



SAP SECTOR SKILLS SUPPLY REVIEW

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SAP Sector Skills Supply Review

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SAP Sector Skills Supply Review

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Executive Summary

Stantec was commissioned in March 2023 by Staffordshire County Council on behalf of Stoke-on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) for a study to identify the supply and demand for skills in SSLEP's priority sectors. This study has focused on the following priority growth sectors¹:

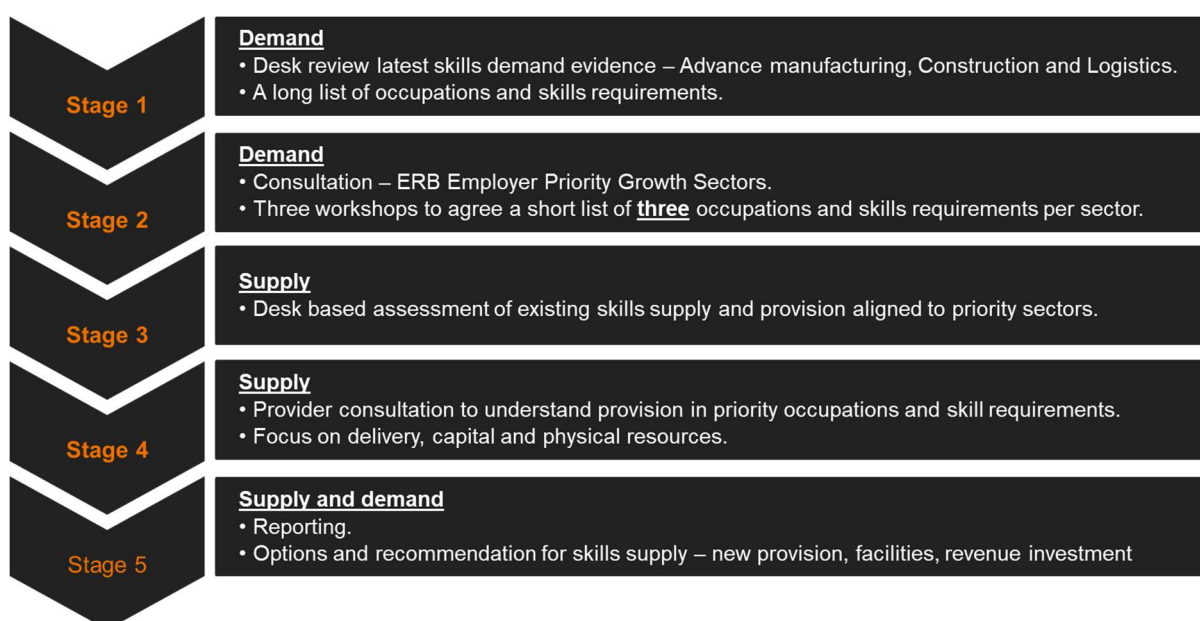
- Advanced manufacturing.
- Construction.
- Logistics.

The key aims of this study were to identify the main occupations and skills requirements within the priority growth sectors now and, in the future, and the issues, gaps and opportunities there are in ensuring that skills supply including learning provision, capital and physical resource meets the needs of local employers now and in the future.

The study aimed to include recommendations for skill supply development including details of what new/additional courses and facilities are needed by the provider base to meet this requirement. This report reflects the final deliverable of the study and the culmination of our findings and key recommendations.

The overarching methodology implemented as part of this study is outlined in Figure 21 below.

Figure 1 – Study Methodology



¹ The study does not focus on Health and Social Care due to budget and programme time constraints. Local workforce requirements for health and social care are being investigated by the NHS and Social Care providers through separate work programmes

Stage 1

The purpose of this stage was to identify a long list of occupations which are high value² and where there is high demand in the short to medium term across each of the priority growth sectors. To identify these occupations a combination of quantitative and qualitative evidence has been reviewed. Data analysis of local employment and vacancy data within Stoke-on-Trent and Staffordshire between 2017 and 2022³ has been completed combined with a desk-based review of sector-based foresight reports to allow for the identification of occupations which are currently high value and in demand, as well as those occupations which are anticipated to be in high demand in the future and that won't necessarily be represented within the current labour market. The longlist of occupations identified from Stage 1 is shown below in Table 1.

Table 1 – Stage 1 – Long list of occupations

Engineering and Advanced Manufacturing	Construction	Advanced Logistics
<ul style="list-style-type: none"> • Telecommunications Engineers. • Design and Development Engineers. • Electrical and Electronics Engineers. • Electricians and Electrical Fitters. • Engineering Technicians. • Mechanical Engineers. • Rail engineers/ maintenance • Vehicle Technicians – EV qualified. 	<ul style="list-style-type: none"> • Architects. • Construction Project Managers and Related Professionals. • Chartered Architectural Technologists. • Scaffolders, Stagers and Riggers. • Bricklayers and Masons. • Production Managers and Directors in Construction. • Civil Engineers. • Chartered Surveyors. • Plumbing and heating ventilation and air conditioning (HVAC) trades and engineers. • Heat pump engineers. 	<ul style="list-style-type: none"> • Managers and Directors in Transport and Distribution. • Large Goods Vehicle Drivers. • Van Drivers. • Elementary Storage Occupations. • Managers and Directors in Storage and Warehousing. • Transport and Distribution Clerks and Assistants. • Forklift truck drivers. • Data analysts/ data scientists/ software engineers.

Stage 2

The purpose of Stage 2 was to reduce the long list of occupations down to a shortlist of approximately 3 occupations across each of the priority growth sectors. This was achieved by engaging with industry bodies and seeking feedback on the long list of occupations identified. Industry bodies including Make UK (Advanced Manufacturing and Engineering), the Chartered Institute for Logistics and

² High value in this sense refers to high levels of productivity.

³ sourced from Lightcast



Transport (CILT) (Advanced Logistics) and the Construction Industry Training Board (CITB) (Construction) were consulted.

Following receipt of feedback, a shortlisting framework was created to ensure all 3 categories included within Stage 1 are represented in the shortlist e.g., High Value High Growth, High Value High Volume and any growth occupations identified in each of the priority growth sectors from a review of national evidence. Using this framework and evidence collated from the consultations with industry groups the occupations identified below in Table 2 were shortlisted as part of Stage 2

Table 2 – Stage 2 output - Shortlist of occupations

Category	Advanced Manufacturing and Engineering	Advanced logistics	Construction
1. High Value High Growth	Design and Development Engineers.	Managers and Directors in Transport and Distribution / Managers and Directors in Storage and Warehousing.	Architects.
2. High Value High Volume	Engineering Technicians.	Transport and Distribution Clerks and Assistants.	Construction Project Managers and Related Professionals.
3. National evidence	Vehicle technicians – EV qualified.	Drivers (Forklift/HGV). Data analysis/software engineers.	Retrofitters (L4). (Heat Pump Engineers).

Stage 3 and 4

Stages 3 and 4 of the study explored the learning provision regards to qualifications and apprenticeships related to the shortlisted occupations identified within Stage 2. These stages were informed by data analysis of the DfE's Datacube, data analysis provided by education providers in Stoke-on-Trent and Staffordshire, and detailed consultations with these same providers.

Analysis of the IFATE occupational maps⁴ was conducted firstly to identify the key education and training routes that lead to the shortlisted occupations. These pathways are shown below in Table 3 underneath each of the shortlisted occupations and were confirmed with SAP members.

⁴ [Occupational maps / Institute for Apprenticeships and Technical Education](#)

Table 3 – IFATE pathways and shortlisted occupations

Occupation Type	Advanced Manufacturing and Engineering	Advanced Logistics	Construction
High Value High Growth	Design and Development Engineers IFATE pathways: <ul style="list-style-type: none"> - Postgraduate engineer (Level 7) - Produce Design and Development Engineer (Level 6) - Embedded electronic systems design and development engineer 	Managers and Directors in Transport/ Distribution Managers and Directors in Storage/ Warehousing IFATE pathways: <ul style="list-style-type: none"> - Supply chain leadership professional (degree) - Express delivery manager (degree) - Transport and warehouse operations supervisor 	Architects IFATE pathways: Architect (integrated degree) Level 8
High Value High Volume	Engineering Technicians IFATE pathways: <ul style="list-style-type: none"> - Engineering Manufacturing Technician (Level 4) 	Transport and Distribution Clerks and Assistants IFATE pathways: <ul style="list-style-type: none"> - Supply chain practitioner (Fast Moving Consumer Goods) - Transport and warehouse operations supervisor - Supply chain operator 	Construction Project Managers and Related Professionals IFATE pathways: <ul style="list-style-type: none"> - Construction site management (degree) - Design and construction management (degree) - Construction site supervisor (Apprenticeship)
National Evidence	Vehicle Technicians – EV qualified IFATE pathways: <ul style="list-style-type: none"> - Motor vehicle service and maintenance technician (light vehicle) - Vehicle damage mechanical electrical and trim (MET) technician - Maintenance and operations engineering technician (Apprenticeship Level 3) - Electrical electronic product service and installation engineer (Apprenticeship Level 3) 	Drivers (Forklift/HGV) IFATE pathways: Large goods vehicle driver C+E Data analysts/ Data scientists/ Software Engineers IFATE pathways: Data scientist (integrated degree) Level 6 Data analyst Level 4 Digital and technology solutions professional (integrated degree) Artificial Intelligence (AI) data specialist (Level 7 non-degree qualifications)	Retrofitters (Level 4 Heat Pump Engineers) IFATE pathways: <ul style="list-style-type: none"> - Refrigeration air conditioning and heat pump engineering technician - Low carbon heating technician - Plumbing and domestic heating technician (Apprenticeship Level 3)

An assessment of existing provision of qualifications/ apprenticeships has been completed based on a combination of data from the DfE's Datacube as well as data provided by providers within Stoke-on-Trent and Staffordshire.



Key findings from the consultations completed include the following:

Engineering and Advanced Manufacturing

- A mixed picture across providers with some opportunities to build on growing demand.
- The availability of tutors is restricting the ability to meet demand for some engineering and advanced manufacturing related provision.
- Large high-profile employers are struggling to fill large volumes of engineering apprenticeships.
- A greater demand for flexibility and modular provision from employers.
- Balance between training for current and future demand.
- Continued and increased capital and revenue investment required to keep pace with technological change.

Construction

- A mixed picture across providers with some opportunities to build on growing demand.
- Provision still focused on more traditional skills than courses specifically targeted at emerging and high growth occupations and are hampered by tutor shortages.
- Evidence of limited and declining demand for relevant apprenticeships and full-time study options leaving spare capacity in IT related provision at Colleges.
- Anecdotal evidence of demand from local firms for architects with increasing demand for some related qualifications (higher technical qualification – architectural technology) whilst others (construction design and build technical apprenticeships) have spare capacity.
- Opportunities to alter perception of school children, teachers and parents about job opportunities and pathways within construction to attract students into careers like architecture.

Advanced Logistics

- Lack of provision of qualifications/ apprenticeships related to managers and directors in transport and transport and distribution clerks and assistants.
- Not all pathways approved/accredited e.g. L4 supply chain managers and L2/3 Transport and Warehousing Operations supervisor unapproved. No provision related to managers and directors in transport and distribution identified.
- High churn of employees, particularly at entry level, leading to less formalized relationships between industry and providers compared to other key sectors, resulting in limited provision.



- Challenge of perceptions of logistics and available careers amongst parents, teachers and advisors.
- Limited evidence of reported industry trends (robotics and automation) being demanded by employers locally.

