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European Centre for the Development
of Vocational Training

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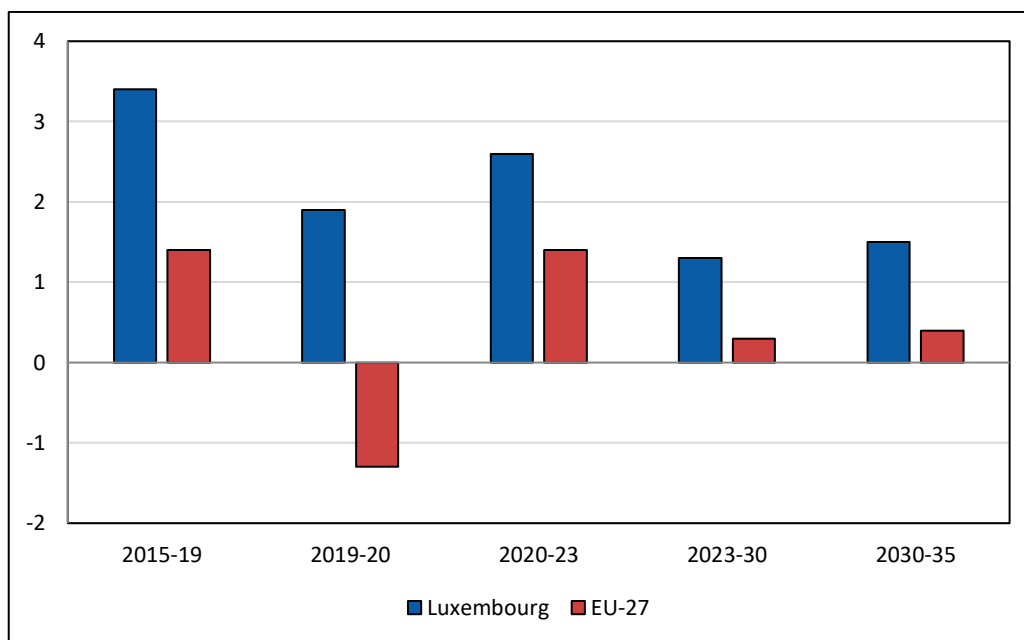
2025 skills forecast Luxembourg



1. Employment outlook

Employment in Luxembourg is forecast to grow much faster than the EU-27 average, albeit at slightly slower rates than seen over 2015-19. Figure 1 shows that employment in Luxembourg grew much faster than the EU-27 average over 2015-19 and continued to grow even in 2020 as the Covid-19 pandemic hit. Employment in Luxembourg is also estimated to have picked up much more strongly than the EU-27 over 2020-23. Across the forecast period, employment in Luxembourg is forecast to grow by 1.3-1.5% pa compared with growth of around 0.3-0.4% pa for the EU-27 as a whole.

Figure 1. **Annual percentage employment growth in Luxembourg and the EU-27, 2015-35**



Source: Cedefop (2025 Skills Forecast).

