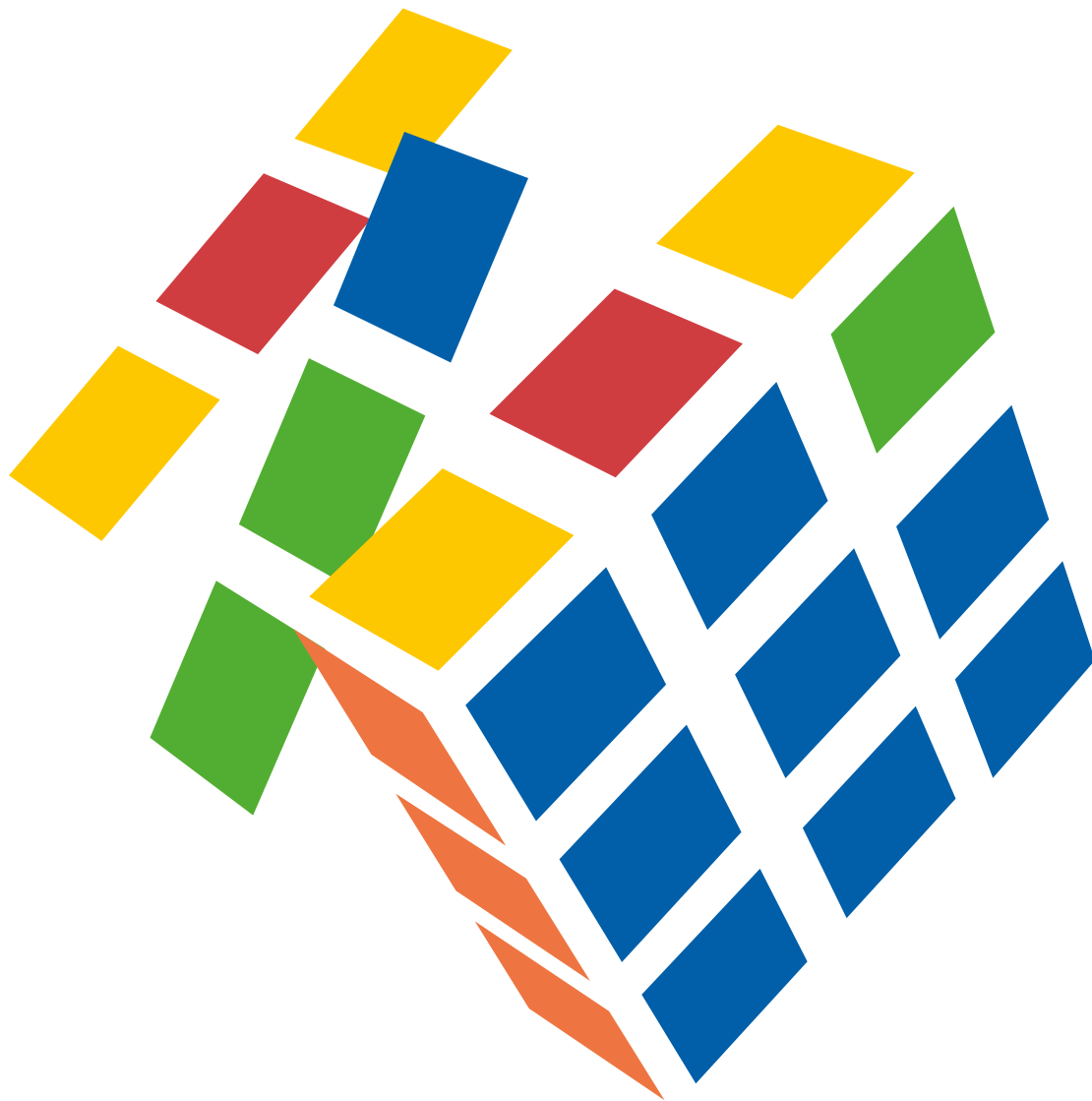




CEDEFOP

European Centre for the Development
of Vocational Training

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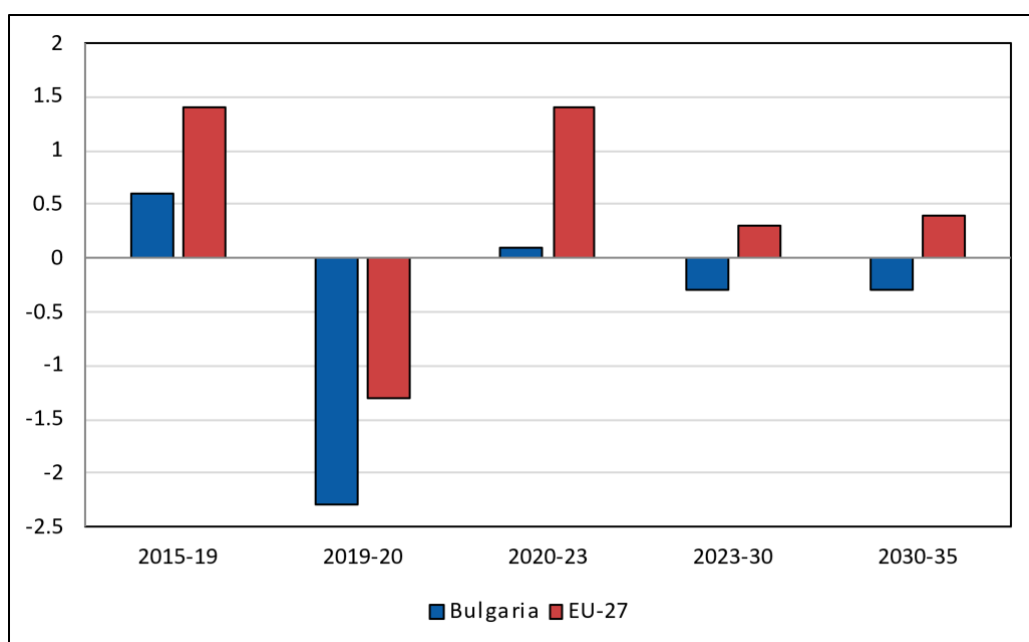
2025 skills forecast Bulgaria



1. Employment outlook

Employment in Bulgaria, which fell sharply in 2020 as the Covid-19 pandemic hit, is forecast to fall over the whole forecast period. Figure 1 shows that employment in Bulgaria grew only weakly over 2015-19 and fell much more sharply than the EU-27 as a whole in 2020. Across the forecast period, employment in Bulgaria is forecast to shrink, compared with fairly weak growth in the EU-27 as a whole.

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



Source: Cedefop (2025 Skills Forecast).