Stage 5

Stage 5 has sought to identify cross-sector findings that have been identified through the stages of data analysis and consultation with Further and Higher education providers operating in Stoke-on-Trent and Staffordshire. Following each finding a recommendation has been identified to help to address these overarching issues:

Finding: Significant and ongoing (capital and revenue) investment required to keep pace with Robotics and AI across sectors.

Recommendation: Establish an investment fund to support the continued investment in technology and equipment to keep pace with technological and industrial change.

Finding: The ability to recruit tutors in key sectors and occupations limits the potential to deliver in engineering and construction trades.

Recommendation: Address the recruitment challenges that are impacting the education sector's ability to respond to demand.

Finding: Interest in some priority occupations and apprenticeships (engineering) is limited due to perceptions, knowledge of opportunities and wages.

Recommendation: Promote interest in priority occupations and apprenticeships in priority sectors such as advanced engineering and manufacturing.

Finding: Skills v qualification - flexibility and modular provision.

Recommendation: Adopt a pilot modular approach to provision focused on the skills required in key occupations.

Finding: The challenge of using available data and intelligence to review the current supply and future demand for skills and qualifications.

Recommendation: To address this, partners across Staffordshire, led by the County Council and in partnership with neighbouring Authorities (e.g. West Midlands Combined Authority) to lobby central government to improve the data available such as from the DfE Data Cubes.

1 Introduction

1.1 Introduction

Stantec was commissioned in March 2023 by Staffordshire County Council on behalf of Stoke-on-Trent and Staffordshire Local Enterprise Partnership (SSLEP) for a study to identify the supply and demand for skills in SSLEP's priority sectors. The priority sectors identified through SSLEP's local skills report include:

- New and emerging Digital skills.
- Roles in the Green Economy/Low Carbon/Net Zero.
- Skills for new technology adoption including AI/Automation/Machine learning in Stoke-on-Trent and Staffordshire's priority sectors including:
 - Engineering and Advanced Manufacturing.
 - Construction of housing including Modern Methods of Construction and Infrastructure e.g. HS2/West Midlands Freight Interchange.
 - Advanced Logistics.
 - Health and Social Care.

This study has focused on bringing together quantitative and qualitative evidence to identify recommendations for new skills provision or infrastructure required to meet the needs of the County's growth sectors. Following confirmation with Staffordshire County Council this study has focused on the following priority growth sectors⁵:

- Advanced manufacturing.
- Construction.
- Logistics.

The key aims of this study are to identify the main occupations and skills requirements within the priority growth sectors now and, in the future, and the issues, gaps and opportunities in ensuring that skills supply including learning provision, capital and physical resource meets the needs of local employers now and in the future.

The study aims to include short, medium and long-term options and recommendations for skill supply development including details of what new/additional courses and facilities are needed by the provider base to meet this requirement. This report reflects the final deliverable of the study and the culmination of our findings and key recommendations.

⁵ The study does not focus on Health and Social Care due to budget and programme time constraints.



1.2 Methodology

The overarching methodology has been developed around a 5-stage process as outlined in Figure 2 below.

Figure 2 – Study Methodology



Stages 1 and 2 have focused on reviewing the demand for occupations across Stoke-on-Trent and Staffordshire's priority growth sectors. The demand stage of the study has focused on investigating the latest demand evidence (both nationally and locally) of challenges and opportunities within Staffordshire and Stoke-on-Trent's priority growth sectors. The demand side analysis has aimed to identify and agree on the main Staffordshire-wide occupations and skills requirements within the LEP's priority growth sectors which are scalable, including existing unmet need and future skills need. Stages 3 and 4 have specifically focused on identifying the supply of learning provision across Staffordshire that feeds into the primary occupations and skills identified within Staffordshire and Stoke-on-Trent's key sectors. Stage 5 has attempted to combine the demand and supply side analysis to develop interim recommendations which will help to support skills provision going forward in occupations in demand across priority growth sectors.

1.3 Structure of the report

The report is structured around the different stages of the study:

- Section 2 reports on the findings from Stage 1 which provided the initial analysis of demand for occupations in the priority growth sectors based on local and national evidence and the original long-list of occupations that was identified.
- Section 3 reports on the findings from Stage 2 whereby the consultant team engaged with industry bodies regarding the long-list, and from which the shortlist of occupations has been identified. The shortlist of occupations is identified here.

- Section 4 reports on the findings from Stages 3 and 4 of the study whereby research has been conducted of the relevant IFATE pathways for each of the shortlisted occupations within the priority growth sectors, the current provision of learning across these education pathways, and the key findings from the consultations with education providers following receipt of proformas.
- Section 5 outlines the key cross-sector findings and recommendations.

1.4 Study limitations

The study provides a comprehensive review of the demand for occupations and the supply of short, medium and long-term options and recommendations for skill supply development including details of what new/additional courses and facilities are needed by the provider base to meet this requirement. However, it is important to note some limitations for the study at the outset.

- The study is based upon a combination of quantitative and qualitative evidence drawn from an amalgamation of qualitative research, data analysis and a series of 1-hour online consultations with providers in Stoke-on-Trent and Staffordshire. The findings of this report and ultimately the recommendations made are entirely based upon the quality of the information collected.
- The study has been guided by a staged methodology originally developed by Staffordshire County Council. This is a logical methodology which first attempts to review and identify a set of high value growing occupations across the priority growth sectors, and then understand existing provision of qualifications/apprenticeships which support these occupations and the key recommendations required to help increase supply of labour in these areas. The key objective at the start of the study was to identify a series of supply-side recommendations such as recommendations for new/additional courses and facilities by providers. However, during the study it became clear, based on consultations, that a series of demand and supply side interventions are required. This study therefore includes both demand and supply side recommendations where appropriate.

2 Stage 1

2.1 Introduction

This section sets out the approach taken during Stage 1 of the study. It outlines the methodology implemented, the emerging future national growth occupations that have been identified across the priority growth sectors and key findings from analysis of local employment and jobs vacancy data sourced from Lightcast. The purpose of this stage was to identify a long list of occupations which are high value⁶ and where there is high demand in the short to medium term across each of the priority growth sectors. This section concludes with the identification of the long list of occupations across each of the priority growth sectors which were taken forward to Stage 2 of the study.

2.2 Methodology

The methodology for Stage 1 is outlined within Figure 3 and discussed in further detail below.

Figure 3 – Stage 1 Methodology



1. Firstly, we have reviewed national level evidence, sector foresight reports and evidence collated by the SAP to understand the key high value occupations within each of the priority growth sectors where there is forecast to be high demand in the future. This reflects future growth opportunities within the medium to long-term which will not be represented within historical labour market statistics but for which there is anticipated to be strong levels of demand for in the future.
2. To identify the high value occupations across the priority growth sectors for which there is currently strong demand, we have conducted data analysis of local employment and vacancy data within Stoke-on-Trent and Staffordshire between 2017 and 2022 sourced from Lightcast. The aim of this approach is to identify high value occupations where there has been higher than average demand in recent years, as well as high value occupations which reflect large volumes of employment within the sector within Stoke-on-Trent and Staffordshire. This approach has sought to capture two major types of occupations based on the following assumptions:
 - a) **High Value High Growth Occupations** – High value has been defined based on occupations where the gross median hourly wage is greater than the average for Stoke-on-

⁶ High value in this sense refers to high levels of productivity.

Trent and Staffordshire, £15.05 (ASHE 2022). High growth has been defined where total jobs by occupation have increased by greater than 10%⁷ between 2017 and 2022.

- b) **High Value High Volume Occupations** - High value has been defined based on occupations where the gross median hourly wage is greater than the average for Stoke-on-Trent and Staffordshire, £15.05 (ASHE 2022). High volume has been defined where the total number of jobs by occupation is greater than the approximate average size of occupations across the sector⁸

Both categories of jobs have then been cross-referenced with data on jobs vacancies from Lightcast to sift out occupations for the basis of the long list⁹

2.3 Demand side analysis

This section of the report presents the demand side analysis for the key sectors identified by partners in Staffordshire and Stoke-on-Trent. These are:

- Engineering and advanced manufacturing.
- Construction (housing and infrastructure).
- Advanced logistics.

The key sectors are considered in this report alongside two cross cutting themes (green technology/ low carbon and digital skills) that are expected to drive growth in the economy across all sectors in the coming years.

2.3.1 ENGINEERING AND ADVANCED MANUFACTURING

The engineering and manufacturing sector is diverse consisting of sub sectors including the manufacture of food, chemicals, metals, machinery, and transport equipment. The UK manufacturing sector employs an estimated 2.6m people¹⁰ while the total value of UK manufacturers' product sales was £400.8 billion in 2021, an increase of £34.5 billion (9%) from 2020 as the sector and economy continues to recover from Covid-19 related disruption¹¹. The sector now accounts for £204 billion of Gross Value Added, accounting for 10% of the output delivered by the UK economy¹².

Advanced manufacturing and engineering involve the design and manufacture of advanced products as well as the application of advanced production systems. This contrasts with traditional manufacturing that is based on the use of dedicated plant and production lines with limited flexibility.

⁷ It should be noted that for engineering and advanced manufacturing there were limited number of occupations where job postings had grown >10%, and for this sector those occupations where job postings had grown by >5% have been included.

⁸ For the purposes of this analysis this was >1,000 for Advanced Manufacturing and Engineering, 3,000 for Advanced Logistics and 700 for construction.

⁹ Only those occupations which are growing in demand and where they feature within the top 10 occupations in terms of vacancies have been taken forward to the longlist.

¹⁰ Source: UK manufacturing. The Facts: 2022. Make UK

¹¹ Source: UK manufacturers' sales by product, 2021.

¹² <https://commonslibrary.parliament.uk/research-briefings/cbp-8353/>



Growing the UK's manufacturing sector plays a vital role in delivering the UK's aspirations set out in the Industrial Strategy and Plan for Growth. The sector has a vital role to play in 'Levelling Up' the UK; achieving net zero; and building the UK's science and research and development capability.

2.3.2 Staffordshire and Stoke-on-Trent's engineering and advanced manufacturing sector

The Stoke-on-Trent and Staffordshire area has a strong history of manufacturing and engineering across numerous sub sectors including a world-leading ceramics cluster, machinery & automotive manufacturers and food manufacturing specialisms.

Stoke-on-Trent and Staffordshire's Skills Action Plan evidence base summarises the strengths, opportunities and challenges of the engineering and advanced manufacturing sector in the sub region:

- The sector consists of 60,000 jobs across more than 2,700 businesses. Large shares of employment in occupations including engineering activities and related technical consultancy, ceramic related occupations, manufacture of motor vehicles and machining, all which account for over 2,400 jobs.
- Other manufacturing sub sectors account for over 1,000 jobs each including printing, manufacture of beer, metal structures, plastic products, lifting & handling equipment and motor vehicles.

The key manufacturing sub sectors are, in part, driven by the presence of major employers such as JCB, Michelin, Jaguar Land Rover, Moog, and Zytex. The Stoke-on-Trent and Staffordshire area also has a world leading ceramics sector that is supported by the Applied Material Research, Innovation and Commercialisation Company (AMRICC). This advanced manufacturing facility provides opportunities to apply advanced ceramics into other areas of advanced manufacturing such as aerospace, battery technology and telecommunications¹³.

