



Green Skills Roadmap Flanders

Final Report on Green Skills
Needs in Flanders
(Deliverable 2)

Executive summary

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Trinomics 



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In association with:



Executive Summary

E1. Introduction

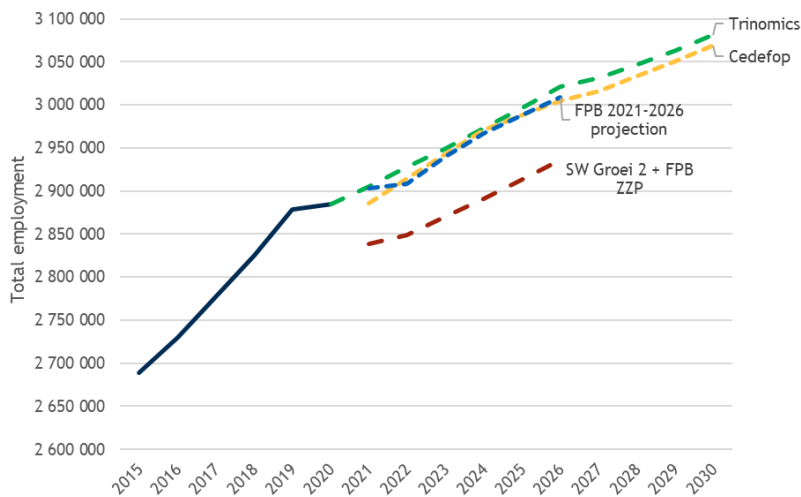
This report provides a situational analysis of the impact of the green transition on the Flemish labour market. This includes an assessment of the current and future green skills and jobs needs, and an overview of the Flemish stakeholders impacted by the skills development required for the green transition. It was developed as part of a contract commissioned by DG REFORM to support **Flanders in the development of a high-level strategy together with an implementation roadmap and a governance framework to guide and support skills development for the green transition**. The main beneficiary of the contract is the Flemish Department of Work and Social Economy (DWSE). This work is supported by DG REFORM.

In order to develop the report, several different data sources were utilised. First of all, a comprehensive **literature review** was undertaken, reviewing studies on the green transition, jobs and skills at Flemish as well as international and EU-level. Secondly, a set of **interviews** was carried out with relevant stakeholders in Flanders (Steunpunt Werk, Vlaanderen Circulair, VDAB, HIVA KU Leuven and Research Unit of the DWSE) and complemented by interviews with leading EU level stakeholders (e.g. DG Employment and Cedefop). In total 13 stakeholders were approached and 9 interviews were carried out. Third, a targeted stakeholder **survey** was developed. The purpose of the survey was to inquire what skills sector stakeholders and other feel will be needed to enable the green transition. In total 48 complete, and 134 partial responses were received, all of which have been considered. Finally, the last source of information that fed into the report was an excel-based '**forecasting tool**' developed by the Trinomics team in the course of the project. The tool provides an estimate for 2022-2030 of the evolution in employment per NACE 2 economic sector for Flanders, based on estimated sector growth in a green transition scenario. Additionally, it provides estimates of the need for new staff per sector based on estimates of expansion of the sector, job-switching and the need to replace retirees. It also provides an indication of the type of green jobs per sector.

E2. Situation analysis of the impact of the green transition

The **EU Green Deal (EGD)** is the European Commission's set of policy initiatives with an overarching aim of making the EU climate neutral by 2050. It provides specific policies and targets for the green transition many of which are directly relevant to Flemish sectors, especially the **industry, construction, transport and the agri-food sectors**. Forecasts expect employment in the EU and in Flanders will increase as a result of the EGD initiatives, if well implemented. As can be seen in Figure 0-1, overall growth in employment demand is anticipated in Flanders when accounting for the most important economic trends, including (but not only) the green transition. Negative impacts of the green transition on jobs are very limited. The reason for this is the high concentration of carbon-intensity in a limited number of sectors that account for only a small amount of employment in Flanders.

