Mind the Technician Gap: Fixing the UK's Hidden Labour Crisis

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Introduction

The UK talks a great deal about the industries of the future—but too little about the people who will build them. Technicians—skilled specialists who install, operate, and maintain the systems that power daily life—are vital. They turn plans into infrastructure, prototypes into production, and research into implementation. Yet despite their centrality and the key policy challenge of a shortage of technical skills, technicians remain an afterthought, with a fragmented approach to training and reskilling. And technician opportunities, though relatively well-paid and often in demand, are too often invisible to young people who might enter them and policymakers who depend on their success.

This report sets out the scale of the challenge and what must change to meet it—placing technicians at the centre of workforce planning, investment, and industrial strategy.

Executive Summary

Technicians are essential to the UK's industrial future. They power the sectors at the heart of the government's Invest 2035 strategy, including advanced manufacturing, defence, clean energy, life sciences, and digital industries.[1] Yet the UK isn't producing enough of them, and the shortage is already constraining growth, weakening resilience, and increasing reliance on overseas labour.

More than one in three technician roles most tightly linked to Invest 2035 sectors (which we refer to in this report as "industrial strategy sectors") already faces acute skills shortages—including electricians, welders, and engineering technicians. Technician wages are rising faster than inflation, with salaries of £40,000 or more in key areas like aircraft maintenance and electrical trades—strong signals of tight labour markets and unmet demand.

Meanwhile, the domestic skills system has not kept up. Inflation-adjusted public spending on adult skills and apprenticeships remains 23% below 2009-10 levels.[2] Pay for further education teachers is around 18% lower than for their school-based peers, contributing to high turnover and subject-specific shortages.[3] Qualification routes—such as T-Level and Higher Technical Qualifications (HTQs)—remain fragmented and poorly understood, limiting access for young people and mid-career changers alike.

New immigration restrictions that could limit inflows of foreign technicians risk compounding these pressures. At the same time, nearly one-third of technician roles are projected to see at least 25% of their current workforce reach retirement age within the next decade, compared with 21% of the overall UK labour force. And across the most affected occupations women remain drastically underrepresented: in 69% of them, female participation is below 5%.

These are not marginal issues; they are symptoms of a system that isn't working. Technicians are the driving force behind the UK's ability to grow its economy, achieve its decarbonisation goals, and sharpen its competitive edge. And yet the country's capacity to train, attract, and retain them is failing to keep pace.

This report outlines a clear agenda for change:

- Raise awareness of technician careers early and widely
- Close gender gaps through outreach and support
- Simplify qualification routes and strengthen T-Level and Higher Technical Qualification (HTQ) uptake
- Ensure migration rules are aligned with industrial strategy and economic priorities
- Improve pay and retention in further education
- Promote pay and progression benchmarks for technician roles to attract new entrants.

With the right investment and focus, the UK can reverse these trends. That will require treating technician shortages not just as a labour market issue—but as a strategic risk to national goals. Addressing it is not optional. It is the foundation for the country's next phase of industrial success.

Section 1: What Are Technicians?

Technicians are skilled professionals with practical expertise and technical knowledge needed to solve real-world problems and keep Britain's most important sectors running. Technicians number over two million across the UK, according to our analysis. Their roles cut across the economy. Whether delivering new medical treatments, maintaining the railways, installing renewable energy systems, or supporting digital infrastructure, technicians ensure that vital systems function reliably and efficiently.

Technicians are not a monolithic group. Their roles range from laboratory technicians enabling life sciences breakthroughs, to engineering and IT technicians maintaining digital infrastructure. While some technician roles are closely linked to emerging sectors such as clean energy and digital industries, others are essential to the daily operation of infrastructure and public services. They typically require skills and knowledge ranging from T-level to HND (RQF 3-5) but they do not generally require a university degree (though many graduates work as technicians). They often combine hands-on expertise with a solid foundation in science, technology, engineering and maths (STEM). They support production, troubleshoot technical challenges, and contribute to applied research across sectors. Their work is essential not only in laboratories but across nearly every industry—from engineering and pharmaceuticals to graphic design, veterinary care, telecommunications, and beyond—and are defined by their hands-on skills, their ability to apply scientific and technical principles, and their central role in turning innovation into action.

For the purposes of this report, we use the definition developed by the Gatsby Foundation as part of its ongoing work to promote technician roles across the UK economy: Table 1 provides a full list of the key technician occupations included in this report, as defined by the Gatsby Foundation using the UK Standard Occupational Classification.

