National Engineering Policy Centre

Royal Academy of Engineering

Migration Advisory Committee (MAC) - Temporary Shortage List Review

Consultation Response

February 2026

Section A: Occupation

This submission covers the following SOC codes: SOC 3111 - 3120; 3131 - 3133; 3213; 5211 - 5250; 5311; 5315; 5330; 8113; 8133 - 8134; 8143.

Section B: Shortage and Drivers

This submission covers the skilled engineering, technology, and allied technical occupations identified in Section A. These roles fall within scope for Stage 2, as they are essential to implementing the Industrial Strategy and maintaining resilience across critical infrastructure. Skills England's Occupations in Demand 2025 analysis demonstrates persistent domestic shortages across a wide range of engineering and technical roles, reinforcing the case for including these occupations on the Temporary Shortage List (TSL).

Occupations within these SOC codes form the technical foundation of the IS-8 priority sectors. They include laboratory and engineering technicians; electrical, electronic and maintenance specialists; CAD, IT operations and user-support staff; skilled metal, electrical, electronic and vehicle trades; construction and building trades; and process and plant operatives. These roles deliver core functions such as testing and diagnostics, installation and commissioning, maintenance, quality assurance, process control, and the creation of technical drawings and models. They are vital for safe, compliant and timely delivery across advanced manufacturing, construction, clean energy systems, transport, and digital infrastructure.

Employers consistently report recruitment challenges despite sustained demand. Shortages in these roles directly threaten delivery timelines across IS-8 sectors and therefore the success of the Industrial Strategy. Entry typically requires Level 3–5 technical qualifications, apprenticeships, higher technical diplomas, and 12–36 months of supervised practice. Government reforms such as updates to technical education, expansion of apprenticeships, Higher Technical Qualifications, and sector-specific workforce initiatives including the Clean Energy Jobs Plan and actions under the Defence Industrial Strategy demonstrate recognition of these challenges but have not yet resolved shortages.

Although some skills are transferable across related occupations, significant barriers limit labour mobility. These include the absence of mature, widely recognised mechanisms such as industry-wide skills passports, standardised competency recognition, and targeted CPD. Regulatory and safety requirements further constrain rapid upskilling. As a result, redeployment of skilled workers across priority sectors—particularly clean energy, advanced manufacturing and defence remains limited. Coordinated action is required to improve portability, accelerate workforce transition and ensure training pathways respond more rapidly to employer needs.

Vacancy data indicate structural tightness: engineering and technology vacancies remain consistently high. Employers report increasing difficulty finding workers with the required skills and in the right locations. A 2025 survey found over three-quarters of employers struggling to recruit people with engineering and technology skills, up from half in 2021. Sustainability, decarbonisation and advanced digital skills were cited as particularly scarce. The tech workforce has grown steadily since 2019, with strong demand across software development, systems architecture and IT operations. While AI may reshape future demand, requirements for skilled IT professionals in emerging fields are expected to continue.
Traditional engineering disciplines face some of the most acute shortages. Declines in the electrical workforce down 26 per cent since 2018 pose risks to housing delivery, infrastructure projects and industrial output. Although policy efforts aim to expand training, the loss of experienced workers has not been sufficiently addressed. JTL estimates around 10,000 annual apprenticeship starts are needed in the electrical sector alone to reverse workforce decline, but current starts fall well below this threshold. Even if achieved, such pipelines would deliver only medium-term relief without parallel retention efforts.

Demographic pressures compound shortages. Technician occupations critical to the Industrial Strategy face a rapidly ageing workforce, with a large share expected to retire within the next decade. For example, 36 per cent of science, engineering and production technicians are aged 55 or over. Replacement demand is high, while the supply of skilled workers entering Level 3–5 routes remain consistently below need. Job-to-apprenticeship ratios are extremely unbalanced electrical 227:1, engineering 145:1, construction 99:1and completion rates remain low, further constraining domestic supply.

