Is the Belgian labour market ready for the green transition and higher occupational mobility?

Policy Brief

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Key messages

1 The green transformation required to meet the ambitious climate targets stipulated at the EU level will have significant implications for the Belgian labour market

2 Labour demand in green sectors and occupations will go up, while other sectors will experience a shrinking demand for workers or will be less affected

3 The Belgian labour market is currently characterised by low levels of occupational mobility, across sectors and regions, and persistent labour and skills shortages. These conditions will make the predicted job growth in green sectors hard to realise and are thus expected to hamper the green transition.

4 Continued efforts towards the upskilling and reskilling of workers are critical to support the green transition

Introduction

Although the green transition is still in its early stages, it is already clear that it will have a consid-erable impact on labour markets across the European Union (EU), including in Belgium. Indeed, in order to achieve the ambitious climate targets set at the EU level, Belgium, like other Member States, will have to invest in renewable energy sources, increase the electrification of transport and production, and upgrade the building stock. These sectors will see labour demand grow, while employment in the petrochemical and gas distribution industry will decline. Alongside these changes, the green transition will make some occupations redundant, introduce new occupations, and lead to changes in skill requirements in some occupations while leaving others relatively un-touched. In addition, some of the sectors and occupations that will likely be most affected by the green transition, for example, construction, are currently already experiencing persistent labour shortages.

The green transition, moreover, is intertwined with other global megatrends, such as digitalisation – including artificial intelligence and automation – and population ageing. While their exact com-bined impact on employment is uncertain, successfully navigating these transitions is likely to re-quire an increase in occupational mobility, with workers shifting to new jobs and roles to account for changes in labour demand. This will necessitate reskilling and training of workers. At the same time, these transformations open up possibilities for low and medium-skilled workers, who should benefit disproportionately from increased demand in technical professions.

Focusing on Belgium, this policy brief addresses the main labour market challenges and opportu-nities related to the green transition, taking into account the current labour market conditions as well as other important factors that will impact the labour market in the future.
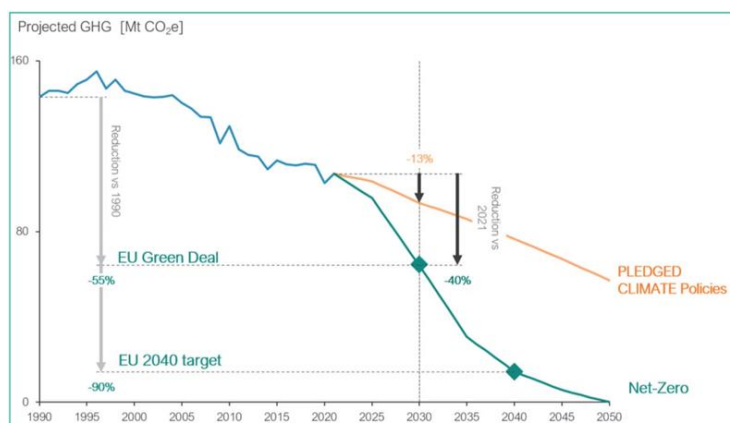
Methods and results

How will the green transition reshape the labour market? What governance strategies could be adopted to bridge decarbonisation and the labour market in sustainability transitions so that the opportunities of the green transition can be reaped and its challenges tackled? To answer these questions, the LAMARTRA project adopted a wide range of research methodologies embedded in the scientific disciplines of sustainability transitions, foresight studies, labour economics, and the sociology of work. This particular policy brief draws on the field of labour economics.

The starting point for this work was a comprehensive literature review on green job measurement and characterisation across various countries and world regions. This review was based on a conceptual framework distinguishing between output-based and process-based greenness, and entity-level and occupation-specific measurement techniques (Apostel and Barslund, 2024). This literature review was enriched with an analysis of labour market differences and dynamics be-tween green and brown jobs, using a large longitudinal labour force survey (LFS) with detailed information on occupations in the period 2017-2022 (Apostel et al., 2023a). The Belgian LFS data were also used to analyse the characteristics of the workforce and working conditions in four key sectors, which are affected by the green transition in different ways: agriculture, construction, metallurgy, and e-commerce (Apostel et al., 2023b). The most salient findings are presented be-low.