2. Labour force overview

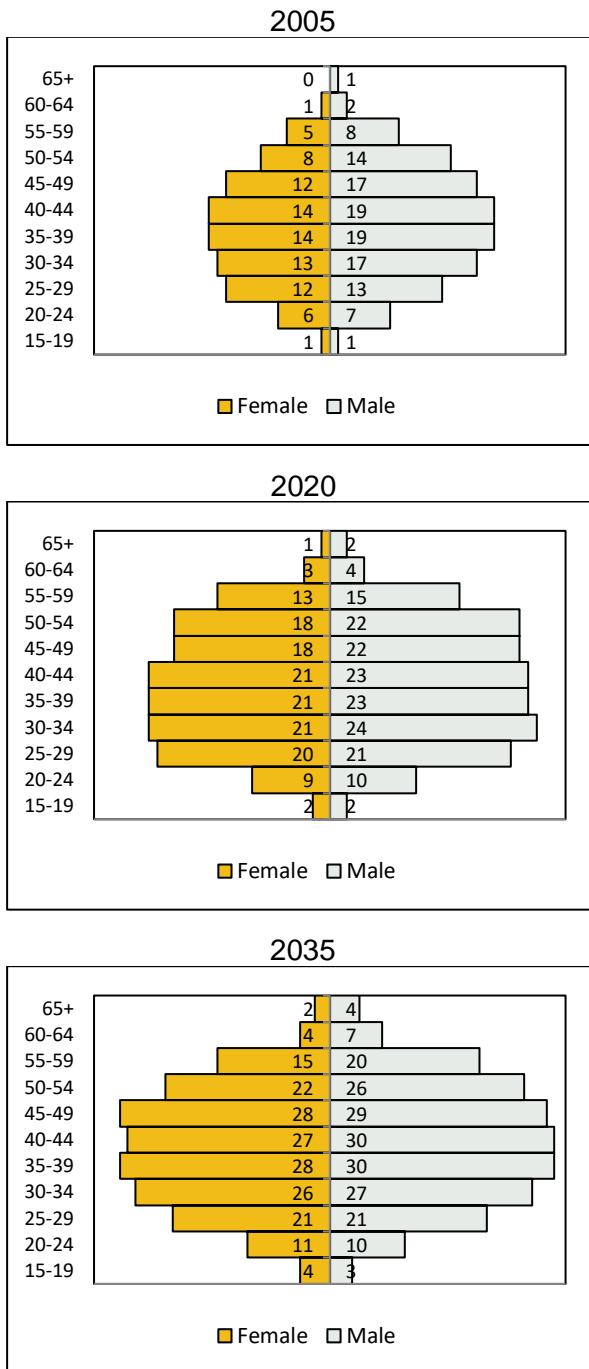
Figure 2 shows the labour force by age group in Luxembourg in 2005, 2020 and 2035. Changes in the labour force in Luxembourg over the forecast period will continue to be driven by the ageing population, although perhaps not as much as in the EU, and increasing participation rates in most age groups. Due to its size and location, Luxembourg experiences a high degree of cross-border in-commuting and is less dependent on the resident labour supply than other EU Member States. The total labour force in Luxembourg is projected to increase by 26% over 2020-35, compared to growth of 54% over the previous 15 years. This compares with an expected increase in the labour force of around 10% over 2020-35 for the EU-27. Due to changes in population in key age groups, the total participation rate in Luxembourg is forecast to remain static over 2020-35, compared with an increase of 4 pp in the total rate for the EU-27. Total population is forecast to grow by 27% over 2020-35, compared with growth of 40% over 2005-20.

Unlike most other EU Member States, the population in Luxembourg is forecast to increase strongly in most age groups, apart from 25-29 year olds. However, growth is generally projected to be strongest in the older age groups (40 and above), reflecting trends in the relevant younger cohorts in preceding periods, and so the population is ageing, as in the EU-27 as a whole.

The participation rates of all age groups in Luxembourg except for 25-29 year olds are forecast to grow over 2020-35, with the strongest increase projected for the 55-59 age group (7 pp).

The differences between male and female participation rates in Luxembourg are not as great as the EU-27 average, but, like the EU-27 average, female participation rates in Luxembourg are generally projected to increase more than male rates. Even so, and due to the changes in population in key age groups, the total participation rate for females is forecast to increase by only 1 pp over 2020-35, and the male rate to decrease by 2 pp.