Access to training across UK nations and regions is a further challenge. Many IS-8 sectors are concentrated outside London and the Southeast, yet regional training capacity remains uneven. To meet Industrial Strategy objectives, Further

Education institutions must attract, train and retain significantly more apprentices and trainees, supported by improved infrastructure, employer partnerships and local delivery models.

Section C: The future (5-10 years)

Overall, labour market conditions across engineering and technology occupations qualified at Levels 3–5 are expected to remain tight over the medium to long term. This reflects a combination of rising replacement demand stemming from an ageing workforce and sustained expansion demand linked to current and planned industrial, digital and infrastructure investment. The Government's Assessment of Priority Skills to 2030 identifies engineering, digital and technician-level occupations as facing persistent shortages, driven by both demographic pressures and structural demand growth, reinforcing the expectation of continued labour market tightness.

Beyond replacement demand, employment growth prospects remain strong. The National Engineering Policy Centre's Engineers 2030 report indicates that engineering related employment is projected to continue growing faster than many other sectors of the economy, a finding echoed in employer surveys and technology workforce projections. Official vacancy data further supports this assessment: ONS vacancy series show that demand for engineering roles has remained resilient relative to the wider economy, even as total vacancies declined through 2025. This pattern points to structural, rather than cyclical, skills shortages. Growth in demand for engineering and technology skills is being reinforced by major Government backed civil infrastructure programmes and sustained private sector investment in electrification, automation, and data and digital capability. CompTIA's analysis of the UK tech workforce projects net growth in technology employment, with strong metropolitan concentrations in London, Manchester, Edinburgh, Leeds, and Bristol. This indicates persistent cross-sector demand for engineering and technology skills, not limited to specialist technology firms. Taken together, sectoral evidence consistently highlights ongoing shortages across skilled trades and technician occupations, particularly those underpinning modernisation, productivity enhancement, and infrastructure delivery. Without a commensurate acceleration in training supply, skills portability and workforce retention, these pressures are likely to persist through to 2030 and beyond.

Demand for engineering and technology skills is highest where manufacturing and infrastructure hubs cluster (Midlands, Northwest, Yorkshire & Humber; Southeast England and Northeast Scotland) (RAEng, Engineering Economy and Place, 2023, p22). Research by CompTIA shows similar metro concentration in tech occupations demonstrating its importance to many economic sectors and industries. It is anticipated that technician and trade shortages to be more intense around large project pipelines and metro tech hubs, with differences reflecting regional sector mixes and training capacity.

Seasonal peaks can be expected in outdoor construction and installation trades, and procurement cycles can affect manufacturing and process operatives working to meet contract demands in short term. However, the multi-year nature of current and future planned infrastructure projects, decarbonisation,

electrification, and digital infrastructure programmes means demand should remain structurally elevated despite seasonal oscillation.

The net effect of these factors points towards a persistent shortage over the next 5 to10 year period in skilled labour across the listed SOCs. This shortage will be driven by expansions in digital, infrastructure and industrial modernisation projects combining with internal workforce factors like impending retirement surges plus regionally specific issues in further education and training capacities. Absent substantive pipeline reforms and targeted migration as a short-term bridge, delivery risks for programmes including the Industrial Strategy and productivity gains are likely to remain elevated.

Section D: Actions

Already doing

The engineering sector delivers a wide range of programmes designed to inspire young people, strengthen pathways into engineering and technical careers, and support the development of a skilled future workforce. These initiatives include awareness-raising campaigns, school and college interventions, careers resources, and targeted support for teachers and employers. Collectively, National Engineering Policy Centre (NEPC) members play a major role in this activity.

The Royal Academy of Engineering (RAEng) and EngineeringUK jointly lead This is Engineering, a national campaign launched in 2018 to increase the number and diversity of young people pursuing engineering. By showcasing real engineers and real engineering, the campaign reframes perceptions among 13–18-year-olds and their influencers, highlighting the creativity, societal value and breadth of engineering careers, as well as the routes into them.