Table 1

Occupation code	Job type
3111	Laboratory technicians
3112	Electrical and electronics technicians
3113	Engineering technicians
3114	Building and civil engineering technicians
3115	Quality assurance technicians
3116	Planning, process and production technicians
3119	Science, engineering and production technicians n.e.c.
3120	CAD, drawing and architectural technicians
3131	IT operations technicians
3132	IT user support technicians
3133	Database administrators and web content technicians
3211	Dispensing opticians
3212	Pharmaceutical technicians
3213	Medical and dental technicians
3240	Veterinary nurses
3417	Photographers, audio-visual and broadcasting equipment operators
3573	Information technology trainers
5112	Horticultural trades
5119	Agricultural and fishing trades n.e.c.
5211	Sheet metal workers
5212	Metal plate workers, smiths, moulders and related occupations
5213	Welding trades
5214	Pipe fitters
5221	Metal machining setters and setter-operators
5222	Tool makers, tool fitters and markers-out
5223	Metal working production and maintenance fitters
5224	Precision instrument makers and repairers
5225	Air-conditioning and refrigeration installers and repairers
5231	Vehicle technicians, mechanics and electricians
5232	Vehicle body builders and repairers
5233	Vehicle paint technicians
5234	Aircraft maintenance and related trades
5235	Boat and ship builders and repairers
5236	Rail and rolling stock builders and repairers
5241	Electricians and electrical fitters
5242	Telecoms and related network installers and repairers
5243	TV, video and audio servicers and repairers
5244	Computer system and equipment installers and servicers
5245	Security system installers and repairers
5246	Electrical service and maintenance mechanics and repairers
5249	Electrical and electronic trades n.e.c.
5250	Skilled metal, electrical and electronic trades supervisors
5315	Plumbers & heating and ventilating installers and repairers
5421	Pre-press technicians
5422	Printers
6121	Pest control officers
6129	Animal care services occupations n.e.c.

Section 2: The Strategic Importance of Technicians

Technicians are the practical backbone of the UK economy, powering growth, innovation, and resilience across sectors identified as strategic national priorities. Their expertise is indispensable not only in established industries—such as manufacturing, construction, and defence—but also in fast-growing fields like clean energy, life sciences, and digital technology.

The government's industrial strategy identifies eight priority sectors with the greatest potential for economic growth:

- Advanced manufacturing
- Clean energy industries
- Creative industries
- Defence
- Digital and technologies
- Financial services
- Life sciences
- Professional and business services

To provide a standardised indicator of their importance, we use Burning Glass Institute job postings data to identify occupations that are at least three times more likely to appear in job ads within a specific key sector compared to the overall labour market. While this approach focuses on roles of particularly concentrated importance and may not capture every essential occupation—likely resulting in a conservative estimate—it effectively demonstrates the widespread and specialised demand for these technical roles. These occupations are listed in Table 2 below. Notably, many occupations appear across multiple sectors, reflecting the cross-cutting nature of technician work. Occupations are designated as facing skills shortages where they are in the top quartile for skills-shortage vacancies density according to the UK Employer Skills Survey.

Table 2. Common Occupations in Key Industrial Strategy Sectors

Role	Industrial strategy sectors	Total workers	Skills shortage*	% Female	Exposure to AI percentile (lower is better)
Electricians and electrical fitters	Defence	197,837	✓	1.7%	36.8
IT user support technicians	Digital and Technologies	135,059	✓	23.3%	58.0
IT operations technicians	Digital and Technologies	94,733		23.9%	67.2
Photographers, audio-visual and broadcasting equipment operators	Creative Industries	78,346		26.6%	46.6
Engineering technicians	Clean Energy Industries	70,930		10.8%	48.2
Database administrators and web content technicians	Creative Industries	52,974		36.6%	69.1
CAD, drawing and architectural technicians	Professional and Business Services	51,136		25.6%	56.4
Welding trades	Defence	45,402	✓	0.6%	13.1

Role	Industrial strategy sectors	Total workers	Skills shortage*	% Female	Exposure to AI percentile (lower is better)
Computer system and equipment installers and servicers	Defence, Digital and Technologies, Advanced Manufacturing	43,220	✓	5.2%	34.7
Electrical and electronic trades n.e.c.	Professional and Business Services, Advanced Manufacturing	37,208		5.6%	17.6
Science, engineering and production technicians n.e.c.	Defence	33,579		26.2%	48.7
Quality assurance technicians	Clean Energy Industries	31,692		34.5%	55.4
Metal machining setters and setter-operators	Professional and Business Services†	30,005	✓	3.3%	20.7
Aircraft maintenance and related trades	Defence, Advanced Manufacturing	29,968		7.5%	21.3
Electrical service and maintenance mechanics and repairers	Defence, Advanced Manufacturing	29,479	✓	0.9%	34.7
Vehicle body builders and repairers	Advanced Manufacturing	24,876		0.4%	14.1
Electrical and electronics technicians	Defence, Clean Energy Industries	19,431		5.4%	46.3
Building and civil engineering technicians	Professional and Business Services	15,670	✓	19.3%	48.5
Vehicle paint technicians	Advanced Manufacturing	12,345	✓	0.0%‡	13.4
Tool makers, tool fitters and markers-out	Advanced Manufacturing	8,713		0.0%‡	31.8
Pipe fitters	Professional and Business Services,† Advanced Manufacturing	6,753		0.0%‡	14.6

* Skills shortage occupations, as identified by the UK Employer Skills Survey, are those in the top quartile for skill-shortage vacancies (SSVs). These roles represent the greatest recruitment challenges employers face, stemming from general or skills-related factors.