Figure 0-1 Comparison of long-term total employment projections for Flanders 2015-2030



Note: SW = Steunpunt Werk; FBP = Federal Planning Bureau; ZZP = self-employed

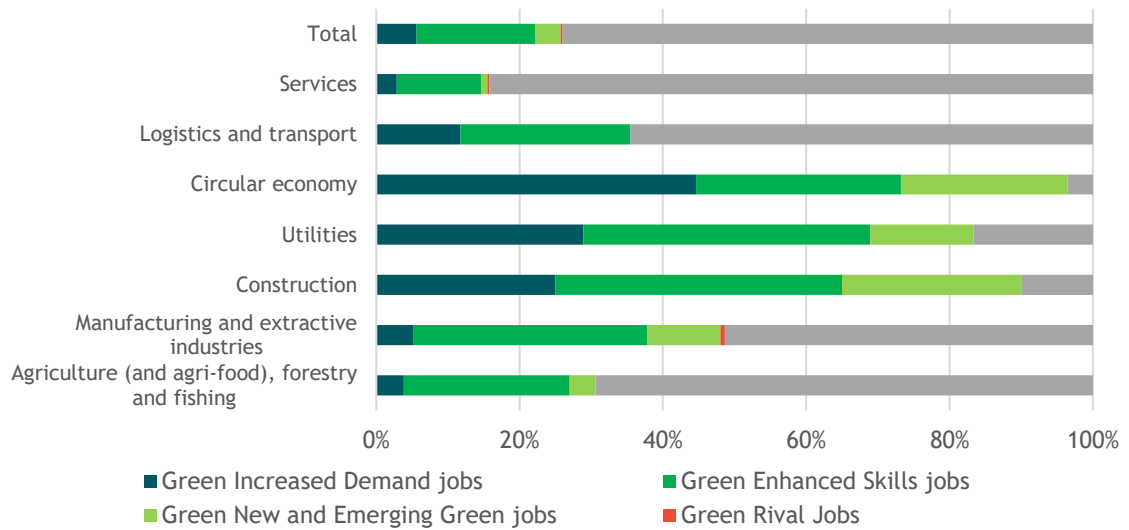
E3. Assessment of future green skills and jobs needs

Similar to most developed economies, employment in Flanders is concentrated (~80% of total) in the services sector. Manufacturing and energy (13%), construction (6%) and agriculture (2%) contribute much lower shares of employment. Total employment in Flanders is expected to grow until 2026 and likely to continue to grow until 2030. The growth is concentrated in the services sector, although the construction and circular economy sectors are also expected to grow. This growth would place continued, and additional, pressure on the labour market in Flanders. There is already significant pressure as every sector will need to replace around 25%-30% of its workforce due to retirement in the 2022-2030 period, this issue is particularly acute for the transport and logistics, and agriculture (and agri-food), forestry and fishing sectors. Furthermore, in addition to replacing retirees, replacing individuals that remain in the workforce but that switch jobs within and across sectors will remain an important challenge for sectors and companies.

In general, around 26% of jobs are expected to see significant impacts from the green transition, requiring either enhanced skills (16%), new and emerging skills (4%) or the green transition leading to increased demand for these jobs (6%). These green jobs types are heavily concentrated in the circular economy, utilities (energy) and construction sectors, and to a lesser extent also in manufacturing. It is estimated around 74% of jobs are unlikely to be significantly affected by the green transition, this high share is driven by the services sector which is largely unaffected. Very few jobs in Flanders are thought to be in opposition (rival) to the green transition and at risk.

Figure 0-2 presents the estimated shares of (green) job types within each sector. This shows clearly that the expectations for increased green jobs are highest in the circular economy, utilities and construction sectors, and to a lesser extent in manufacturing. These sectors see needs for all types of green jobs and nearly all jobs in the sectors are likely to be affected in one way or another. Logistics and transport is notable as not anticipating new and emerging green jobs, but rather seeing greening through increased demand for existing jobs and enhanced skills needs within existing jobs. The services sector is among the least affected by the green transition proportionally, but it is still crucial to address as it is by far the most numerous in terms of jobs.

Figure 0-2 Split between green job types per sector



The following subsections present the conclusions on implications of the green transition on jobs and green skills need in each sector.

Agriculture (and agri-food), forestry and fishing sectors

This sector is the most directly connected to the environment of all sectors and is important to the green transition, where policy seeks to better manage the environmental impacts of food production. For the employees within the sector, more transversal skills will be needed in addition to the current skill set of farmers.

