ENERGY & UTILITY SKILLS

Workforce demand estimates – 2026 to 2032
Energy and Utilities Sector

Summary report
November 2026



Workforce demand estimates – 2026 to 2032

Energy & Utilities Sector

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Sector 2026 – 2032

Skills to deliver the UK's future

ENERGY & UTILITY SKILLS

Turning workforce evidence into action for a resilient sector.

Our ambition
A resilient sector that keeps the UK healthy, supports growth and protects the environment.

Our Growth
Creating jobs, skills and investment to deliver vital infrastructure across the UK.

Our Opportunity
Good careers. Stronger communities. A cleaner, greener future.

Research
Trusted evidence for action renewed every two years.

Core requirement of **360,500** **people by 2032** ↑ **53%** of the current workforce

Robust workforce evidence to guide investment and delivery.

- Credible, transparent forecasts and methodology.
- A consistent framework for monitoring industry progress and the accuracy of our forecasts.
- Insight across sub-industries, geographies, skill levels and occupations.

Trusted insights to inform decisions today and tomorrow.

Attract
Bring new people into the industry.

We forecast **246,200** **new jobs by 2032** ↑ **36%** growth in total employment

That's around **35,200** new jobs each year.

- More apprenticeships and training opportunities.
- A diverse and inclusive workforce.
- Rewarding, meaningful careers.

Attracting new talent is essential to deliver a safe, reliable and resilient sector.

Develop
Grow skills and embrace new technology.

Core requirement of **127,700** **at RQF 3/SCQF 6 by 2032** ↑ **61%** of the current workforce

Split across 93,800 in technical occupations and 33,900 in business support occupations.

- Increase productivity through innovation and technology.
- The adoption of AI and automation could reduce the core requirement by up to 15,500 people.

A more productive, higher skilled workforce that can deliver more.

Retain
Keep and develop our talented people.

We expect **114,300** **retirements by 2032**

That's **17%** of today's workforce – around **16,300** people each year

- Improve job quality, health, safety and well-being.
- Create clear career pathways and progression.
- Through continuous improvement in workforce retention the industry could mitigate the effect of normal staff turnover by up to **143,000 people**.

Retaining our people protects expertise, builds stronger teams and keeps the sector moving forward.

Real economic impact. Stronger communities.

Growth as a % of current workforce
Scotland = **41%**
England = **36%**
Wales = **32%**
Northern Ireland = **31%**

246,200 new jobs could create **£10.1 billion** of additional earnings.

By 2032, total GVA could reach between **£170 billion** and **£292 billion.**

1 About this report

1.1 Introduction

1.1.1 This report is one in a series that contain current workforce estimates and forecasts for the number of new jobs and people required across the UK energy and utilities sector between 2026 and 2032 inclusive, including:

- **Energy and utilities sector** (containing the aggregate analysis from across all six industries of the sector)
- **Community & domestic low carbon technologies** (including community and district heating, and the installation and repair of domestic gas boilers, heat pumps, smart meters, solar PV and battery storage and EV chargepoints)
- **Electricity networks** (including electrical equipment manufacturing, construction and installation, operation and maintenance and the trade of electricity)
- **Gas networks** (including the manufacture, distribution and retail trade of gas through the networks)
- **Power generation** (including thermal power and clean energy technologies)
- **Waste and recycling** (including the collection, treatment, disposal and recycling of waste)
- **Water and wastewater** (including the collection, treatment and supply of water; sewerage; the construction of water assets)

1.1.2 This report covers the whole of the energy and utilities sector.

1.2 From workforce evidence to strategic action

1.2.1 This report provides a factual estimate of the workforce required by the UK Energy & Utilities sector between 2026 and 2032. Its central purpose is to identify the gap between the number and mix of people the industry will require and the workforce available to meet that requirement.

1.2.1 The findings support the four pillars of the Energy and Utilities Skills Strategy 2025-2030[1] in distinct ways:

- **Research** provides the definitions, evidence, methodology and update cycle that make the estimates credible
- **Attract** identifies the core requirement for additional jobs and replacement of people retiring from the workforce
- **Develop** considers how productivity, artificial intelligence, automation and new working methods could reduce or reshape that requirement
- **Retain** shows how movement out of the industry could increase the number of new people who must be recruited.

1.2.2 These pillars are not separate forecasts. **Attract** provides the central workforce requirement, while **Develop** and **Retain** test the factors that could move it. **Research** establishes the credibility of the forecasts.

[1] https://euskills.co.uk/about/our-strategy/

2 Industry headlines

Figure 1: Current workforce estimates and forecast number of new jobs created, retirements and the total core requirement for people by 2032

Industry	Total employment		New jobs created		Retirements		Core requirement for people		
	2025 baseline	2032	Number	*% Growth*	Number	*% of current workforce*	Total	*% of current workforce*	Average per year
Community & Domestic Low Carbon Technologies	151,000	240,400	89,300	*59%*	27,400	*18%*	116,800	*77%*	16,700
Electricity Networks	110,100	137,500	27,400	*25%*	16,900	*15%*	44,300	*40%*	6,300
Gas Networks	32,000	39,200	7,200	*23%*	4,700	*15%*	11,900	*37%*	1,700
Power Generation	137,000	213,300	76,300	*56%*	23,300	*17%*	99,600	*73%*	14,200
Waste & Recycling	154,000	175,000	21,000	*14%*	27,000	*18%*	48,000	*31%*	6,900
Water & Sewerage	92,000	117,000	25,000	*27%*	15,000	*16%*	40,000	*43%*	5,700
Energy & Utilities Sector	**676,100**	**922,400**	**246,200**	*36%*	**114,300**	*17%*	**360,500**	*53%*	**51,500**

Note: Figures may not sum to the grand total due to rounding.

2.1 Attract: The core workforce requirement

2.1.1 The Energy & Utilities Sector is forecast to grow from 676,100 to 922,400 in 2032 – an increase of 246,200 people, or 36% over current levels.

2.1.2 In addition, there will be approximately 114,300 retirements, equivalent to 17% of the current workforce.

2.1.3 The total core requirement for people between 2026 and 2032 is forecast to be 360,500, equivalent to 53% of the current workforce – requiring 51,500 people per year.

2.1.4 The figure below shows the annual forecasts of the core requirement for people across the energy and utilities sector – broken down by new jobs created and retirements.

2.1.5 The number of retirements is forecast to increase slightly each year – driven partly by the workforce getting older, but also as the workforce increases in size.

Figure 2: Core requirement for people by year and cause



Note: Figures may not sum to the grand total due to rounding.

2.1.6 The reduction over time in the number of new jobs created is entirely driven by these forecasts being based on the known pipeline of projects and investments in each industry – these known pipelines naturally tend to diminish over time. So, it is important to note that this profile of new job creation does not necessarily reflect an expected decline in new job creation – although that may be the case – as new and additional projects and investment may well become known and become live before 2032.

2.2 Develop: Potential impact of artificial intelligence and automation on 'At Risk of Reduction' occupations

2.2.1 Section 3 below systematically assesses how artificial intelligence (AI), automation and associated technologies might affect workforce demand across individual occupations. It applies low, medium and high adoption scenarios across seven dimensions of technological adoption and classifies each occupation according to whether workforce demand is *At Risk of Reduction, Significantly Impacted, Augmented* or subject to *Limited Impact*.

2.2.2 Across the sector, the following occupations are At Risk of Reduction meaning AI and automation could reduce their future core workforce requirement through productivity improvements and task automation:

- 71 - Sales Occupations
- 72 - Customer Service Occupations
- 41 - Administrative Occupations
- 42 - Secretarial and Related Occupations
- 92 - Elementary Administration and Service Occupations
- 34 - Culture, Media and Sports Occupations
- 62 - Leisure, Travel and Related Personal Service Occupations

2.2.3 Together, these occupations have a core requirement of 66,100 people by 2032, equivalent to 18% of the overall core requirement. This identifies the part of the forecast that is most exposed to potential workforce demand reduction – it does not imply that the core requirement for people by 2032 could be reduced by 66,100.

Figure 3: Core requirement of 'At Risk of Reduction' occupations across the sector

Industry	Number
Community & Domestic Low Carbon Technologies	17,800
Electricity Networks	9,100
Gas Networks	2,600
Power Generation	14,500
Waste & Recycling	14,400
Water & Sewerage	7,700
Energy & Utilities Sector – *At Risk of Reduction* occupations only	**66,100**

Note: Figures may not sum to the grand total due to rounding.

2.2.4 The potential reduction in workforce demand varies between industries depending on the occupations exposed and the technologies being adopted. The sensitivity analysis therefore applies industry-specific assumptions rather than a single sector-wide reduction rate.

2.2.5 The table below shows the potential reduction in the core requirement for people within each industry under three AI and automation scenarios – more details of these scenarios are contained in each industry report.

Figure 4: Potential impact of AI and automation adoption by industry

Industry	AI and automation adoption scenario		
	Low	Medium	High
Community & Domestic Low Carbon Technologies	0-2%	3-8%	9-18%
Electricity Networks	0-3%	4-12%	13-25%
Gas Networks	0-3%	4-10%	11-20%
Power Generation	0-3%	4-12%	13-25%
Waste & Recycling	0-4%	5-15%	16-30%
Water & Sewerage	0-3%	4-10%	11-20%

2.2.6 The greatest potential impact is identified in Waste & Recycling, where automation can directly substitute some routine sorting and processing activities, while the impact is lower in Community & Domestic Low Carbon Technologies, where workforce demand remains heavily driven by physical installation, commissioning and maintenance.

2.2.7 Our analysis indicates that the potential impact of AI and automation on the *At Risk of Reduction* occupations (listed in paragraph 2.3.2 above) could be:

- 1,950 people under the low adoption scenario (equivalent to a reduction of up to 3%)
- Between 2,600–7,450 under the medium adoption scenario (equivalent to a reduction of between 4% to 11%)
- Between 8,100–15,500 under the high adoption scenario (equivalent to a reduction of between 12% to 23%)

2.2.8 These are illustrative sensitivity assumptions rather than forecasts of job losses.

2.2.9 Section 3 presents the detailed occupation-level assessment under each adoption scenario, with the full analytical framework set out in Annex A2.4.

2.3 Retain: Replacement demand sensitivity

2.3.1 In addition to the core requirement for people based on new job creation and retirements, we must consider the extent to which people might leave the workforce in order to take up employment in other sectors of the economy (or move overseas).

2.3.2 For this analysis we have not included any vacancies that may be created by one person leaving their job in the energy and utilities sector and taking up another position within the sector.

2.3.3 As detailed in Annex 2.2, we have assumed a proportion of the workforce will leave each year for reasons other than retirement – these annual proportions range from 2% to 5% depending on the occupation.

2.3.4 In total, in addition to the core requirement for 360,500 people by 2032, an additional 143,000 people may be needed to fill vacancies by those who leave the workforce for other reasons

Figure 5: Potential additional vacancies (over-and-above the core requirement)

Industry	Number	*% of current workforce*
Community & Domestic Low Carbon Technologies	33,800	*22%*
Electricity Networks	23,900	*22%*
Gas Networks	7,000	*22%*
Power Generation	31,700	*23%*
Waste & Recycling	26,600	*17%*
Water & Sewerage	20,000	*22%*
Energy & Utilities Sector	**143,000**	***21%***

Note: Figures may not sum to the grand total due to rounding.

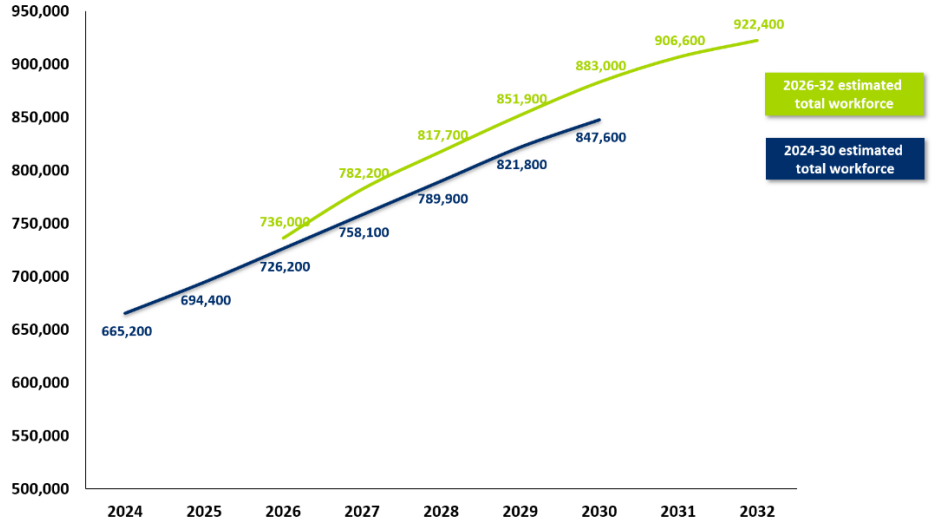
2.3.5 The challenge for the sector will be to minimise these additional vacancies, while recognising that some level of staff turnover is generally considered positive in terms of bringing in a diversity of people, experiences and ideas. Commitment 3: Retain experience and widen access to opportunity in the Call to Action below provides further information on how the sector might achieve improvements in workforce retention.