† Workers in these occupations within the Professional and Business Services sector are primarily engaged in Temporary employment agency activities – i.e. they work for workforce solutions agencies such as Adecco.

‡ Data come from the Labor Force Survey, of which 8 quarterly waves were used. There were no female respondents in the sample for these occupations.

Technicians are embedded in the infrastructure of the UK economy, enabling productivity and innovation across industries critical to future prosperity. Yet many of these occupations already face serious talent shortage, compounded by an ageing workforce, underrepresentation of women, and growing reliance on migration.

For better or worse, many technician roles are among the least susceptible to automation, offering limited opportunity for AI or robotics to offset workforce gaps. That resilience adds to their strategic importance—but also raises the stakes for policy intervention.

The next section examines the evidence behind these shortages—and the risks they pose to the UK's industrial future.

Section 3: Where the Gaps Are: Identifying the Most Acute Skills Shortages

Despite headlines bemoaning the death of traditional manufacturing and industrial trades, these roles remain essential. Misconceptions about their relevance likely contribute to persistent shortages, as policy and public attention skew elsewhere. This section identifies where the most acute workforce gaps are emerging, which occupations are most at risk, and how these shortages intersect with the UK's industrial priorities.

NATIONAL SHORTAGES IN KEY SECTORS

More than a third of technician occupations tied to key industrial sectors face documented skills shortages. In Defence alone, more than half of relevant technician roles are affected. These are not low-paid or low-growth jobs. For example, Electrical service and maintenance mechanics and repairers earn a median salary of £39,713, and many technician occupations, including Pipe Fitters, IT trainers, and Sheet Metal Workers, have seen double-digit wage growth in recent years. This problem is compounded as key sectors often find themselves competing for the same limited pool of skilled technicians—a challenge particularly acute for these vocational roles compared to more specialised graduate positions.

The implication is clear: the government's industrial strategy is poised to increase demand for workers that are already in short supply. Without targeted workforce policies, sectoral expansion plans will run up against hard labour market limits.

THE OCCUPATIONS MOST AT RISK

Beyond the core strategic sectors, technician shortages extend across the wider economy. Using data from the Department for Education's Employer Skills Survey, we identify 16 technician roles where employers report particular difficulty filling vacancies due to a lack of technical skills, experience, or qualifications. These are listed in Table 3.

Table 3. Technician Roles with Skills Shortages*

Role	Total employment	% Age 55+	Exposure to AI percentile (lower is better)
Electricians and electrical fitters	197,837	18%	36.8
Metal working production and maintenance fitters	177,869	25%	15.4
Vehicle technicians, mechanics and electricians	161,746	20%	20.0
Plumbers & heating and ventilating installers and repairers	145,018	23%	17.2
IT user support technicians	135,059	11%	58.0
Telecoms and related network installers and repairers	56,551	16%	21.3
Welding trades	45,402	22%	13.1
Computer system and equipment installers and servicers	43,220	13%	34.7
Metal machining setters and setter-operators	30,005	27%	20.7
Electrical service and maintenance mechanics and repairers	29,479	25%	34.7
Precision instrument makers and repairers	18,881	16%	47.5
Building and civil engineering technicians	15,670	14%	48.5
Air-conditioning and refrigeration installers and repairers	12,437	20%	24.7
Vehicle paint technicians	12,345	36%	13.4
Sheet metal workers	11,736	28%	16.6
Boat and ship builders and repairers	8,601	12%	19.9

*includes both key industrial strategy sectors and non-key sectors

The list of shortage-prone occupations includes many linked to industrial strategy priorities—particularly in defence, advanced manufacturing, digital technology, and professional services. This convergence underscores that these are not niche gaps—they are bottlenecks at the heart of the UK's economic ambitions.

A LIMITED ROLE FOR AUTOMATION

Technician roles are, on the whole, among the least exposed to replacement by automation or AI, based on our estimates, which use percentile rankings to quantify an occupation's relative vulnerability to automation (see Table 3).[4] According to recent occupational risk analyses, many of these roles require physical dexterity, on-site problem-solving, and interdisciplinary knowledge—attributes that are difficult to replicate with current technologies. 15 of the 16 high-risk occupations identified here are less vulnerable to AI-driven displacement than the (50th percentile) average role. This resilience to automation strengthens their long-term strategic value—but also means labour shortages are unlikely to be resolved through technological substitution.