Even though the agri-food sector will experience significant impacts from climate change and will need to adapt due to the green transition, the relative size of sector employment is small, and therefore employments impacts will be limited. In 2020, this sector represented 2% of employment in Flanders. By 2030, employment in the sector is forecast to decrease by 1.7% compared to the 2020-level. Although the sector shows limited awareness of the expected changes in the employment levels under the green transition, the sector is particularly vulnerable to the impacts of climate change and will experience changes in skills demand. The agri-food sector is characterised by facilitating the employment of low-skilled workers. In this context, it is important to support enterprises in the training of their employees, as the jobs may become more complicated under the green transition (need to acquire more administrative, HR- and managerial competences, as well as more knowledge on climate change, relevant policies and their implications). Furthermore, there will be an increasing need for networking and team work skills, analytical skills, entrepreneurship, problem solving skills in addition to the current skillset of farmers.

Manufacturing and extractive industries

The manufacturing sector and related subsectors are energy and labour intensive, and therefore a critical focus point for both green policy and green skills challenges. Employment in this sector is highly sensitive to the impacts of the green transition, with risks to a number of sectors, support to improve the resilience of the sector will be important.

In accordance with the report, we consider in particular the energy-intensive, chemicals and automotive industry as important subsectors. The manufacturing sector represented 12% of Flemish employment in 2020. A significant decline in the share of employment of -6.8% is expected by 2030 in comparison to 2020. Especially the chemicals, primary metals, rubber & plastics and petrochemicals sectors, which are already facing labour shortages, will be severely impacted by the green transition. For the chemicals and related sectors, the chemical processes which are key for the sector are still heavily reliant on fossil fuels. The expectation is that with the continued innovation of the chemical processing industry, guided by increasingly stringent regulations, jobs will shift from fossil-fuel based chemicals to 'greener' chemicals - bio-based chemicals. For the automotive industry, besides potential resource shortages, the quantitative impact on jobs of the green transition is unclear. Through to 2030 continued manufacture of internal combustion engine vehicles will continue, but a rapid transition to battery electric vehicles will also be taking place, these require fewer, and different components, changing the jobs in the sector, but if the EU takes a leading role in electric vehicle manufacture the net impact on jobs in automotive manufacture is expected to be neutral or positive.

In terms of skills needed for the manufacturing sector, and particularly the energy-intensive industries, there will be a major challenge to attract sufficient employees with STEM (Science, Technology, Engineering and Mathematics) profiles. There will be a need for upskilling of a total of around 111 000 current employees in four main green themes (durable design and engineering, (renewable) energy, efficient and circular production, green business models). Furthermore, the chemical sector has identified a structural shortage of employees with a highly technical profile. Not only specialised skills, but also interdisciplinary skills are also increasingly necessary and difficult to find on the labour market. Finally, the automotive industry identified a need for several technical, as well as non-technical, competences.

Construction sector

The construction sector, as well as the manufacturing sector is energy intensive, and highly labour intensive. It is characterized mainly by SMEs. Due to the environmental impacts of construction itself and the importance of buildings and their energy use, employment in the construction sector is highly sensitive to the impacts of the green transition.

In consultations for this deliverable several stakeholders identified the construction sector as one of the sectors in Flanders which will be most significantly impacted by the green transition. The sector is understood to be very aware of the current and future green transition impacts and is trying to increase its resilience to be able to deal with the ongoing transition. The current share of employment (2020 data) in the construction sector reached 6% of total Flemish employment.

By 2030, the sector's labour demand is expected to expand by 2.7% in comparison to 2020. New green jobs will be created along with green specialised building techniques and materials such as insulation and ventilation systems. Additionally, there is also the trend of 'greening' current jobs. Considering the fact that this sector is already facing significant labour shortages and skills gaps, this will be an important challenge to address. Failure to do so could potentially hinder or slow the green transition. The green transition will also result in a need for upskilling and reskilling in the construction sector. The required level of skills has increased across all levels in the sector. All workers need more technical and complex skills than before.

Utilities

This sector is crucial to the energy part of the green transition. Whilst it does not employ the largest number of staff, those that are employed are amongst those most significantly affected by the green transition in terms of skills and job needs.