2.4 Research: Maintaining the credibility of these forecasts

2.4.1 These workforce demand estimates were published for the first time in 2024 and will be updated every two years.

2.4.2 In order to assess how our forecasts of total workforce numbers have changed since our 2024 forecasts, the figure below presents those and our latest forecasts side-by-side.

Figure 6: Forecast total workforce for 2026-32 compared to 2024-30 forecast



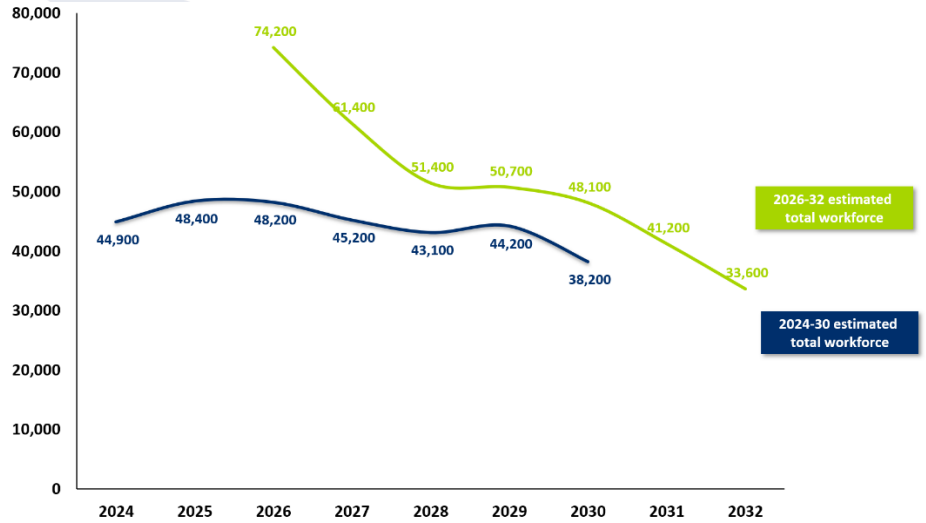
2.4.3 Overall, the updated workforce forecasts remain broadly comparable with those published in 2024, although the new estimates are consistently higher across the overlapping forecast period.

2.4.4 The main causes of this variance include:

- The inclusion of Community & District Low Carbon Technologies – only Gas Utilisation was included in the 2024 estimates
- A wider industry definition of the electricity networks industry, which now includes the manufacturing of equipment and more of the construction supply chain

2.4.5 Similarly, the figure below compares our 2024 annual core requirement for people to our new forecasts for 2026 to 2032.

Figure 7: Forecast core requirement for 2026-32 compared to 2024-30 forecast



2.4.6 The principal reasons behind this greater level of variance are:

- The core requirement for people in the Community & District Low Carbon Technologies industry
- In 2024, we flat-profiled the forecast 30,000 new jobs across AMP8 (covering the 2025 to 2029 calendar years), while in our latest forecasts we have assumed 25,000 new jobs over the remaining four years of AMP8 will be front-loaded in the earlier years
- A revised profile of new job creation in the electricity networks industry based on known investments

2.4.7 Our aim, wherever possible, is to improve the accuracy of these workforce demand estimates with each update.

2.5 Nations and regions

2.5.1 The following analysis uses the government-standard definition of four nations across the UK and nine regions within England.

2.5.2 Workforce demand is concentrated in England, which accounts for 288,100 of the 360,500 core requirement for people across the UK by 2032. England's workforce is forecast to grow by 36%.

2.5.3 Scotland faces the greatest proportional recruitment pressure among the four nations. Its workforce is forecast to grow from 80,100 to 113,400 – a 41% increase.

2.5.4 Within England, London has the largest core requirement for people, at 54,100 people (equivalent to 81% of the current workforce).

Figure 8: Current workforce estimates and forecast number of new jobs created, retirements and the total core requirement for people by 2032 by region

Nation & Region	Total employment		New jobs created		Retirements		Core requirement for people		
	2025 baseline	Number	Number	*% Growth*	Number	*% of current workforce*	Total	*% of current workforce*	Average per year
England	543,500	740,100	196,600	*36%*	91,500	*17%*	288,100	*53%*	41,200
Northern Ireland	19,500	25,400	6,000	*31%*	3,300	*17%*	9,200	*47%*	1,300
Scotland	80,100	113,400	33,200	*41%*	14,000	*17%*	47,200	*59%*	6,700
Wales	33,000	43,400	10,400	*32%*	5,500	*17%*	15,900	*48%*	2,300
United Kingdom	**676,100**	**922,400**	**246,200**	***36%***	**114,300**	***17%***	**360,500**	***53%***	**51,500**
English regions									
East of England	53,300	76,500	23,200	*43%*	9,200	*17%*	32,400	*61%*	4,600
East Midlands	43,100	53,000	9,900	*23%*	6,800	*16%*	16,700	*39%*	2,400
London	66,400	107,900	41,500	*62%*	12,600	*19%*	54,100	*81%*	7,700
North East	28,400	38,100	9,700	*34%*	4,700	*17%*	14,500	*51%*	2,100
North West	92,600	118,000	25,300	*27%*	14,700	*16%*	40,000	*43%*	5,700
South East	92,600	123,000	30,400	*33%*	15,500	*17%*	46,000	*50%*	6,600
South West	68,600	91,800	23,100	*34%*	11,200	*16%*	34,400	*50%*	4,900
West Midlands	46,900	60,300	13,400	*29%*	7,700	*16%*	21,100	*45%*	3,000
Yorkshire & The Humber	51,500	71,600	20,000	*39%*	8,900	*17%*	29,000	*56%*	4,100

Note: Figures may not sum to the grand total due to rounding.

2.6 Skills and occupations

Skill levels

2.6.2 The core requirement for people is greatest at RQF 3 / SCQF 6, where employers will need to attract 127,700 people by 2032. This is equivalent to 61% of the current workforce and includes 89,500 new jobs and 38,200 retirements.

2.6.3 Substantial demand is also forecast at RQF 1 / SCQF 4, which will require 71,600 people.

2.6.4 Replacement demand exceeds new job creation at most skill levels. The exception is RQF 4–5, where workforce expansion is greater than replacement demand, while at RQF 6 the two components are broadly equal. This illustrates the need to support both workforce renewal and the expansion of technical and higher-skilled roles.

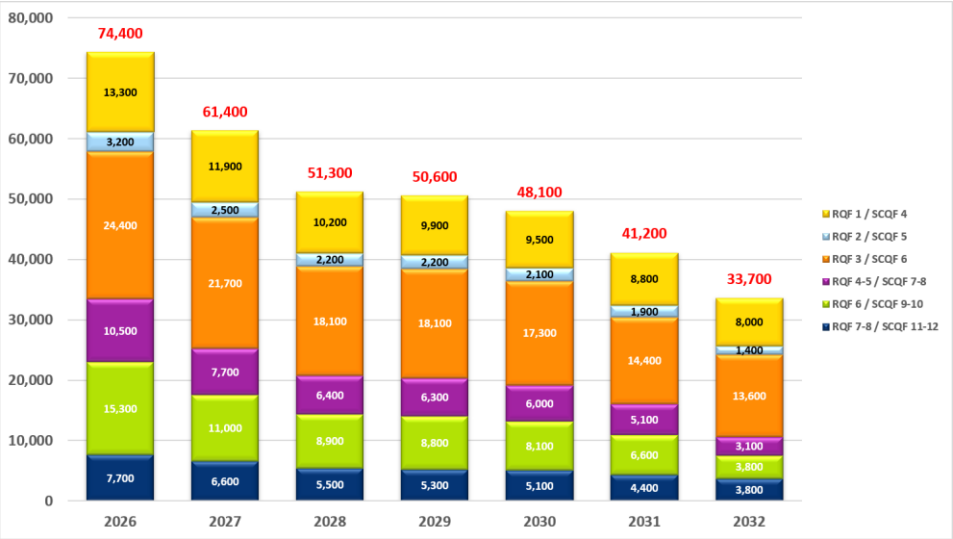
Figure 9: Current workforce estimates and forecast number of new jobs created, retirements and the total core requirement for people by 2032 by skill level

RQF/SCQF Level	Total employment		New jobs created		Retirements		Core requirement for people		
	2025 baseline	Number	Number	% Growth	Number	% of current workforce	Total	% of current workforce	Average per year
RQF 7-8 SCQF 11-12	66,800	91,700	24,900	*37%*	13,500	*20%*	38,400	*58%*	5,500
RQF 6 SCQF 9-10	116,800	165,000	48,300	*41%*	14,100	*12%*	62,400	*53%*	8,900
RQF 4-5 SCQF 7-8	84,300	118,600	34,300	*41%*	10,800	*13%*	45,100	*54%*	6,400
RQF 3 SCQF 6	210,200	299,600	89,500	*43%*	38,200	*18%*	127,700	*61%*	18,200
RQF 2 SCQF 5	35,600	46,500	10,900	*31%*	4,500	*13%*	15,400	*43%*	2,200
RQF 1 SCQF 4	162,500	200,900	38,400	*24%*	33,200	*20%*	71,600	*44%*	10,200
Energy & Utilities Sector	**676,100**	**922,400**	**246,200**	*36%*	**114,300**	*17%*	**360,500**	*53%*	**51,500**

Note: Figures may not sum to the grand total due to rounding.

2.6.5 The next figure shows the annual core requirement for people by skill level.

Figure 10: Core requirement for people by skill level and year



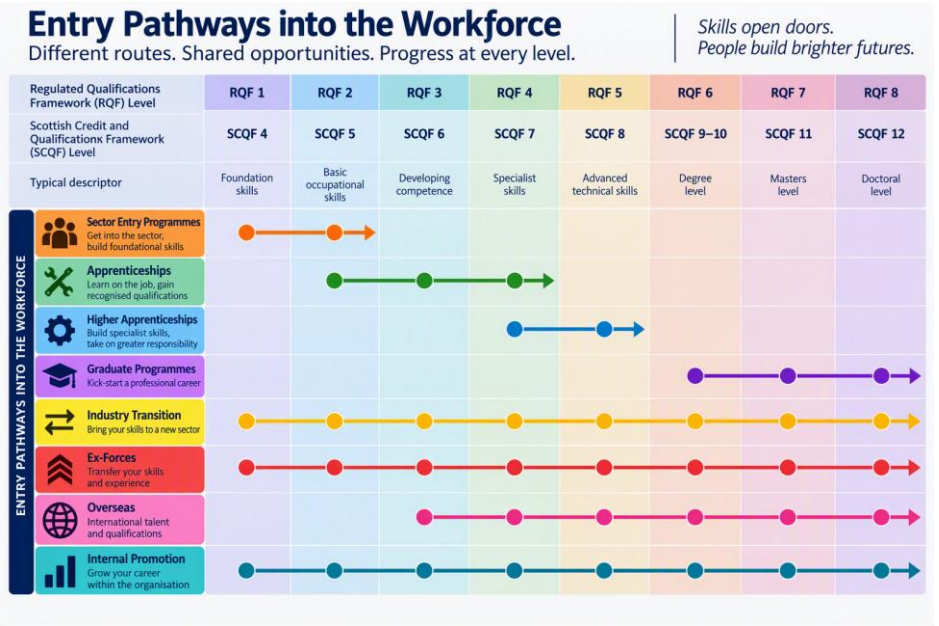
Note: Figures may not sum to the grand total due to rounding.

2.6.6 The entry pathways into the workforce will vary depending upon the skill level of the occupation. Each entry pathway will have its unique characteristics in terms of lead-time to competency and entry point into the workforce.

2.6.7 At skill levels 1 and 2 (4-5 in Scotland), sector entry-type programmes could provide an immediate solution. At skill levels 3-5 (6-8 in Scotland), a number of entry pathways may be appropriate, but lead-times to competency will determine the extent to which they are able to satisfy immediate demands (e.g. with training lead-times of 3 years+ for an apprentice (and the associated need for trainers, assessors and mentors), increasing the volume in the pipeline now will not produce positive outcomes until the turn of the decade).

2.6.8 Transitioning in experienced workers from other sectors will be a priority, as will developing the existing workforce and enabling career progression via internal promotions. However, this process cannot be rushed to point where people are promoted prematurely.