Figure 2. Distribution of the labour force (thousands), 2005-35

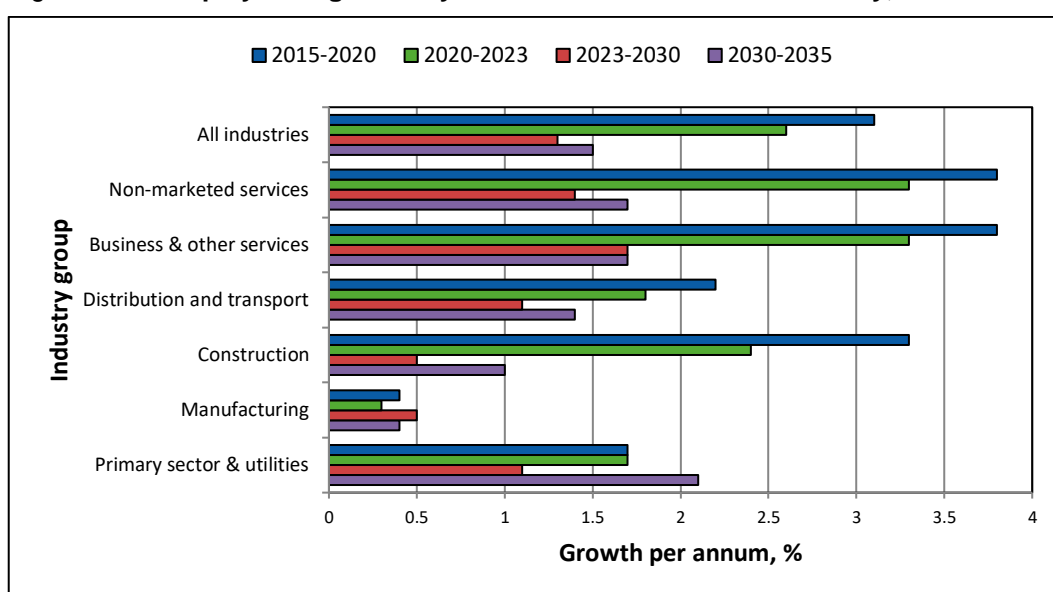


Source: Cedefop (2025 Skills Forecast).

3. Sectoral employment trends

Figure 3 shows annual average employment growth by broad sector in Luxembourg between 2015 and 2035. All broad sectors are forecast to see strong employment growth, with the slowest growth forecast for *Manufacturing* (0.5% pa) and *Construction* (0.5% pa) over 2023-30. These two sectors, along with *Primary sector & utilities*, account for a much smaller proportion (19% in 2020) of employment in Luxembourg than the EU-27 average (27%).

Figure 3. **Employment growth by broad sector of economic activity, 2015-35**



Source: Cedefop (2025 Skills Forecast).

In terms of sub-sectors (i.e. below the level of the six broad sectors discussed above), the pattern of employment growth is more mixed, but is still generally expected to be positive. Among the larger sub-sectors within *business & other services*, employment growth is forecast to be driven by *administrative & support services*, *computer programming & information services* and *legal, accounting & consultancy services*, all with forecast growth in employment of more than 2% pa over 2023-30. *Research & development* is the only services sub-sector forecast to see a decline in employment over this period. Within *non-marketed services*, employment in both *education* and *health* is forecast to grow strongly over 2023-30, with the latter reflecting the increased demand due to the ageing population, while in *public administration & defence* employment is forecast to grow more slowly over the same period. Within *distribution & transport*, employment in *land transport* (3.6% of total employment in 2020) and *wholesale & retail trade* (11.4%

of total employment) is forecast to drive total growth over the forecast period. Within *manufacturing*, although the sub-sectors tend to be smaller, accounting for a lower percentage of total employment, growth in employment is forecast to be driven by *optical & electronic equipment* and *basic metals & metal products*.

Cedefop skills forecasts estimate the total job openings by occupational group as the sum of net employment change and replacement needs. Net employment change refers to new jobs created or lost due to the expansion or contraction of employment in that sector or occupation. Replacement needs arise as the workforce leaves the occupation due to retirement or career changes. Replacement needs, generally, provide more job opportunities than new jobs, meaning that significant job opportunities arise even in occupations declining in size (i.e. agricultural workers are a typical example, as ageing workers employed in the sector will need to be replaced).

