

Power Industry: workforce and skills profile

Purpose – Collate the power sector intelligence on workforce and skills issues (sources include primary and secondary data and/ qualitative evidence).

Characteristics of the industry

- The coming decade will see huge investment in energy (including power) as well as enormous change, with over £100bn to be invested in infrastructure and technology.ⁱ
- The energy industry is responsible for delivery of around 35% of the £500bn National Infrastructure Plan.ⁱⁱ
- Between 2017/18 – 2026/27, Utilities and Electricity Generation alone account for £194 bn or around 33% of projected investment.ⁱⁱⁱ
- 4,900 business operate in the power industry, 99% of them are SMEs, employing approx. 81,000 people^{iv}

Industry demographics

- The industry workforce, in comparison with the UK workforce, lacks diversity: 76% of the workforce is male and only 6% from BAME backgrounds. Across the UK, 47% of the workforce are women and 12% are from BAME backgrounds.^v
- In the Power industry 8% of the total workforce is made up on non UK nationals and, overall, the industry has a comparatively low proportion of workers from outside the UK.^{vi}
- The industry is a high performing and well-paying sector, with average salaries above the UK average of £29,010. In the power industry the average annual salary is £41,565.^{vii}
- The industry employs almost half of its workforce in skilled trades (21%), and professional occupations (24%).^{viii}

Skills challenges

- The demand for systems, processes and approaches that transcend traditional boundaries between industries is stimulating a changing profile in the nature and complexity of roles and skills required in the industry^{ix}.
- Skills shortages identified are at three levels in the power industry:
 - Professional: Monitoring and network management skills, and customer facing skills.
 - Technical: such as R&D and engineering skills.^x
 - Cross-sector: the need for transferable cross-sector skills and utilisation of skilled workers from declining infrastructure sectors.^{xi}

- The power transmission and distribution industry has had 13 job roles on the UK's Shortage Occupation List since 2012. These roles are presented below, along with shortage job roles identified by employers^{xii}:

| Employer feedback (2016) | Shortage Occupation List |
|--|--|
| <ul style="list-style-type: none"> • Commercial capabilities • Commissioning engineer • Graduate engineer • Jointers (HV and LV) • Maintenance technician • Operational manager • Overhead linesperson • Planner • Power graduate • Project and contract manager • Smart meter installer • Substation fitter | <ul style="list-style-type: none"> • Project manager • Site manager • Power system engineer • Control engineer • Protection engineer • Design engineer • Planning / development engineer • Quality, health, safety and environment (QHSE) engineer • Project engineer • Proposals engineer • Commissioning engineer • Substation electrical engineer • Overhead linesworker |

Employment and workforce renewal

- Delivery of long-term infrastructure programmes is dependent on the sustainability of the workforce which is under pressure due to a number of factors, including an ageing workforce, increasingly intense competition for many of the industries' core skills and tightening up of the labour market supply.
- The industry has an ageing workforce: nearly a fifth (18%) of the total workforce are over 55 years old^{xiii}
- Data suggests that when only the technical and engineering occupations are considered, the age profiles look somewhat older than the UK profile. For example, 25% of the electricity distribution technical workforce is aged over 55 years.^{xiv}
- The power industry estimates that 63,000 vacancies will need to be filled during the next decade. This is due to 53,000 leavers through retirement or staff turnover and 10,000 new jobs.^{xv}
- Only 1% of university leavers (2,005) joined the energy and utilities sector in 2015/16 and 47% of these university leavers joined the power industry.^{xvi}

Apprenticeships expenditure and starts

- In the power industry, the highest level of apprenticeship expenditure is amongst the larger, i.e. levy paying, businesses, equating to approximately 93% of the total expenditure.^{xvii}
- In 2014/15, of all the apprenticeships started in the sector, 50% (2,040) were in power, however employer participation is below half at 45%.^{xviii}

ⁱ HM Treasury, (2015) National Infrastructure Plan for Skills, HMT

ⁱⁱ HM Treasury, (2015) National Infrastructure Plan for Skills, HMT

ⁱⁱⁱ HM Treasury (2017) *National Infrastructure and Construction Pipeline*, HMT

^{iv} ONS (2015) *UK Business Counts*

^v ONS (2016) *Labour Force Survey (4 quarter average Jan-Dec 2016)*

^{vi} ONS (2016) *Labour Force Survey (4 quarter average Jan-Dec 2016)*

^{vii} ONS (2017) *ASHE*

^{viii} ONS (2016) *Labour Force Survey (4 quarter average Jan-Dec 2016)*

^{ix} HM Treasury, (2015) National Infrastructure Plan for Skills, HMT

^x EUSG (2013) *Foresight: Overview of key findings*

^{xi} HM Treasury (2016) *National Infrastructure Delivery Plan*,

- xii EUSG (2016) *Workforce Renewal and Skills Strategy*
- xiii BIS (2017) *Labour Force Survey (4 quarter average Jan-Dec 2016)*
- xiv EUSG (2014) *Workforce Planning Research Results*
- xv NSAP (2016) *Workforce Planning Research Results*
- xvi EUSG (2017) *HESA Data Analysis – Higher Education Statistical Summary 2015/2016*
- xvii DfE (2016), *Information on apprenticeship levy: data drawn down by size and sector and the total apprenticeship budget*
- xviii London Economics (2017) *The incidence of apprenticeships in England*