Figure 11: Potential entry pathways into the workforce



2.6.9 Industry will make use of range of different recruitment and training pathways, providing a balanced approach to meeting both short-term and longer-term demands for people.

Occupations

2.6.10 All our estimates and forecasts have been broken down by 26 occupations – based on the two-digit Standard Occupational Classification taxonomy (see Figure 12 below). Furthermore, these have been grouped into five occupational groups (more information can be found in Annex 1 below):

- **Managerial**: Directors and functional managers
- **Technical Professional**: Typically, science and engineering professional engineers
- **Business Support**: Typically, roles including media, marketing, site security, and specialist roles such as quantity surveyor, estimator and procurement
- **Front Line Technical**: Typically, operative and craft level workers such as Overhead Linesperson; Gas Network Operative, Heat Pump Installer, etc
- **Other**: In the main, these occupations are generally not directly relevant to the core activities of the industry, but data collection processes may result in a small number of people being reported (e.g. nurses/first aiders, community development specialists, etc.).

2.6.11 Front Line Technical occupations account for the largest share of the core requirement for people – 158,500 people by 2032.

2.6.12 Business Support occupations have the second-largest requirement, at 106,500 people.

2.6.13 Figure 12 below breaks down these broad occupational groups into 26 two-digit SOCs.

Figure 12: Current workforce estimates and forecast number of new jobs created, retirements and the total core requirement for people by 2032 by broad occupational group

Broad Occupational Group	Total employment		New jobs created		Retirements		Core requirement for people		
	2025 baseline	2032	Number	% Growth	Number	% of current workforce	Total	% of current workforce	Average per year
Managerial	66,800	91,700	24,900	*37%*	13,500	*20%*	38,400	*58%*	5,500
Technical Professional	104,500	147,400	42,900	*41%*	12,100	*12%*	55,000	*53%*	7,900
Business Support	202,500	278,400	75,900	*37%*	30,600	*15%*	106,500	*53%*	15,200
Front Line Technical	298,100	399,200	101,100	*34%*	57,400	*19%*	158,500	*53%*	22,600
Other	4,300	5,700	1,400	*34%*	700	*17%*	2,200	*52%*	300
Energy & Utilities Sector	**676,100**	**922,400**	**246,200**	*36%*	**114,300**	*17%*	**360,500**	*53%*	**51,500**

Note: Figures may not sum to the grand total due to rounding.

Figure 13: Current workforce estimates and forecast number of new jobs created, retirements and the total core requirement for people by 2032 by occupation

Skill level	Standard Occupation Classification (Sub-Major Group)	Total employment		New jobs created		Retirements		Core requirement for people		
		2025 baseline	2032	Number	% Growth	Number	% of current workforce	Total	% of current workforce	Average per year
RQF 7-8 SCQF 11-12	11 - Corporate Managers and Directors	52,200	73,200	21,000	40%	10,700	20%	31,700	61%	4,500
	12 - Other Managers and Proprietors	14,600	18,500	3,900	27%	2,800	19%	6,700	46%	1,000
RQF 6 SCQF 9-10	21 - Science, Research, Engineering and Technology Professionals	77,600	109,200	31,700	41%	8,400	11%	40,000	52%	5,700
	22 - Health Professionals	900	1,200	300	34%	100	16%	400	50%	100
	23 - Teaching and Other Educational Professionals	<100	<100	<100	57%	<100	17%	<100	74%	<100
	24 - Business, Media and Public Service Professionals	38,300	54,600	16,300	43%	5,600	15%	21,900	57%	3,100
RQF 4-5 SCQF 7-8	31 - Science, Engineering and Technology Associate Professionals	27,000	38,200	11,200	42%	3,700	14%	14,900	55%	2,100
	32 - Health and Social Care Associate Professionals	300	400	100	27%	100	17%	100	44%	--
	33 - Protective Service Occupations	1,000	1,200	300	30%	100	8%	400	38%	100
	34 - Culture, Media and Sports Occupations	1,000	1,500	500	49%	100	11%	600	61%	100
	35 - Business and Public Service Associate Professionals	55,100	77,300	22,200	40%	6,900	13%	29,100	53%	4,200
RQF 3 SCQF 6	41 - Administrative Occupations	55,900	75,200	19,300	35%	10,100	18%	29,400	53%	4,200
	42 - Secretarial and Related Occupations	6,000	8,400	2,400	40%	1,600	27%	4,000	67%	600
	51 - Skilled Agricultural and Related Trades	1,300	1,700	400	31%	400	32%	800	63%	100
	52 - Skilled Metal, Electrical and Electronic Trades	70,100	104,500	34,400	49%	12,400	18%	46,800	67%	6,700
	53 - Skilled Construction and Building Trades	76,000	108,700	32,700	43%	13,500	18%	46,200	61%	6,600
	54 - Textiles, Printing and Other Skilled Trades	900	1,200	300	31%	200	16%	400	47%	100
	61 - Caring Personal Service Occupations	1,100	1,400	400	37%	200	18%	600	56%	100
	62 - Leisure, Travel and Related Personal Service Occupations	1,100	1,400	400	34%	200	18%	600	52%	100
	63 - Community and Civil Enforcement Occupations	0	0	0	--	0	--	0	--	--
RQF 2 SCQF 5	71 - Sales Occupations	10,000	12,600	2,600	26%	1,500	15%	4,100	41%	600
	72 - Customer Service Occupations	23,500	31,000	7,500	32%	2,600	11%	10,100	43%	1,400
RQF 1 SCQF 4	81 - Process, Plant and Machine Operatives	35,500	47,900	12,400	35%	7,500	21%	19,900	56%	2,800
	82 - Transport and Mobile Machine Drivers and Operatives	53,100	63,700	10,600	20%	13,800	26%	24,400	46%	3,500
	91 - Elementary Trades and Related Occupations	10,600	14,500	4,000	37%	2,100	20%	6,000	57%	900
	92 - Elementary Administration and Service Occupations	63,400	74,800	11,400	18%	9,900	16%	21,300	34%	3,000
Energy & Utilities Sector		**676,100**	**922,400**	**246,200**	**36%**	**114,300**	**17%**	**360,500**	**53%**	**51,500**

Note: Figures may not sum to the grand total due to rounding.

2.6.14 Figure 13 below ranks each of the above occupations in terms of their level of priority through to 2032 based on a range of ten criteria (including taking in account each occupation's importance to delivery and level of shortage in the UK) – those ranked as low priority are not shown.

2.6.15 Five occupations are ranked as critical:

- 21: Science, research, engineering and technology professionals
- 52: Skilled metal, electrical and electronic trades
- 53: Skilled construction and building trades
- 31: Science, engineering and technology associate professionals
- 81: Process, plant and machine operatives

2.6.16 These occupations are likely to be major constraints on infrastructure delivery by 2032 because they combine high delivery criticality, existing shortages, long training lead times, regulatory importance and limited scalability. It is likely that immediate intervention is required, including targeted workforce strategies, apprenticeships, retraining programmes, recruitment campaigns and supply-chain action.

2.6.17 By 2032, these five critical occupations will employ an additional 122,400 people and have a core requirement for people of 167,900 by 2032.

2.6.18 Five occupations are ranked as high priority:

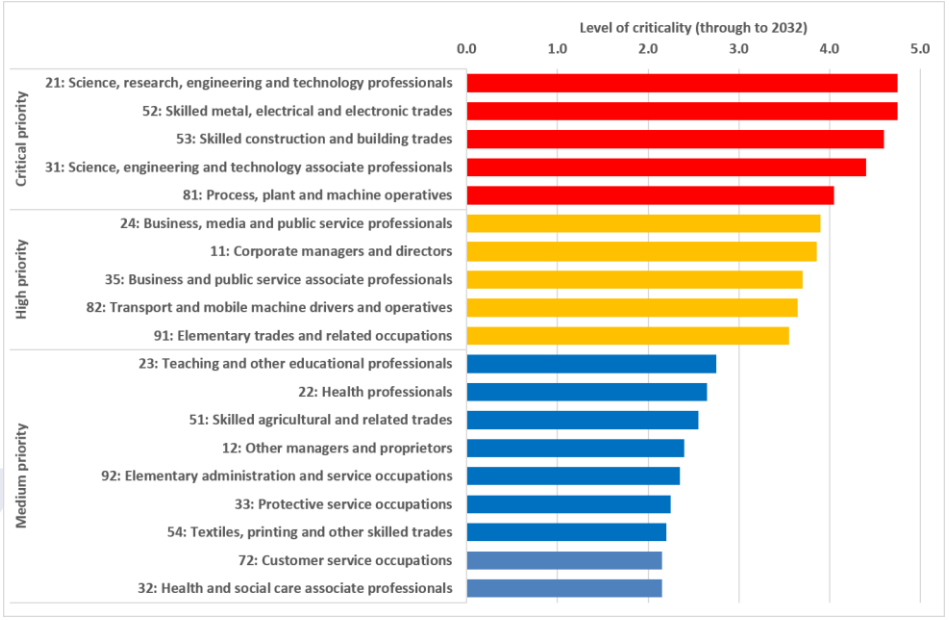
- 24: Business, media and public service professionals
- 11: Corporate managers and directors
- 35: Business and public service associate professionals
- 82: Transport and mobile machine drivers and operatives
- 91: Elementary trades and related occupations

2.6.19 These occupations present a significant workforce risk and are likely to experience recruitment pressure but are not expected to be a critical bottleneck across the industry. Active monitoring and targeted interventions is required.

2.6.20 By 2032, these five high priority occupations will employ an additional 74,000 people and have a core requirement for people of 113,100 by 2032.

2.6.21 In total, some 196,400 new jobs will be created in occupations that are either critical or high priority occupations (80% of all new job creation); with a core requirement for people of 281,000 (78% of the total core requirement for people).

Figure 14: Forecasted level of occupational criticality through to 2032



3 Impact of artificial intelligence and automation on workforce demands

3.1.1 Artificial intelligence (AI), automation, advanced analytics and digital technologies are increasingly being adopted across the energy and utilities sector. Evidence from electricity networks, gas networks, power generation, water and sewerage, waste and recycling, and domestic low-carbon technologies suggests that AI is likely to have a greater impact on how work is undertaken than on overall employment levels.

3.1.2 Across the sector, AI adoption is typically focused on improving operational performance, optimising asset utilisation, supporting decision-making and automating routine information-processing activities. Common applications include:

- predictive maintenance;
- digital twins;
- remote monitoring;
- operational analytics;
- optimisation systems;
- smart metering and sensor networks;
- customer-service automation;
- reporting and workflow automation.

3.1.3 The specific technologies being adopted vary between industries. Examples include:

- asset-health monitoring and network analytics in electricity networks;
- pressure management and leakage analytics in gas networks;
- plant optimisation an advanced control systems in power generation;
- leakage detection, treatment optimisation and smart metering in water and sewerage;
- robotic sorting and computer vision in waste and recycling;
- smart controls, connected heating systems and energy-management platforms in domestic low-carbon technologies.

3.1.4 Despite these differences, a consistent theme is the growing use of operational data to support more predictive and proactive approaches to asset management, maintenance planning and service delivery. AI-enabled systems are increasingly being used to identify anomalies, forecast operational risks, prioritise interventions and improve decision-making.

3.1.5 The greatest workforce-demand reductions are generally expected in routine administrative, customer-service and information-processing activities. AI can increasingly automate customer enquiries, reporting, document management, workflow processing, scheduling and routine analytical tasks, reducing the need for manual processing and transactional work.

3.1.6 Most engineering, technical and operational occupations are expected to experience augmentation rather than workforce reduction. Across the sector, AI is more likely to provide workers with improved information, diagnostics, forecasting and decision-support capabilities than replace the need for human expertise. In many cases, physical intervention, safety-critical decision-making, regulatory compliance and operational accountability continue to require skilled workers.

3.1.7 The sector is increasingly moving from reactive towards predictive operating models. Predictive maintenance, condition monitoring, automated diagnostics and real-time performance monitoring are becoming more widespread across network infrastructure, generation assets, treatment facilities, vehicles, equipment and customer-facing systems.

3.1.8 A recurring finding across all industries is that effective AI adoption depends on data quality, digital infrastructure and organisational capability. As a result, demand is expected to increase for occupations and skills associated with:

- data analytics;
- digital systems management;
- operational analytics;
- remote monitoring;
- asset-information management;
- automation technologies;
- instrumentation and telemetry;
- AI-enabled decision support.

3.1.9 The impact of AI and automation is expected to vary considerably between occupations. Occupations involving routine monitoring, administrative processing, reporting, customer interaction and information management are generally more exposed to automation. By contrast, roles that depend heavily on physical intervention, engineering judgement, field operations, construction, maintenance and customer-facing technical work are more likely to be augmented than replaced.