The Stoke-on-Trent and Staffordshire Skills for Growth Survey¹⁴ identifies recent trends and future plans for growth, recruitment and training. The following key findings emerged from the engineering and manufacturing sector:

- **Future growth** - The largest proportion of engineering and manufacturing employers in Stoke-on-Trent and Staffordshire are planning to maintain their current business size (47%). A slightly smaller proportion are planning some level of growth (45%) – 38% are planning moderate growth.
- **Recruitment challenges** – Most (54%) of the engineering and manufacturing employers responding to the survey in the sector have recruited in the past 12 months with exactly half of these businesses experiencing recruitment difficulties. Over three-quarters (77%) of businesses believed the main reason for recruitment challenges was the lack of

¹³ <https://www.amricc.com/>

¹⁴ Source: Stoke-on-Trent and Staffordshire Skills Advisory Panel: Skills for Growth Survey. September 2022. Metro Dynamics. [SSLEP Skills Survey: Sector Spotlights \(stokestaffslep.org.uk\)](https://stokestaffslep.org.uk/)



suitable candidates whereas a lack of interest from candidates in the role was quoted by almost half of businesses (49%).

- **Skills gaps** – The vast majority of engineering and manufacturing employers reported experiencing digital (88%) and green (95%) skills gaps. Skills gaps in the existing workforce are driven by staff with a lack of experience in the industry, being unable to recruit ideal candidates and existing qualifications not being aligned to business needs.

Data collected from Lightcast provides an indication of the jobs within Stoke-on-Trent and Staffordshire's engineering and manufacturing sector, as presented in Table 4 below. The following trends in jobs by occupation within the engineering and manufacturing sector are found in Stoke-on-Trent and Staffordshire between 2017 and 2022:

Table 4: Engineering and Advanced Manufacturing jobs by occupation in Stoke-on-Trent and Staffordshire¹⁵

Occupation	2017 Jobs	2022 Jobs	Change	% Change
Production Managers and Directors in Manufacturing (1121)	5,373	5,260	(113)	(2%)
Metal Working Production and Maintenance Fitters (5223)	4,519	4,566	47	1%
Electricians and Electrical Fitters (5241)	4,182	4,472	289	6.9%
Engineering Professionals n.e.c. (2129)	2,181	2,146	(35)	(2%)
Electrical and Electronic Trades n.e.c. (5249)	1,566	1,529	(37)	(2%)
Design and Development Engineers (2126)	1,372	1,463	92	6.7%
Quality Assurance and Regulatory Professionals (2462)	1,448	1,413	(36)	(2%)
Welding Trades (5215)	1,165	1,250	85	7%
Telecommunications Engineers (5242)	1,094	1,227	133	12%
Metal Machining Setters and Setter-operators (5221)	1,141	1,184	43	4%
Engineering Technicians (3113)	1,063	1,114	51	5%
Mechanical Engineers (2122)	1,046	1,066	20	2%
Production and Process Engineers (2127)	982	927	(54)	(6%)
Skilled Metal, Electrical and Electronic Trades Supervisors (5250)	889	852	(37)	(4%)
Civil Engineers (2121)	794	822	28	3%
Science, Engineering and Production Technicians n.e.c. (3119)	610	599	(11)	(2%)
Electrical Engineers (2123)	626	598	(28)	(4%)
Research and Development Managers (2150)	552	550	(2)	(0%)
Quality Control and Planning Engineers (2461)	512	526	14	3%
Tool Makers, Tool Fitters and Markers-out (5222)	508	525	18	4%

¹⁵ Source: Lightcast



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2 Stage 1

Quality Assurance Technicians (3115)	535	466	(68)	(13%)
Sheet Metal Workers (5213)	454	454	(0)	(0%)
Precision Instrument Makers and Repairers (5224)	435	427	(7)	(2%)
Electronics Engineers (2124)	380	399	19	5%
Air-conditioning and Refrigeration Engineers (5225)	347	378	32	9%
Electrical and Electronics Technicians (3112)	285	304	20	6.9%
Planning, Process and Production Technicians (3116)	268	276	8	3%
TV, Video and Audio Engineers (5244)	147	160	12	8%
Production Managers and Directors in Mining and Energy (1123)	150	145	(5)	(3%)
Metal Plate Workers, and Riveters (5214)	113	136	22	20%
Pipe Fitters (5216)	56	86	29	52%
Smiths and Forge Workers (5211)	43	50	7	15%
Moulders, Core Makers and Die Casters (5212)	50	44	(6)	(11%)

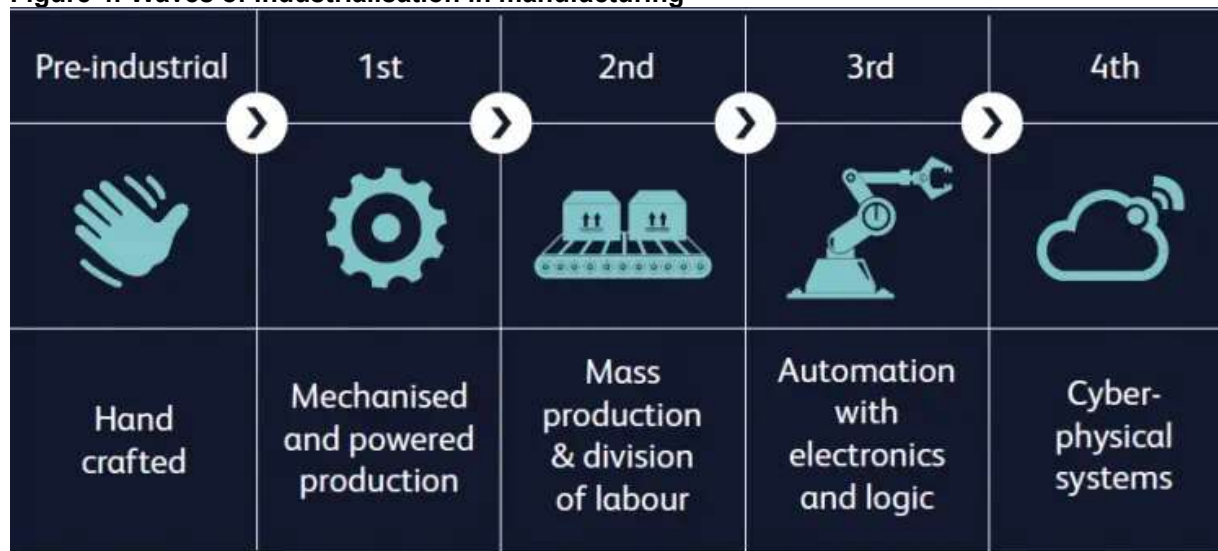
- There were 35,415 jobs within Stoke-on-Trent and Staffordshire's engineering and advanced manufacturing sector in 2022.
- The largest number of jobs have been recorded for production managers and directors in manufacturing (5,260); metal working production and maintenance fitters (4,566); electricians and electrical fitters (4,182), and engineering professionals not elsewhere classified (2,146).
- The largest increase in jobs between 2017 and 2022 has been recorded for pipefitters (+52%); metal plate workers and riveters (+20%); smiths and forge workers (+15%); and welding trades (+7%).

2.3.3 National sector trends

The future of the manufacturing sector is linked to a move from the third to the fourth industrial revolution— a move from robotics and investment to automated manufacturing processes to cyber physical systems as the more advanced aspects of the sector move further away from mass production. The fourth industrial revolution is expected to involve the use of sensors and a greater reliance on data to improve products, processes and supply chains which links to trends in the logistics sector.



Figure 4: Waves of industrialisation in manufacturing¹⁶



The move to a fourth industrial revolution is combined with a recent trend of 'reshoring' manufacturing activity back to the UK. Reshoring is an emerging trend which has been witnessed since the Covid-19 pandemic due to the dwindling cost effectiveness of overseas production and uncertainty of supply chains. Research from Lloyds bank illustrated 37% of manufacturing firms are planning to move processes back to the UK from overseas territories in Asia and Europe. In general, reshoring is most prevalent in sectors such as pharmaceuticals, healthcare and life sciences; transport and logistics; clothing, footwear and textiles; and automotive and motor vehicle parts, providing opportunities at all skills levels.

The following trends in future skills demand are anticipated across sub sectors present in the Stoke-on-Trent and Staffordshire economy:

- **Advanced materials** - Stoke-on-Trent and Staffordshire's historical ceramics cluster, supported by the Applied Material Research, Innovation and Commercialisation Company (AMRICC), means the area has an opportunity to develop a leading role in advanced materials manufacturing. The Material and Manufacturing Vision 2050¹⁷ presents a future vision for the sector in the UK with demand for skills expected to change with demand for physical and manual skills expected to decline by 30% whilst demand for technological and complex cognitive skills is expected to rise by 50%, including for high-level social and emotional skills as well as initiative taking and entrepreneurship. The 2050 vision for manufacturing also sets an ambition to grow 30,000 managers by 2040.
- **Automotive, transport and mobility** – The automotive manufacturing industry is undergoing rapid change driven by the increasing demand for electric vehicles. This will generate demand for jobs and skills both in electric vehicle production and maintenance both for the vehicles themselves and the associated infrastructure. For instance, the

¹⁶ Source: Make UK

¹⁷ Source UKRI and Innovate UK: [Innovate UK Materials and Manufacturing Vision 2050 \(ukri.org\)](https://www.ukri.org/innovate-uk/materials-and-manufacturing-vision-2050/)

Faraday Institute estimates¹⁸ that 21,000 of the current 182,000 vehicle technicians are electric vehicle qualified. Demand for the maintenance of electric vehicles will inevitably increase as the sale of new petrol and diesel vehicles will cease in 2030. The increase in electric vehicle sales is already increasing with 19.9% of newly registered cars in Q3, 2022 being either a plug-in hybrid, battery electric, range extended electric, or fuel cell electric cars. Four years earlier, the corresponding figure was 3.5%¹⁹. In addition, the Green Jobs Taskforce has also identified a need for skills the following skills although the scale of demand is unknown - charge point installers, operators, smart charging services, engineering, manufacturing, purchasing, material planning and logistics, vehicle scrappage and recycling, vehicle recovery operations, emergency services personnel, quality assurance and operations quality involved with batteries²⁰.

- **Rail engineering** – Stoke-on-Trent and Staffordshire's strategic position on the West Coast mainline, it's proximity to the West Midlands Freight Interchange and HS2 passing through the county provide the potential opportunities within the rail engineering sector. The National Skills Academy for Rail forecast growth of around 7,000 – 12,000 additional people per year up to 2030 (around 95,000 new people on average) with current modelling showing peak demand to be around 2025. The annual number of roles needed to fill capacity by 2025 is for occupations such as customer service assistants, drivers, maintenance operatives and engineers (all expected to require between 3,000-5,000 a year. Project Managers, Operations Managers and Engineers are all expected to generate demand for up to 2,000 jobs per year.
- **Smart systems** – The shift to the fourth industrial revolution and increased automation in all aspects of industry is leading to the growth of smart systems involving the use of advanced software, robotics and data analytics. The Green Skills taskforce report identified this shift will create demand for skills at Level Three and above within occupations such as Electricians (L4), electrical engineering (L3), Data analytics (L3-7), modellers and programmers (L4-8), electronic engineering (L3-8), control engineering (L3-8), cyber security (L4-8), integration of electric vehicle charging / microgeneration / domestic storage / demand side response, smart metering (L3-8).

2.3.4 CONSTRUCTION

The UK construction sector is a key driver of productivity and skills needs across the UK. It employs an estimated 3.05m people across Great Britain (4.9% of all employment). Employment in the sector is now higher than the previous peak in 2019 and has experienced growth of over 13% since 2015²¹. The UK construction sector accounted for £130 bn GVA in 2019²². The sector's output has increased by 56% since in 2010 a faster rate of growth compared to the economy overall (39%). The largest

¹⁸ Faraday Institution (2019), Electric Vehicle and Battery Safety Skills for Emergency Services, Vehicle Repair and Auto Retailers.

¹⁹ <https://researchbriefings.files.parliament.uk/documents/CBP-7480/CBP-7480.pdf>

²⁰ [Green Jobs Taskforce \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/101111/green-jobs-taskforce-report.pdf)

²¹ Source: Business Register and Employment Survey, ONS, June 2021.