The next section examines the deeper structural and demographic forces driving these shortages—from an ageing workforce and gender imbalances to underinvestment in training and education.

Section 4: Systemic Drivers of the Shortage

Technician shortages are not just the result of demand outpacing supply—they stem from deeper structural issues. This section explores two of these drivers: immigration policy uncertainty and demographic pressures. Together, these forces risk turning existing shortfalls into long-lasting constraints on the UK's industrial ambitions.

IMMIGRATION UNCERTAINTY

Foreign workers make up a critical part of the technician workforce. In 2020, the government lowered the skills threshold for Skilled Worker visas from RQF 6 (typically requiring a university degree) to RQF 3 (roughly equivalent to A-level qualifications), bringing most technician roles into scope.

However, the May 2025 Home Office white paper proposed raising the threshold back to RQF 6, which would exclude most technician roles from the Skilled Worker route. This change would effectively shut down a key supply channel for technical talent, even as demand continues to climb. At present, all but one occupation studied in this report—pest control officers—qualify for a Skilled Worker visa. Under current plans, none will be eligible by 2029, except under narrow, temporary exceptions.[5]

Technician roles may be included on a proposed 'Temporary Shortage List,' allowing short-term access to the Points-Based Immigration System where justified by workforce needs. However, the criteria for inclusion remain undefined, and no specific occupations have been guaranteed protection. While the occupations flagged in this report—those facing shortages and overrepresented in strategic sectors—could qualify, this ambiguity means employers cannot be certain that visas will be granted for new hires or extended for existing staff. This policy uncertainty is already creating friction for businesses trying to plan their workforce and profound insecurity for the workers themselves.

The stakes are high. These are not low-skilled roles, and the idea that they are dispensable runs counter to the government's own industrial strategy. Without a clear, stable pathway for sourcing technical talent internationally, the UK risks losing the very workers it needs most. While growing the domestic talent pipeline is a worthy long-term goal, it takes years. Cutting off the immediate supply of experienced international technicians risks starving these sectors of the skills they need to survive today, meaning that by the time a new domestic workforce is trained, the industrial base they were meant to support may be irrevocably weakened.

DEMOGRAPHIC PRESSURES

Even without tightening immigration rules, demographic trends threaten to deepen technician shortages. Looking at technician roles in aggregate, the share of the workforce aged 55 and older is slightly less than the overall UK labour force (20% vs. 21%). However, many key technician occupations have a disproportionately large share of workers who will reach retirement age in the next decade. For example, 25% of Electrical Service and Maintenance Mechanics and Repairers—a key Defence and Advanced Manufacturing role—are 55 and older, compared with 21% for the overall UK workforce. That figure is 36% for Science, Engineering, and Production Technicians, a key Defence role. As these workers retire, labour market gaps will widen unless new entrants can replace them at scale.

Table 4. Key Sector Occupations That Have Older Workforces

Role	Industrial strategy sectors	% Age 55+
Vehicle paint technicians	Advanced Manufacturing	36%
Science, engineering and production technicians n.e.c.	Defence	36%
Quality assurance technicians	Clean Energy Industries	28%
Metal machining setters and setter-operators	Professional and Business Services	27%
Vehicle body builders and repairers	Advanced Manufacturing	25%
Electrical service and maintenance mechanics and repairers	Defence, Advanced Manufacturing	25%
Aircraft maintenance and related trades	Defence, Advanced Manufacturing	23%
Electrical and electronic trades n.e.c.	Professional and Business Services, Advanced Manufacturing	22%
Welding trades	Defence	22%

Section 5: Gender Disparities and Skills Shortages in Technician Roles

Gender imbalances compound the challenge. Women are significantly underrepresented in UK technician roles, particularly in high-demand, high-paying occupations critical to economic growth. Female participation in shortage occupations within key industrial strategy sectors does not exceed 23%, with half falling below 2%. Overall, women constitute 19% of the technician workforce, but their representation is concentrated in a few specific roles (e.g., veterinary nurses, pharmaceutical technicians) that are not linked to priority sectors or shortages.

Conversely, the majority of technician occupations are male-dominated, especially those that are systems-oriented, physically intensive, and higher paid. For instance, roles like Tool Makers, Welders, and Electrical Mechanics have female participation rates below 1%. (In comparison, 23.5% of UK graduates in engineering, manufacturing, and construction are women.[6]) These strategic, higher-paid roles contrast sharply with the concentration of women in lower-paid positions. Women make up only 14% of technicians in roles earning above the national median wage, compared to 23.5% of graduates in related engineering and manufacturing fields.