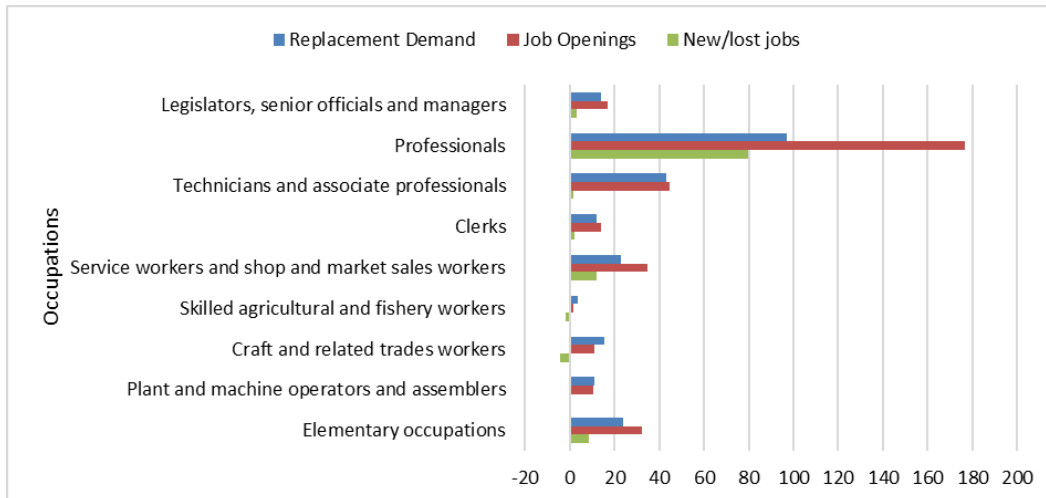
4. Job openings by occupational group

Figure 4 shows total job openings by broad occupational group over 2022-35. The number of job openings indicates the number of jobs required to be filled due to lost/newly created jobs and those that need replacement workers.

By far the biggest share of job openings is expected to be in the occupational group of *professionals* – driven both by replacement demand and the creation of new jobs. In the other occupational groups, except for *service workers*, *shop and market sales workers*, and *elementary occupations*, job openings are almost exclusively driven by replacement demand - - as they are all forecast to experience only a few new job creations. More than half of total job openings in the forecast period are attributed to the occupational group of *professionals* (51 %).

At the more detailed level, the most job openings (taking both new/lost jobs and replacement needs together) as a share of all job openings are expected to be in *business and administration professionals* (21%), *legal, social and cultural professionals* (11%), and *science and engineering professionals* (7%).

Figure 4. Total job openings, 2022-35



Source: Cedefop (2025 Skills Forecast).

5. Drivers of occupational change

Within the Cedefop skills forecast, future employment growth (or decline) of occupations is further broken down by separating national economic components from regional industrial and economic effects, helping to interpret what is driving the change. From this perspective, employment growth can be explained by three possible drivers: (a) overall economic trends (i.e., growth or decline), (b) shifts of employment between sectors, and (c) changes in the occupational structure within sectors (i.e., factors making some occupations more important than others).

An increasing specialisation in many sectors influences the occupational composition of employment in Luxembourg. This is reflected in stronger occupation-specific effects, leading to increasing shares of *science and engineering professionals*, *business and administration professionals*, *information and communications technology professionals*, and *legal, social and cultural professionals* in the economy. These changes reflect changes in job organisation in many sectors and, in many cases, an increasing specialisation.

In Luxembourg, most high-skilled occupations do not benefit from occupation-specific trends. Instead, occupations like *health professionals* and *science and engineering associate professionals* benefit from growth in underlying sectors.

Drivers and mobile plant operators benefit from expansion of the sector among workers with low qualification levels, although occupational effects are