2. Labour force overview

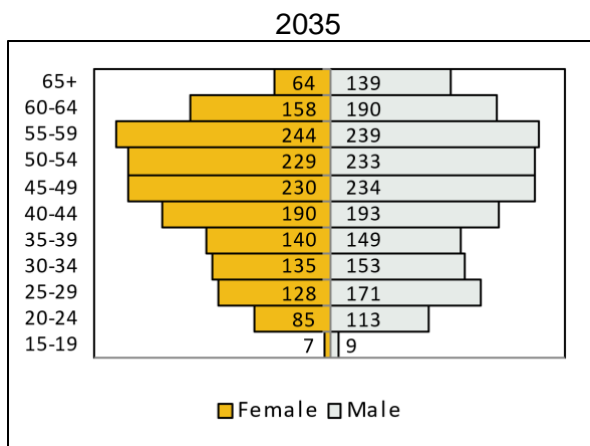
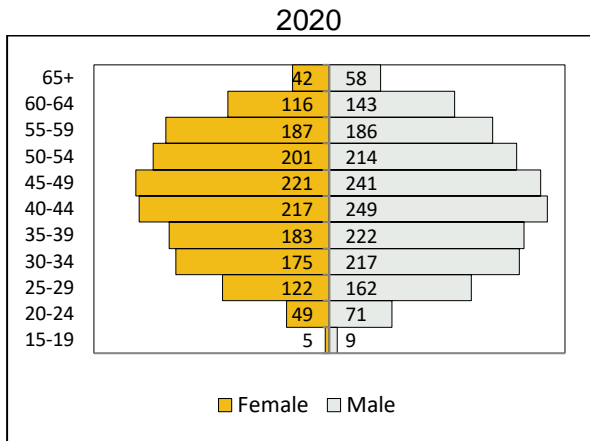
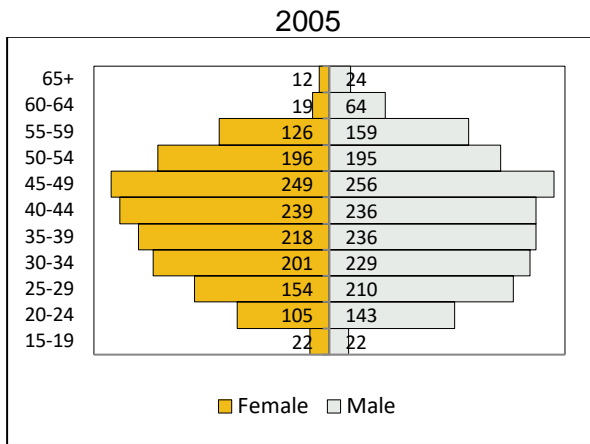
Figure 2 shows Bulgaria's labour force by age group in 2005, 2020 and 2035. Changes in the labour force in Bulgaria over the forecast period will continue to be driven by the ageing population, as is the case in much of the EU, and increasing participation rates in most age groups. The total labour force is projected to increase by around 4% over 2020-35, compared with a fall of just under 1% over the previous 15 years. This compares with an expected increase in the labour force of just under 10% over 2020-35 for the EU-27. The total participation rate in Bulgaria is forecast to increase by 7 pp over 2020-35. Total population is forecast to fall by around 8% over 2020-35, compared with a fall of just over 10% over 2005-20

The population for all age groups between 25 and 54 is forecast to decline in Bulgaria over 2020-35, reflecting trends in the relevant younger cohorts in preceding periods.

The participation rates of all age groups above 20 are forecast to grow strongly over 2020-35 (by between 6 and 18 pp), albeit those below the age of 35 are starting from fairly low levels compared to the EU-27 as a whole.

As elsewhere, female participation rates by age group are generally forecast to increase more than male rates, with an increase in the total female participation rate of 7 pp over 2020-35. However, the pattern of population growth by gender is such that the total male participation rate in Bulgaria is also projected to increase by 7 pp over the same period.

