



STUDY ON ACCESS TO SKILLS

Employers Studies (Social Prerogative and Specific Competencies Line – SOCPL)

Brussels, October 2026

Final Report for BusinessEurope, prepared in coordination with nine European sectoral employers' organisations

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Competencies Line – SOCPL)

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Executive Summary

Access to skills is a major concern for European employers and an increasingly important factor in Europe's competitiveness. Companies across sectors face difficulties both in recruiting workers and in securing the talent needed to respond to technological, environmental, demographic and organisational change. These pressures affect day-to-day operations, productivity, innovation, investment and the capacity of businesses to grow. This Study examines **access to skills from an employer perspective** (with manufacturing, professional services and construction as frequently occurring sectors) and identifies possible lines of action at European, national and sectoral levels. It draws on desk research, national consultations involving 35 stakeholders and employer organisations; EU-level sectoral consultations involving 16 stakeholders, and an online Company Survey with 209 responses across 25 countries (including Switzerland and Norway), 16 sectors, 89 large companies and 120 SMEs.

The evidence shows that employers are dealing with **two closely related problems**: shortages in the number of available workers and mismatches between the skills available and those required in the workplace. Recruitment difficulties are not limited to highly specialised occupations: they also affect technical, vocational, manual and operational roles, including many of those needed to support the green and digital transitions. **Demographic ageing, the massive replacement of baby boom retirements and insufficient inflows** of new labour-market entrants are reducing workforce availability in many Member States. At the same time, employers report important mismatches in the skills and job-readiness of available candidates, who do not always match the moving target of evolving occupational requirements.

The **attractiveness of sectors and occupations** also influences where shortages arise. Employers report difficulties attracting younger people to vocational and technical careers, even where occupations are evolving and new opportunities are emerging. Stereotypes, limited awareness of career prospects, and unclear progression routes are the key factors that continue to shape education and employment choices. Less populated areas and SMEs are particularly exposed because they tend to rely more heavily on local labour supply and have fewer alternatives when recruitment is unsuccessful.

Making mobility real is a key challenge. Labour mobility and international workers can make a valuable contribution to expanding the talent pool and should be part of a broader strategy to address labour and skills shortages; however, they do not provide a complete solution. Mobility contribution depends on efficient admission, recruitment procedures and language support, and the ability of employers to understand qualifications and experience acquired elsewhere. In non-regulated occupations, formal recognition may not always be necessary, but, in some cases, employers continue to face lack of clear and reliable information on the level, content and learning outcomes of qualifications.

Skills mismatches are reported across qualification levels. Employers refer to gaps in foundational and transversal skills, insufficient practical experience, limited job readiness and qualifications that do not always correspond to current occupational demand. It is critical that education and training systems are updating curricula and qualifications in line with developments on the labour market, where companies adopt new technologies, production processes and job roles.

Companies are already adapting to these conditions. Continuous staff training is the most common response reported in the Company Survey, selected by more than four out of five respondents across both large companies and SMEs. The importance of **lifelong learning** is widely recognised, but participation remains low and difficult in practice due to different interconnected barriers. The main issue is not necessarily an absence of training opportunities, since, in many countries, adult learning provision, including in-company training, and publicly supported programmes already exist. The greater challenges are workers availability and whether companies can release employees, identify suitable provision and organise learning around operational requirements. **Workload and lack of time were the most influential barriers** to organising training in the Company Survey, followed by limited organisational capacity and training costs. These constraints are particularly significant for SMEs, small teams and sectors with seasonal, shift-based or operationally intensive activity. On the workers side, availability, reconciliation needs and motivation are the most relevant obstacles.

The Study finds that skills intelligence has developed considerably across Europe. However, the main weakness of skills intelligence still lies, on the one hand, in the fragmentation and duplication of efforts; and, on the other, in the connection between evidence and action to translate identified needs in updated curricula, training supply and training priorities. Fragmentation and duplication could be overcome improving the **communication and connection between skills intelligence** processes. The obsolescence paradox of skills needs well identified, even monitored in real time, while learning content remain not updated, require connecting evidence with action by **embedding better existing skills intelligence exercises in decision-making procedures**. At company level, skills intelligence usefulness also depends on whether companies can apply it. On one hand, large companies are more likely to identify skills needs and complement these practices with formal workforce planning and analytical tools; on the other, SMEs may have a good understanding of their immediate requirements but less capacity to engage with complex external intelligence systems or undertake longer-term planning. National and sectoral **information therefore needs to be presented in an accessible form and translated into practical guidance** for training and internal workforce development. Beyond contributing to skills intelligence, employers also play an important role in interpreting data and what it means for future skills needs and training orientation.