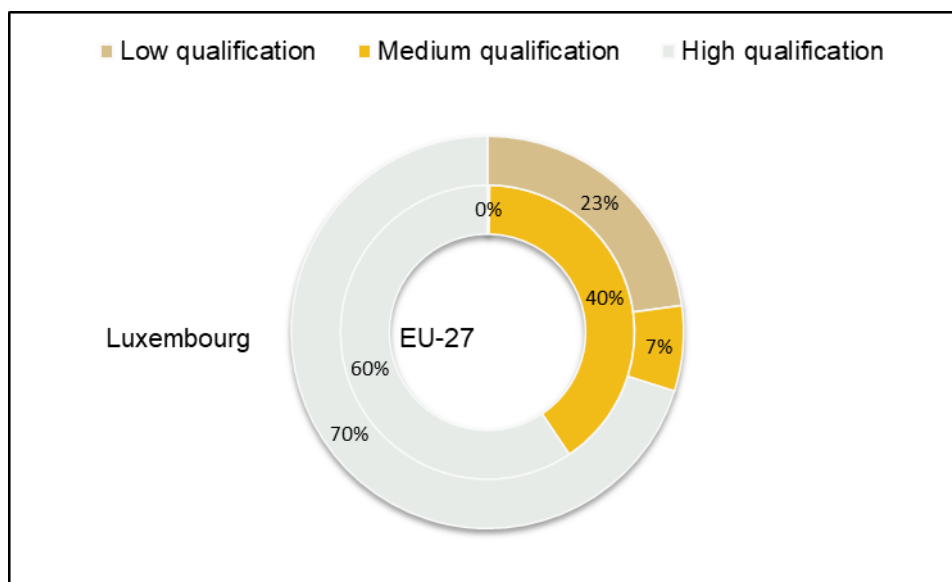
negative, which still results in an employment expansion. The same is true for *personal service workers* with medium qualification levels. This occupation is an outlier among workers with medium skills, as overall employment of workers with medium qualification levels is expected to decrease in the forecasting period.

6. Demand for and supply of skills

Within the Cedefop skills forecast, skills are proxied by the highest level of qualification held by individuals in the labour force and employment. Three levels are distinguished: high, medium, and low, corresponding to the official ISCED classification. The occupational group also indicates the skill level required, as some occupations (e.g. professionals) typically require high-level skills, while others (e.g. elementary) typically require only basic ones. Therefore, occupational groups are also linked to a skill level.

Job openings in Luxembourg are characterised by a high polarisation in education levels. Only around 7% of the total job openings expected to be created in Luxembourg over the period up to 2035 will require medium-level qualifications, about 37 pp less than the EU-27 average (see Figure 5).

Figure 5. **Shares of total job openings by level of qualification, 2022-35**



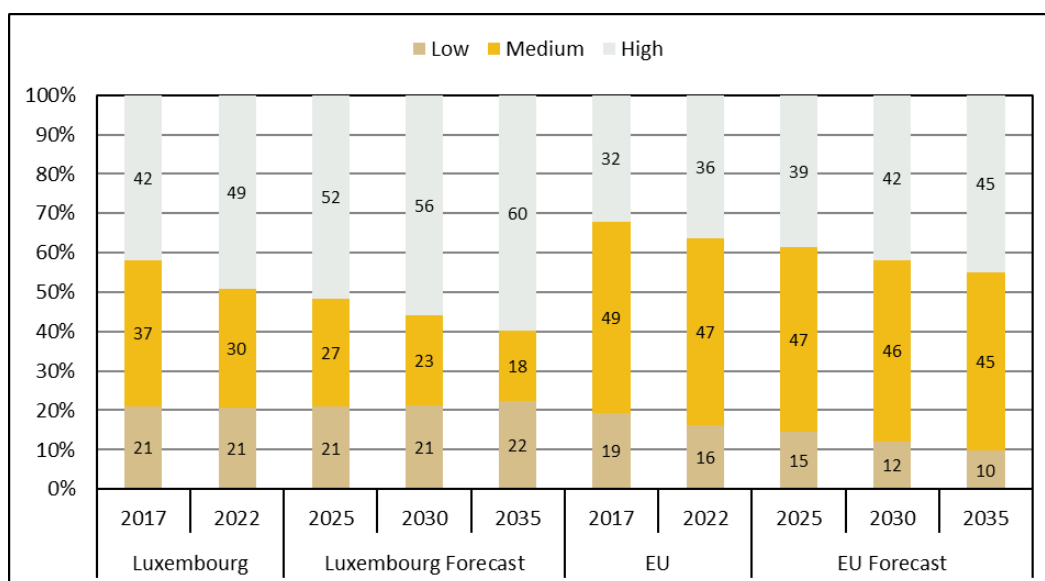
Source: Cedefop (2025 Skills Forecast).