3.1.10 Overall, the evidence suggests that AI and automation will primarily accelerate the digital transformation of the energy and utilities sector rather than fundamentally reduce workforce demand. Workforce requirements are expected to evolve towards stronger digital, analytical and technical capabilities, while human oversight, engineering expertise, operational judgement and regulatory accountability remain central to service delivery.

3.1.11 The following assessment considers how workforce demand may be affected under different levels of AI and automation adoption within the energy and utilities sector. Occupational groups have been classified according to their likely workforce-demand response to AI and automation adoption:

- **At Risk of Reduction** – Fewer workers may be required because AI and automation increase productivity and automate routine tasks.
- **Significantly Impacted** – Workforce demand remains broadly stable, but roles undergo substantial redesign as tasks, skills, responsibilities and workflows change significantly.
- **Augmented** – AI and automation improve productivity, decision-making and performance, but primarily enhance rather than redesign core roles, and demand for workers remains strong.
- **Limited Impact** – Little expected effect on workforce demand because activities continue to depend heavily on physical intervention, human interaction or site-based work.

3.1.12 Both *Significantly Impacted* and *Augmented* occupations are expected to experience widespread adoption of AI and automation. The key difference is that significantly impacted occupations are expected to undergo substantial job redesign, while augmented occupations primarily experience productivity and performance improvements with limited changes to the core nature of the role.

3.1.13 Low, medium and high adoption scenarios have been developed using a seven-dimension framework covering:

- investment and pace of adoption;
- technology maturity and autonomy;
- breadth of deployment;
- depth of workflow integration;
- task automation and augmentation;
- job redesign and skills transformation;
- productivity ambition.

3.1.14 These adoption scenarios describe the extent to which AI and automation are deployed within the industry. The occupational assessment then considers how different occupations may be affected under each adoption scenario.

3.1.15 The scenarios are intended to illustrate a range of plausible outcomes through to 2032 rather than predict a single future state:

- **Low Adoption** — AI and automation adoption remains relatively limited and focused on specific use cases. Organisations deploy individual tools for activities such as information retrieval, reporting, scheduling, basic analytics or administrative support, but these technologies are not extensively integrated into operational workflows. Most work continues to be undertaken using existing processes and workforce-demand impacts are limited.
- **Medium adoption** — AI and automation become mainstream across many organisations and functions. Proven technologies are integrated into business processes and support activities such as planning, monitoring, customer engagement, decision support and predictive maintenance. Roles and skill requirements begin to evolve, productivity improves and organisations increasingly use technology to redesign workflows and operating practices.
- **High adoption** — AI and automation are extensively embedded across organisational processes, operational activities and decision-making. Technologies are integrated with core systems, data and workflows, enabling significant automation, augmentation and workflow redesign. Organisations achieve substantial productivity gains and workforce demand is affected according to the exposure of the occupation group, with impacts ranging from workforce reduction in some roles to significant augmentation in others.

3.1.16 Potential workforce effects are assessed separately through the occupational risk categories and scenario analysis.

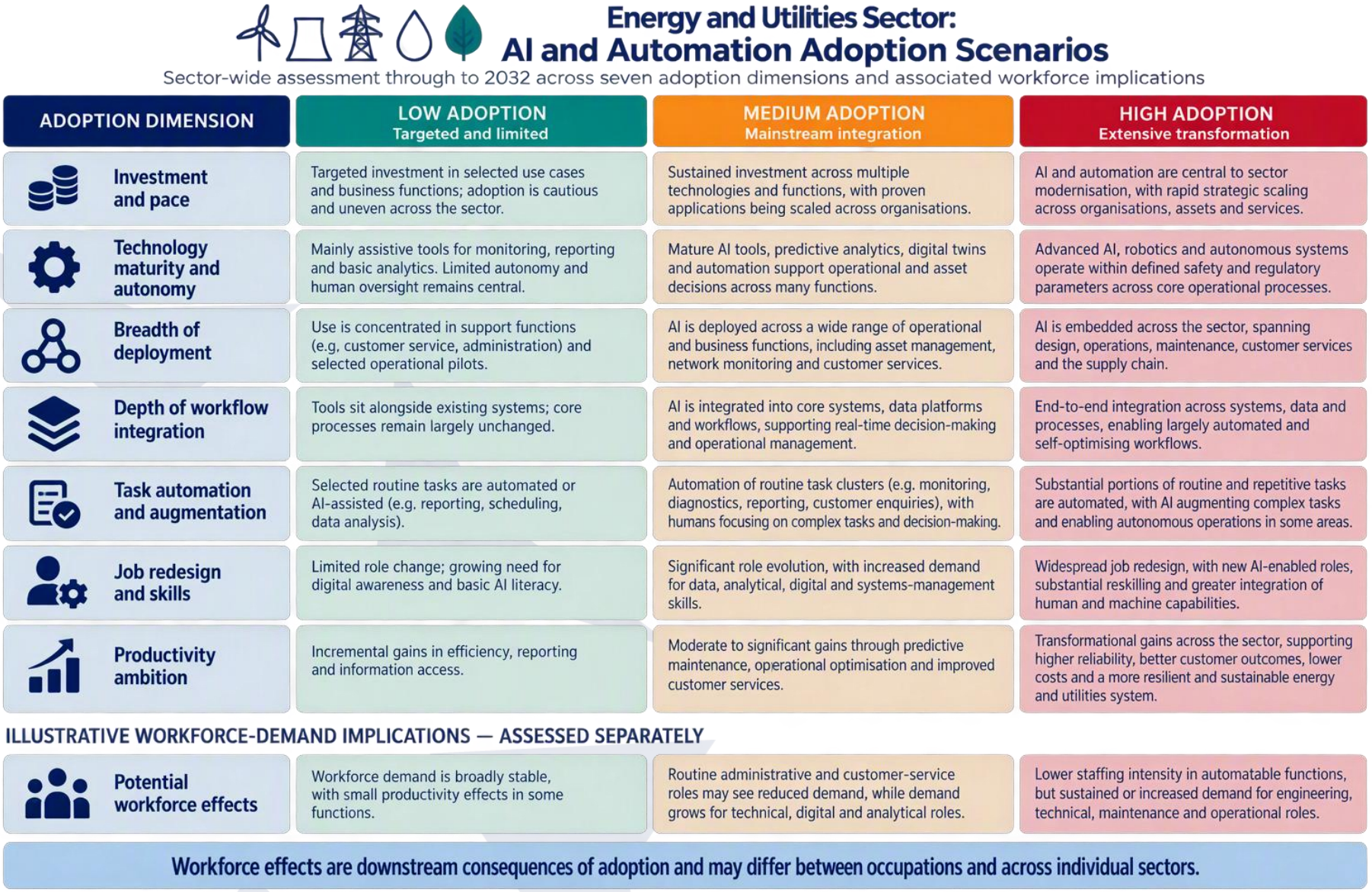
3.1.17 It is important to note that higher levels of AI and automation adoption do not automatically result in workforce reductions; impacts vary according to the characteristics of individual occupations and the extent to which tasks can be automated. Actual workforce outcomes will also depend on wider drivers including investment levels, regulatory requirements, infrastructure programmes, technological maturity and future demand for energy and utilities services.

Figure 15: Assessment of AI and automation risk by occupation

Risk category	Standard Occupation Classification	Occupational Group	Adoption Scenarios		
			Low Adoption	Medium Adoption	High Adoption
At Risk of Reduction	71 - Sales Occupations 72 - Customer Service Occupations 41 - Administrative Occupations 42 - Secretarial and Related Occupations 92 - Elementary Administration and Service Occupations 34 - Culture, Media and Sports Occupations	Business Support	AI is used mainly for document management, reporting, scheduling and customer-service support. Most administrative activities remain human-led and workforce demand remains broadly stable.	AI is routinely used for customer enquiries, scheduling, reporting, compliance administration and workflow management. Productivity improves while recruitment demand slows as routine tasks are increasingly automated.	AI is deeply integrated across customer service, reporting, compliance administration and workflow management. Automated processes, virtual agents and AI-generated reporting significantly reduce routine support activities and lower staffing intensity.
	62 - Leisure, Travel and Related Personal Service Occupations	Other	AI supports content creation, communications and stakeholder-engagement activities. Human oversight remains central to most work.	Generative AI becomes widely used for communications, engagement materials, scheduling and content production. Routine support activities become increasingly automated.	AI automates large elements of communications production, marketing content and routine coordination activities, reducing demand for repetitive support work.
Significantly Impacted	24 - Business, Media and Public Service Professionals 35 - Business and Public Service Associate Professionals	Business Support	AI supports reporting, compliance activities, performance analysis and operational planning. Most professional judgement remains unchanged.	AI becomes embedded within operational analytics, compliance reporting, asset-performance assessment and business-planning activities. Roles increasingly focus on interpretation, validation and assurance.	AI undertakes significant portions of performance analysis, forecasting, reporting and planning activities. Roles are redesigned around oversight, governance and decision-making, requiring substantial reskilling.
	54 - Textiles, Printing and Other Skilled Trades	Other	AI-assisted design, documentation and workflow-management tools support existing processes, with limited changes to role requirements.	Intelligent design and documentation systems automate routine production activities, increasing demand for digital and systems-management skills.	AI is integrated throughout production and documentation workflows. Workers increasingly manage, verify and quality-assure machine-generated outputs rather than producing them manually.
	31 - Science, Engineering and Technology Associate Professionals	Technical Professional	AI supports condition monitoring, diagnostics, technical reporting and asset-health assessments. Existing technician roles remain broadly unchanged.	Predictive maintenance, remote monitoring, operational analytics and automated diagnostics become increasingly common. Technicians increasingly use AI-generated insights to identify issues and prioritise interventions.	AI is deeply integrated into diagnostics, monitoring, asset management and maintenance planning. Roles shift towards interpreting AI-generated insights and managing increasingly automated systems.
	81 - Process, Plant and Machine Operatives	Front Line Technical	Automation mainly supports monitoring, operational reporting and process optimisation. Workers remain responsible for routine operational decisions.	AI-enabled monitoring, predictive analytics and optimisation systems become widespread. Workers spend less time on routine monitoring and more time responding to AI-generated insights.	Automated monitoring, predictive-control systems, digital twins and intelligent operational platforms significantly reshape operational roles. Workers increasingly manage exceptions, compliance and system assurance rather than routine operational control.

Risk category	Standard Occupation Classification	Occupational Group	Adoption Scenarios		
			Low Adoption	Medium Adoption	High Adoption
Augmented	11 - Corporate Managers and Directors	Managerial	Managers use AI for reporting, information retrieval and performance monitoring. Decision-making remains largely unchanged.	AI supports workforce allocation, asset planning, operational performance management and maintenance prioritisation, enabling more data-driven management.	AI is embedded across planning, resource allocation, performance management and reporting. Managers achieve significant productivity gains while retaining accountability for organisational outcomes.
	12 - Other Managers and Proprietors				
	21 - Science, Research, Engineering and Technology Professionals	Technical Professional	AI supports engineering analysis, asset reviews and performance assessments.	AI-enabled modelling, digital twins and advanced analytics improve operational performance, asset utilisation and maintenance planning.	AI is deeply embedded in asset management, optimisation, forecasting and planning activities. Productivity improves significantly while demand for engineering professionals remains strong.
	22 - Health Professionals	Other	AI supports training preparation, information management and administrative activities, with limited impact on workforce demand.	AI enhances workforce training, knowledge management and professional support activities, increasing demand for digital skills.	AI supports learning, skills analysis and workforce planning, making training and support functions more data-driven while workforce demand remains stable.
	23 - Teaching and Other Educational Professionals				
	32 - Health and Social Care Associate Professionals				
	33 - Protective Service Occupations	Business Support	AI supports monitoring, surveillance and risk-detection activities, with limited changes to working practices.	Intelligent monitoring systems improve incident detection, threat identification and risk management.	AI significantly improves monitoring, threat detection and incident-response coordination. Human judgement remains essential in regulated and safety-critical environments.
	51 - Skilled Agricultural and Related Trades	Front Line Technical	AI supports inspection planning, work scheduling, equipment monitoring and basic diagnostics. Most physical maintenance activities remain unchanged.	Predictive maintenance, AI-assisted diagnostics and digital work-management systems improve operational efficiency. Workers increasingly use digital decision-support tools.	AI enhances maintenance planning, condition monitoring, diagnostics and asset-performance management. Workers increasingly use AI-generated insights and automated monitoring systems, but physical maintenance, repair and field operations remain essential.
	82 - Transport and Mobile Machine Drivers and Operatives				
	52 - Skilled Metal, Electrical and Electronic Trades				
Limited Impact	53 - Skilled Construction and Building Trades	Front Line Technical	AI is limited to digital work instructions, scheduling tools and basic planning support, with little change to core physical work.	AI supports project planning, safety management and site coordination, but construction and site activities remain labour-intensive.	Physical construction, infrastructure delivery and site-based work remain essential. AI improves productivity and safety but has limited impact on workforce demand.
	91 - Elementary Trades and Related Occupations				
	61 - Caring Personal Service Occupations	Other	AI provides limited administrative support but has little influence on core activities.	Digital tools improve coordination and access to information, although work remains heavily dependent on human interaction and judgement.	Technology supports planning and information management but does not significantly alter workforce demand due to the inherently interpersonal nature of the work.
	63 - Community and Civil Enforcement Occupations				

Figure 16: Sector-wide AI and automation adoption scenarios



4 Future labour supply

4.1 The UK population

4.1.1 These population projections are based on assumptions about fertility, mortality and migration. They are not forecasts of future government policy, economic conditions or global events. The principal long-term assumptions are:

- annual net international migration of 230,000 from mid-2027 onwards;
- long-term fertility of 1.42 children per woman;
- continuing improvements in mortality.