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

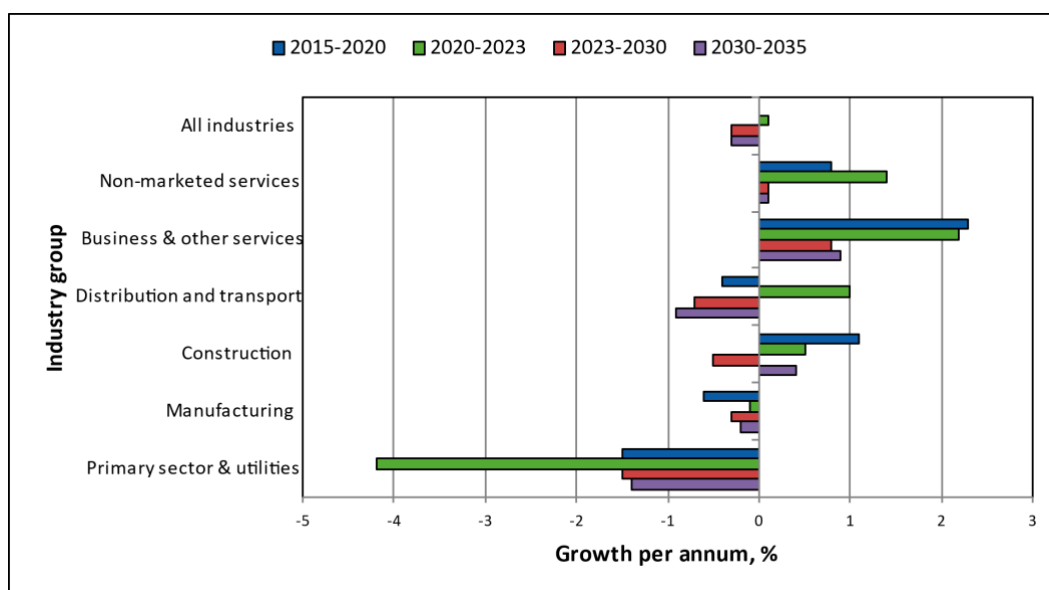


Source: Cedefop (2025 Skills Forecast).

3. Sectoral employment trends

Figure 3 shows annual average employment growth by broad sector in Bulgaria between 2015 and 2035. Although total employment is expected to fall in Bulgaria over the forecast period, the broad sectors of *business & other services* and *non-marketed services* are expected to see positive growth over the whole period, and *Construction* is expected to see positive growth in employment over 2030-35. the strongest employment growth is forecast in *business & other services*, at 0.8-0.9% pa over 2023-35, while growth in *non-marketed services* is expected to be very slow, at 0.1% pa. Employment in *construction* is forecast to fall by 0.4% pa over 2023-30 and then grow by 0.4% pa over 2030-35. Employment in *primary sector & utilities*, which accounts for a far greater share of employment in Bulgaria (20% in 2020) than is the case for the EU-27 as a whole (6%), is forecast to decline by around 1.5% pa over 2023-35.

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), services such as research & development, media, computer programming & information services, market research & other professional services, real estate activities and architectural & engineering services are expected to be among the fastest growing, thus driving the increase in business & other services as a whole. Within the broad sector of distribution & transport, the relatively large sub-sector (accounting for 3.5% of total employment, or 122,000 jobs, in 2020) of

accommodation & catering services is forecast to grow relatively strongly. The forecast decline in employment in primary sector & utilities is due to a strong forecast decline in employment in agriculture over the whole forecast period. Agriculture accounted for 17% of total employment in Bulgaria in 2020. Within the same broad sector, employment in electricity is forecast to grow over the whole forecast period. Although total manufacturing employment is forecast to fall over 2023-35, some sub-sectors are forecast to see relatively strong growth over the forecast period, including electrical equipment, rubber & non-metallic mineral products and motor vehicles.

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

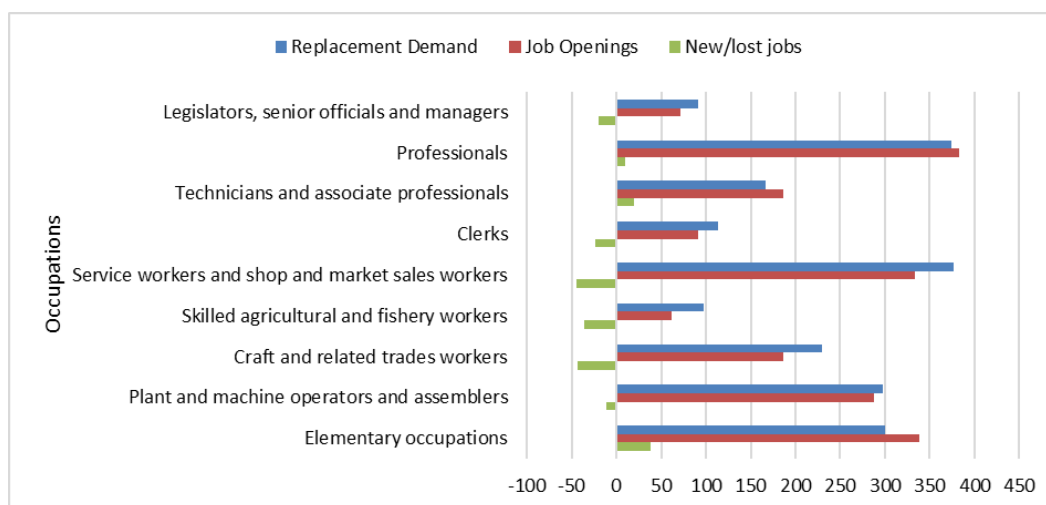
Figure 4 shows the total job openings by broad occupational group over 2022-35. The number of job openings indicates the number of jobs that are required to be filled due to lost/newly created jobs and those that need replacement workers.