Consequently, the majority of job openings are expected to require high-level qualifications (70%, around 11 pp more than the EU-27 average) and low

qualifications (23%, compared to a share of slightly above zero for the EU-27 average).

Future labour supply trends depend on the size of the working-age population (defined as those aged 15 or older), labour market participation rates, and the extent to which people acquire formal qualifications.

Figure 6. Labour force by qualification level



Source: Cedefop (2025 Skills Forecast).

Luxembourg is expected to experience considerable changes over 2022-35 in shares of qualifications in the labour force, as seen in Figure 6. The share of people with high-level qualifications is expected to increase by around 11 pp to 60% in 2035. The medium qualified labour force share is expected to decrease significantly from 30% in 2022 to 18% in 2035. The share of those with low levels

The **labour shortage index** is a method to summarise three elements of potential labour shortage: (1) employment growth, (2) replacement demand, and (3) Supply/Demand imbalance (IFIOD). The outcomes at the occupation level are grouped into four quartiles: those with a low indication of shortage get the value 1, and those with the highest indication of shortage will get the value 4. The total outcome of the individual elements is a simple average of the elements. In Figure 6, the length of the bar gives the overall outcome, where higher levels indicate more shortage. The outcomes of the three elements are also given to quickly evaluate the influence of employment growth - replacement demand, and - supply-demand imbalances.

of qualification is expected to increase slightly by about 1 ppt to 22%. In Luxembourg, the proportion of the labour force with low and high-level qualifications remains significantly higher than the EU-27 average.

The labour market in Luxembourg is heavily influenced by the large share of commuting into Luxembourg. Imbalances are calculated on national labour market statistics, however, not always do these numbers reflect the labour market experience of the actors especially in very specific labour markets. Imbalances should thus always take on the view of potential supply from the neighbouring regions.

The labour shortage index is calculated at the ISCO 2-digit level and then aggregated to the ISCO 1-digit level (see Figure 7). The highest value of the labour shortage index can be found among *Technicians and associate professionals* (2-3-4), driven by supply-demand imbalances and, to a lesser degree, by replacement demand, along with their high replacement needs. Shortages are also expected in the occupational group of *Service workers and shop and market sales workers* (3-3-3), *Elementary occupations* (3-3-2), and *Skilled agricultural and fishery workers* (2-1-3).

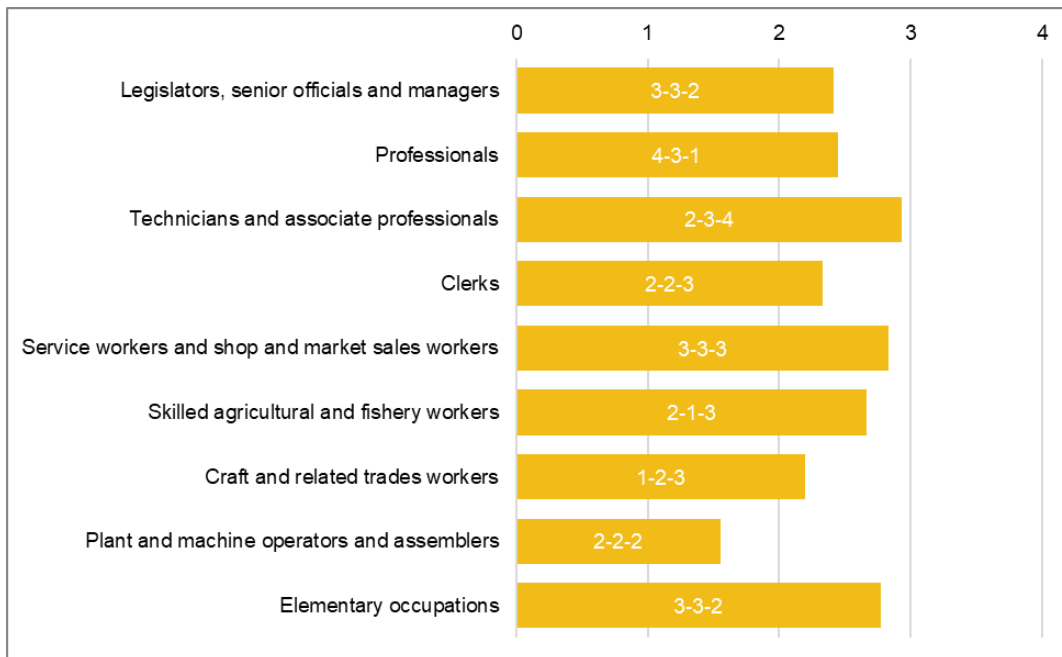
In Luxembourg, hiring difficulties mostly arise due to employment and replacement demand growth. They arise mainly among High-skilled non-manual occupations and elementary occupations (both 3-3-2). Labour market tightness in skilled non-manual occupations (3-2-3) are expected to be related to employment growth in combination with supply-demand imbalances, while the latter also play a certain role in skills shortages that arise in skilled manual occupations (1-2-3).