4.1.2 The 2024-based projections indicate that the UK population is projected to remain broadly stable through to 2040. However, this stability masks two labour supply pressures:

- declining birth rates, resulting in fewer young people entering the workforce;
- continued reliance on migration to sustain population growth and the working-age population.

4.1.3 These pressures become increasingly apparent after 2030, particularly in sectors with ageing workforces and long training lead times.

4.2 Falling birth rates and the domestic entrant pipeline

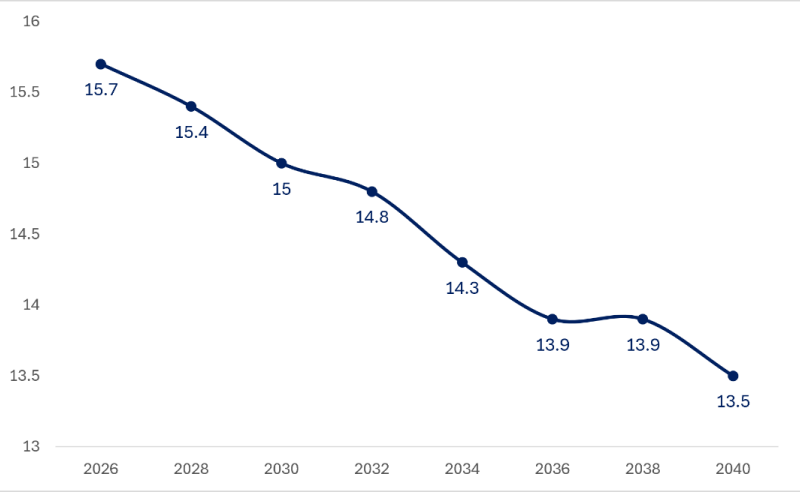
4.2.1 Birth rates in England and Wales have fallen steadily since the early 2010s. The total fertility rate declined from 1.94 children per woman in 2012 to 1.39 in 2025, including a fall from 1.41 in 2024.[2]

4.2.2 These lower birth rates will directly affect workforce entrants during the period covered by this analysis:

- people entering employment at age 18 in 2032 were born in 2014;
- those entering at age 18 in 2040 were born in 2022;
- young people entering apprenticeships at age 16 between 2032 and 2040 were born approximately between 2016 and 2024.

4.2.3 Reflecting these demographic trends, the number of people aged under 20 is projected to fall from 15.7 million in 2026 to 13.5 million by 2040.

Figure 17: Population projections for people aged 0-19 from 2026 to 2040 in millions[3]



[2] Births in England and Wales: 2025, ONS, September 2026

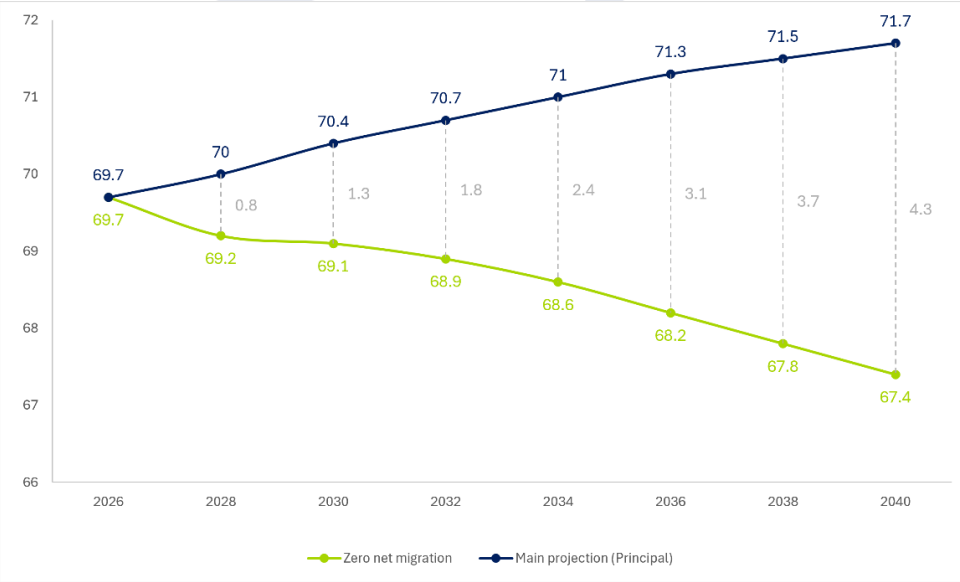
[3] UK Population Projection Explorer, ONS, April 2026

4.2.4 This decline indicates that fewer young people will be available to enter employment and training during the 2030s, resulting in a tighter domestic talent pipeline. As a result, workforce demand will increasingly need to be met through higher retention, retraining, productivity improvements and, where appropriate, migration.

4.3 Migration and sustaining the working-age population

4.3.1 Under the principal projection, migration is the sole source of long-term population growth. The UK population is projected to increase from around 69.7 million in mid-2026 to 71.6 million by 2040.

Figure 18: UK population projections under principal and zero net migration scenarios from 2026 to 2040 with the widening population gap shown in millions[4]



4.3.2 Under the zero net migration variant, the population begins to decline as deaths exceed births, falling towards 67 million by 2040. This illustrates the extent to which future population growth is dependent on migration.

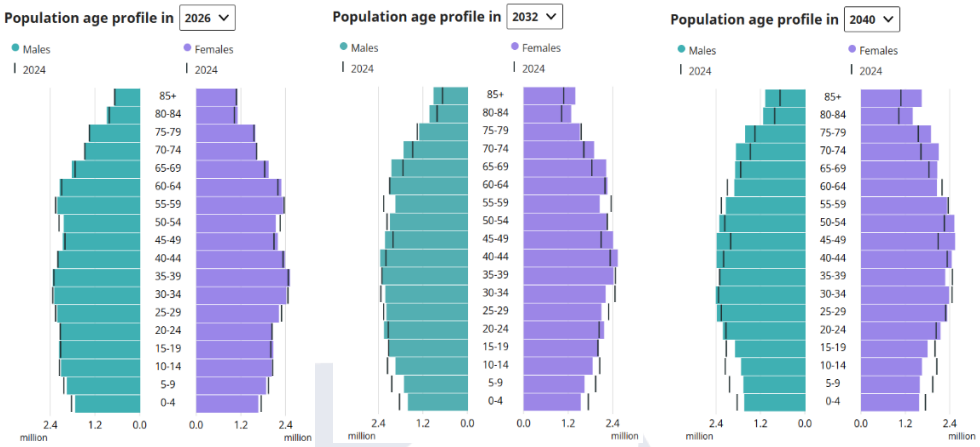
4.3.3 In 2025, there was an estimated net migration of 204,000.[5] This was two-thirds lower than a year earlier (649,000). Net migration remains an important contributor to population and workforce growth, but the decline from 649,000 to 204,000 within a year demonstrates that migration flows can change rapidly in response to policy, economic and international factors. This introduces uncertainty for sectors that rely heavily on migration to meet workforce requirements.

4.3.4 Figure 19 illustrates how the UK's age structure is projected to change between 2026 and 2040. The base of the population pyramid narrows over time, reflecting lower birth rates and a reduced flow of future labour market entrants. At the same time, older age groups become larger as life expectancy improves and larger cohorts move into later life. The working-age population remains substantial throughout the projection period, but its age profile shifts upwards. This suggests that workforce pressures are likely to arise less from an overall shortage of people and more from increasing replacement demand as larger cohorts approach retirement while fewer younger workers enter the labour market.

[4] UK Population Projection Explorer, ONS, April 2026

[5] Long-term international migration, provisional: year ending June 2025, ONS, May 2026

Figure 19: UK population age profile, 2026, 2032 and 2040[6]



4.4 Implications for the sector

4.4.1 Future labour supply will be shaped by a narrowing domestic entrant pipeline and continued reliance on migration.

4.4.2 As the youth population declines, energy and utilities employers will face growing competition for engineering and technical talent from construction, advanced manufacturing, transport, defence, digital and wider infrastructure sectors.

4.4.3 Migration can also provide targeted labour supply in occupations facing shortages. The Migration Advisory Committee found that sponsored engineering workers are concentrated in younger age groups, particularly between ages 26 and 35, while the domestic engineering workforce is more evenly distributed across the working-age population.[7]

4.4.4 Migration can also help where training lead times are long, skills are internationally transferable and recruitment supports time-limited infrastructure delivery. However, it is should not be considered a substitute for sustained domestic workforce development.

4.4.5 The principal workforce challenge from 2032 onwards is therefore not overall population decline, but the interaction of four factors:

- a smaller domestic entrant pipeline;
- high replacement demand from an ageing workforce;
- increasing competition for technical skills;
- continued dependence on migration to sustain labour supply.

[6] UK Population Projection Explorer, ONS, April 2026

[7] Professionals in IT and engineering, Migration Advisory Committee, May 2025

5 Potential economic and social benefits

5.1.1 Attracting and recruiting the required 360, 500 people could cost the industry an estimated £1.4 billion just in recruitment costs alone[8] (excluding any additional training or other costs incurred once new recruits are on-boarded).

5.1.2 However, the economic benefits to the industry and to UK PLC are significantly higher.

5.1.3 Assuming that each of the 246,200 additional people in the workforce earns the median salary for their occupation[9], this could create an estimated £10.1 billion of additional earnings entering the economy by 2032. Approximately 15% of this - c£1.5 billion - would be paid out to the 48,500 new recruits in entry-level occupations.

Figure 20: Estimated additional salaries paid out to new recruits by 2032

Skill level	Standard Occupational Classification	Additional jobs by 2032	Median Salary	New Income Generated
RQF 7-8 SCQF 11-12	11 - Corporate Managers and Directors	21,000	£63,350	£1,329,385,782
	12 - Other Managers and Proprietors	3,900	£40,799	£160,301,018
RQF 6 SCQF 9-10	21 - Science, Research, Engineering and Technology Professionals	31,700	£52,297	£1,655,545,627
	22 - Health Professionals	300	£46,131	£14,240,641
	23 - Teaching and Other Educational Professionals	<100	£47,479	£246,891
	24 - Business, Media and Public Service Professionals	16,300	£49,513	£807,364,161
RQF 4-5 SCQF 7-8	31 - Science, Engineering and Technology Associate Professionals	11,200	£35,945	£404,130,659
	32 - Health and Social Care Associate Professionals	100	£29,652	£2,520,091
	33 - Protective Service Occupations	300	£42,806	£12,178,251
	34 - Culture, Media and Sports Occupations	500	£36,510	£17,601,149
	35 - Business and Public Service Associate Professionals	22,200	£41,404	£919,593,541
RQF 3 SCQF 6	41 - Administrative Occupations	19,300	£30,787	£594,005,781
	42 - Secretarial and Related Occupations	2,400	£28,388	£67,746,306
	51 - Skilled Agricultural and Related Trades	400	£28,980	£11,452,139
	52 - Skilled Metal, Electrical and Electronic Trades	34,400	£39,942	£1,373,401,097
	53 - Skilled Construction and Building Trades	32,700	£35,764	£1,170,253,401
	54 - Textiles, Printing and Other Skilled Trades	300	£29,208	£8,402,105
	61 - Caring Personal Service Occupations	400	£26,859	£10,583,347
	62 - Leisure, Travel and Related Personal Service Occupations	400	£27,911	£10,045,913
	63 - Community and Civil Enforcement Occupations	0	£32,945	£0
RQF 2 SCQF 5	71 - Sales Occupations	2,600	£26,121	£68,646,153
	72 - Customer Service Occupations	7,500	£28,485	£214,860,507

[8] Based on recruitment costs of: Managerial = £9,000; Technical Professional = £6,000; Front Line Technical = £3,500; Business Support = £2,100; Other = £2,000.

