to also develop new programmes and funding for this activity in the local area.
WMCA and the sector will work with Innovate UK to increase the share of innovation funding to SMEs, with a greater amount going to the	Work within existing frameworks and create new ones to ensure a more holistic and co-ordinated approach to careers advice and metals and materials engagement with schools.	Develop the metals & materials context for the regional 'Productivity Factory' programme (& its delivery models) to support supply chain companies in the region to raise their productivity.	UK Metals Council to work with local partners on making metals and materials firms aware of pre-existing programmes to support energy efficiency and sustainability, and to also develop new

metals & materials sector.			programmes and funding for this activity in the local area.
Appoint a dedicated West Midlands metals sector Export Champion to link the sector and Department for International Trade, aligning government trade strategy and local sector capabilities.	Maximise the use of the Elite Centre for Manufacturing Skills and Black Country and Marches Institute of Technology to develop a sustainable skills pool for the future.	Implement emergency safety, employment and financial capacity measures to enable the survival of vulnerable businesses during the COVID period and in COVID recovery.	
Investigate the less favourable treatment of process developments in patent box, to promote innovation that drives productivity growth.			

4b) Full List of Proposed Interventions

IS Foundation	Proposed Intervention	Strategic Opportunity	Overarching
Ideas	1 Government should support the Creation of a new type of productivity support, a £xm regional 'Productivity Factory', exclusively for the supply chain	  	Industry Bodies Engagement with SMEs via Boost Resources for Business
	2 Government should support the setup of a £xm regional 'Innovation Factory' to provide mentoring and strategic support on innovation to supply chain firms	  	
	3 WMCA and the sector will work with Innovate UK to increase the share of innovation funding to SMEs, with a greater amount going to the metals & materials sector.	  	
	4 Appoint a dedicated West Midlands metals sector Export Champion to link the sector and Department for International Trade, aligning government trade strategy and local sector capabilities.		
	5 Government, the WMCA and the sector to work together to investigate the less favourable treatment of process developments in patent box, to promote innovation that drives productivity growth.	 	
	6 Utilise the West Midlands Innovation Programme (WMIP) for metals and materials priorities, including the	  	

IS Foundation	Proposed Intervention	Strategic Opportunity	Overarching
	CITEC programme, supporting sustainable technologies, and bidding into national schemes.		
People	7 Provide better matching of skills supply and industry demand – e.g. through extending the Skills Factory and growing a focus on developing and delivering relevant T-level, Apprenticeship and other vocational standards and frameworks required by industry, especially in terms of relevance and workability for SMEs.		
	8 The UK Metals Council, alongside stakeholders such as LEPs & Chambers of Commerce, to promote relevant metals and materials training provision to local businesses, and to increase accredited technical training where required.		
	9 Encourage UK Metals Council membership organisations to offer & increase accredited technical training for industry.		
	10 Work within existing frameworks and create new ones to ensure a more holistic and co-ordinated approach to careers advice and metals and materials engagement with schools.		
	11 Maximise the use of the Elite Centre for Manufacturing Skills and Black Country and Marches Institute of Technology to develop a sustainable skills pool for the future.		
Business Environment	12 Metals and Materials sector (led by the UK Metals Council) to identify the supply chain capabilities and competitiveness of metals and materials in the region and produce a ‘Capabilities Directory’.		
	13 Allow further capacity to appoint a metals sector specialist to work within WMCA’s Growth Hubs, providing business support exclusively to metals sector businesses		
	14 Encourage greater public procurement to British/regional companies down the tiers – not just large companies/contracts.		
	15 Develop the metals & materials context for the regional ‘Productivity Factory’ programme (& its delivery models) to support supply chain companies in the region to raise their productivity.		
	16 Implement emergency safety, employment and financial capacity measures to enable the survival of vulnerable businesses during the COVID period and in COVID recovery.		
	17 Government should re-assess regulatory decisions on a range of specific areas which are creating inequity within the metals sector.		
Infrastructure	18 The sector supports regional momentum on improving energy infrastructure, e.g. the bid for the regional Energy Innovation Zones.		

IS Foundation	Proposed Intervention	Strategic Opportunity	Overarching
	<p>19 UK Metals Council to work with local partners on making metals and materials firms aware of pre-existing programmes to support energy efficiency and sustainability, and to also develop new programmes and funding for this activity in the local area.</p>		

Conclusion

The West Midlands’ well-established and successful metals and materials industry has distinct future opportunities, particularly attainable through maximising its innovation potential, improving skills levels, ensuring better business support and greater energy efficiency. Progress in these areas will provide a more productive, robust sector for the long-term that can continue to be the bedrock of the West Midlands economy, the base supplier of vital local industries such as automotive and aerospace, and contributing to key construction investment in the region and across the UK. A successful implementation of policy in the West Midlands can be used in future to roll-out similar initiatives in other areas of the UK with a distinct metals cluster.