Among high-skilled non-manual occupations, the highest shortages are expected among *legal, social, cultural and related associate professionals* and *Information and communications technicians* (3-4-4), who have among the highest replacement demand and supply-demand imbalances.

Labour shortages are expected in the occupations of skilled non-manual occupations of *customer service clerks* and *personal service workers* (both 4-2-3), which can be attributed to employment growth, while shortages for *sales workers* (3-3-3) are equally connected to employment growth, replacement demand, and imbalances. Shortages in skilled manual occupations are less pronounced. However, demand for *electrical and electronic trades workers* (2-4-4) are expected to experience a level of shortage due to replacement demand in combination with supply-demand imbalances.

Agricultural, forestry and fishery labourers (4-4-2) and *food preparation assistants* (3-4-2) are expected to represent only a small portion of total employment but they are still forecast to be affected by skills shortages.

Figure 7. Labour Shortage Index, 2022-35



Source: Cedefop (2025 Skills Forecast).

Cedefop methodology

The Cedefop Skills Forecast offers quantitative projections of future trends in employment, by sector of economic activity and occupational group. Future trends in the level of education of the population and the labour force are also estimated. Cedefop's forecast uses harmonised international data and a common methodological approach allowing cross-country comparisons between employment trends in sectors, occupations and qualifications. The forecast and methodology is validated by a group of national experts. The forecast does not substitute national forecasts, which often use more detailed methodologies and data, while they also incorporate in-depth knowledge of a country's labour market.

The latest round of the forecast covers the period up to 2035. The forecast takes account of global economic developments up to November 2023. The European Economy is expected to grow despite monetary tightening on phasing out of fiscal support.

The key assumptions of the baseline scenario incorporate the Eurostat population forecast available in June 2023 (Europop 2023) ⁽¹⁾, and the short-term macroeconomic forecast produced by DG ECFIN in November 2023 ⁽²⁾. The source of historical labour force data is the European Labour Force Survey, which in 2022 underwent important methodological changes, causing a break in the time series for several variables, including the labour force. Consequently, in many Member States, the participation rates in 2021 are noticeably above/below historical trends. Moreover, some Member States experienced significant revisions in the historical data series for sectoral employment from the National Accounts.

The Cedefop Skills forecast 2025 is consistent with the objectives set by the European Green Deal by incorporating suitable assumptions about additional investment, power sector technologies, energy balances, and carbon pricing.

Energy and commodity price forecasts from the World Bank and the IEA are used as inputs to the Cedefop Skills Forecast.

(1) <https://ec.europa.eu/eurostat/web/population-demography/population-projections/database>

(2) https://economy-finance.ec.europa.eu/economic-forecast-and-surveys/economic-forecasts/autumn-2023-economic-forecast-modest-recovery-ahead-after-challenging-year_en

For the latest update and access to more detailed Cedefop skills forecast data please visit:

www.cedefop.europa.eu/el/events-and-projects/projects/forecasting-skill-demand-and-supply

For more details, please contact Cedefop's Skills Forecast team at:

Skills-Forecast@cedefop.europa.eu