Studies show that on average more jobs are created per unit of energy produced in a renewable system than in a fossil-based system, thus the green transition could have an extensive impact on the energy labour market. Employment levels in the sector represent only approximately 1% of total Flemish employment in 2020. Compared to this 2020 level, a decline in labour demand of 0.7% by 2030 was calculated. Job growth in the sector will be expressed mainly in additional jobs in construction, installation and manufacturing of renewable energy sources and in a lesser degree jobs related to operations, maintenance and fuel processing. The energy and utilities sector is at the heart of the green transition, electricity and heating will require the most major overhaul of any sector, and this is clearly reflected in growth of needs for particular skills in renewable energy, and broader professional skills to effectively manage and implement the transition that will take place.

Circular economy

The circular economy sector¹ is amongst the sectors to be most affected by the green transition, but in contrast to some sectors the impact is expected to be positive, with a significant increase in employment in the sector being driven by green transition policies.

The circular economy transition can have a positive influence on the Flemish labour market if it is managed well. For instance, it can create additional job opportunities, raise the job standard and reduce inequality. This is due to several shifts and trends such as the increase in labour intensive activities (repairing, remanufacturing and recycling are more labour intensive than traditional manufacturing and disposal); the relocation of manufacturing activities (re-shoring manufacturing); and the creation of new markets (e.g. rental business models). However, risks that come along with not being prepared for the circular transition relate to job insecurity, labour shortages and skills gaps. Considering the fact that circular economy jobs exist across many sectors, the share of employment is difficult to calculate. However, a study by the *Koning Boudewijnstichting* (2022), estimates that there are approximately 148 000 circular jobs in Flanders, which represents 7.5% of all Flemish jobs. By 2030, an increase of 22.4% in labour demand is expected compared to 2020 levels. This is the biggest increase identified across all sectors analysed in this study. Circular economy requires upskilling of the workforce in several areas. Most importantly, workers need to have an increased understanding of and involvement in the steps occurring before and after them in the value chain. It will require new combinations of skills from workers: a combination of traditional skills (such as manual skills) and more novel skills (such as material sciences); and a combination of soft skills (such as service-related skills) and hard skills (such as programming, operating and repairing equipment).

¹ Transitioning to a circular economy is a change that should occur across all sectors to a greater or lesser extent. For the purposes of this work we have defined a circular economy sector to help capture the skills need from this part of the green transition, it encompasses the economic sectors (NACE codes) most heavily involved in this transition, namely: Repair and installation of machinery and equipment; Sewerage; Waste collection, treatment and disposal activities, materials recovery; remediation activities and other waste management activities; and, Repair of computers and personal and household goods.

Logistics and transport

The logistics and transport sector in Flanders is labour intensive and crucial to the modern economy. The green transition will have a significant impact on transport technologies with increasing electrification of vehicles and use of alternative fuels. Employment in the sector is regarded as very sensitive to the impacts of the green transition.

For the sector, the transition to clean mobility includes the electrification of the transport sector, modal shift, hydrogen applications, charging infrastructure, etc. To enable this transition, the ageing Flemish population is an issue, since it causes a shortage in truck and lorry drivers, as 70% of truckdrivers are older than 45. In addition, there is a low influx of new workers which lead to the categorization of many jobs in the sector as labour shortage occupations. In 2020, the logistics and transport sector represented 6% of total employment in Flanders. By 2030, a decline in labour demand of 2.7%, as compared to 2020, is expected. The majority of employees in the logistics and transport sector work as vehicle drivers and mobile installation operators; followed by administrative staff, and occupations such as warehousemen; and technicians and related occupations. As part of this sector, Flemish ports are considered one of the most important economic motors of the region and in total (maritime and non-maritime clusters and both direct and indirect jobs), they employ almost 9% of the Flemish working population. The Flemish Port Strategy (2022) recognises that additional efforts will be required to find and keep the necessary profiles to achieve the green transition within Flemish ports. The strategy focuses on jobs in clean energy (e.g. hydrogen), transport (modal shift) and circular economy. The green transition will not only require increased social skills such as team work, communication and networking; but also increased ICT skills, analytical skills and knowledge of environmental regulations. This will impact several types of jobs: managers, transport experts, planning experts and administrative staff. For truck drivers, environmental consciousness as well as sustainable driving skills can positively influence the emissions while driving and thus decrease the environmental impact of the sector. During the stakeholder survey, respondents considered all types of skills suggested (technical occupation specific skills, professional, cross-sectoral skills (STEM skills, analytical skills, management skills, soft skills etc.) and environmental literacy and awareness skills equally important.