Table 5. Top And Bottom Technician Roles by Female Representation

Role	% Female	Median wage	Average wage growth	Exposure to AI/ automation percentile (lower is better)
Veterinary nurses	95.0%	£25,974	6.1%	43.1
Animal care services occupations n.e.c.	80.7%	£23,646	6.0%	32.6
Pharmaceutical technicians	80.0%	£30,232	6.2%	48
Dispensing opticians	63.3%	£27,540	2.1%	49.4
Medical and dental technicians	61.1%	£27,734	4.7%	51.4
Vehicle technicians, mechanics and electricians	0.4%	£35,540	7.9%	20
Vehicle body builders and repairers	0.4%	£33,301	7.7%	14.1
Pipe fitters	0.0%*	£46,047	18.5%	14.6
Air-conditioning and refrigeration installers and repairers	0.0%*	£41,056	5.6%	24.7
Tool makers, tool fitters and markers-out	0.0%*	£38,409	6.5%	31.8
Vehicle paint technicians	0.0%*	£33,265	7.9%	13.4

* Data come from the Labor Force Survey, of which 8 quarterly waves were used. There were no female respondents in the sample for these occupations.

These gender disparities imply a missed opportunity to address technician shortages. Reducing structural barriers for women is key to unlocking this untapped workforce potential. The high pay, job security, and low automation exposure of these critical roles offer a significant opportunity to expand the supply of skilled technicians in vital sectors like construction, advanced manufacturing, and utilities. Reducing structural barriers, particularly for women, could unlock significant workforce potential. Even modest gains in female participation could help expand the supply of skilled technicians in sectors such as construction, advanced manufacturing, and utilities—without relying solely on younger entrants or international recruitment.

WHAT THE DATA SHOWS ABOUT PROGRESS

There are already incipient signs of movement. Some women are transitioning from traditionally female, non-technical occupations—such as retail salespeople or receptionists—into technician roles. Of those switching from such jobs, 1.6% (7,530 individuals) moved into well-paid technician roles with higher female participation (e.g. pharmacy or dental technicians), while 0.2% (1,020 individuals) entered higher-paying, male-heavy technical trades like HVAC, electronics, and engineering.

Apprenticeship data offers a mixed picture. In some of the most male-dominated fields, female representation is growing among apprentices—albeit from a very low base. For example:

- Vehicle Paint Technicians: <1% of current workforce vs 13% of apprentices
- Tool Makers: <1% vs 10%
- Rail and Rolling Stock Technicians: 5% vs 11%

For several occupations—including Vehicle Technicians, Welders, and Electrical Fitters—adding the current cohort of female apprentices would increase workforce representation by 10% or more.

Still, overall gains remain minimal. In 46 of the 47 technician occupations, adding the current apprentice pipeline would increase female representation by less than one percentage point—and in 43, by 0.1% or less. The exception is Medical and dental technicians, which would see a three-point increase in female representation—but women already constitute more than half of the workforce here. In some key roles—including Science, Engineering, and Production Technicians, IT Support Technicians, and Engineering Technicians—female representation among apprentices is actually lower than in the current workforce.

Table 6. Proportion of Apprentices and Overall Workforce Female by Number of Apprentices

Role	% Female	% Apprentices Female	Number of apprentices	Total workers
Medical and dental technicians	61%	83%	6,340	43,281
Engineering technicians	11%	10%	5,133	70,930
Science, engineering and production technicians n.e.c.	26%	8%	3,950	33,579
Plumbers & heating and ventilating installers and repairers	2%	3%	3,590	145,018
Pharmaceutical technicians	80%	78%	2,360	22,696
Building and civil engineering technicians	19%	16%	2,360	15,670
IT user support technicians	23%	10%	2,060	135,059
Animal care services occupations n.e.c.	81%	84%	1,640	94,459
Electricians and electrical fitters	2%	7%	1,230	197,837
Metal machining setters and setter-operators	3%	6%	1,230	30,005

Section 6: Why the Pipeline Is Failing

The UK urgently needs more technicians—and demand is set to grow. Yet the current education and training system is not equipped to deliver the volume or breadth of skilled workers required. Without clearer entry routes, stronger teaching capacity, and more flexible training models, even the most ambitious industrial strategy risks falling short.

The qualification landscape remains fragmented. T-Levels, BTECs, and other vocational programmes compete for students, offering varied content and rigour. Technician roles rarely have protected titles, and links between qualifications, skills, and job outcomes are often unclear. While technician careers can offer earnings comparable to those of teachers or nurses, there is far less public understanding of what a technician does or how to become one.

Further education institutions, which deliver much of this training, remain under pressure. College lecturers earn on average 18% less than their school counterparts, contributing to a 16% annual exit rate. While adult skills and apprenticeship funding is increasing in real terms, total spending in 2024-25 will still be 23% below 2009-10 levels.[7] These constraints affect quality. Students report limited access to practical learning, high teacher turnover, and gaps in subject-specific expertise. Some courses lack textbooks or past papers—conditions that weaken delivery regardless of curriculum.[8]

Section 7: A Broader Case for Why Technician Jobs Matter

Technician roles sit at the intersection of economic necessity and individual opportunity. They are essential to the UK's ambition to grow sectors such as energy, manufacturing, and defence—but they also offer something increasingly rare in the labour market: jobs that are well-paid, upwardly mobile, and resistant to automation.