[9] Source: Earnings and hours worked, occupation by four-digit SOC: ASHE Table 14, 23rd October 2025.

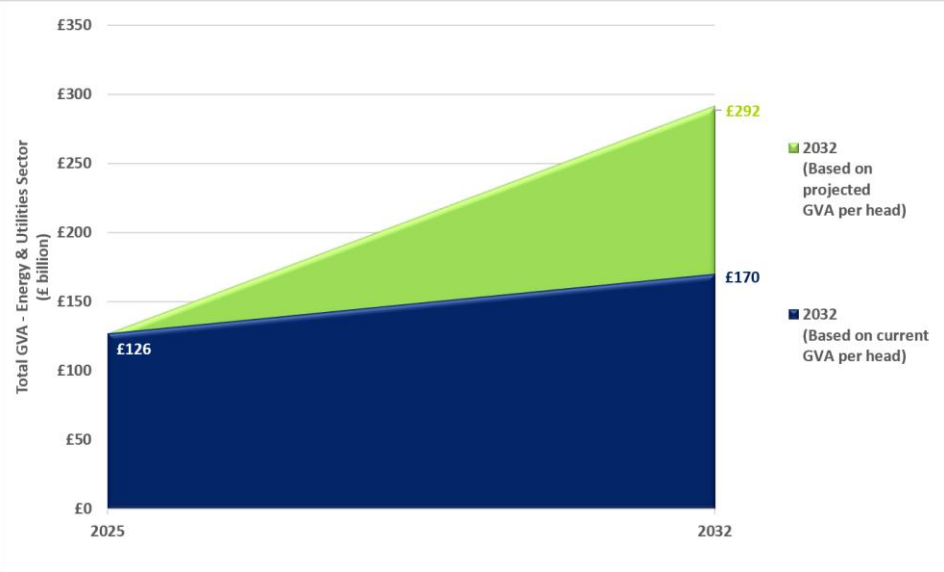
Skill level	Standard Occupational Classification	Additional jobs by 2032	Median Salary	New Income Generated
RQF 1 SCQF 4	81 - Process, Plant and Machine Operatives	12,400	£31,158	£387,106,765
	82 - Transport and Mobile Machine Drivers and Operatives	10,600	£36,869	£389,775,429
	91 - Elementary Trades and Related Occupations	4,000	£28,259	£111,807,277
	92 - Elementary Administration and Service Occupations	11,400	£27,486	£313,472,718
Energy & Utilities Sector		246,200	--	£10,054,666,749

Note: Figures may not sum to the grand total due to rounding.

5.1.4 An approximate estimate of the total GVA of the energy and utilities sector in 2025 is £126 billion (based on output per worker multiplied by total workforce).

5.1.5 By 2032, total GVA could reach between £170 billion (based on 2025 output per worker) and £292 billion (based on annual growth of 9% in output per worker – continuing the growth trajectory seen over the past five years)[10].

Figure 21: Estimated total GVA created by the energy & utilities sector (£ billions)



[10] Energy & Utility Skills' estimate of GVA per head in the electricity networks industry is based on Output per job, UK, ONS, 18th August 2026 and headcount estimates produced for this analysis.

6 Conclusions

6.1.1 The Energy & Utilities Sector faces a substantial workforce challenge over the period to 2032. The workforce is projected to grow from 676,100 to 922,400, creating 246,200 additional jobs. Combined with around 114,300 retirements, the sector has a core requirement for 360,500 people over the forecast period, equivalent to 53% of the current workforce and an average of around 51,500 people per year.

6.1.2 The core requirement is heavily front-loaded, falling from 74,200 people in 2026 to 33,500 in 2032 as the known pipeline of new projects and investment reduces over time. This does not necessarily indicate an expected decline in future job creation, as further projects and investments may emerge during the forecast period. In addition, staff turnover could create a further 143,000 vacancies by 2032 if people leave the sector for employment elsewhere or overseas, emphasising the importance of retention alongside attraction.

6.1.3 The scale of workforce demand varies considerably across the sector. Community & Domestic Low Carbon Technologies has the largest core requirement, at 116,800 people, followed by Power Generation at 99,600, Waste & Recycling at 48,000, Electricity Networks at 44,300, Water & Sewerage at 40,000 and Gas Networks at 11,900. Community & Domestic Low Carbon Technologies also faces the greatest relative pressure, with its core requirement equivalent to 77% of the current workforce.

6.1.4 Demand is distributed across the UK but varies considerably across nations and regions. England accounts for 288,100 of the 360,500 people in the core requirement, while Scotland faces the greatest relative pressure among the four nations, with a requirement for 47,200 people equivalent to 59% of its current workforce. Within England, London has the largest core requirement, at 54,100 people, and also faces the greatest relative pressure, with demand equivalent to 81% of the current workforce.

6.1.5 Professional, technical and vocational skills remain central to delivery. RQF Level 3 / SCQF Level 6 has the largest core requirement, with 127,700 people needed by 2032, followed by RQF Level 1 / SCQF Level 4 at 71,600 and RQF Level 6 / SCQF Levels 9–10 at 62,400. Together, these three skill levels account for around 73% of the total core requirement, demonstrating the breadth of demand across skilled trades, operational, professional and technical occupations.

6.1.6 Front Line Technical occupations account for the largest workforce requirement, with 158,500 people needed by 2032, followed by Business Support occupations at 106,500 and Technical Professional occupations at 55,000. Together, these three occupational groups account for almost 89% of the sector's core requirement, demonstrating the scale of demand for operational and technical capability alongside the business functions required to support delivery.

6.1.7 Five occupational groups are assessed as critical to delivery:

- Science, Research, Engineering and Technology Professionals
- Skilled Metal, Electrical and Electronic Trades
- Skilled Construction and Building Trades
- Science, Engineering and Technology Associate Professionals
- Process, Plant and Machine Operatives

6.1.8 These critical occupational groups are forecast to create 122,400 additional jobs and have a core requirement for 167,900 people by 2032. A further five occupational groups are assessed as high priority. Together, critical and high-priority occupational groups account for around 196,400 additional jobs and have a core requirement for 281,000 people, equivalent to 78% of the total sector-wide requirement.

6.1.9 Future labour supply is likely to become more constrained as the domestic entrant pipeline narrows. The number of people aged under 20 is projected to fall from 15.7 million in 2026 to 13.5 million by 2040, while employers will face increasing competition for engineering and technical talent from construction, advanced manufacturing, transport, defence, digital and wider infrastructure sectors. Migration can help address occupation-specific shortages, particularly where training lead times are long, but is unlikely to substitute for sustained domestic workforce development.

6.1.10 AI and automation are expected to change how work is undertaken more than overall employment levels. Seven occupational groups, with a combined core requirement for 66,100 people, are identified as at risk of workforce-demand reduction. Under the high-adoption scenario, the analysis indicates a potential sector-wide reduction of approximately 8,100 to 15,500 people. Across much of the workforce, however, technology is more likely to reshape tasks, skills and working practices or augment workforce capability than substantially reduce the need for people.

6.1.11 No single recruitment or training route can deliver the number and mix of people required. Industry will need to use a range of entry pathways, including sector-entry programmes, apprenticeships, graduate programmes, industry transitions, experienced-hire recruitment and internal progression. Lead times to competence mean that expanding some pipelines will not meet immediate demand, making the transition of experienced workers, development of the existing workforce and retention of critical skills particularly important.

6.1.12 Meeting this workforce requirement would also bring substantial economic benefits. Recruiting the 360,500 people in the core requirement is estimated to cost around £1.4 billion before training and onboarding costs. The 246,200 additional jobs are estimated to generate approximately £10.1 billion in additional earnings, while the sector's total GVA could increase from approximately £126 billion in 2025 to between £170 billion and £292 billion by 2032.

6.1.13 The workforce requirement is therefore both a major delivery challenge and a significant economic opportunity. Meeting it will require coordinated action across the sector to attract new people, expand safe routes to competence, retain experience and critical knowledge, enable workforce mobility and use technology responsibly to increase delivery capacity. Workforce investment will need to be planned alongside infrastructure and technology investment if the sector is to secure the people required to deliver the UK's future energy, water, waste and low-carbon infrastructure.

7 Call to action

7.1 Ambition, growth and opportunity

7.1.1 The UK's energy and utilities sector is entering a period of substantial workforce growth, investment and technological change. Employers must continue to deliver safe, reliable and resilient essential services while expanding the workforce and capabilities required to deliver future energy, water, waste and low-carbon infrastructure.

7.1.2 Across the sector, employers are expected to deliver major programmes of work spanning power generation, electricity and gas networks, water and wastewater, waste and recycling, and low-carbon technologies. These programmes must be delivered while maintaining the essential infrastructure, assets and services that households, businesses and communities rely upon every day.

7.1.3 Delivering this ambition will require a skilled, productive and adaptable workforce. The challenge is not simply one of replacing retiring workers or filling vacancies. It is about ensuring that the sector has the capability, capacity and competence required to design, manufacture, construct, install, operate and maintain the infrastructure, assets, technologies and services on which the UK depends.

7.1.4 The opportunity extends across every nation and region of the UK. It includes engineering, science, environmental management, operations, construction, project delivery, digital and data professions, skilled technical trades and a wide range of supporting occupations. It creates opportunities for young people entering the labour market, experienced workers progressing within the sector, people transitioning from related industries and those who have traditionally faced barriers to employment.

7.1.5 Workforce investment must be treated as a critical enabler of industry outcomes rather than a consequence of them. Infrastructure, technology and workforce investment must be planned together. Employers, governments, regulators, education and skills providers, professional bodies and supply-chain partners all have a role to play in ensuring that workforce capability grows at the pace required.

7.1.6 The commitments that follow bring together three interconnected themes:

- **Ambition**: delivering safe, reliable, resilient and sustainable energy and utilities services while delivering future infrastructure and meeting environmental, regulatory and economic objectives.
- **Growth**: ensuring the sector has the workforce capacity and capability required to deliver future investment and operational requirements.
- **Opportunity**: creating pathways that enable people and communities across the UK to access rewarding, long-term careers across the energy and utilities sector.

7.1.7 This approach reflects the four interconnected pillars of the Skills Strategy 2025–2030:

- **Research:** developing the insight, evidence and intelligence needed to understand workforce demand, identify emerging challenges and support informed decision-making
- **Attract:** raising awareness of sector careers, broadening access to opportunities and attracting the diverse talent needed to meet future workforce requirements
- **Develop:** supporting the continuous development of a safe, skilled and productive workforce through learning, progression and skills development

- **Retain:** creating the conditions for people to build long-term careers within the sector by supporting inclusion, progression, wellbeing and workforce resilience

7.1.8 Equality, Diversity and Inclusion, AI and Technology, and Productivity provide cross-cutting themes through which activity under the four pillars should be considered.

7.2 Safety is the foundation of delivery

7.2.1 Safety and occupational competence must remain the foundation of workforce growth. They are not barriers to expansion, new entry routes, productivity improvement or technological change. They are the conditions that enable these changes to be delivered responsibly and sustainably.

7.2.2 Engineering professionals, skilled metal, electrical and electronic trades, skilled construction and building trades, engineering technicians and process, plant and machine operatives are among the occupations most critical to delivery. Across the five broad occupational groups identified as critical, there is a core requirement for 167,900 people by 2032. Many of these roles demand specialist expertise, recognised competence and substantial periods of training and workplace development.

7.2.3 Expanding the workforce must not dilute occupational standards, reduce the quality of training or lead to people being deployed before they are competent. Employers must also avoid placing unsustainable pressure on the trainers, assessors, mentors and supervisors responsible for supporting new entrants and developing the existing workforce.

7.2.4 The same principle applies to artificial intelligence, automation and other digital technologies. Technology should be adopted where it can improve safety, quality, productivity or service. However, safety-critical and regulatory decisions must remain subject to clear human accountability. Data, models and automated outputs must be appropriately validated and assured, and affected workers must be supported to develop the capabilities required by redesigned roles.

7.3 Five commitments for delivery

7.3.1 The scale and timing of demand mean that no single organisation can close the workforce gap independently. Employers must lead, supported by coordinated action from supply-chain organisations, governments, regulators, education and skills providers, trade unions, professional and standards bodies, and the Energy & Utility Skills Partnership.

Commitment 1: Plan and invest against evidenced workforce demand

7.3.2 The workforce requirement is immediate, significant and unevenly distributed. Demand varies by occupation, industry, region and year.

7.3.3 Employers and supply-chain organisations should convert the forecasts into practical, funded and regularly updated workforce plans covering:

- Critical occupations and job roles
- Annual and regional demand
- Recruitment, retention and progression
- Routes to occupational competence
- Training, supervision, mentoring and assessment capacity

- Dependencies on suppliers, contractors and other industries and infrastructure sectors

7.3.4 Plans should be reviewed as investment profiles, delivery schedules and labour-market conditions change. Regulation, price controls, procurement and contracting arrangements should give employers and their supply chains sufficient visibility and certainty to invest ahead of demand.