Services sector

The services sector employs by far the largest part of the Flemish population. Many of the services sub-sectors are hardly affected by the green transition, however some important niches and sub-sectors will see large impacts on jobs and skills.

The services sector is by far the largest sector in Flanders in terms of employment share, representing around 80% of Flemish employment in 2020. By 2030, a further increase is expected in labour demand by 7.9%, compared to 2020. Whilst this growth is not driven by the green transition, i.e. there is significant growth in the healthcare sector to deal with an increasingly ageing population, there will be growth in some areas to support national level implementation of green policies. In these areas that will support the transition appropriate institutional capacity and preparedness will be needed. This ranges from planning, development of 'green' standards, to monitoring policy implementation and even green procurement. Many of the professional services in finance, law, architecture, science, technical and engineering services are likely to see important impacts from the green transition. There are also several emerging occupations in this field such as environmental consultants and auditors.

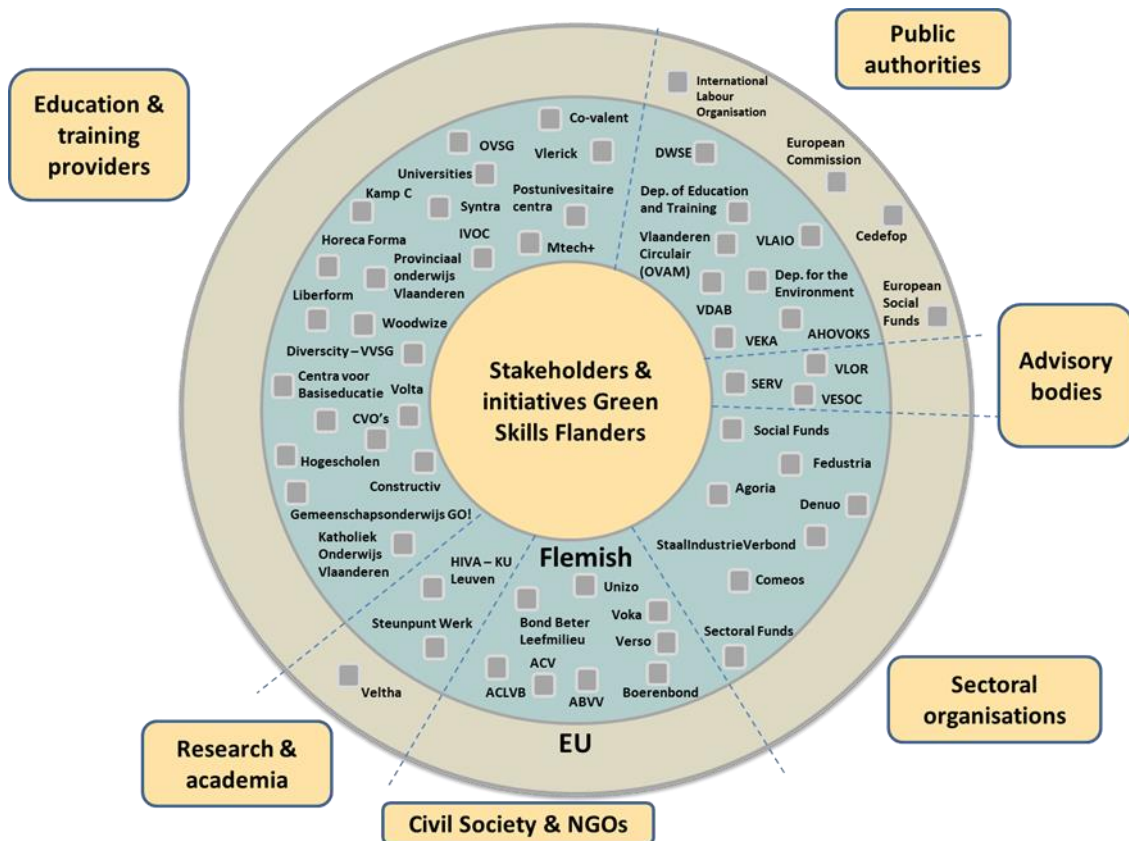
Across sectors

Total labour demand in Flanders is expected to increase by 5.3% by 2030, compared to 2020-levels. In terms of skills, there are several cross-sectoral trends which have emerged in this study. Across sectors the importance of both professional and cross-cutting competences² should be emphasised, these needs are high across sectors and are required by the highest number of workers. It will be crucial for employees to develop a balanced set of skills. General green skills (i.e. cross-cutting skills as identified above) are those needed by the highest share of the workforce, after generic skills.

E4. Overview of Flemish actors involved in the green transition

The stakeholder landscape for skills in Flanders covers multiple public, private and other stakeholders. In this study, in total 61 stakeholders from 6 stakeholder groups have been identified: Public authorities (including governmental departments and EU-level actors); Advisory bodies; Sectoral organisations; Education and training providers; Civil society & NGOs; and Research & academia. Some important organisations are shown in Figure 0-3.

Figure 0-3 Overview of Flemish and international actors and initiatives on green skills



These stakeholders have identified that there is already a profound shortage of employees. To bridge this gap some employers already have strategies in place. The main responses to these shortages are to hire under-qualified staff and train them on-the-job; and to increase training for existing employees. Although more than 1/3 of firms also address the problem by hiring from outside of Flanders. A large majority of employers indicated in the survey that they see a responsibility and are willing to offer

² Cross-cutting competences are personal skills, knowledge or attitudes that allow a person to act in an effective manner with others and that, beyond technical competences, are crucial to access and evolve in the world of work.