²² Source: Regional Gross Value Added (balanced approach), ONS, 2019



proportion of new construction work in 2021 was driven by private housing (over £40,000m) which has steadily increased in value on an annual basis since 2012 until 2019 before dipping in 2020²³.

The importance of the UK construction sector is highlighted in the UK Government's Construction Sector Deal. The Deal recognises that the sector affects the life of every person in the UK given its role in providing domestic building services to delivering the country's largest infrastructure projects. The Sector Deal identifies the sector as being held back by a lack of productivity that is below levels recorded in the wider economy.

2.3.5 Staffordshire and Stoke-on-Trent's construction sector

The Construction sector in Staffordshire and Stoke-on-Trent employs an estimated 25,000 people, accounting for over 5% of total employment in the area. The sector contributed £2bn to the sub region's GVA, accounting for 8% of total GVA and experiencing growth of 22.1% over a five-year period, the second largest sector growth rate for the area²⁴. The Skills Advisory Panel (SAP) Priority Sector Evidence produced by SSLEP identifies several significant employers in the construction sector including the Kier Group, Amey, Taylor Wimpey, Seddon Construction, Homeserve and Balfour Beatty.

The Stoke-on-Trent and Staffordshire Skills for Growth Survey²⁵ identifies recent trends and future plans for growth, recruitment and training. The following key findings emerged from construction sector employers:

- **Future growth** - The majority of construction employers in Stoke-on-Trent and Staffordshire are planning to maintain their current business size (60%). This is below the levels recorded for the engineering and manufacturing sector and possibly linked to the large number of sole traders or micro businesses within the sector – 89% of employers have between 0-9 employees.
- **Recruitment challenges** - Most of the construction employers responding to the survey (58%) in the sector have recruited in the past 12 months with exactly half of these businesses experiencing recruitment difficulties. Over eight in ten (82%) of businesses believed the main reason for recruitment challenges was the lack of suitable candidates whereas a lack of interest from candidates in the role was quoted by just over a third of businesses (36%).
- **Skills gaps** – Almost all employers reported experiencing digital and green (96%) skills gaps, higher than the figures recorded in the engineering and manufacturing sector. Construction businesses were most likely to anticipate a future need for digital skills related to computer literacy, web design and Microsoft Office. Anticipated demand for green skills was identified for sustainability managers as well as energy managers and technicians.

²³ Source: Construction statistics, 2021, ONS

²⁴ <https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/gvaforlocalenterprisepartnerships/current>

²⁵ Source: Stoke-on-Trent and Staffordshire Skills Advisory Panel: Skills for Growth Survey. September 2022. Metro Dynamics. [SSLEP Skills Survey: Sector Spotlights \(stokestaffslep.org.uk\)](https://stokestaffslep.org.uk)



Data collected by Lightcast provides an indication of jobs by occupation in the construction sector workforce within Stoke-on-Trent and Staffordshire, as presented in Table 5 below. The following trends within the construction sector are found in Stoke-on-Trent and Staffordshire between 2017 and 2022:

Table 5: Construction jobs by occupation in Stoke-on-Trent and Staffordshire²⁶

Occupation	2017 Jobs	2022 Jobs	Change	% Change
Production Managers and Directors in Construction (1122)	2,140	2,168	28	1%
Elementary Construction Occupations (9120)	1,891	1,971	80	4%
Plumbers and Heating and Ventilating Engineers (5314)	1,774	1,881	107	6%
Carpenters and Joiners (5315)	1,774	1,594	(180)	(10%)
Construction Project Managers and Related Professionals (2436)	1,248	1,388	140	11%
Construction and Building Trades n.e.c. (5319)	1,364	1,359	(4)	(0%)
Construction Operatives n.e.c. (8149)	1,173	1,047	(127)	(11%)
Civil Engineers (2121)	794	822	28	3%
Painters and Decorators (5323)	1,305	808	(497)	(38%)
Chartered Surveyors (2434)	770	779	10	1%
Construction and Building Trades Supervisors (5330)	629	640	10	2%
Bricklayers and Masons (5312)	436	528	92	21%
Quantity Surveyors (2433)	533	516	(17)	(3%)
Scaffolders, Stagers and Riggers (8141)	391	514	123	32%
Glaziers, Window Fabricators and Fitters (5316)	638	505	(133)	(21%)
Plasterers (5321)	364	394	30	8%
Architects (2431)	270	301	31	11%
Roofers, Roof Tilers and Slaters (5313)	257	300	43	17%
Road Construction Operatives (8142)	215	281	65	30%
Architectural and Town Planning Technicians (3121)	253	273	20	8%
Steel Erectors (5311)	216	232	16	7%
Floorers and Wall Tilers (5322)	220	211	(9)	(4%)
Town Planning Officers (2432)	195	182	(13)	(7%)
Building and Civil Engineering Technicians (3114)	160	169	9	6%
Production Managers and Directors in Mining and Energy (1123)	150	145	(5)	(3%)
Rail Construction and Maintenance Operatives (8143)	182	137	(45)	(25%)
Chartered Architectural Technologists (2435)	29	34	6	19%

²⁶ Source: Lightcast



- There were 19,179 jobs within Stoke-on-Trent and Staffordshire's construction sector in 2022.
- The largest number of jobs have been recorded for production managers and directors with over 2,000 being recorded both in 2017 and 2021. Over 1,500 were also recorded for elementary construction occupations; plumbing & heating and ventilation engineers; and carpenters & joiners in 2022.
- The largest increase in jobs between 2017 and 2022 has been recorded for scaffolders, staggers and riggers (+32%) and road construction operatives (+30%) whereas noticeable decreases across Stoke-on-Trent and Staffordshire have been recorded for painters and decorators; rail construction and maintenance operatives; and glaziers, window fabricators and fitters.

2.3.6 National sector trends

The Construction Sector Deal identified key future trends in the construction industry including the adoption of digital techniques across all phases of the design and delivery of projects as well as the increased adoption of offsite manufacturing technologies will help to minimise the wastage and make construction more efficient by, for instance, enabling production to happen in parallel with site preparation.

The Construction Industry Training Board's (CITB) assessment of the UK construction skills needs between 2023-27 reports that construction sector output has remained strong in 2022 with estimated annual growth of 4% despite cost inflation driven by high energy bills and increasing wages because of labour shortages. CITB forecasts a slowing of growth in the construction sector as the UK economy is forecast to slow down in the short term. However, across the 2023-27 period CITB still forecasts a growth in the UK construction sector with 224,900 extra workers required to meet UK construction output, largely driven by the following sub sector:

- **Private Housing** – the projected annual average growth rate for private housing over the 2023-27 period, at 2.1%, is only slightly above that for the public housing sector at 1.1% as the sector is starting from a much stronger base. Demand for construction workers in Staffordshire is likely to be driven by the high level of anticipated housing growth with 86,772 new dwellings forecast for delivery between 2018 and 2038 across Stoke-on-Trent and Staffordshire²⁷, including the delivery of a new garden community at Meecebrook that could deliver 6,000 homes and associated community infrastructure.
- **Repair and maintenance** – projections for this sector over the next five years are weaker than new work, with an annual average growth rate of 0.9% compared with 1.9% for new work.

²⁷ Source: Staffordshire and Stoke-on-Trent Infrastructure Plan 2018-2038



Evidence developed by the CITB²⁸ highlights the challenge and opportunity of the shift to net zero for the construction industry and the associated demands for skilled labour. CITB estimates that an additional 350,000 full time equivalent workers will be needed by 2028 to deliver improvements to existing buildings that will reduce energy demand, the equivalent to an increase of 13% on the current workforce. The demand for additional labour will be generated by:

- Retrofitting existing buildings with at least some retrofit work being required on around 27 million residential and two million non-residential buildings to reduce emissions over the next 30 years.
- An expected tightening of regulation related to energy performance, insulation and energy systems in new building.
- A need to reduce embodied emissions from production of construction materials and processes.

CITB forecasts the shift towards net zero will drive demand for skills during construction as well as the pre and post construction phases. In particular, the CITB estimates that an additional 59,000 plumbers and HVAC workers will be required, primarily in the installation of heat pumps by 2028. The Government's Ten Point Plan for a Green Industrial Revolution²⁹ set out an ambition to install 600,000 heat pumps by 2028 that will drive demand for heat pump installers. The Heat Pump Association estimate the need for 35,000 installers (Levels 2-4) for domestic heat pump installation by 2028 to achieve this that will require skills in heat loss calculations; hydraulic balancing; flow temperature calculations and heating system sizing; F-Gas qualification for the installation of heat pumps that use HFC refrigerants; and Part P qualifications as heat pumps also tend to require 32-amp electrical supplies and so need connecting to the power supply³⁰.

CITB forecasts also identify the labour requirement from infrastructure projects, estimating 1.7% average annual growth in construction sector output to 2027. Growth nationally will be driven by major infrastructure project such as Hinkley Point C, offshore wind farms and HS2 which will also drive output and demand for employees in the construction sector across the West Midlands.

The delivery of HS2 will generate demand for construction skills in Stoke-on-Trent and Staffordshire given the route of HS2 Phase 2a passes directly through Staffordshire while Phase 1 of the HS2 route, between London and Birmingham, is located close to the southern end of the Local Enterprise Partnership area. A total of 8,800 people are already working on HS2 within the West Midlands³¹. Forecasts produced by HS2 Ltd estimate that a total of 1.675m people will be required to deliver HS2, with 384,700 of the roles being required in the West Midlands. These figures were produced before the scheme was scaled back and delayed but still give an indication of the types and relative size of roles required by the scheme. Table 6 below summarises the forecast labour by occupation required by HS2 in the West Midlands.

²⁸ Building Skills for Net Zero. CITB Industry Insights and Analysis, 2021.

²⁹ <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>

³⁰ Building Skills for Net Zero, CITB, 2021

³¹ <https://assets.hs2.org.uk/wp-content/uploads/2023/03/HS2ITWM-report-final.pdf>



Table 6: Forecast demand in construction for HS2 in the West Midlands, Phases 1, 2a and 2b³²

Construction occupation	West Midlands
Managerial and professional	70,100
Other construction process managers	20,300
Other construction professional and technical staff	13,900
Senior executives and business managers	19,000
Surveyors	6,600
Construction project managers	2,300
Civil engineers	3,000
Construction trade supervisors	3,700
Architects	1,400
Skilled trades	112,800
Wood trades and interior fit out	17,600
Electrical trades and installation	18,300
Plumbing and HVAC trades	13,400
Labourers	10,500
Building envelope specialists	7,900
Painters and decorators	6,400
Specialist building operators (nec)	4,700
Bricklayers	3,900
Plasterers	2,600
Plant mechanics/fitters	7,100
Roofers	3,700
Plant operatives	2,300
Glaziers	3,000
Floorers	1,600
Steel erectors/structural fabrication	3,000
Logistics	3,100
Civil engineering operatives (nec)	2,100
Scaffolders	2,000
Office-based staff	35,400
Non-construction prof/tech/IT/other	32,400
Non-construction operatives	3,000
All occupations	384,700

In summary, the demand for construction occupations in the West Midlands is expected to require:

- Over 112,000 skilled trade roles accounting for 29.3% of all demand labour across the region. The largest number of forecast demand for skilled trades is within electrical trades

³² Source: High Speed Two labour and skills demand and supply forecasting and analysis, HS2 Ltd, 2018.

and installation (18,300) followed by wood trades (17,600) and plumbing and HVAC trades (13,400).