In areas like electrical installation, precision machining, and metal work, median earnings regularly exceed £35,000, with many roles showing sustained wage growth over time. These careers often provide a clear path to supervisory or engineering-level positions, and many technicians remain in the field for a decade or more. In a labour market where lateral moves and short-term contracts are increasingly common, technician careers offer long-term stability and development.

These roles also tend to be more resilient to technological disruption than many others. While automation and AI are reshaping large parts of the workforce, technician jobs typically involve practical, situational problem-solving—tasks that remain difficult to automate. This gives them a rare degree of futureproofing, particularly for workers in sectors vulnerable to displacement. For individuals seeking to reskill or pivot from declining fields, technician careers represent a viable and secure alternative.

Crucially, these jobs align with what many workers—especially younger ones—say they value: meaningful work, skill development, and progression without necessarily requiring a university degree. Yet despite these advantages, technician roles are under-recognised in career guidance, cultural discourse, and public policy. That disconnect between the value of the roles and their visibility is part of what has sustained long-standing shortages.

Recognising the individual upside of technician careers, as championed by initiatives like Gatsby's 'Technicians: We make the difference' campaign', is not a distraction from the economic case—it is part of it.[9] In a labour market marked by structural change, these roles offer an important lever for economic mobility, social resilience, and inclusive growth.

Table 7. Attributes of Technician Roles Providing Median Income Above £35,000

Role	Median wage	Average wage growth	% in manager jobs 10 years later	% still in role 10 years later	Exposure to AI/automation percentile (lower is better)
Rail and rolling stock builders and repairers	£56,984	7.8%	22.0%	20%	8.5
Pipe fitters	£46,047	18.5%	20.1%	41%	14.6
Electrical and electronic trades n.e.c.	£45,849	9.0%	18.9%	34%	17.6
Aircraft maintenance and related trades	£44,966	9.5%	21.6%	19%	21.3
Engineering technicians	£42,543	5.5%	18.3%	21%	48.2
Skilled metal, electrical and electronic trades supervisors	£42,419	6.4%	54.1%	23%	43.5
Air-conditioning and refrigeration installers and repairers	£41,056	5.6%	22.4%	33%	24.7
Information technology trainers	£39,950	11.4%	26.8%	20%	88.6
Electrical service and maintenance mechanics and repairers	£39,713	5.3%	14.8%	18%	34.7
Electrical and electronics technicians	£39,288	4.7%	17.8%	21%	46.3
Metal working production and maintenance fitters	£39,277	7.2%	19.4%	27%	15.4
Electricians and electrical fitters	£38,760	6.9%	16.4%	32%	36.8
Tool makers, tool fitters and markers-out	£38,409	6.5%	15.2%	34%	31.8
Plumbers & heating and ventilating installers and repairers	£38,099	6.3%	20.7%	39%	17.2
Telecoms and related network installers and repairers	£36,722	1.7%	15.5%	21%	21.3
Metal plate workers, smiths, moulders and related occupations	£36,685	7.6%	23.2%	27%	9.9
Security system installers and repairers	£36,348	7.3%	17.2%	21%	30.1
Vehicle technicians, mechanics and electricians	£35,540	7.9%	19.8%	21%	20
IT operations technicians	£35,235	5.7%	12.3%	17%	67.2
Computer system and equipment installers and servicers	£35,146	14.5%	11.8%	15%	34.7

Section 8: Aligning Policy with Demand

The UK cannot meet its industrial ambitions without a technician workforce to match. Yet current policy settings do not add up to a coherent plan. Below are six priority actions to bring supply and demand into better alignment.

1. MAKE TECHNICIAN CAREERS VISIBLE—EARLY AND OFTEN

Recommendation: Enhance and amplify existing awareness initiatives through strategic government partnership to raise awareness of technician roles—especially among young people, parents, and teachers.

Too many people simply don't know these jobs exist—or assume they are low-paid and insecure. Careers guidance in schools is often shaped by performance metrics that prioritise A-levels and universities. The result is a visibility vacuum: technician careers are overlooked at the moment when career aspirations begin to lock in. Campaigns to counter this problem should be targeted and persistent, reaching audiences where they are, and highlight the strong wages, progression, and security these roles offer. Rather than launching a new, separate campaign, the government should build upon successful foundations. As previously mentioned, Gatsby's 'Technicians: We make the difference' campaign is an excellent example. The government's role should be to act as a key partner, helping to ensure this work is targeted and persistent, reaching audiences where they are, and highlighting the strong wages, progression, and security these roles offer.

2. BUILD THE FEMALE TALENT PIPELINE THROUGH OUTREACH AND SUPPORT

Recommendation: Set measurable targets to increase women's participation in technician roles, supported by outreach, mentorship, and workplace inclusion efforts.