A long way to go

The green transition is still in its early stages and will need to be accelerated significantly to reach the Green Deal 2030 reduction target and achieve the 90% reduction target by 2040 and net-zero emissions by 2050 (Figure 1). Carbon emissions have followed a decreasing trend since the year 2000, but on the current trend, the targets will not be fulfilled. Moreover, additional reductions be-come harder to achieve as we move towards a net-zero target. Initially, significant reductions were achieved by switching electricity production from coal to gas-fired plants, essentially the same technology, but using a different fuel. Phasing out gas implies a change in technology. Similarly, at a smaller scale, households first insulated rooftops, which is comparatively cheap relative to the installation of heat pumps and other forms of energy renovation.

Figure 1. Past and projected GHG emissions under different scenarios in Belgium.

Source: Climact (2024)

Methods and results

This points towards a need for more people to be employed in occupations that contribute, directly or indirectly, to decarbonisation. Overall, the green transition is also expected to create additional employment. Part of the increase in green employment will come at the expense of polluting sec-tors ('brown jobs'), but most will come from employment switching into green sectors.

Green jobs

It is challenging to define precisely which occupations are 'green' and which are not (Apostel and Barslund, 2024). Moreover, occupations can be 'brown' in one context and green in another (e.g. an electrician working in a gas turbine electricity plant versus servicing solar panels). Using the Belgian LFS data, and combining the European occupation classification (ESCO) with the equivalent US classification (O*NET), it is possible to derive 'green' occupations as those contributing to the green transition and promoting the green economy (Dierdorff et al., 2009). Around 20% of employment is in occupations that can be characterised as at least partly green. These numbers have been relatively unchanged from 2013 to 2023. This suggests that green occupations have not yet grown in relative size in response to greenhouse gas emission targets, in line with the relatively modest reductions in greenhouse gas emissions in the period.

Employees in green occupations differ from those in other occupations across several dimensions of workforce characteristics. First, green occupations remain predominantly male, with around 80% of employees being men, in contrast to 38% in other occupations. Second, while educational attainment is, on average, lower in green occupations, green jobs still feature a relatively high share of medium-educated workers. Third, the overall age profile of workers in green occupations is only slightly different from that of other occupations. Fourth, green jobs are considerably more likely to involve full-time work (around 90%) than other jobs (67%). Workers in green jobs tend to earn more than in other professions, also when comparing wages within groups with similar educational attainment.

The construction sector plays a particular role in the green transition, both for reducing emissions and driving job creation. The sector has one of the largest concentrations of "green" occupations, covering anything from insulation and energy retrofitting to the adoption of more efficient building techniques and materials. These activities are not only labour-intensive but often require practical, on-the-job skills, making the sector a source of local employment growth. Renovation and retrofit-ting of the existing building stock, in particular, are considered critical for cutting energy use and carbon emissions.

Brown jobs

In contrast to green jobs, brown jobs are found in highly polluting industries. Brown jobs account-ed for about 2.4% of total Belgian employment in 2017 and declined to roughly 2% by 2022, reflecting ongoing structural shifts. They tend to be heavily

Methods and results

male-dominated (around 80%) and have lower average educational attainment than green occupations. Brown jobs also come with an earnings penalty relative to other occupations. Importantly, workers in brown occupations who transitioned into a different occupation during the period 2017-2022 were more likely to transition directly into green jobs (around two-thirds of all job-to-job transitions) than to neutral occupations. This suggests some overlap in underlying skill requirements and that the green transition may pose less risk of unemployment than previously assumed (Apostel et al., 2023a; 2023b).

Labour shortages

Labour shortages have become a pressing challenge for Belgium's green economy more broadly (Barslund et al., 2024). Many green occupations—particularly those requiring technical skills—are classified as 'bottleneck jobs'. These positions are often found in energy-efficient manufacturing, renewable energy, and environmental services, yet they attract fewer applicants than vacancies posted. Men (around 80%) predominantly occupy green shortage jobs, and educational attainment varies significantly between green shortage and non-shortage jobs. Over half of the workers in green shortage jobs have a medium level of educational attainment (ISCED 3-4), while only 31% have a high level, compared to 61% in green non-shortage jobs and around 50% among all workers. Factors contributing to these shortages include limited awareness about the career potential and wage levels in green jobs, as well as a mismatch between

the STEM qualifications demanded by employers and the skill sets of workers entering the labour market. Moreover, many of these roles require hands-on or specialised training—such as installing and maintaining renew-able energy infrastructure—which adds another layer of complexity. In the construction sector in particular, nearly half of the workers in green occupations are in bottleneck jobs. It remains challenging to recruit enough skilled workers for tasks that can be physically demanding and require certain technical proficiencies.