Through the UK Metals Council (UKMC), co-authors of this action plan, the sector is committed to leading positive change across a number of themes, for the good of industry and the local economy overall. UKMC will be proactive and engaging on all fronts, promoting the industry’s local excellence and engaging more effectively within key areas of policy, such as skills and innovation. Working with central government, the WMCA and UKMC want to build on the metals sector’s excellence regionally and provide businesses with the opportunities to advance their capabilities.

Unleashing the potential of the metals sector in the West Midlands and across the UK will require greater capacity for industry, particularly through trade bodies like UKMC, through interventions such as the Productivity Factory we suggest. Currently under-utilised and under-resourced, commitment from government to industry bodies will create an effective working interface of support across a wide range of themes to enhance the productivity and performance of metals companies. It is understood that around 60% of metals employees work for SMEs; engaging and empowering large and significant section of the industry can make a real difference. This will ensure local and national targets become more achievable, whether these be within ideas, people, business environment or infrastructure.

Metals businesses can be more innovative, have a higher set of skilled workers, more aware of opportunities around them and make strides on competitiveness through energy efficiency. This action plan understands the responsibility of the sector itself to advance in many of these areas, but with assistance from government the size of the prize is far greater. Action on the proposed interventions above will drive improvements in the West Midlands metals industry, a large employer and key foundation industry locally. The positive changes possible through this action will enhance innovation, skills and business operation, boosting the productivity of the sector locally, which in the long-term can make an effective contribution to WMCA economic growth, living standards and inclusive growth.

Appendix 1: WMCA Industry profile for the metals and materials sector, including local “Super Strengths”

Metals & Materials: Industry Profile

<p>Our Competitive Advantage</p> <ul style="list-style-type: none"> Historic presence within metals & materials manufacturing & metals treatment, leading to a significant concentration of infrastructure like furnaces and foundries. Leading innovation from the region's universities is helping develop materials for industrial use and future applications. The significant presence of automotive, aerospace and rail in the area ensures a strong number of metals & materials firms, feeding into these industries' supply chains. There is widespread demand for these products locally. Good connectivity with well developed road and train network and international airport Highly concentrated industry in WM Major infrastructure investments in the region (HS2 etc). The West Midlands has the largest concentration of materials related jobs in the UK. (WMGC) The WM region has export expertise in machinery & transport goods (71% of all goods exports compared to 41% nationally) Representation from key industry bodies locally – e.g. UK Metals Council, RAPRA 	<p>Products, Services & Brands</p> <ul style="list-style-type: none"> Asa Abloy - World's largest lock manufacturer Mitsubishi Chemical Carbon Fiber and Composites – Key suppliers in manufacturing specialist materials. Nord Composites – Major composite material business, specialising in sealant and adhesive materials. Precision Chains make the chains for the London Underground escalators. RMD Kwikform helped install the roof of the Aquatics Centre for London 2012. ZF Lemforder's Darlaston factory supplies suspension control arms to Jaguar. 	<p>Centres of Excellence/Assets</p> <p>Innovation:</p> <ul style="list-style-type: none"> School of Metallurgy and Materials, UoB National Centre for Nuclear Robotics The National Transport Design Centre, Coventry MIRA Technology Park Advanced Propulsion Centre W'ton Science, Technology & Prototyping Centre Rolls-Royce University Technology Centre, Birmingham Engineering and Computer Science Research Centre Automotive Composites Research Centre <p>Production:</p> <ul style="list-style-type: none"> Institute For Advanced Manufacturing and Engineering Warwick Manufacturing Group (HVM Catapult) Manufacturing Technology Centre (HVM Catapult) Advanced materials characterisation and simulation hub (AMCASH) Alternative Raw Materials with Low Impact <p>Training:</p> <ul style="list-style-type: none"> EEF Technology Training Centre WMG Academy for Young Engineers Black Country Skills Factory 	<p>Inward Investment</p> <p>Linked specifically within Advanced Manufacturing as an overall priority investment sector</p> <ul style="list-style-type: none"> Targeting of reshoring/localisation operations for supply chain resilience Strongly linked to sectors under Transport Technologies for inward investment. For areas outside of this: Demand for these materials is down due to significantly reduced industrial output On this basis, not a high priority for new investment Retention of existing supply chains will be crucial if/when auto and aero sectors recover <p>Priority:</p> <ul style="list-style-type: none"> Medium (new investment) Will need to plug gaps in steel supply chain for instance if companies go under High (retention) 	<p>Implication of New Covid-19 Guidance</p> <p>Implementation of guidance will create innovation opportunities across a wide range of areas which will generate demand for new products</p> <p>Transition to greater use of digital manufacturing to facilitate social distancing and other guidance requirements. There will be cost implications and management capacity issues especially for SMEs</p> <p>Social distancing requirements will impact on factory capacity and productivity</p> <p>There will be increased pressure on management of small SMEs as a result of implementing the guidance (and costs), on top of financial, personal and personnel issues. These may see a rise in business closures as management becomes too difficult.</p>
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Super Strengths
Manufacture and treatment of metals, Composites & other advanced materials