An updated and appropriate training response is not only an issue of connecting better skills intelligence with action. The design of the education and training responses can benefit from modular programmes, real work-based learning, and increasing the flexibility and autonomy to tailor parts of the curriculum. **Training is delivered through a diverse network**, including multiple stakeholders of VET, higher education, adult learning centres, public employment services, private providers, sectoral organisations and companies. Best practices can be found in these partnerships, often at sectoral and regional level. On one hand, this diversity gives companies and workers access to different learning routes; on the other, it can also make training offers difficult to navigate. Furthermore, **training capacity is also a concern**: shortages of qualified teachers and trainers and outdated equipment and facilities can prevent training from keeping pace with technological developments. **Blended and short modular provision** are the best formats to facilitate participation and easy adjustment to specific needs. **Digital** (including AI-assistants in re- and upskilling) and simulation-based methods can widen access and complement practical learning. Some employers see considerable potential in AI-enabled adaptive learning systems to strengthen lifelong learning and workforce development

when implemented responsibly (e.g. by personalising learning pathways, helping individuals acquire relevant skills more efficiently and effectively.). However, digital and AI-enabled methods cannot fully replace hands-on learning and experience where technical skills depend on equipment or workplace practice, and where fundamental knowledge and skills are required to use AI effectively.

On another issue, **certification and recognition frameworks** still determine whether learning outcomes are trusted and used beyond the setting in which they were acquired. Thus, **formal qualifications** and professional certifications and standards continue to provide important signals for employers and workers. By contrast, skills acquired through internal company training and workplace experience are often less visible and less portable. **Alternative training solutions**, such as short, stackable modules and recognition of prior learning can provide more flexible pathways and help make these skills more transparent.

For a cross-cutting perspective, **governance** affects every stage of the process to access skills. Social partners are formally involved in many skills systems, but the extent of their influence varies considerably. In some cases, they contribute directly to the definition of occupational standards and curricula revision, and training delivery, especially in blended models informing training priorities; in others, their role remains largely consultative. The evidence suggests that employer participation is most effective when it is stable, structured through the different stages, from skills intelligence to delivery, and connected to decisions on the content and implementation of skills responses. Employers' commitment requires that they feel heard. From a different perspective, governance arrangements can also improve the connection between EU level initiatives and national systems in charge of education and training, in the context of national diversity and subsidiarity.

Secondly, **funding arrangements** also need to reflect the real conditions under which companies organise training. In this sense, course fees are only one part of the costs structure: working time, replacement of staff, targeted motivation and administrative requirements may be equally important. In current contexts, complex eligibility conditions and procedures usually discourage participation, particularly among SMEs. The report also points out to some requirement for national funding tools, like training funds or individual support, to be more effective.

Finally, monitoring and evaluation remain less developed than the design and delivery of initiatives. Evidence from the Study and complementary research confirms the broader importance of human capital and skills for productivity, but evidence on the effects of individual training interventions remains limited. Many programmes still focus on participants, courses or resources produced rather than subsequent skills gains, workplace performance or productivity. **Stronger attention to skills outcomes** – in line with Draghi recommendations on EU spending on skills – would help improve existing programmes and guide the allocation of resources.

Overall, the findings of the Study point to the need for **better-connected skills systems rather than a further expansion of separate initiatives**, and lifelong learning should be organised in ways that reflect working realities. This is particularly relevant for micro and small enterprises, where limited administrative capacity can determine whether available support

can be accessed and used in practice. Support schemes therefore need to be sufficiently simple and accessible to companies without dedicated HR, legal or funding capacity.

The most effective approaches combine the responsiveness of company-based and adult learning with the credibility and flexibility of education and training systems. **European action can add value** through cooperation, common tools, transparency and mutual learning, **while respecting the diversity of national systems and labour markets**. At every level, the priority is to ensure that identified skills needs lead to timely practical and trusted responses for employers and workers.

The **Conclusions** section of this report sets out more detailed and actionable policy pointers to address the common barriers identified in the Study, strengthen skills intelligence, improve the responsiveness and effectiveness of training responses and provision, and tackle the cross-cutting issues highlighted throughout the analysis.

1. Introduction

Access to **workforce with the right skills has become one of the main challenges facing European employers**. Across the EU, companies report increasing difficulties in recruiting workers with the qualifications, technical expertise and transversal skills needed to support business operations and innovation in the face of digital, green and demographic transitions.