Women are underrepresented in almost all technician roles—especially those that are highest paid, least automatable, and most strategically important. Progress will not come through organic change alone; measurable targets are needed. For instance, targeting an increase in female participation over the next decade equivalent to a 10 percentage-point increase in female representation in relevant apprenticeships, would bring an additional almost 70,000 workers to the technician labour force. Outreach efforts should consider apprenticeships, lateral moves from less well paid and strategically important sectors, and retraining schemes. To get there, employers and education providers will need to invest in mentoring, inclusive recruitment, and active efforts to shift perceptions in male-dominated specialisms.

3. SIMPLIFY AND STRENGTHEN TRAINING ROUTES

Recommendation: Prioritise technical qualifications linked to occupational standards, and expand the reach of T-Levels and HTQs through employer engagement and clearer progression pathways.

While the technical education system can be confusing, the key to clarity is to focus on qualifications linked to national occupational standards. T-Levels show strong outcomes and their uptake is growing, but this trend needs to be accelerated. To do this, government funding should be prioritised for qualifications based on national occupational standards developed by employers—this currently includes T-Levels, HTQs and apprenticeships. Making it clear

that these qualifications are the gold standard will simplify the landscape and ensure every route has clear progression options into higher technical, apprenticeship, or degree-level study. Employers must also play their part by offering industry placements and continuing to validate course content to ensure relevance.

4. INVEST IN FURTHER EDUCATION AS A STRATEGIC ASSET

Recommendation: Address the FE staffing crisis by improving pay, retention, and resources—especially in technician-relevant subject areas.

Further education institutions are delivering on a national priority without the budgets to match. College teacher pay remains 18% below schoolteachers', contributing to high turnover and patchy subject coverage. This directly weakens the technician pipeline. Government should aim for parity of pay and resourcing across FE and secondary education, prioritising subjects aligned to industrial strategy and areas of persistent skill shortages.

5. MAINTAIN A STABLE, SKILLS-BASED MIGRATION PIPELINE

Recommendation: Protect technician access to the Skilled Worker visa and clarify the criteria for any future Temporary Shortage List.

In the short term the UK's current technician workforce depends significantly on overseas talent. The 2025 immigration white paper proposes reversing this pipeline, with no clear domestic alternative in place. A stable, transparent migration route is essential to support sectors like defence, construction, and advanced manufacturing. Government should maintain technician eligibility for migration routes and publish clear, data-driven criteria for any future shortage lists. The government should also explore how the immigration skills charge—tax employers must pay to bring in workers from overseas—could be used to improve the quality and quantity of technician training to reduce the reliance on migration in the future.

6. USE PAY AND PROGRESSION BENCHMARKS TO ATTRACT TALENT

Recommendation: Work with employers to publish pay benchmarks and career progression profiles for technician roles—especially in shortage areas.

Market signals are not working well enough to correct supply gaps. Even in roles with persistent shortages, wages have not consistently risen to attract new entrants. Part of the problem is information asymmetry: young people don't know what these roles pay or where they lead. Government and industry bodies should convene to set and promote benchmark pay ranges and typical career trajectories—especially for roles in strategic sectors with clear long-term demand. These benchmarks should be embedded in outreach materials and careers guidance.

Conclusion: Turning Technician Roles into a National Priority

The UK's industrial future depends on a workforce it does not yet have. Technician roles underpin nearly every sector identified as strategically vital—from clean energy to defence to advanced manufacturing. But despite strong wages, high job security, and clear advancement opportunities, these careers remain undervalued, underpromoted, and underfilled.

This is not a problem of potential—it is a problem of coordination. The UK has the tools: a growing technical education system, an existing (if uneven) pipeline of apprenticeships, and a motivated population eager for stable, meaningful work. But these tools are not being used in concert. The result is a labour market where demand for technicians grows year after year, yet too few young people, career changers, or employers can find a clear way in.

What's needed now is focus. That means aligning education policy, migration rules, funding systems, and public communication around a shared goal: to make technician careers a first-choice option for a much wider share of the population. It also means recognising that addressing long-standing gender gaps, funding gaps, and perception gaps is not just a matter of fairness—but a strategic necessity.

This report has shown that technician roles are not a backup plan. They are some of the strongest offers in the UK labour market—and critical to the country's long-term resilience. The case for action is not just compelling. It is overdue.

Appendix

Methodology

STARTING POINT OF UK SOCS PROVIDED

We begin with a set of 47 technician occupations defined at the 4-digit level of the UK Standard Occupational Classification (SOC). This list was developed and provided by the Gatsby Foundation as part of its ongoing work to better understand and promote technician roles across the UK economy. These occupations span a range of sectors—from engineering and health to digital and applied sciences—and serve as the foundation for our analysis of labour market dynamics, skill requirements, and workforce outcomes.