Building on this, RAEng operates the This is Engineering Schools Programme across the Devolved Administrations and the West Midlands. This initiative aims to transform learner perceptions of engineering, boost engagement in STEM and strengthen teacher confidence, while tailoring activities to regional labour market needs. RAEng also supports the Further Education sector through information and teaching resources on T Levels to help students understand their options, support employers to offer placements, and guide providers in delivering high-quality technical education.
In 2024, EngineeringUK launched EUK Education, a unified platform bringing together its full suite of education and careers resources, including the Big Bang, Neon, Energy Quest, Tomorrow's Engineers Week and the Climate Schools Programme. Since launch, more than 30,000 educators have accessed the platform.

EngineeringUK's Climate Schools Programme provides curriculum-linked resources that demonstrate how engineering and technology contribute to tackling climate change. In 2024/25, 386 schools registered to use the materials. Tomorrow's Engineers Week remains a focal point for national engagement, with the 2025 campaign reaching over 61,000 young people, generating more than one million social media engagements and a media reach of 1.7 million.

The Institution of Mechanical Engineers (IMechE) also plays an important role in strengthening teaching capacity. Its Share Your Skills FE programme encourages engineers to take up part-time teaching roles, helping address shortages in the sector. The Engineers Teach Physics scheme, supported by IMechE, the Institution of Engineering and Technology (IET), the Institute of Physics (IOP) and EngineeringUK, enables engineers, veterans and career-changers to enter physics teaching and bring real-world engineering experience into classrooms. Together, these initiatives show sustained investment in awareness-raising, high-quality STEM experiences, teacher capability and technical pathways. They also underline the importance of a coherent national strategy, long-term funding and collaboration between government, employers, education providers and the engineering profession to meet the UK's future engineering and clean-energy skills needs.

In parallel, the UK Government has introduced measures to strengthen the national pipeline of engineering and technical skills. Central to this is the Clean Energy Jobs Plan, which outlines how government intends to grow the workforce required to deliver the UK's clean-energy ambitions. Commitments include £182 million for engineering skills, further investment in engineering T Levels and new Technical Excellence Colleges. While welcome, questions remain about whether these steps are sufficient given historic underinvestment and expected workforce shortages across clean energy and industrial sectors.

Several cross-cutting factors will also affect the success of the skills system. Apprenticeship units could provide more flexible entry routes into technical roles, but their effectiveness will depend on clear standards and strong employer engagement. Investment in engineering and technology skills will only have impact if it translates into increased capacity, improved provision and meaningful learning opportunities. Foundation apprenticeships, still early in implementation, are likely to deliver varied outcomes until more robust evidence emerges. Crucially, young people must be able to navigate the growing range of technical pathways. The non-delivery of the planned £85 million for enhanced careers education risks limiting awareness of engineering and clean-energy opportunities. Strengthening existing careers support, such as the partnership between DWP School Advisers and Careers Hubs, will therefore be vital. As reforms progress, ongoing evaluation will be needed to ensure interventions deliver intended outcomes across all regions and sectors.

New Actions

In 2026, RAEng will launch its Skills Centre, bringing together expertise from industry and education to help the engineering community keep pace with rapidly evolving skills and technologies. Working with skills organisations, professional bodies and research institutes, the Centre will support colleges, universities, training providers and employers to ensure engineering and technology skills meet current and future needs. Initially based in Northeast England, the Centre will expand through additional hubs across the UK.

The Industrial Strategy includes new funding for the Further Education sector in England to expand and repair education infrastructure. The NEPC will work with

government to target this funding to increase the supply of engineering and technology technicians needed for major projects and policy goals.
Even with these measures, expansion of infrastructure projects, combined with rising retirements, means demand for skilled labour is likely to outpace current supply. Targeted, time-limited migration at RQF levels 3–5 will be essential to meeting workforce needs.