- Demand for 70,100 managerial and professional occupations are forecast (18.2% of all forecast demand). An estimated 75.9% of this demand is for construction process managers; construction professional and technical staff; and senior executives and business managers. This highlights the demand for higher level occupations from the construction phase of HS2.
- Demand for a further 35,400 (9.2% of forecast demand) office-based staff is forecast.

2.3.7 LOGISTICS

The UK logistics industry employs an estimated 2.7 million people in the UK which equates to approximately 8.7% of total jobs in the UK. The logistics sector is one of the largest sectors in the UK economy with an annual turnover of £942.5 billion contributing £124 billion GVA per annum to the UK economy and representing 10% of the contribution to the UK non-financial business economy³³.

Frontier Economics, on behalf of Logistics UK³⁴, estimates that employment in logistics has nearly doubled since 2012, outpacing the rest of the UK economy. Logistics growth pre-dates the COVID-19 pandemic, but the last two years have seen a particular acceleration in logistics employment: latest figures show that between 2019 and 2021, the number of people employed in logistics has grown by 190,000 (+18%). This has been driven by several factors such as shifts in consumer behaviour and the rising popularity of e-commerce which was accelerated by the COVID-19 pandemic.

2.3.8 Staffordshire and Stoke-on-Trent's logistics sector

Stoke-on-Trent and Staffordshire have a central location with strong connectivity, access to land and premises to support growth. This is evidenced by the 14,000 jobs increase since 2011, the 21,700 available roles now and the £1.3bn in GVA per annum the sector provides to the area. With GVA growing by £444m in total since 2011, becoming 5.5% of the total area GVA.

The prominence of the sector within Stoke-on-Trent and Staffordshire can also be shown by the number of major couriers who have located within the region including DHL, Amazon, Fedex, Pets at Home and Royal Mail as well as several freight, warehousing and haulage businesses including Browns Distribution, Hawkins Logistics and Wincanton. It also supports the significant manufacturing and engineering sector across the region.

The advanced logistics sector in Stoke-on-Trent and Staffordshire will be bolstered by the planned delivery of several major projects that will support growth in the sector including the **West Midlands Strategic Rail Freight Interchange** that is a 300-hectare development located to the south of Penkridge, adjacent to the West Coast Mainline and M6 Junction 12. It will provide the largest rail-served logistics development in the UK that will generate up to 8,000,000 square foot of logistics space and a forecast 8,500 new jobs over the next 10 years.

³³ [Microsoft PowerPoint - E&S Strategy - Full Evidence Base - Latest to use - SSLEP \(stokestaffslep.org.uk\)](#)

³⁴ The impact of logistics sites in the UK. A report prepared for Amazon and supported by Logistics UK, June 2022. Frontier Economics.



The Stoke-on-Trent and Staffordshire Skills for Growth Survey³⁵ identifies recent trends and future plans for growth, recruitment and training. The following key findings emerged from logistics sector employers:

- **Future growth** – Almost half (49%) of logistics businesses in Stoke-on-Trent and Staffordshire plan to grow their businesses, driven by the desire to increase revenue and profitability and provide better customer service.
- **Recruitment challenges** - Most of the logistics employers responding to the survey (57%) in the sector have recruited in the past 12 months with exactly half of these businesses experiencing recruitment difficulties. A lack of suitable candidates for roles was identified as much less of a problem within logistics compared to construction and manufacturing. A general lack of interest from candidates in roles advertised was quoted by more than half of employers (46%), a much higher proportion than the construction and manufacturing sectors.
- **Skills gaps** – Almost all employers reported experiencing digital (93%) and green (98%) skills gaps. The most commonly forecast need for green skills focuses on transport managers, engineers, technicians and sustainability managers.

Data collected by Lightcast provides an indication of jobs by occupation within the logistics sector in Stoke-on-Trent and Staffordshire, as presented in Table 7 below. The following trends are found in Stoke-on-Trent and Staffordshire between 2017 and 2022:

Table 7 - logistics jobs by occupation in Stoke-on-Trent and Staffordshire³⁶

Occupation	2017 Jobs	2022 Jobs	Change	% Change
Elementary Storage Occupations (9260)	17,557	18,084	527	3%
Large Goods Vehicle Drivers (8211)	8,382	10,814	2,431	29%
Van Drivers (8212)	4,962	5,382	420	8%
Fork-lift Truck Drivers (8222)	3,805	3,758	(48)	(1%)
Managers and Directors in Storage and Warehousing (1162)	2,653	2,867	213	8%
Postal Workers, Mail Sorters, Messengers and Couriers (9211)	1,858	2,277	419	23%
Managers and Directors in Transport and Distribution (1161)	1,441	1,845	404	28%
Transport and Distribution Clerks and Assistants (4134)	1,294	1,362	68	5%
Purchasing Managers and Directors (1133)	903	862	(40)	(4%)
Other Drivers and Transport Operatives n.e.c. (8239)	372	426	54	15%
Rail Transport Operatives (8234)	136	120	(16)	(12%)
Air Transport Operatives (8233)	45	65	19	42%
Importers and Exporters (3536)	62	61	(1)	(2%)

³⁵ Source: Stoke-on-Trent and Staffordshire Skills Advisory Panel: Skills for Growth Survey. September 2022. Metro Dynamics. [SSLEP Skills Survey: Sector Spotlights \(stokestaffslep.org.uk\)](https://stokestaffslep.org.uk)

³⁶ Source: Lightcast



- There were 47,921 jobs within the logistics sector in 2022. The largest number of jobs was recorded in elementary storage occupations, almost double the number within the second most sought after occupation – large goods vehicle drivers (10,514). In addition, over 5,300 jobs for van drivers were recorded during 2022.
- The largest increase in jobs between 2017 and 2022 has been recorded for air transport operatives although the total number of job postings is very small. Over 20% growth in jobs has been recorded for large goods vehicle drivers (+29%); managers and directors in transport distribution (+28%); and postal workers, mail sorters and couriers (+23%), all of which have over 1,800 jobs in 2022.

2.3.9 National sector trends

The UK logistics market is projected to grow at a compounded annual growth rate of 6.3% through to 2027³⁷ with growth driven by increases in online sales and investment in the sector's infrastructure. The growth of online retail and the desire to store goods closer to end markets to avoid supply chain disruption experienced during the COVID-19 pandemic mean the growth in the logistics and distribution industry is set to continue.

The logistics industry is facing challenges in terms of addressing immediate labour shortages in established occupations whilst also being on the cusp of transformation by increased digitisation and automation. For instance:

- The sector has struggled with labour shortages driven by the continued e-commerce boom and reduction in supply of EU workers have left a labour shortage in warehouse operatives. Labour shortages were previously restricted to the Christmas period and the Golden Triangle in the East Midlands but have now spread throughout the UK³⁸.
- Shortages across higher skilled job roles such as transport managers and mechanics with an ageing workforce and problems recruiting and retaining younger staff contribute to the situation. Just over 80% of transport managers responding to the Fleet Transport Association's manager's survey in 2019 were over the age of 45 while a noticeable drop in the number of transport managers was also recorded³⁹. Ongoing challenges with recruiting HGV drivers. The recruitment of drivers was a barrier to 53% of companies within the logistics sector in 2021⁴⁰. The Road Haulage Association has developed a Twelve Point Plan to address the shortage of drivers. It estimates a shortage of between 70,000-100,000 which has increased from a figure of 60,000 due to long term challenges such as an aging workforce and short-term shocks such as Brexit leading to overseas drivers returning home. There was a noticeable downturn in the number of people working as HGV drivers during COVID-19 with Logistics UK reporting a fall in employment of 49,000 HGV drivers in Q4 of 2021 to 265,000 making the workforce

³⁷ United Kingdom Freight and Logistics Market: Growth, Trends, and Forecast (2021 - 2026)

³⁸ <https://logisticsvoices.co.uk/2022/03/warehouse-operatives-crisis-the-uk-locations-with-the-biggest-labour-shortages-revealed/>

³⁹ Fleet Transport Association Transport Managers Survey, 2019

⁴⁰ The logistics Report Summary. Logistics UK, 2021



15.6% smaller than it was before the pandemic. However, during the same period, 27,144 HGV vocational tests were taken, representing a 53.5% increase from 2019⁴¹. The demand for HGV drivers is anticipated to persist as substantial parts of haulage jobs cannot be automated until autonomous vehicles become commonplace⁴².

The future of the logistics sector is dominated by trends such as the decarbonisation of transport, the increase in e-commerce driving innovation in last mile delivery, reduced energy consumption and the emergence of new technologies⁴³. Warehouses are expected to increasingly shift to autonomous or semi-autonomous operations driven by AI, machine learning, robotics and autonomous vehicles including drones⁴⁴. These trends will lead to changing demands for skills and labour with the McKinsey Global Institute Survey⁴⁵ finding:

- 50% of current supply chain activity will be automated by 2030 which will fundamentally change the nature of the workforce skills required.
- 87% of global leaders think their company are not ready to address digital skills gaps required in supply chain management.
- 45% of the global supply chain workforce has skills sets that are too traditional to meet their expectations.

Technology is changing the logistics and supply chain industry. For instance, applications of technology such as predictive analytics to identify future trends such as demand forecasts and demand for stock or goods; robotics and automation in warehouses to increase efficiency and reduce labour costs; and the Internet of Things (IoT) devices to monitor vehicle movements and routes to optimize deliveries and to assess stock levels. This will inevitably lead to a change in demand for skills and job roles with the World Economic Forum identifying supply chain and logistics specialists as one of the top ten emerging job roles⁴⁶ that are expected to demand roles such as data engineers, data scientists, supply chain managers, order managers, automation architects and transport management system operators.

In summary, the logistics industry faces several skills and labour market challenges. The demand for vacancies within the industry is driven by demand for storage occupations and drivers. The industry is widely forecast to change through increasing automation. However, it should be noted that investment in warehouse automation is expected to grow the slowest in logistics, at about 3-5% a year to 2025, compared to retail and automotive (6-8% a year) and pharmaceutical (8-10%) a year⁴⁷. This may in part explain the difference between the roles required via the automation of the warehousing and logistics compared to the current demand for vacancies seen across the sector in Stoke-on-Trent and Staffordshire using Lightcast data.

⁴¹ The logistics Report Summary. Logistics UK, 2021

⁴² Transforming logistics. A sector fit for the future. Deloitte, 2022.

⁴³ The future of workforce and talent in the logistics and supply chain industry. Adecco.

⁴⁴ The Future of Logistics, KPMG, March 2021

⁴⁵ Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wages," McKinsey Global Institute, 2017

⁴⁶ The Future of Jobs Report. World Economic Forum, 2020.

⁴⁷ [Logistics automation: Big opportunity, bigger uncertainty | McKinsey](#)



2.4 Data-led analysis key findings

Analysis of Lightcast data has been facilitated by Staffordshire County Council who have provided access to the data through their licence. The Lightcast data analysed was pre-sifted and the consultant team were provided with sub-sets of data whereby occupations were aligned to sectors. Data has been extracted between 2017 and 2022 to provide a sufficient period to support the analysis taking into consideration the impacts on the labour market of the coronavirus pandemic. The original data analysed is shown below by sector illustrating the types of occupations within each sector that formed the basis of the analysis. In addition, this was cross-referenced with jobs vacancy data to understand the level of current latent demand for these occupations within the existing labour market.

Figure 5 – Advanced manufacturing and engineering jobs by occupation

Based on key assumptions outlined in Section 2.2 a long list of occupations was identified and is outlined in Table 8 below.

