## Labour Forecasting Tool – Key findings and considerations

### Important considerations

#### Scope of engineering construction

The [Labour Forecasting Tool](https://www.ecitb.org.uk/labour-forecasting-tool-overview/) (LFT) is designed to focus on the engineering construction industry (ECI). As a result, the sector sizes and forecasts presented in this tool may differ from the size estimates and forecasts published by other sources which may adopt broader views of the sectors concerned. For a comprehensive definition of the engineering construction industry, please refer to the [1991 Industrial Training Order](https://www.ecitb.org.uk/wp-content/uploads/2019/01/The-Industrial-Training-Engineering-Construction-Board-Order-1991.pdf).

#### Database characteristics

The two main databases are the [ECITB 2021 workforce census](https://www.ecitb.org.uk/blog/portfolio-items/ecitb-workforce-census-2021/) and a list of ECI projects. The list contains data on over 1,500 projects across the oil and gas, nuclear, renewables, water treatment, food and drink, conventional power generation, chemicals, hydrogen, and carbon capture sectors. The ECITB makes no specific assumptions about the likelihood of each project meeting the deadlines indicated in the database. Therefore, any overestimation or underestimation by the parties involved will have an impact on the accuracy of the forecasts.

The list focuses on projects located in Great Britain (including offshore projects) and therefore does not include projects located in other countries, although GB-based contractors may be awarded contracts for overseas projects. The first iteration of the LFT does not cover this aspect, and the ECITB will work to incorporate it into the tool.

#### Workforce location

Workforces are linked to the location of industrial sites rather than the exact place of work. For example, 1,000 workers may be needed for a project in Wales, but some of the workforce based in the offices may be based elsewhere. In this case, the LFT links the 1,000 workers to Wales. Similarly, the number of workers linked to offshore regions are not all travelling offshore. Offshore locations are aligned with the British Geological Survey’s [classification](https://webapps.bgs.ac.uk/Memoirs/index.html?category=regional-guides-offshore).

#### Local content

The underlying workforce data is derived from the ECITB 2021 ECI workforce census of ECITB in-scope employers. Therefore, the percentage of local content is assumed to remain similar to that in 2021. It should also be noted that the Workforce Census may not have captured the broader ECI (i.e. employers out of scope to the ECITB but still active in the ECI).

#### Relationship between investment and workforce numbers

Project investment values drive labour forecasts. This means that a higher project value translates into a larger workforce. The relationship between labour and investment varies according to sector and technology. The tool uses a series of labour coefficients to capture these sectoral differences. However, data for the less mature sectors (carbon capture and hydrogen) are scarce, which affects the reliability of the forecasts.

#### Longer-term assumptions

For the purposes of this tool, a conservative judgement has been applied with regard to longer-term assumptions. For example, it is assumed that there will be no further major nuclear power stations in addition to the existing plans (mainly the EDF plants, the STEP prototype fusion plan, and possibly Bradwell B and Wylfa). The LFT shows a decline in the oil and gas sector over the next few years, in line with existing literature and forecasts. However, the decline described in the LFT is on the less pessimistic side of the forecasts published to date, with a 30% decline in the sector's workforce between 2023 and 2035.

#### Future updates

In addition to quarterly updates of the underlying project data, major updates to this tool will take place after the ECITB 2024 ECI Workforce Census. One of the main objectives of this project will be to update the underlying labour coefficients and provide a higher level of detail and accuracy. New types of data, particularly regarding occupational and sectoral breakdowns, will be published accordingly. A particular focus will be made on ensuring activity from UK based companies on projects abroad is correctly captured, as well as improving data on maintenance and shutdowns.