7.3.5 Primary ownership sits with:

- **Employers and supply-chain organisations** should produce, fund and deliver workforce plans
- **Governments and regulators** should align policy, regulation, investment and contracting arrangements with credible workforce delivery
- **The Energy & Utility Skills Partnership** should maintain the shared evidence base and provide a consistent framework for workforce planning

7.3.6 Alignment with the 2025-2030 Skills Strategy and EUSP CEO Council 2026/27 priorities:

- This commitment principally supports the **Research** pillar. It also supports the **Develop** and **Retain** pillars because effective workforce plans must address competence, progression and retention
- It directly aligns with the priorities to:
  - Update workforce demand estimates so that industry and government plan using one set of workforce-planning assumptions (**G2**)
  - Champion workforce and skills decisions based on nationally recognised, employer-informed evidence (**P1**)
  - Use industry evidence to inform regulation, price controls and contracting periods for long-term workforce planning (**UK1**)
- It also supports the wider priorities to maintain a current research programme (**G3**) and strengthen evidence-led workforce planning through partnership (**P2**)

Commitment 2: Expand safe routes to competence

7.3.7 Demand extends across operational, technical, vocational and professional occupations. Apprenticeship and graduate routes cannot meet the earliest demand on their own because some pathways take three years or more to produce an occupationally competent worker. Sector-entry and other shorter pathways will also be important in meeting immediate requirements at lower skill levels.

7.3.8 Employers, education and skills providers, governments and standards bodies should jointly increase the capacity and range of routes into competent employment by:

- Increasing apprenticeship and graduate provision in critical occupations
- Expanding trainer, assessor, mentor, supervisor, facility and placement capacity
- Scaling sector-entry programmes linked to genuine vacancies and progression opportunities
- Developing funded modular provision aligned with sector-specific occupational requirements
- Creating progression routes for experienced workers whose capability is not fully represented by prior academic attainment
- Supporting career transitions from sectors with transferable skills

- Using targeted migration where urgent shortages cannot be filled domestically within the required timeframe

7.3.9 Every pathway must lead towards clearly defined occupational competence. Faster entry must not mean weaker standards or premature deployment into safety-critical work.

7.3.10 Primary ownership sits with:

- **Employers** should provide vacancies, placements, mentors, assessors and progression opportunities
- **Education and skills providers** should expand responsive provision and demonstrate how learning leads to recognised competence
- **Governments** should improve the flexibility, accessibility and consistency of skills funding across the UK
- **Regulators, professional bodies and standards organisations** should protect competence and quality while enabling proportionate innovation in delivery
- **The Energy & Utility Skills Partnership** should coordinate occupational profiles, standards, pathway design and cross-sector transferability

7.3.11 Alignment with the 2025-2030 Skills Strategy and EUSP CEO Council 2026/27 priorities:

- This commitment principally supports the **Develop** pillar. It also supports **Attract**, by creating credible entry routes, and **Retain**, by enabling progression and continued development.
- It directly aligns with the priorities covering:
  - Occupational profiles and occupational mapping (**G6**)
  - Standards and workforce competence (**G7**)
  - Expansion of Sector Entry provision and learner places (**P6**)
  - Flexible routes towards RQF Level 3 competence through apprenticeship units (**P7**)
  - Protection of safety and competence during apprenticeship reform (**UK2**)
  - Alternative progression routes for experienced workers into RQF Level 4 and above (**UK5**)
  - Simpler and more consistent apprenticeship funding, administration and delivery (UK6)
  - Removal of disincentives for frontline workers to become trainers and assessors (**UK7**)
- It also supports:
  - Development of a Youth Guarantee model (**G8**)
  - Effective use of skills investment and the levy (**P8**)
  - Sustainable routes from economic inactivity and unemployment into the sector (**UK3**)
  - Place-based adult skills investment (**UK4**)
  - Pathways for skilled workers moving from other industries (**P10**)

Commitment 3: Retain experience and widen access to opportunity

7.3.12 Employers should treat retention, succession and knowledge transfer as essential infrastructure-delivery activities by:

- Identifying retirement and turnover exposure in critical roles
- Strengthening career development and internal progression
- Protecting time for experienced workers to train and mentor others

- Improving job quality, inclusion, wellbeing and workforce experience
- Retaining unsuccessful applicants and displaced workers within the wider sector talent pool
- Opening routes for people who are unemployed, economically inactive, under-represented or moving from other industries

7.3.13 UK-wide action should be combined with place-based delivery so that people can access genuine vacancies, appropriate support and clear progression from entry-level roles into skilled employment.

7.3.14 Primary ownership sits with:

- **Employers** should improve retention, succession, progression and knowledge transfer
- **Governments and public employment services** should connect employment, welfare, careers and skills policy to evidenced sector demand
- **Education and skills providers** should create accessible entry and progression pathways that reflect regional labour markets
- **The Energy & Utility Skills Partnership** should coordinate talent referral, inclusion, attraction and cross-sector transition activity

7.3.15 Alignment with the 2025-2030 Skills Strategy and EUSP CEO Council 2026/27 priorities:

- This commitment principally supports the **Retain** and **Attract** pillars. It also supports **Develop** through mentoring, knowledge transfer and career progression.
- It directly aligns with the priorities to:
  - Retain skilled people and unsuccessful candidates within the sector and its supply chains (**G9**)
  - Launch the evaluated Inclusion Measurement Framework, supported by best practice and recommendations (**P9**)
  - Create pathways for skilled workers moving from industries undergoing programme-driven transitions (**P10**)
  - Reduce economic inactivity and unemployment while strengthening progression from entry-level roles into apprenticeships and skilled occupations (**UK3**)
- It also supports:
  - Development of the Youth Guarantee model (**G8**)
  - Access to careers, routes, tools and insight through the sector platform (**P4**)
  - Inclusive attraction and recruitment activity through Destination Energy (**P5**)
  - Progression by experienced workers into higher-level opportunities (**UK5**)
  - The use of experienced workers as trainers and assessors (**UK7**)

Commitment 4: Adopt technology responsibly to increase safe delivery capacity

7.3.16 Digital technologies, automation, artificial intelligence, smart assets, advanced monitoring systems and digital twins are expected to change tasks, skills and working practices across the energy and utilities sector. Many technologies have the potential to improve operational performance, asset utilisation, environmental outcomes, service delivery and workforce productivity. However, technology should augment workforce capability rather than be viewed solely as a substitute for labour.

7.3.17 Employers should adopt AI, automation and digital technologies where they can demonstrably improve delivery. Implementation should be governed by:

- Task-level assessment of safety, competence and operational risk
- Workforce involvement in workflow and job redesign
- Clear human accountability for safety-critical and regulatory decisions
- Validation and assurance of data, models and automated outputs
- Structured reskilling and redeployment
- Measurement of productivity, quality, safety and service outcomes.

7.3.18 Where technology releases capacity, employers should seek to redirect it towards higher-value, safety-critical or shortage-constrained work. Adoption should respond to clearly defined operational needs rather than an assumption that technology automatically substitutes for labour.

7.3.19 Primary ownership sits with:

- **Employers** should select appropriate use cases, manage risk, redesign work and reskill affected workers
- **Regulators** should establish clear and proportionate expectations for assurance, accountability and evidence
- **Education and skills providers** should embed relevant digital and AI capabilities within technical and professional learning
- **The Energy & Utility Skills Partnership** should gather evidence, share effective practice and identify common implications for occupations, standards and workforce planning

7.3.20 Alignment with the 2025-2030 Skills Strategy and EUSP CEO Council 2026/27 priorities:

- This commitment principally supports the **Develop** pillar because it addresses new capabilities, occupational competence, reskilling and the redesign of work.

  It also supports **Research**, through evidence and workforce intelligence, and **Retain**, where reskilling and redeployment allow people to continue contributing within the sector.
- The commitment also advances the Skills Strategy's cross-cutting themes of **AI and Technology** and **Productivity**. These are cross-cutting themes rather than additional strategic pillars.
- No single 2026/27 priority corresponds directly and comprehensively to responsible AI and automation adoption. The commitment nevertheless supports the priorities covering:
  - Research and evidence needed to identify emerging workforce challenges (**G3**)
  - Occupational profiles and occupational mapping (**G6**)
  - Continuous improvement in standards and workforce competence (**G7**)
  - Workforce and skills decisions based on employer-informed evidence (**P1**)
  - Investment in skills and improved productivity (**P8**)
  - Protection of competence and safety as skills provision changes (**UK2**)
- This supporting alignment should not be interpreted as making any one of these priorities a standalone AI or automation priority

Commitment 5: Champion the people delivering the UK's future

7.3.21 Workforce growth will depend not only on creating opportunities but also on making those opportunities visible, credible and attractive. The sector and its partners should champion, amplify and celebrate the people and teams who design, manufacture, construct, install, operate and maintain the infrastructure, assets, technologies and services that provide the UK's energy, water, waste and low-carbon systems.

7.3.22 This should include:

- Creating a shared, evidence-led account of the contribution made by the energy and utilities workforce
- Using authentic stories from employees, apprentices, career changers, trainers, mentors and supply-chain teams
- Showcasing the breadth of technical, professional, operational and support careers available across the UK
- Recognising employers and partnerships that widen access, uphold competence and improve workforce experience
- Connecting communications to genuine jobs, training, work experience and progression opportunities
- Making careers information accessible to young people, educators, careers advisers, jobseekers and workers in transition
- Measuring whether activity improves awareness, engagement and entry into the industry, rather than reporting communications reach alone.

7.3.23 This is more than a communications commitment. It supports attraction by showing people where opportunities exist, development by making pathways and competence requirements clear, and retention by recognising the contribution of the existing workforce and demonstrating that the sector offers meaningful, long-term careers.

7.3.24 Primary ownership sits with:

- **Employers and supply-chain organisations** should provide authentic workforce stories, career information and examples of effective practice
- **Trade unions, employee networks and workforce representatives** should help ensure that communications accurately reflect the work and the workforce experience
- **Education, careers and employment partners** should bring these messages to schools, colleges, universities, jobseekers and local communities
- **The Energy & Utility Skills Partnership** and sector communications networks should coordinate and amplify a consistent sector narrative

7.3.25 Alignment with the 2025-2030 Skills Strategy and EUSP CEO Council 2026/27 priorities:

- This commitment principally supports the **Attract** pillar

  It also supports **Retain**, through recognition and an authentic employee proposition, and **Develop**, by explaining career pathways, progression and competence requirements
- It directly aligns with the priorities to:
  - Align communications and marketing with the agreed CEO Council priorities (**G10**)
  - Deliver coordinated sector attraction and recruitment activity through Destination Energy (**P5**)

- It also supports the priorities to:
  - Deepen partnerships and clarify engagement routes (**G4**)
  - Support worker transitions through the North Sea Worker service (**G5**)
  - Use occupational profiles to make careers and pathways clearer (**G6**)
  - Retain candidates and skilled people within the sector talent pool (**G9**)
  - Provide access to careers, routes, tools and insight through the sector platform (**P4**)
  - Promote inclusive workforce practice and recommendations (**P9**)
  - Make transition pathways visible to workers in adjacent industries (**P10**)
  - Strengthen entry routes and progression from economic inactivity or unemployment into skilled work (**UK3**)

Summary of strategic alignment

7.3.26 The following table distinguishes between:

- **Direct alignment:** the commitment would materially contribute to delivery of the priority
- **Supporting alignment:** the commitment contributes to the priority but would not deliver it by itself

Commitment	2025-2030 Skills Strategy alignment	EUSP CEO Council 2026/27 priority alignment (Direct)	EUSP CEO Council 2026/27 priority alignment (Supporting)
1. Plan and invest against evidenced workforce demand	**Primary:** Research. **Supporting:** Develop and Retain.	G2, P1, UK1	G3, P2
2. Expand safe routes to competence	**Primary:** Develop. **Supporting:** Attract and Retain.	G6, G7, P6, P7, UK2, UK5, UK6, UK7	G8, P8, UK3, UK4, P10
3. Retain experience and widen access to opportunity	**Primary:** Retain and Attract. **Supporting:** Develop.	G9, P9, P10, UK3	G8, P4, P5, UK5, UK7
4. Adopt technology responsibly to increase safe delivery capacity	**Primary:** Develop. **Supporting:** Research and Retain. **Cross-cutting:** AI and Technology; Productivity.	No single priority directly covers the full commitment	G3, G6, G7, P1, P8, UK2
5. Champion the people delivering the UK's future	**Primary:** Attract. **Supporting:** Retain and Develop.	G10, P5	G4, G5, G6, G9, P4, P9, P10, UK3

7.3.27 The mapping identifies the priorities to which each commitment makes the clearest direct or supporting contribution. It does not imply that a commitment is solely responsible for delivering those priorities. The four pillars are interconnected, and action under one commitment may contribute to outcomes across more than one pillar.