GETTING FROM O*NETS IN OUR DATA TO UK SOCS

Because our data infrastructure is based on U.S. occupational classifications, we mapped the 47 UK SOC technician occupations to their closest equivalents in the U.S. SOC and ONET systems. As a starting point, we used the **crosswalk developed by the National Foundation for Educational Research (NFER)**.[10] However, to improve accuracy and relevance for technician roles specifically, we manually reviewed and refined these mappings. For each UK SOC occupation, we developed a tailored hybrid match—linking it to a single U.S. SOC 5-digit code or directly to an O*NET occupation, depending on the level of alignment. This approach allowed us to more precisely capture the occupational content and skill demands of technician roles across both classification systems.

HOW WE IDENTIFY OCCUPATIONS KEY TO UK INDUSTRIAL STRATEGY

The UK government has identified eight growth-driving sectors as key to its industrial strategy: advanced manufacturing, clean energy industries, creative industries, defence, digital and technologies, financial services, life sciences, and professional and business services.

We define strategic sectors as either groups of UK SIC 3-digit industries (corresponding to Professional and Business Services, Defence, Digital and Technologies, and Creative Industries) or clusters of companies active in Advanced Manufacturing or Clean Energy. Using BGI job postings data, we tag occupations that are at least three times more likely to appear in postings within one of these sectors than in the overall market—highlighting roles in particularly high demand. Some occupations are relevant to multiple sectors. We exclude occupation–sector pairs with a low number of postings.

HOW WE IDENTIFY THE MOST UNIQUE SKILLS

We use a TF-IDF approach to highlight the most distinctive skills for each occupation. This method surfaces skills that appear frequently in job postings for a specific role but are relatively rare across the broader labour market—capturing the skills that are most unique to that occupation.

DATA SOURCES FOR SKILL SHORTAGES AND OCCUPATIONAL CHARACTERISTICS

Indicators of hiring difficulty are drawn from the UK Employer Skills Survey. We look at skill-shortage vacancies (SSVs) at the occupational level based on the last two available waves of the survey (i.e. 2022 and 2024). We also flag occupations that fall in the top quartile for either SSV density—indicating roles where employers report the greatest recruitment challenges due to general or skills-related factors.

Occupational characteristics—including total employment, age distribution (across three broad age groups), median age, and typical educational requirements—are derived from the UK Labour Force Survey (LFS). Demographic characteristics such as location of usual residence are also derived from the LFS. Educational requirements reflect the modal (most common) qualification reported for each occupation in the LFS. To address small sample sizes, we pool data from eight consecutive LFS waves, spanning Q4 2022 to Q3 2024. Wage-related measures, including the median wage for full-time employees and its annual change, are sourced from the Annual Survey of Hours and Earnings (ASHE).

HOW WE DEFINE REAL LIVING WAGE

The real living wage is defined by the Living Wage Foundation based on what employees and their families need to meet the basic costs of living. They provide two versions of the real living wage: one for the UK overall, and one specifically for London (where living costs are higher). The wage rate is provided as an hourly wage. We assume a 40-hour week, equating to a total annual wage of £26,208 for the UK living wage and £28,808 for the London living wage. A real living wage is calculated for each occupation on the basis of the proportion of its workers who are based in London.

HOW IS EXPOSURE TO LLMS DEFINED?

We use exposure scores from Felten et al. (2023). The authors develop LLM exposure scores by linking language model capabilities to O*NET work activities via expert annotation. The scores estimate how likely specific tasks or occupations are to be affected by LLMs, serving as a proxy for potential automation or augmentation.

HOW DO WE GET APPRENTICESHIP START COUNTS?

To determine apprenticeship start counts by demographic group for each UK SOC code, we use data from the Institute for Apprenticeships and Technical Education (IfATE) and the UK Department of Education.

We begin by using IfATE data to map UKSOC4 codes to the corresponding standard codes under which apprenticeship information is provided. We then download the number of apprenticeship starts—broken down by standard code, gender, and ethnicity—from the UK Department of Education.

With this mapping, we then sum these counts across UKSOC4 codes and demographics to derive the total number of apprenticeship starts for each category. To ensure accurate aggregation, any subcategories within the IfATE standard codes (e.g., “0154A, 0154B” within “0154”) are first aggregated to their main standard code before being matched and summed at the UKSOC4 level. In cases where subcategories do not all match the same UKSOC4 code, we assume an even distribution of apprentices across the subcategories.

Endnotes

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[3] Ibid.

[4] Felten, Edward W. and Raj, Manav and Seamans, Robert, How will Language Modelers like ChatGPT Affect Occupations and Industries? (March 1, 2023). **http://dx.doi.org/10.2139/ssrn.4375268** Methodology for our estimation crosswalking between O*NET and UK SOC provided in the Appendix.

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