### Key findings

#### Engineering construction industry

* Demand could peak as early as 2028, with around 40,000 additional workers needed on top of the existing supply of 101,000, taking into account retirements. This could represent a 28% increase in demand between 2023 and 2028.
* Should labour demand be met each year, 2024 will be a pivotal year, with nearly 8,000 additional workers potentially needed to meet demand that year. 40% of them could be required to work on offshore wind projects. A further 25% could work on the pre-construction phases of hydrogen and carbon capture projects. Failure to meet demand in 2024 could lead to delays and could shift the pressure to subsequent years. This could ultimately push the peak back, which in turn would have an impact on the delivery of projects which underpin the UK’s Net Zero commitments.
* The situation is predicted to ease after the peak. However, demand would reach a plateau and remain above 2023 levels (+15% on average) at least until 2035.

#### Oil and gas

* The oil and gas sector is the largest in which engineering construction contractors operate, accounting for 32% of the ECI workforce in 2023. However, a gradual decline in North Sea oil and gas activity due to production decline, combined with a rise in other engineering sectors, could see the oil and gas sector's share of the overall ECI workforce fall to 20% by 2035.
* Oil and gas activity could shift significantly from the North Sea to the Atlantic Ocean, understood here as a large area encompassing the west of Shetland where most of this activity will take place. Projects in this region could drive up to 20% of the demand for labour in the oil and gas sector by 2035.
* The workforce could continue to grow until 2025, before experiencing a sustained decline. However, it is important to note that the oil and gas sector is undoubtedly the most volatile sector in which ECI companies operate. The robustness of oil and gas price forecasts has always been limited, and price changes can radically alter the picture.
* The expected longer-term decline in the oil and gas workforce could be instrumental in delivering projects in other sectors, potentially helping to alleviate labour market pressures where skills are transferable.

#### Nuclear

* The nuclear workforce could peak in 2028, with Hinkley Point C and Sizewell C simultaneously expected to boost demand. This would represent an increase of almost 30% in demand for engineering construction workers in the sector compared with 2023.
* Should a further new nuclear power station be built, the current planned operating dates suggest that demand could coincide in part with at least one of EDF’s projects mentioned above, thus further increasing pressure on the labour market.
* Decommissioning activity is likely to be steady across the period, although the sites involved will vary over time.
* Assuming that demand in 2028 is met, it could fall by 20% the following year. This means that the sector would have a supplement of at least 7,000 workers. This situation could help to offset recruitment difficulties in other sectors, or provide an incentive to increase investment in the sector, whether through the ramp-up of small modular reactors or the development of a new large nuclear power plant.

#### Renewables

* Offshore wind represents 86% of the ECI workforce in the renewable energy sector in 2023. The offshore wind sector could see a 75% increase in demand between 2023 and 2030, with no significant reduction until at least 2035. In that year, it could account for 27% of the ECI workforce.
* The Southern North Sea is the main hotspot for offshore wind in 2023, with 36% of demand resulting from activity in this area. By 2035, activity could have increased significantly in the Moray Firth (from 9% of demand in 2023 to 16% in 2023) and the Northern North Sea (from 5% to 26%).
* Onshore wind and solar power account for the bulk of the remaining ECI renewables energy workforce (around 60%). Energy from waste accounts for a further 18%. Demand for labour in these sectors, although much lower than for offshore wind, is expected to grow steadily until at least 2035.
* The Scottish Highlands and Islands could be a key player, particularly for onshore wind. Solar projects could be developed mainly in the East Midlands and the East of England.

#### Carbon Capture and Hydrogen

*Please note that data for these sectors is immature, which affects the reliability of the forecasts.*

* Demand for carbon capture and hydrogen projects could peak at 12,000 ECI workers by 2026. However, competition for skills and/or failure to improve transferability between sectors can lead to significant delays.
* The long-term trend could reach a plateau above the 10,000 mark, as there is still relative uncertainty about the exact scale these technologies could reach. This also reflects the productivity gains expected after the first wave of construction.
* Many major projects currently in the front-end engineering design or feasibility study phases relate to the general infrastructure needed to support the future handling of carbon and hydrogen. Once these projects are completed, many smaller-scale projects can be expected to develop over the longer term.

#### Contact

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