Table 8 – List of occupations identified from analysis of Lightcast data

Type of Occupation	Advanced Manufacturing and Engineering	Construction	Advanced Logistics ⁴⁸
High Value High Growth	<ul style="list-style-type: none"> Design and Development Engineers Electrical and Electronics Technicians Telecommunications Engineers Electricians and Electrical Fitters 	<ul style="list-style-type: none"> Architects Construction project managers and related professionals Chartered Architectural Technologists Scaffolders, Stagers and Riggers Bricklayers and Masons 	<ul style="list-style-type: none"> Managers and Directors in Transport and Distribution
High Value High Volume	<ul style="list-style-type: none"> Engineering Technicians Mechanical Engineers 	<ul style="list-style-type: none"> Construction project managers and related professionals Production Managers and Directors in Construction Chartered Surveyors Civil Engineers 	<ul style="list-style-type: none"> Elementary Storage Occupations Large Goods Vehicle Drivers Fork-lift Truck Drivers

In addition to those outlined above the following occupations have been added to the list at the request of Staffordshire County Council.

- Managers and Directors in Storage and Warehousing (1162) (high volume and medium growth / high vacancies).
- Transport and Distribution Clerks and Assistants (high volume and medium growth / high vacancies).

⁴⁸ It should be noted that within logistics there are no high value high volume occupations based on the criteria selected and therefore occupations have been included here where the gross median hourly wage is lower than the average for Stoke-on-Trent and Staffordshire.

- Forklift truck drivers (8222) (high volume and technical skill / high vacancies).

2.5 Long-list of occupations

Based on a combination of national level qualitative research and local level quantitative research the following long list of occupations was identified across the priority growth sectors. This formed the basis of the occupations by priority growth sector which were taken forward to Stage 2.

Table 9 – Stage 1 – Long list of occupations

Engineering and Advanced Manufacturing	Construction	Advanced Logistics
<ul style="list-style-type: none"> • Telecommunications Engineers. • Design and Development Engineers. • Electrical and Electronics Engineers. • Electricians and Electrical Fitters. • Engineering Technicians. • Mechanical Engineers. • Rail engineers/ maintenance • Vehicle Technicians – EV qualified. 	<ul style="list-style-type: none"> • Architects. • Construction Project Managers and Related Professionals. • Chartered Architectural Technologists. • Scaffolders, Stagers and Riggers. • Bricklayers and Masons. • Production Managers and Directors in Construction. • Civil Engineers. • Chartered Surveyors. • Plumbing and heating ventilation and air conditioning (HVAC) trades and engineers. • Heat pump engineers. 	<ul style="list-style-type: none"> • Managers and Directors in Transport and Distribution. • Large Goods Vehicles Drivers. • Van Drivers. • Elementary Storage Occupations. • Managers and Directors in Storage and Warehousing. • Transport and Distribution Clerks and Assistants. • Forklift truck drivers. • Data analysts/ data scientists/ software engineers.

3 Stage 2

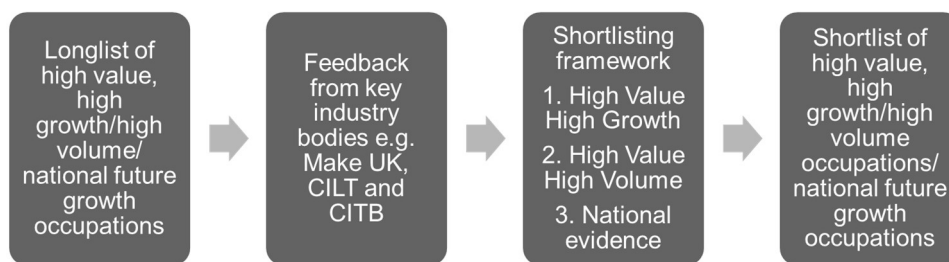
3.1 Introduction

This section sets out the approach taken during Stage 2 of the study and outlines the methodology implemented, the key findings from consultations with industry bodies and the ultimate shortlist of occupations across the priority growth sectors. The purpose of this stage was to sift down the longlist identified within Stage 1, to the top three occupations which form the basis of the shortlist which were taken forward to Stage 3 of the study. This section concludes with the identification of the shortlist of occupations across each of the priority growth sectors.

3.2 Methodology

The overarching methodology implemented as part of Stage 2 is identified in Figure 6 and discussed in further detail below.

Figure 6 – Stage 2 methodology



1. The longlist of occupations was identified from Stage 1 and taken forward to Stage 2.
2. A series of online consultations were conducted with industry bodies across the priority growth sectors. This included Make UK (Advanced Manufacturing and Engineering), the Chartered Institute for Logistics and Transport (CILT) (Advanced Logistics) and the Construction Industry Training Board (CITB) (Construction). As part of these consultations, feedback was sought on the long list of occupations provided by asking the following questions:
 - Are there any occupations within the long list which shouldn't be?
 - Are there any occupations which aren't in the long list which should be?
 - Of the long list of occupations which are the highest priority areas within the sector and specifically within Stoke-on-Trent and Staffordshire? ⁴⁹
3. Following receipt of feedback, a shortlisting framework was created to ensure all three categories included within Stage 1 are represented in the shortlist e.g., High Value High Growth, High Value High Volume and any growth occupations identified in each of the priority growth sectors from a

⁴⁹ The feedback provided was mostly in relation to sector findings due to lack of area specific knowledge.

review of national evidence. Using this framework and evidence collated from the consultations with industry groups, 3 occupations were identified.

3.3 Key findings from consultations

The key findings from consultations completed with industry bodies are outlined within the table below. This identifies the key occupations where there is high demand in the short, medium and longer term as well as some occupations they identified needed to be prioritised within the shortlist.

Table 10 – Key findings from consultations

	Construction	Advanced manufacturing and engineering	Advanced logistics	Other key comments
CITB	<p>Long list should include:</p> <ul style="list-style-type: none"> • Roofers. • Bricklayers. • Carpenters. • Quantity surveyors. • Retrofitters (Level 4). <p>Priorities based on the long list:</p> <ul style="list-style-type: none"> • Architects. • Construction Project Managers. • Production Managers / Directors. 			<ul style="list-style-type: none"> • Question the focus on the study on higher level skills / occupations only when such significant shortages are recorded at in the trades.
CILT			<p>Long list should include:</p> <ul style="list-style-type: none"> • Fitters, mechanics and technicians. • Any form of drivers- Forklift drivers, van drivers, HGV drivers. • Clerks and assistants – shortage at the bottom for people to come into the sector and grow. • Mechanics side -EV technology – traditional fitters, mechanics and technicians are normal car trained however reluctant to retrain for EV. 	<ul style="list-style-type: none"> • During height of the driver shortage wages increased for drivers and fitters mechanics and technicians have HGV licences and so went over to be drivers. Balance likely to return when shortage of fitters mechanics and technicians results in higher wages. People rather than skills issue. • How do you sell logistics as an attractive sector to start your career in? Apprenticeships not the only route. • Soft skills for all professions. • Not always formal education route. • Level 3 supply chain practitioners are the managers and directors of



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	Construction	Advanced manufacturing and engineering	Advanced logistics	Other key comments
			<p>Priorities based on the long list:</p> <ul style="list-style-type: none"> - Fitters mechanics and technicians. - Drivers. - Level 3 supply chain practitioners. - Managers and directors. 	the future – it is difficult to recruit staff at this level without that experience.
Make UK		<ul style="list-style-type: none"> • Agree broadly with the long list of occupations identified. • National evidence identifies the need for data analysis, software engineering, digital skills, cyber security over the next 5-10 years. • National evidence points to transition in demand for low and high value technical skills due to digital and green transition. • Also demand for leadership/management skills, project managers, team leaders etc. People with good soft skills and emotional intelligence. <p>Key priorities:</p> <ul style="list-style-type: none"> • High value high growth – design and development engineers (potential for growth), electricians and electrical fitters (right now). • High value high volume – engineering technicians – technical skills in this occupation have a wider application in terms 		<ul style="list-style-type: none"> • Make UK have been exploring this issue but less through the lens of specific occupations and more around skill sets. • Highlighted skills gap more specific to green and digital transition.



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	Construction	Advanced manufacturing and engineering	Advanced logistics	Other key comments
		of how they will evolve to support digital and green transition. • National evidence – Vehicle technicians -EV qualified.		



3.4 Short list of occupations

Following completion of the consultations with the industry groups, and use of the framework identified within Section 3.2 above, the following occupations outlined within Table 11 were included within the shortlist of occupations taken forward to Stage 3.

Table 11 – Stage 2 output - Shortlist of occupations

Category	Advanced Manufacturing and Engineering	Advanced logistics	Construction
1. High Value High Growth	Design and Development Engineers.	Managers and Directors in Transport and Distribution / Managers and Directors in Storage and Warehousing.	Architects.
2. High Value High Volume	Engineering Technicians.	Transport and Distribution Clerks and Assistants.	Construction Project Managers and Related Professionals.
3. National evidence	Vehicle technicians – EV qualified.	Drivers (Forklift/HGV). Data analysis/software engineers.	Retrofitters (L4). (Heat Pump Engineers).

5 Stages 3 and 4

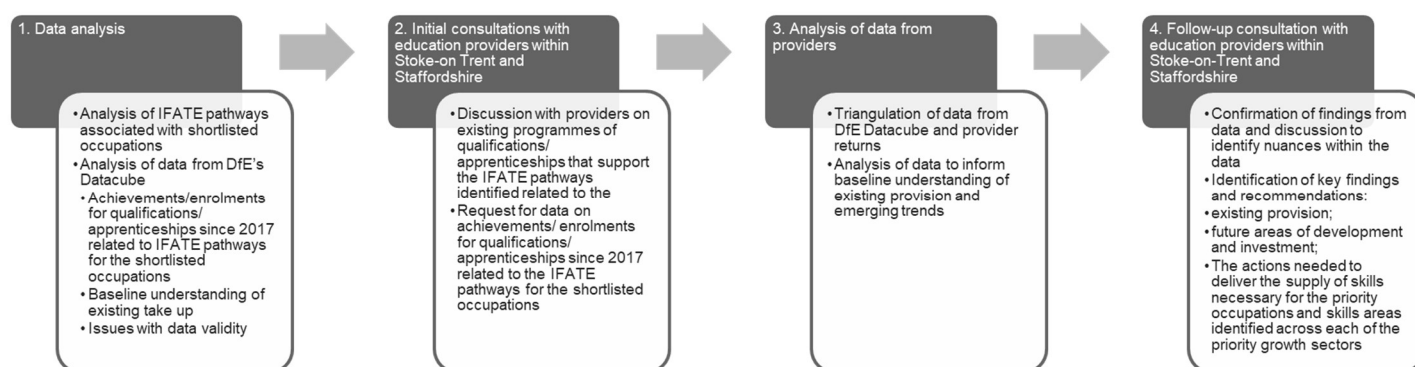
5.1 Introduction

This section sets out the approach taken during Stages 3 and 4 of the study. The purpose of this part of the study was to explore the learning provision regards to qualifications and apprenticeships related to the shortlisted occupations identified with Stage 2. These stages were informed by data analysis of the DfE's Datacube, data analysis provided by education providers in Stoke-on-Trent and Staffordshire, and detailed consultations with these same providers. This section outlines the methodology implemented, the findings of research conducted of IFATE pathways related to the shortlisted occupations and a baseline understanding of existing provision and trends in provision of these education pathways. This section then concludes with sector-specific findings related to the provision of qualifications and apprenticeships to support the shortlisted occupations, as well as cross-sector findings. These findings have then been used to support a series of recommendations which are outlined in Section 0.

5.2 Methodology

The methodology for Stages 3 and 4 is outlined within Figure 7 and described in further detail below.