The number of jobs in all broad occupations except for *professionals*, *technicians and associate professionals* and *elementary occupations* is expected to decrease over this period, reflecting the forecast by sector.

Due to replacement demand, there will still be many job openings. The combined total job openings are dominated by *professionals*, *service workers and shop and market sales workers*, and *technicians and associate professionals*, who are expected to generate the largest number of job openings over the forecast period, accounting for 20%, 17% and 17% of total job openings respectively. *Plant and machine operators and assemblers*, despite a slight decline in employment, are still forecast to provide 15% of the job openings, thanks to high replacement needs.

At the more detailed level, most job openings (taking both new/lost jobs and replacement needs together) as a share of all job openings are expected to be in *Drivers and mobile plant operators* (9%), *sales workers* (6%) and *protective services workers* (6%). These three large occupations have high replacement needs. Among the higher-level workers *business and administration associate professionals* are forecast to account for 64% of the total job openings, while health professionals constitute 4% of the job openings.

Figure 4. Total job openings, 2015-35



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).

Occupational shares are influenced by several, sometimes contradictory, factors. While in some parts of the economy, some specialisation occurs, in others, higher-level occupations are replaced by intermediate ones (health, business, and

manufacturing). These shifts are hard to predict as they follow the intricacies of the salary structure, opportunities for graduates and supply and demand at a level of detail that is not included in the forecast.

Bulgaria seems to replace higher level occupations in many cases with their lower counterparts which could be a reaction on the brain-drain of the past years.

Along with these specialisations there is also a move towards managing these new work forms. Intermediate-skilled occupations that can benefit from this trend are, for example, *associate health professionals, business and administration associate professionals* and also *assemblers*.

Health professionals and associate health professionals benefit from the increase in the underlying health sector. Yet, not all of the increases in employment translate into higher employment in these important health occupations. *Information and communications technology professionals* benefit from a sector-specific increase but also from the increased share in all other sectors. The occupation-specific increases come at the cost of the lower-level associate professionals in this specific occupation.

Therefore, the overall effect of occupational change depends on several factors that need to be considered together. Increasing digitalisation and moving towards a more service-oriented economy will lead to a greater use of higher-level occupations. At the other end of the spectrum, lower-level occupations supporting production and the service sector are increasing at the cost of some intermediate occupations.