Labour market transitions into green shortage jobs are relatively low. Technical skills are essential for such transitions across all worker groups, while resource management skills are particularly critical for highly educated individuals making the shift into green shortage occupations (Barslund et al., 2024). Inactive and unemployed persons constitute a potential source of persons who could potentially take up green shortage jobs, and they represent almost half of those who start such jobs. However, many of them also lack the necessary technical skills, and their skill profiles are, in general, not sufficiently aligned with the requirements of green shortage jobs.

Conclusions

The green transition will lead to a more volatile labour market with occupational supply and demand changing faster. The central labour market opportunity from the green transition is its potential to bring more people into employment. Given the low overall employment rate in Belgium in international comparison, this is a promising development. While green jobs are predominantly technical, there are opportunities across all educational attainment levels. Moreover, it seems that skills used in brown jobs are also demanded in green jobs. These opportunities are not only future-oriented. In fact, already today, there are (persistent) labour shortages in several green occupations, and filling these jobs is as much an opportunity as it is a challenge. On the other hand, the current low labour market participation and comparatively low adult education and training are well-known obstacles to increasing the employment rate. Another issue is low occupational labour mobility. Given the job reallocation that will likely take place due to the green and digital transition, low occupational mobility may become more important as a labour market challenge. Overall, it is clear that the Belgian labour market is not yet adequately prepared for the green transition.

Policy recommendations

Continue to improve the understanding and measurement of green jobs and skills to push the green transformation forward

One of the key challenges that the LAMARTRA project uncovered and faced was the wide divergence in green employment estimates, which can be partially attributed to differences in the underlying greenness concept, measurement technique, and scope. In addition, some of the variability is due to the shortcomings of individual measurement techniques.

1

Recommendation: *To support the green transition, further improvements in the conceptualisation, data availability and measurement techniques are necessary. Moreover, additional work on identifying brown and green occupations would benefit future research concerned with identifying and characterising green employment. This will help to ensure that policymakers get more insight into existing gaps and can more easily pinpoint where more efforts are needed to foster the green transformation, to be able to better tackle the risks and reap the opportunities that it presents.*

Policy recommendations

Address existing labour shortages in sectors and occupations where requirements are low in terms of educational attainment

Labour and skills shortages persist in critical economic sectors and occupations – of which several are among those that will be most affected by the green transition, and/or are critical in driving the green transformation.

The share of brown occupations in total employment is in decline, while the share of green occupations is relatively stable. Employment in both green and brown occupations appears to be driven by men, individuals with a lower educational level and workers in full-time employment, compared to workers in neutral occupations.

Recommendation: *Policy remedies to ease labour and skills shortages should combine multiple avenues of action:*

2

1. *Expanding and streamlining vocational and apprenticeship programmes would encourage more young people and career changers to develop the specialised skills needed for green jobs. This can be done in partnership with companies and sectoral training funds, which can help define standardised yet flexible training modules for high-demand tasks like heat pump installation, advanced insulation, and low-carbon construction methods.*
2. *Awareness campaigns and improved career guidance can counter outdated perceptions of green or construction work and highlight viable, modernised career paths within these domains.*
3. *Targeted recruitment efforts to bring in underrepresented groups—such as women, migrants, and older workers—can expand the overall talent pool, while strong coordination among government agencies, private industry, and educational institutions will ensure that the supply of skilled labour meets the rising need for green construction projects.*

Policy recommendations

Increase occupational labour mobility

Occupational mobility is low in the Belgian labour market, which is problematic considering that the green transition will reshape the economy and call for labour mobility between occupations and sectors. This issue is alarming, especially in a fast-changing labour market experiencing severe labour and skills shortages.

LAMARTRA research finds that workers in green and neutral employment are likely to remain in their job type, with around 90% of workers remaining in the same type over a one-year timespan. 78% of workers in brown employment stayed in a brown occupation. Workers who initially were employed in brown occupations appear to disproportionately move to green occupations, suggesting that the skills gap between green and brown occupations is relatively narrower compared to the gap between green and neutral occupations. Moreover, workers transitioning to different job types are generally younger, and those moving towards green employment are slightly more educated than their peers who remain in the same job type.