Figure 7 – Stage 3 and 4 methodology



1. Data analysis – Initial data analysis was conducted on the following elements:

- Analysis of IFATE pathways associated with the shortlisted occupations was produced to understand potential qualifications/ apprenticeship routes.
- To understand the existing provision of qualifications/ apprenticeships provided by education providers within Stoke-on-Trent and Staffordshire related to these IFATE pathways analysis of the DfE's data cube was produced. Access to this data was limited and we were reliant on Staffordshire County Council to provide sub-sets of the data to support the analysis.

2. **Initial consultations** – Initial consultations were conducted with education providers within Stoke-on-Trent and Staffordshire to discuss their existing delivery of qualifications and apprenticeships aligned to the IFATE pathways identified. In addition, the extract of data from the DfE's Datacube was also discussed and verified. Throughout these discussions providers identified that the Datacube data did not provide an accurate representation of the current provision. Therefore, proformas were developed by the consultant team for each of the providers used to identify qualifications and apprenticeships provided to support each shortlisted occupation, alongside information on level of the qualification, capacity, trend in uptake alongside other nuances which were important to understand.
3. **Analysis of data from education providers** – Following receipt of the completed proformas these were analysed and triangulated against the data extracts from the DfE's Datacube. This helped to provide a baseline understanding of provision of qualifications/apprenticeships across each of the shortlisted occupations within the priority growth sectors, and helped provide an outline of any other nuances within the data. For example, in some instances demand looked low however detail provided by the providers showed that in some instances that student numbers were being capped due to the availability of sufficiently qualified tutors. As part of this process questions were also outlined to be asked in the follow-up consultations with providers.
4. **Follow-up consultations with education providers within Stoke-on-Trent and Staffordshire** – During the follow-up consultations with providers the following was discussed:
 - The key trends from the provider including a discussion around nuances within the data and clarification of queries identified during the collation of the data.
 - Confirmation of existing provision and any future areas of development and investment.
 - Identification of key findings related to gaps in learning provision, capital and physical resource, the development of existing provision to meet employer needs, the need for new provision and any issues with learner engagement, interest and participation.
 - The actions needed to deliver the supply of skills necessary for the priority occupations and skills areas identified across each of the priority growth sectors.

Stages 3 and 4 concluded with key findings across each of the priority growth sectors.

5.3 Analysis of IFATE pathways

Following confirmation of the shortlisted occupations in Stage 2, we researched the relevant IFATE pathways which would support the skills and experience required for the shortlisted occupations across the priority growth sectors. Whilst it is acknowledged that there are a range of different pathways that individuals could take which would provide a route into these occupations, budget and programme constraints have prevented these from all being explored. Instead, analysis of the IFATE occupational maps⁵⁰ was conducted to identify the key routes people can take to lead to the shortlisted occupations. These pathways are shown below in Table 12 underneath each of the shortlisted occupations and were confirmed with SAP members.

⁵⁰ [Occupational maps / Institute for Apprenticeships and Technical Education](#)



Table 12 – IFATE pathways and shortlisted occupations

Occupation Type	Advanced Manufacturing and Engineering	Advanced Logistics	Construction
High Value High Growth	Design and Development Engineers IFATE pathways: <ul style="list-style-type: none"> - Postgraduate engineer (Level 7) - Produce Design and Development Engineer (Level 6) - Embedded electronic systems design and development engineer 	Managers and Directors in Transport/ Distribution Managers and Directors in Storage/ Warehousing IFATE pathways: <ul style="list-style-type: none"> - Supply chain leadership professional (degree) - Express delivery manager (degree) - Transport and warehouse operations supervisor 	Architects IFATE pathways: Architect (integrated Degree) Level 8
High Value High Volume	Engineering Technicians IFATE pathways: <ul style="list-style-type: none"> - Engineering Manufacturing Technician Level 4 	Transport and Distribution Clerks and Assistants IFATE pathways: <ul style="list-style-type: none"> - Supply chain practitioner (Fast Moving Consumer Goods) - Transport and warehouse operations supervisor - Supply chain operator 	Construction Project Managers and Related Professionals IFATE pathways: <ul style="list-style-type: none"> - Construction site management (degree) - Design and construction management (degree) - Construction site supervisor (Apprenticeship)
National Evidence	Vehicle Technicians – EV qualified IFATE pathways: <ul style="list-style-type: none"> - Motor vehicle service and maintenance technician (light vehicle) - Vehicle damage mechanical electrical and trim (MET) technician - Maintenance and operations engineering technician (Level 3 Apprenticeship) - Electrical electronic product service and installation engineer (Level 3 apprenticeship) 	Drivers (Forklift/HGV) IFATE pathways: Large goods vehicle driver C+E Data analysts/ Data scientists/ Software Engineers IFATE pathways: Data scientist (integrated degree) level 6 Data analyst level 4 Digital and technology solutions professional (integrated degree) Artificial Intelligence (AI) data specialist (Level 7 non-degree qualifications)	Retrofitters (Level 4 Heat Pump Engineers) IFATE pathways: <ul style="list-style-type: none"> - Refrigeration air conditioning and heat pump engineering technician - Low carbon heating technician - Plumbing and domestic heating technician (Level 3 apprenticeships)

5.4 Sector specific findings

The previous section demonstrates the complexity of existing provision and the level of demand across providers. The following sections summarises the key findings identified across each of the sectors drawing on examples outlined within the consultations.

5.4.1 ENGINEERING AND ADVANCED MANUFACTURING

The following trends and feedback have been identified for engineering and advanced manufacturing from the data and consultations:

- **A mixed picture across providers with some opportunities to build on growing demand**
 - The profile and demand for learning across the sector varies by provider. For instance, some providers have identified large and growing demand for qualifications such as L2/3 Engineering Diplomas and extended diplomas (e.g., South Staffs College and NSCG) whereas demand for the same provision at other providers is lower as other providers have not experienced growing demand. Recommendations for additional provision will therefore need to be targeted towards specific institutions to reflect the variety of feedback received during consultations. Examples of qualifications/apprenticeships where high demand was identified by specific providers and where there are opportunities to increase provision include:
 - Apprentice Standard 167 Engineering Technician Level 3 - Advanced Manufacturing Engineering.
 - Apprentice Standard 167 Engineering Technician Level 3 - Non BTEC.
 - BTEC HNC Engineering.
 - BTEC Level 3 Certificate in Advanced Manufacturing Engineering (Development Technical Knowledge).
 - BTEC Level 3 Extended Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge).
 - Level 3 BTEC Diploma in Advanced Manufacturing Engineering (Development Technical Knowledge).
 - Level 2 Diploma in Engineering.
 - Level 2 First Extended Certificate in Engineering.
 - Level 3 Extended Diploma in Engineering.
 - Level 3 National Foundation Diploma in Engineering.
 - Level 3 Engineering Technician.

- Award in Electric/Hybrid Vehicle Routine Maintenance Activities.
- Award in Electric/Hybrid Vehicle System Repair and Replacement.
- Entry Level Certificate to Automotive Maintenance and repair.
- Diploma in Transport Maintenance.
- Level 3 Diploma in Light Vehicle Maintenance & Repair Principles.
- Level 3 Motor Vehicle Service & Maintenance Technician.
- Level 1 Diploma in Transport Maintenance.

Further specifics on the providers where this is evident is provided in the tables above.

- **The availability of tutors is restricting the ability to meet demand for some engineering and advanced manufacturing related provision** - A key finding across many of the providers was that the uptake in relevant qualifications/ apprenticeships in support of the shortlisted occupations is often limited by the availability of qualified tutors. There is a limited supply of qualified tutors in these occupations mainly due to failure to attract them into the education sector due to the relative high wages they can attract within their respective industries. Consequently, providers are in some instances having to restrict course numbers, which in turn limits the supply of skilled labour in these occupations. This was identified as an issue by all providers engaged in this study across a wide variety of delivery. Qualifications/apprenticeships in high demand and restricted by the availability of tutors include:
 - Diploma in Engineering – Levels 1 and 2.
 - Advanced Technical Diploma – Level 3.
 - Higher National Certificates in General Engineering – L4.
 - Higher National Certificates in Electrical and Electronic Engineering – L4.
 - Engineering Manufacturing Technician: Engineering – L3 Apprenticeship.
 - Engineering Manufacturing Technician: Manufacturing – L3 and L4 Apprenticeship.
 - Engineering Manufacturing Technician: Installation Electrician Apprenticeship – Level 3.
 - Automation and Control Engineering Technician – L4 Apprenticeship.
 - Certificate in Light Vehicle Maintenance and Repair Principles.
 - Diploma in Light Vehicle Maintenance and Repair Principles.

Further specifics on the providers where this is evident is provided in the tables above.

The following challenges were highlighted across providers in relation to the delivery of engineering and advanced manufacturing related provision:



- **Large, high-profile employers are struggling to fill large volumes of engineering apprenticeships** – Several providers identified how they are struggling to fill large volumes of apprenticeships related to engineering and advanced manufacturing occupations. For instance, one provider identified an example of a major engineering and advanced manufacturing centre in Burnaston where there are 300 apprenticeships available, but which have proved difficult to fill. Similarly, another provider identified that some apprenticeships within Stafford had been advertised for over 9 months with low numbers of applications. This demonstrates the need for further demand-side interventions to help stimulate demand for careers in engineering and advanced manufacturing from prospective students.
- **A greater demand for flexibility and modular provision from employers** - Providers identified the importance of delivering more flexible and modular apprenticeships to match the skills demanded from employers now and in the future. Providers identified that qualifications are not the most effective means of providing employers with the skills they require. For instance, one provider stressed that some apprenticeship frameworks are teaching skills that are largely redundant in industry but are still required to meet the needs of the framework. However, they identified there would be significant value in being able to mix or pick and choose skills and deliver bolt on Level 1 or 2 of technical skills required by specific employers. Some examples identified by providers included a company which required engineering skills but also chemical engineering skills, and another company where they required manufacturing skills but also mechatronics. Enabling a more flexible and modular approach in the delivery of qualifications and apprenticeships will help to better align students' skillsets with the requirements of businesses within the sector. Within this, the role that micro-credentials could play in enabling this flexibility for employers, apprentices and trainees should be a priority area to explore.
- **Balance between training for current and future demand** - Providers identified the challenge of providing the right balance of skills and training that addresses both current and future demand from industry. This was raised in the context of vehicle maintenance training which is predominantly focused on the repair of combustion engines whilst the industry and market is increasingly moving towards hybrid and electric vehicles. Limited specific electric vehicle provision exists in Stoke-on-Trent and Staffordshire and anecdotal feedback suggests update has been limited but is expected to increase in the longer term.
- **Continued and increased capital and revenue investment required to keep pace with technological change** – Links to the above point, providers highlighted the need to keep pace with industry trends through on-going investment in equipment and staff training related to technologies such as robotics and AI across the engineering and manufacturing sector and Driver Assistance Systems in the automotive industry. This reinforces the need for continued capital and revenue funding so that providers can keep up with the pace of technological change and the impact this is having on skill requirements within engineering and advanced manufacturing. The unprecedented speed of change is therefore a challenge in continuing to provide training that is industry relevant.