internal and external training to address skills gaps. At sector level, a role is seen for improved mapping of gaps and for developing a sector strategy to address these.

Skills are identified within the main Flemish economic strategies as an issue, albeit one of many issues. Within these and broader policies there is a focus especially on improving lifelong learning culture and practice, and also on promoting STEM skills, improving basic and digital literacy, and working with sectors (e.g. sector covenants, SCOPE studies) to better understand needs. There are multiple ongoing initiatives on green skills already active in Flanders led by various agencies including sectors, many of these tend to have a focus on manufacturing industries and STEM skills. Education and training programmes in Flanders are working on a number of small initiatives to better tailor frameworks and programmes towards the key issues for skills for the green transition, with lifelong learning and STEM skills among the main focal issues. At EU level, skills policy is established through initiatives such as GreenComp, the European Skills Agenda, Skills4Climate, BuildUp Skills and others supporting Member States to address the various issues.

E5. Conclusions

The key conclusions extracted from this report are the following:

- The green transition is necessary and likely to accelerate quickly in the coming years;
- The green transition is expected to have a positive overall impact on jobs and economic growth;
- The green transition will impact unevenly across sectors, services, the largest sector by far, will be largely unaffected, but energy, manufacturing, construction and circular economy will be much more impacted;
- Future projections for Flanders estimate job growth to 2026 and likely 2030;
- Around 26% of jobs in Flanders could all be categorised as green, however shares of green jobs are much higher in the circular economy, construction, utilities (energy), and manufacturing sectors;
- Around 25-30% of the existing workforce is likely to retire between 2022-2030;
- Skills gaps already exists in Flanders, the green transition could put even more pressure on certain sectors/skills;
- There are specific technical skills needs from the green transition, but a larger priority is given to generic STEM skills, Lifelong learning and professional and cross-cutting skills;
- Lifelong learning is emphasised as an issue as most of the 2030 workforce is already part of the workforce today;
- There are risks in not addressing skills needs for the green transition, such as insecurity, labour shortages and skills gaps;
- Flemish policy frameworks provide a good basis for action, but these need to be updated;
- Flemish institutions and stakeholders are active, and some initiatives are already ongoing - however, further mobilisation, particularly for the circular economy, construction, energy and manufacturing sectors, is needed to address the challenge; and
- The cross-sectoral nature of the key skills challenges lends itself to cross-sector cooperation.