7.4 The immediate commitment

7.4.1 The workforce requirement is not a distant 2032 issue. There are significant, immediate workforce requirements, while many technical and professional pathways can take years to produce an occupationally competent worker.

7.4.2 The industry and its partners should therefore commit now to:

1. **Produce funded workforce and supply-chain plans** for critical occupations, regions and delivery programmes
2. **Expand training, supervision, mentoring and assessment capacity** ahead of demand
3. **Scale entry, progression and transition routes** without weakening competence or safety standards
4. **Retain experienced workers and protect critical knowledge** through succession planning, progression and mentoring
5. **Adopt AI, automation and digital technologies responsibly**, with clear human accountability
6. **Champion the people and opportunities behind the UK's energy and utilities investment and services**, connecting communications to genuine jobs, training and careers
7. **Report progress collectively**, using shared workforce outcomes and escalating barriers that individual organisations cannot resolve

7.4.3 By their next workforce-planning cycle, major employers and participating supply-chain organisations should be able to demonstrate how their plans:

- Respond to evidenced occupational demand
- Increase routes to competence
- Protect safety
- Expand delivery capacity
- Support retention

7.4.4 The sector's infrastructure and service ambitions will move only as quickly as the workforce behind them. Investment in people must therefore be planned, funded and governed with the same urgency as investment in infrastructure and technology.

Annex 1 – Occupations and example job titles

Skill Level	Standard Occupation Classification	Occupational Group	Example job titles
RQF 7-8 SCQF 11-12	**11 - Corporate Managers and Directors**	Managerial	Chief Executive Officer; Operations Director; Engineering Director
	12 - Other Managers and Proprietors	Managerial	Depot Manager; Warehouse Manager; Area Manager
RQF 6 SCQF 9-10	**21 - Science, Research, Engineering and Technology Professionals**	Technical Professional	Electrical Engineer; Mechanical Engineer; Control & Instrumentation Engineer; Process Engineer; Data Scientist
	22 - Health Professionals	Other	Occupational Health Physician; Occupational Health Nurse/Adviser; Site Paramedic
	23 - Teaching and Other Educational Professionals	Other	Apprenticeship Trainer/Lecturer; Education Manager
	24 - Business, Media and Public Service Professionals	Business Support	Project Manager; Quantity Surveyor; Regulatory Affairs Manager
RQF 4-5 SCQF 7-8	**31 - Science, Engineering and Technology Associate Professionals**	Technical Professional	Engineering Technician; CAD/BIM Technician; IT Operations Technician
	32 - Health and Social Care Associate Professionals	Other	Occupational Health Technician; Workplace Health Trainer; Employee Assistance Programme Counsellor; Vulnerable Customer Outreach Worker; Community Development Officer; Health & Safety Officer
	33 - Protective Service Occupations	Business Support	Fire Safety Officer; Emergency-planning Officer; Security Officer; Fraud/investigation officer
	34 - Culture, Media and Sports Occupations	Business Support	Technical Author/ Illustrator; Copywriter; Translator; Corporate Videographer; Aerial/Drone Photographer
	35 - Business and Public Service Associate Professionals	Business Support	Estimator; Data Analyst; Procurement Officer
RQF 3 SCQF 6	**41 - Administrative Occupations**	Business Support	Project Administrator; Finance Officer; Logistics Coordinator
	42 - Secretarial and Related Occupations	Business Support	Executive Assistant; Personal Assistant; Legal Secretary; Receptionist
	51 - Skilled Agricultural and Related Trades	Front Line Technical	Utility Arborist; Vegetation Management Operative
	52 - Skilled Metal, Electrical and Electronic Trades	Front Line Technical	Electrician; Mechanical Fitter; Welder
	53 - Skilled Construction and Building Trades	Front Line Technical	Plumber; Construction Supervisor; Heating and Ventilation Installer
	54 - Textiles, Printing and Other Skilled Trades	Other	Digital Printer; Depot Canteen Chef
	61 - Caring Personal Service Occupations	Other	Pest Control Officer; Vulnerable Customer Care Worker
	62 - Leisure, Travel and Related Personal Service Occupations	Other	Business Travel Adviser; Reservations Agent; Project-Accommodation Housekeeper; Depot/Office Caretaker; Facilities Caretaker
	63 - Community and Civil Enforcement Occupations	Other	Waste Enforcement Officer; Environmental Enforcement Officer

Skill Level	Standard Occupation Classification	Occupational Group	Example job titles
RQF 2 SCQF 5	**71 - Sales Occupations**	Business Support	Renewable Energy Sales Adviser; Field Sales Representative; Telesales Executive
	72 - Customer Service Occupations	Business Support	Customer Service Adviser; Complaints Adviser; Vulnerable Customer Adviser
RQF 1 SCQF 4	**81 - Process, Plant and Machine Operatives**	Front Line Technical	Control-Room Operator; Plant Operator; Process Operator
	82 - Transport and Mobile Machine Drivers and Operatives	Front Line Technical	HGV Driver; Excavator Operator; Crane Operator
	91 - Elementary Trades and Related Occupations	Front Line Technical	Groundworker; Construction Labourer; Fitter's Mate
	92 - Elementary Administration and Service Occupations	Business Support	Warehouse Operative; Stores Assistant; Security Guard

Annex 2 – Methodology

A2.1 Current workforce estimates and future employment forecasts

A2.1.1 The estimates and forecasts contained in this report are based on research and employment data from a range of credible sources – all of which are based on what is known at the time of being published (such as known government policies/ strategies and industry investment plans). Where published workforce forecasts were unavailable, Energy & Utility Skills has developed forecasts using industry investment plans, workforce data and employer evidence.

A2.1.2 Details of the various sources used within each industry are contained in their separate report.

A2.1.3 Estimates are rounded to the nearest 100. As a result, the sum of industries and tables may not equal published totals. Users should exercise caution when interpreting small differences between estimates and forecasts or changes over time, as these may reflect the effects of rounding rather than underlying variation.

A2.1.4 This analysis includes forecast workforce growth in the 2026 calendar year, through to the end of 2032 – seven full years.

A2.2 Retirement and staff turnover assumptions

A2.2.1 Retirement forecasts have been calculated on the assumption that the proportion of the current workforce in each occupation who are aged 55+ will retire over the next ten years – therefore, we have taken one-tenth of that percentage as the annual retirement rate (see the table opposite).

A2.2.2 Staff turnover, although not an element of the core requirement for people, is based on the assumption that a small proportion of the workforce will leave the industry each year to take up employment in other sectors. Leavers through staff turnover that remain in the energy & utilities sector are not reported in this analysis (as they do not need to be replaced).

Standard Occupation Classification	Annual Retirement Rate	Annual Staff Turnover Rate
11 - Corporate Managers and Directors	2.3%	2%
12 - Other Managers and Proprietors	2.3%	2%
21 - Science, Research, Engineering and Technology Professionals	1.2%	2%
22 - Health Professionals	1.8%	2%
23 - Teaching and Other Educational Professionals	1.7%	2%
24 - Business, Media and Public Service Professionals	1.6%	2%
31 - Science, Engineering and Technology Associate Professionals	1.5%	2%
32 - Health and Social Care Associate Professionals	2.0%	2%
33 - Protective Service Occupations	1.0%	2%
34 - Culture, Media and Sports Occupations	1.2%	2%
35 - Business and Public Service Associate Professionals	1.4%	2%
41 - Administrative Occupations	2.1%	5%
42 - Secretarial and Related Occupations	3.0%	5%
51 - Skilled Agricultural and Related Trades	3.8%	2%
52 - Skilled Metal, Electrical and Electronic Trades	1.9%	2%

Standard Occupation Classification	Annual Retirement Rate	Annual Staff Turnover Rate
53 - Skilled Construction and Building Trades	2.0%	2%
54 - Textiles, Printing and Other Skilled Trades	1.9%	2%
61 - Caring Personal Service Occupations	2.1%	5%
62 - Leisure, Travel and Related Personal Service Occupations	2.1%	5%
63 - Community and Civil Enforcement Occupations	1.9%	5%
71 - Sales Occupations	1.8%	5%
72 - Customer Service Occupations	1.3%	5%
81 - Process, Plant and Machine Operatives	2.4%	2%
82 - Transport and Mobile Machine Drivers and Operatives	3.3%	2%
91 - Elementary Trades and Related Occupations	2.2%	2%
92 - Elementary Administration and Service Occupations	2.0%	2%

A2.3 Estimating occupational criticality

A2.3.1 Our approach to assessing the absolute and relative criticality of each occupational group (2-digit SOCs) and detailed occupation (4-digit SOCs) is based on the weighted average of each occupations scores against the following 11 criteria.

Criterion	Description
Occupational relevance to the industry	Importance of occupation to the industry
Infrastructure delivery criticality	Importance of occupation to infrastructure delivery
Workforce shortage severity	Current or forecast workforce shortage level
Training lead time	Time required to reach competency
Replacement demand risk	Exposure to retirement and attrition
Regional concentration risk	Geographic availability constraints
Supply chain dependency	Reliance on contractors/subcontractors
Scalability of workforce	Ability to rapidly increase workforce numbers
Technology substitution potential	Potential for AI, robotics or automation to reduce workforce requirement
Regulatory / safety criticality	Importance to safety-critical or regulated activities
Future system relevance	Importance to future digital, DSO and whole-system requirements

A2.3.2 Each occupation is given a rating out of five against each criterion set our above and each score is multiplied by a weighting. The overall weighted average is then calculated and assigned to a level of criticality:

Score	Level of criticality	Suggested response
4.0 - 5.0	Critical priority	Immediate intervention required
3.0 - 3.9	High priority	Active monitoring and targeted interventions
2.0 - 2.9	Medium priority	Longer-term workforce planning
<2.0	Lower priority	Monitor only

A2.4 AI and automation adoption framework

A2.4.1 Our approach to assessing the impact of AI and automation on the future workforce is based on three adoption scenarios (low, medium and high adoption) assessed across seven dimensions of AI and automation adoption, as set out in the table below.

A2.4.2 Potential workforce effects are assessed separately and are not a defining characteristic of AI and automation adoption. Workforce impacts may vary between occupations operating under the same adoption scenario.

A2.4.3 The distinction between Significantly Impacted and Augmented occupations is important. Occupations classified as Significantly Impacted are expected to experience substantial changes to role content, responsibilities, skills and workflows, resulting in meaningful job redesign. Occupations classified as Augmented may also experience significant AI and automation adoption, but technology primarily enhances productivity, decision-making and performance while the core nature of the role remains broadly unchanged.

Dimension	Low Adoption	Medium Adoption	High Adoption
1. Investment and pace	Selective, cautious and uneven; scaling remains slow	Sustained investment in proven cases; adoption accelerates	Strong strategic investment; rapid scaling is prioritised
2. Technology maturity and autonomy	Established, low-risk tools; mainly assistive or rule-based	Mature predictive, generative and workflow tools; bounded autonomy	Agentic AI, machine vision, robotics and autonomous systems expand
3. Breadth of deployment	Selected teams, support functions and isolated operational uses	Multiple core and support functions; adoption still varies by organisation	Most feasible functions, supply-chain areas and lifecycle stages
4. Depth and operating-model integration	Tools sit alongside existing processes; pilots and local solutions dominate	Tools enter business-as-usual workflows, data platforms and governance	Processes are designed around AI; systems coordinate across workflows
5. Task automation and augmentation	Assists workers, removes discrete routine tasks and improves information access	Automates task clusters while augmenting judgement and decisions	Automates substantial sequences or selected end-to-end processes
6. Job redesign and skills	Local working-practice changes and basic AI literacy; little formal redesign	Material role redesign, structured upskilling and some redeployment	Widespread redesign, substantial reskilling and new oversight roles
7. Productivity ambition	Incremental gains in efficiency, quality, safety or service	Material productivity and capacity gains pursued across functions	Transformational gains; higher output, faster delivery or lower labour intensity

Risk Category	Definition
At Risk of Reduction	Fewer workers may be required because AI and automation increase productivity and automate routine tasks.
Significantly Impacted	Workforce demand remains broadly stable, but roles undergo substantial redesign as tasks, skills, responsibilities and workflows change significantly.
Augmented	AI and automation significantly improve productivity, decision-making and performance, but primarily enhance rather than redesign core roles, and demand for workers remains strong.
Limited Impact	Little expected effect on workforce demand because activities continue to depend heavily on physical intervention, human interaction or site-based work.

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