5.4.2 CONSTRUCTION

The following trends and feedback have been identified for the construction sector from the data collected and consultations with providers:

- **A mixed picture across providers with some opportunities to build on growing demand** - Similar to engineering and advanced manufacturing there is a mixed picture of provision across providers for construction. Anecdotally all providers identified that there has been strong and consistent demand for Level 2 technical construction skills with less demand for higher level qualifications. Anecdotally, providers identified strong demand for architects from locally based firms which is supported by over 300 jobs for Architects in 2022, an increase of 11% from 2017⁵¹. However, demand for architectural qualifications outside of traditional academic focused routes was mixed. Some providers identified increasing demand for higher technical qualifications such as architectural technology whereas others such as construction design and build technical apprenticeships having spare capacity with low demand. There are opportunities to raise awareness and alter perceptions of prospective students, teachers and parents about routes into construction related careers such as architecture to highlight the opportunities and pathways available via routes other than A Levels.
- Specific qualifications/ apprenticeships where high demand has been identified by providers and where there are opportunities to deliver further provision include:
 - Diploma in carpentry and joinery – L1 and L2.
 - Plumbing and Domestic Heating Technician - (Apprenticeship Standard 303).
 - Engineering Manufacturing Tech - Installation Electrician: (Apprenticeship Standard 152).
 - Higher national Certificate in Construction – L4.
 - Higher Technical Qualification - Architectural Technology (Higher Education Programme).
 - Construction site supervisor – L4.
- **Provision still focused on more traditional construction skills whilst growth is often hampered by tutor shortages** - There is limited provision related to emerging occupations related to renewable technologies such as heat pump engineers in Stoke-on-Trent and Staffordshire. Despite this, evidence in the Ten Point Plan for a Green Industrial Revolution⁵² setting out an ambition to install 600,000 heat pumps by 2028 requiring 35,000 installers at Levels 2-4. There is, however, strong demand for related provision such as Plumbing and Electrical Installation that could be expanded or adjusted if recruitment

⁵¹ Source: Lightcast

⁵² <https://www.gov.uk/government/publications/the-ten-point-plan-for-a-green-industrial-revolution>



challenges were overcome. There is opportunity to expand provision of qualifications/ apprenticeships due to high demand subject to resolving teaching constraints in:

- Diploma in carpentry and joinery – L1 and L2.
- Diploma in Electrical installation (L2).
- Advanced technical diploma – electrical installation (L3).
- Diploma in plumbing studies (L2).
- Advanced technical diploma – plumbing (L3).
- Level 1 Diploma Electrical.
- Level 2 Diploma in Electrical.
- Level 3 Advanced Technical Diploma in Electrical.

5.4.3 ADVANCED LOGISTICS

The following trends and feedback have been identified for the advanced logistics roles from the data collected and consultations with providers:

- **Limited provision is available related to the advanced logistics sector** – Despite the size and importance of the logistics sector, limited relevant provision has been identified for the priority roles that are the focus of this study. A number of reasons were identified for this trend such as the sector being renowned for having a high churn of employees who are often on short-term contracts (particularly at entry level). This has resulted in less emphasis on training and a reluctance from employers to invest in training leading to less formal, or even limited, relationships between providers and industry when compared to other sectors that are the focus of this study.
- **Challenge of perceptions of logistics and available careers amongst parents, teachers and advisors** – Linked to the above point, there is a challenge to attract people into the sector and providers acknowledged the requirement for increasing awareness and altering perceptions of prospective students, teachers and parents about the potential career pathways that are available within the logistics and particularly the advanced logistics sector. This is further evidenced within the Stoke-on-Trent and Staffordshire Skills for Growth Survey where a lack of interest from candidates in roles advertised was quoted by more than half of employers in the advanced logistics sector (46%), a much higher proportion than the construction and manufacturing sectors. As for construction, there is a need to improve awareness of the potential opportunities within advanced logistics at primary and secondary school level to increase demand for these qualifications/ apprenticeships in the long-term.
- **Not all pathways approved/accredited contributing towards no provision related to managers and directors in transport and distribution** - A key barrier identified by providers within advanced logistics and specifically for the shortlisted occupations (Managers and Directors in Transport and Distribution / Managers and Directors in

Storage and Warehousing and Transport and Distribution Clerks and Assistants) was that in some instances occupational standards have not been approved or are not accredited. In the absence of approved and accredited occupational standards providers will struggle to provide qualifications/ apprenticeships tailored to these occupations. For instance, the pathway for Level 4 supply chain managers is currently unapproved and there is no provision related to managers and directors in transport and distribution. Similarly, L2/3 Transport and Warehousing Operations Supervisor has also not been approved.

- **Evidence of limited supply and demand of advanced logistics related provision** - The logistics industry is widely regarded to be moving towards increased automation and being driven by data analytics. However, whilst providers acknowledged the potential for opportunities within advanced logistics based upon technological advancements in robotics and automation as well as opportunities through net zero and the decarbonization of the supply chain, they identified that these opportunities are not currently materializing within the local Stoke-on-Trent and Staffordshire economy. Linked to this, providers identified that regarding qualifications/ apprenticeships related to data science/ data analytics they had identified evidence of limited and declining demand for these qualifications leaving spare capacity in IT related provision at colleges. It was acknowledged that data science, analytics and AI require high level maths skills and that it was most likely that prospective students would go through the A-level and degree pathway than via further education supported by the low demand for these courses identified by these providers.

6 Stage 5 - Conclusions

6.1 Introduction

This section outlines findings which have been consistently identified across each of the priority growth sectors and concludes the report with a series of supply and demand side recommendations related to these findings.

6.2 Cross Sector Findings and Recommendations

The following cross sector findings have been identified through the stages of data analysis and consultation with Further and Higher education providers operating in Stoke-on-Trent and Staffordshire. Following each finding a recommendation has been identified to help to address these overarching issues:

Finding: Significant and ongoing (capital and revenue) investment required to keep pace with Robotics and AI across sectors.

Technological advancements in areas such as AI and robotics are currently having a profound impact on the pace of change across all sectors of the economy. The impact of this technology is anticipated to have a transformational impact on the whole economy with improvements in productivity but also displacement of existing jobs. A 2021 report by BEIS⁵³ identified that 7% of existing UK jobs could face a high (over 70%) probability of automation over the next 5 years, rising to around 18% after 10 years and just under 30% after 20 years. This has profound implications for further and higher education providers who have a responsibility to deliver relevant qualifications and apprenticeships which provide skills in demand within both the current and future labour market.

To support this, providers identified the importance of significant and ongoing capital and revenue funding to support investment in technologies such as AI and robotics. This is both for investment in physical technology e.g., robotic arm demonstrators as well as revenue funding required to attract skilled teachers to provide training in these skills. Providers also identified the important role that technology demonstrators have for industry in supporting implementation across sectors. This finding was demonstrated across each of the priority growth sectors.

Recommendation: Establish an investment fund to support the continued investment in technology and equipment to keep pace with technological and industrial change.

Ring fund investment for capital and revenue investment in robotics and AI via the Local Skills Improvement Fund and UK Shared Prosperity Fund and partnerships with industry of consortiums of employers.

Revenue funding should be targeted at college staff development to keep pace with the application of AI and robotics in industry. This could be expanded to include staff development in the adoption of green technology.

⁵³ [The impact of AI on jobs \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

Finding: The ability to recruit tutors in key sectors and occupations limits the potential to deliver in engineering and construction trades.

The Further Education sector's ability to meet demand for learning in some of the Stoke-on-Trent and Staffordshire's key sectors is limited by the availability of qualified tutors. Several providers reported experiencing recruitment challenges for electrical engineers, mechanical engineers, electricians, plumbers and vehicle repair technicians. These recruitment challenges have led to potential expansion of provision in these areas being constrained, and in some instances, the number of enrolments on engineering and manufacturing related provision being reduced. The ability to recruit tutors, driven by full employment and increasing wages within industry, is therefore restricting the number of learners able to enrol on qualifications linked to high growth and high value occupations across Stoke-on-Trent and Staffordshire.

Recommendation: Address the recruitment challenges that are impacting the education sector's ability to respond to demand.

The following approaches should be considered to address this significant barrier. These build on the following priority within the Stoke-on-Trent and Staffordshire Local Skills Improvement Plan:

“Providers and stakeholders should collaborate to share specialist staff expertise to ensure learners across the region benefit from expert training such as by jointly developing collaborative approaches to planning and delivering training, cross-provider specialist staff updating to upskill teachers from across the region and/or developing a cross-provider ‘specialist skills agency’”.

- Promote teaching in further education as a career option to learners currently enrolled on learning provision including offering the opportunity for 'peer tutoring' whereby learners to support the delivery of entry level or generic provision.
- Develop partnerships with local universities to offer 'knowledge exchange partnerships' whereby higher education students can support delivery in further education via gap years in industry, part time employment or via graduate recruitment in tutor shortage areas that do not require site experience.
- Build on the Stoke-on-Trent and Staffordshire employer pledge to encourage and gain commitments from industry professionals to support learning delivery as part of business' corporate social value activity.
- Pilot a recruitment and retention bonus for key occupational areas such as electrical engineering, mechanical engineering, plumbing electricians using the Local Skills Improvement Fund.

Finding: Interest in some priority occupations and apprenticeships (engineering) is limited due to perceptions, knowledge of opportunities and wages.

Common feedback from providers highlighted the challenge of recruiting to apprenticeships with high profile engineering and manufacturing companies in Stoke-on-Trent and Staffordshire that offer high quality careers in a priority growth sector. Recruitment challenges are driven by several factors including perceptions of the engineering and manufacturing sector amongst teachers, parents and



young people as well as apprenticeship wage levels being uncompetitive compared to other sectors with more limited career and earning potential.

Recommendation: Promote interest in priority occupations and apprenticeships in priority sectors such as advanced engineering and manufacturing.

Recommendations in the Stoke-on-Trent and Staffordshire LSIP to address recruitment challenges focus on the 'careers transition period' to raise the quality of careers information, advice and guidance and the 'Stoke-on-Trent and Staffordshire Employer Pledge'. In addition, it is recommended that wage incentives are offered to engineering and manufacturing apprenticeships to promote uptake.

Incentives could be funded by seeking flexibility within the unspent apprenticeship levy; working with sector bodies such as Make UK.

Finding: Skills v qualification - flexibility and modular provision.

Demand for more flexible and modular learning has been reported by providers in terms of challenges of balancing employer's needs whilst meeting the requirements of apprenticeship frameworks. The employer survey commissioned by Staffordshire Chambers of Commerce to inform the Local Skills and Improvement Plan also identified a need for modular learning. Over half of employers responding to the survey stated they would 'favour short modular courses and qualifications designed for their sector' whilst demand for modular courses was identified in areas of anticipated job growth within priority sectors including:

- Artificial intelligence.
- Data analytics.
- Electrical and electronic engineering design.
- Computer programming.
- Team leadership and management.

Recommendation: Adopt a pilot modular approach to provision focused on the skills required in key occupations.

Pilot modular provision should be developed and trialled using the Local Skills Improvement Fund (LSIF), targeted at the priority sectors identified in this study. The pilot should build on current strengths within further education as well as micro-credentials and Skills Bootcamps already being developed and delivered by higher institutions in Staffordshire.

Finding: The challenge of using available data and intelligence to review the current supply and future demand for skills and qualifications.

This study has drawn on several data sources to understand the current profile of jobs and vacancies within key employment sectors across Staffordshire and Stoke-on-Trent. The supply of learning provision related to priority occupations was initially tested using information from the Department for Education's Data Cube. The data was shared and tested with providers and found to be inconsistent both in terms of the breadth of provision (the number and type of qualifications offered) whilst the headline details, such as the number of learners enrolled per year were also inaccurate. The



limitations on data provided by the Data Cube provides challenges in terms of establishing an accurate baseline of provision to assist strategic planning by local partnerships.

Recommendation: To address this, partners across Staffordshire, led by the County Council and in partnership with neighbouring Authorities (e.g. West Midlands Combined Authority) to lobby central government to improve the data available from the Department for Education including the Data Cube.

The anticipated timescales for significant improvements to DfE data provision mean that Staffordshire Council could seek to implement data sharing agreements with partners to provide access to qualification level data that can inform future interactions that should include a focus on other key sectors such as health and social care and entry and mid-level occupations.