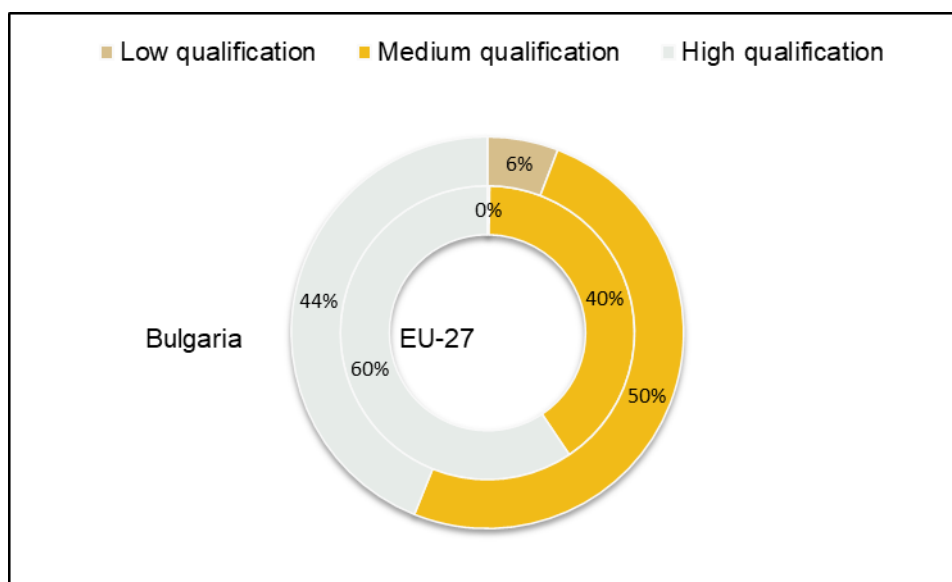
6. Demand for and supply of skills

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.

Half (50%) of the total job openings expected to be created in Bulgaria over the period up to 2035 will require medium-level qualifications, 10 pp more than the EU-27 average (see Figure 5). 44% of total job openings will require high-level qualifications, 6% will require low-level qualifications.

Relative to the European averages, the share of job openings among intermediate and lower qualifications is thus higher, reflecting also the supply of the labour force that is available within the country.

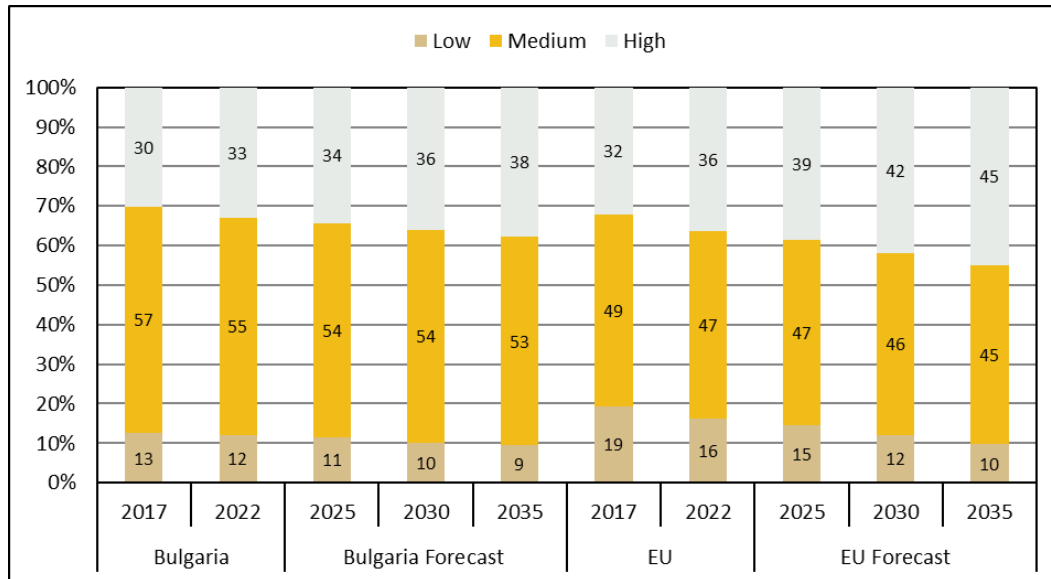
Figure 5. **Shares of total job openings by level of qualification, 2022-35**



Source: Cedefop (2025 Skills Forecast).

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).

Bulgaria is expected to experience slow but steady 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 in Bulgaria is expected to increase to 38% by 2035, up from a share of one third in 2022. The share of medium qualified labour force is expected to decrease slightly, from 55% to 53%, remaining the largest qualification group. Those with low levels of qualification are expected to decrease from 12% to 9% in 2035. In Bulgaria, the proportion of the labour force with medium level qualifications remains significantly higher than the EU-27 average, while lower and higher qualified have somewhat lower shares. The overall trends follow those of the other EU countries: decreases among lower and medium qualification levels, leading to increases among the higher educated.

In Bulgaria, the supply of low- and medium-skill workers is expected to be below what is required by demand by 2035, while the supply of high-skill workers is expected to meet the demand for those qualifications broadly.