3

Recommendation: *Policymakers should step up efforts to boost occupational mobility, not only in general but also between sectors and regions, to increase green employment and support the expansion of the green economy. Continued attention for up- and reskilling is needed to support especially workers with lower levels of educational attainment and older workers throughout these transitions. For some sectors, the skills required are similar, which could encourage workers to switch jobs.*

Policy recommendations

Invest in the upskilling and reskilling of workers

Participation in adult education in Belgium is low compared to the EU average, and the number of students in STEM and technical education remains too low, especially among some groups (e.g., women, individuals with a migration background).

4

Recommendation: *Continued investments in worker upskilling and reskilling are needed. The social partners have a critical role to play here, identifying changing skills requirements at the sectoral and occupational levels, lowering the thresholds to offer and participate in training, and ensuring that sufficient attention is paid to the most vulnerable workers in this transition.*

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Project

This policy brief is part of a research project called LAMARTRA (2021-2025). The project aimed to explore the potential futures that could emerge from the low-carbon and labour transitions. It also sought to understand how these transitions can be governed to achieve both climate objectives and just work and employment opportunities.

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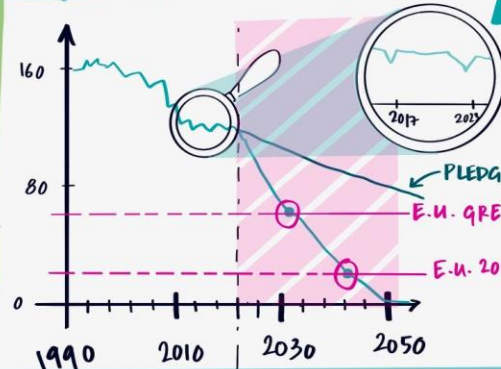
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Emolyement risks and opportunities linked to decarbonization

GREEN TRANSITION?

& LABOUR MARKET

→ A TRANSFORMATION in HOW WE PRODUCE, DELIVER, STORE and USE ENERGY

EMISSIONS HAVE BEEN FALLING... BUT TOO SLOW

MEETING 2030 TARGETS REQUIRES ALMOST DOUBLING ANUAL EMMISSIONS CUTS AFTER 2024

— PLEDGED CLIMATE POLICIES
— E.U. GREEN DEAL
— E.U. 2040 TARGET

(graph axes: 160, 80, 0 / 1990, 2010, 2030, 2050; inset 2017, 2023)

TILL NOW:

- MEASURED "GREEN" JOBS HAS PLATEAUED
- ...IN LINE WITH RELATIVELY FLAT CURVE OF CARBON REDUCTIONS 2017-2023

OPPORTUNITIES

- ACCELERATION WILL CONCENTRATE JOBS IN RETROFIT, RENEWABLES, and GRID SERVICES
- ESPECIALLY IN CONSTRUCTION and RENOVATION
- THESE JOBS ARE MOSTLY LOW MEDIUM SKILLED, FULL-TIME and BETTER PAID

CHALLENGES

BROWN JOBS
* DEMAND FOR BROWN JOBS ↓
* SMALL SHARE of TOTAL EMPLOYMENT
* OFTEN HAVE A SKILL OVERLAP WITH GREEN JOBS

LABOUR SHORTAGES
* LABOUR SHORTAGES ARE ALREADY BEING FELT, ALSO IN GREEN JOBS

LOW OCCUPATIONAL MOBILITY
* BELGIUM'S OCCUPATIONAL MOBILITY IS LOW by E.U. STANDARDS
  → LIMITS the LABOUR MARKET'S ABILITY to ADJUST

DIGITAL / A.I. TRANSITION
* LIKELY TO DEEPEN EXISTING CHALLENGES
* INCREASING LABOUR MARKET CHURN
* UNCLEAR WHICH LABOUR MARKET SEGMENTS MOST AFFECTED

JOB NOW HIRING!
THIS WAY
HELP WANTED

LAMARTRA
Bridging decarbonization and labour market in sustainability transitions

POLICY RECOMMENDATIONS

1. IMPROVING ACCESS TO/ UPTAKE of RETRAINING ESPECIALLY in TECHNICAL EDUCATION
WELCOME

2. IMPROVING APPRENTICESHIP SYSTEMS TO MEET RISING DEMAND FOR CRAFTSMEN

3. BETTER GUIDANCE FOR THOSE OUTSIDE THE LABOUR MARKET, to TACKLE SHORTAGES

4. ADDRESSING LOW LABOUR MARKET MOBILITY