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.

Some labour market tightness is expected to remain throughout the forecast period. Hiring difficulties arise mainly among low and medium qualified. The labour shortage index is calculated at the ISCO 2-digit level and then aggregated to the ISCO 1-digit level. The labour shortage index points especially towards *elementary occupations* who not only increase slightly in employment, but also have high replacement needs. Most of the employment is also from the lower qualified group of workers that, given the increased qualification level, will experience some shortage.

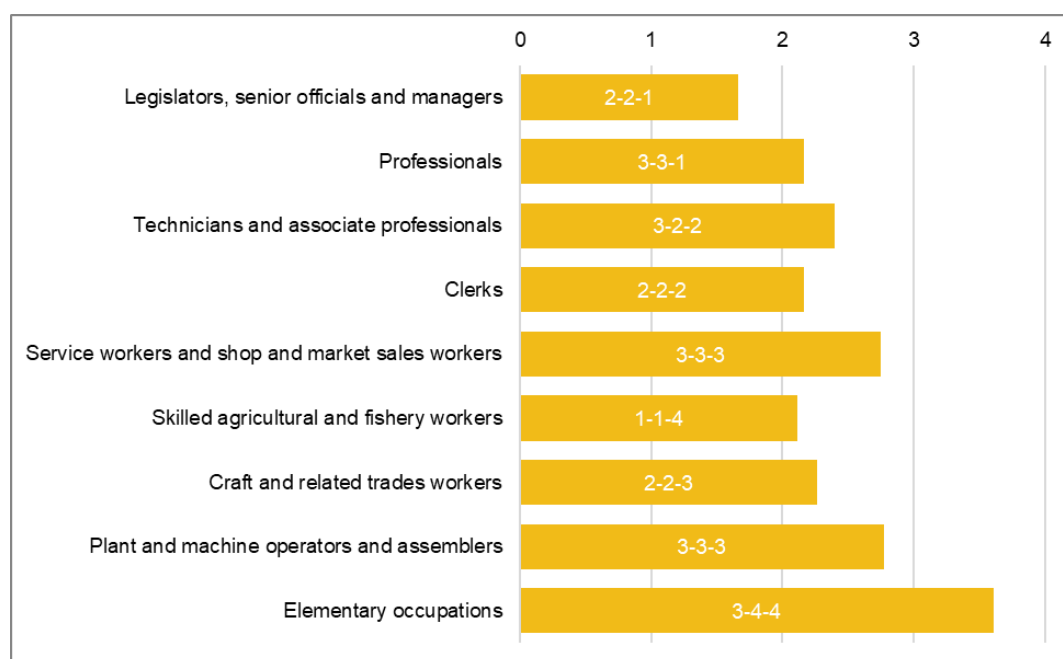
Service workers and shop and market sales workers are also expected to experience some shortages. In all elements of the index, employment growth, replacement needs, and supply/demand imbalances, this occupation group is in the second-highest quartile. *Technicians and associate professionals* are in a similar position; however, given their requirement for higher qualifications, the supply/demand indicator, or the third component in the index, does not see a shortage. Whether the sufficiency of higher educated also provides sufficient graduates from the required fields remains to be seen.

The highest value of the labour shortage index at the two-digit ISCO can be found among *building and related trades workers (4-4-4)*. This is driven by the growth of the underlying occupations, their high replacement needs, and the expected shortage in the required qualifications. Another occupation among the skilled manual occupations, with high expected shortages, is *assemblers (4-3-3)*, who have among the highest employment growth and high replacement needs and imbalances.

Among the skilled non-manual occupations, the highest shortage is expected among *protective service workers (3-4-2)* and *personal care workers (3-4-3)*. This

is driven by being among the highest group for replacement demand, and second highest for employment growth. Among the high-skilled workers, *legal, social and cultural professionals* (4-4-1) stand out. The shortage among professionals is driven by high employment growth and high replacement demand.

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:
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