Several structural trends are driving this challenge. The digital and green transitions, along with demographic changes and European competitiveness in a context of increasing global competition, are reshaping occupational profiles and creating demand for new skills across virtually all sectors of the economy. At the same time, demographic ageing is reducing the size of the available workforce in many Member States. Combined with changing career expectations and increasing job transitions, these trends are intensifying competition for talent and contributing to persistent labour and skills shortages.

For employers, the implications are significant: difficulties in finding suitable workers can delay investment decisions, limit productivity and innovation, slow the adoption of new technologies and constrain expansion plans. **Skills shortages and mismatches are increasingly reported** by employers not only in highly specialised professions but also in technical, vocational and operational occupations. Small and medium-sized enterprises (SMEs), which often face greater recruitment challenges and have fewer resources to attract talent, can be particularly affected.

In this context, access to skills is no longer solely an employment or education issue. **It has become a strategic competitiveness concern**, influencing Europe's ability to innovate and attract investment and talent, while successfully manage the digital and green transitions. Addressing the challenge **requires coordinated action** from employers, governments, education and training providers, and social partners at European, national and sectoral level.

1.1. European Policy Framework on Skills

Over the past decade, a demand-led approach to skills development has moved higher up the European policy agenda. Reflecting growing concerns about labour shortages and skills mismatches, the European Union has introduced a range of initiatives designed to strengthen workforce skills, improve labour market responsiveness and support business competitiveness.

The cornerstone of this framework is the **European Skills Agenda**¹, adopted in 2020. The Agenda addresses upskilling and reskilling, skills intelligence, lifelong learning and the links between education and labour-market needs.

Alongside this, European cooperation on education and training is structured through the **European Education Area (EEA)**² and its strategic framework. In June 2026, the Council agreed the second cycle of this framework for **2026-2030**, setting priorities for EU-level cooperation in

¹ For more detail visit: https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/european-skills-agenda_en

² For more detail visit: [Council agrees roadmap for European cooperation in education and training until 2030 - Consilium](#)

areas including foundational and digital skills, lifelong learning and mobility, VET and higher education.

One of the Agenda's flagship actions is the **Pact for Skills**³, launched in 2020 to encourage cooperation among employers, social partners, public authorities, education providers and other stakeholders. Through large-scale partnerships at European, national and regional level, the Pact aims to increase investment in training, anticipate future skills needs and support workforce adaptation to technological and industrial change. The Pact for Skills was referred to in both sectoral and national consultations, although views on its practical relevance varied across stakeholders.

The EU designated the period from **9 May 2023 to 8 May 2024 as the European Year of Skills**⁴, providing political momentum to skills-related initiatives and reinforcing the importance of upskilling and reskilling, better alignment between skills development and labour-market needs, and cooperation between relevant stakeholders.

More recently, the Council adopted in 2026 the first **Recommendation on Human Capital in the European Union**⁵ (Council Recommendation of 9 March 2026 on human capital in the European Union, OJ C, C/2026/1687, 13.3.2026). The Recommendation recognises that skills shortages have become a major constraint on competitiveness and investment, noting that 77% of EU companies reported skills shortages as a barrier to long-term investment in 2024, according to the EIB Investment Survey 2024. It calls on Member States to strengthen skills development through improvements in vocational education and training (VET), increased participation in lifelong learning, enhanced skills intelligence and targeted action to address shortages in strategic sectors such as health, ICT, engineering, agriculture and education.

Discussions conducted in the context of this Study also highlighted the potential value of using the **European Semester**⁶ to give greater visibility to human-capital challenges and their links to competitiveness and productivity. Where relevant, these issues could be reflected in the annual country-level monitoring and recommendations. Any strengthened monitoring in this area should, however, make use as far as possible of existing evidence and indicators and avoid creating additional data-reporting burdens for companies.

Box 1. EU Human Capital in brief

- **Human capital** is identified as a central driver of European competitiveness, productivity, innovation, resilience and the successful delivery of the green and digital transitions.
- The EU faces **persistent labour and skills shortages** across Member States, sectors and company sizes, with particular pressure in manufacturing, construction, healthcare, transport, ICT, engineering, teaching and strategic industrial ecosystems.

³ For more detail visit: <https://pact-for-skills.ec.europa.eu/>

⁴ For more detail visit: <https://year-of-skills.europa.eu/>

⁵ For more detail visit: [EUR-Lex - 32026H01687 - EN - EUR-Lex](#)

⁶ For more detail visit: [The European Semester explained - Consilium](#)

- Skills shortages are increasingly **constraining investment and innovation**, with companies reporting difficulties in finding workers with the competences required to support growth and technological transformation.
- Demand for **STEM skills** across different levels and sectors is expected to increase significantly, including due to specific developments in artificial intelligence, cybersecurity, semiconductors, clean technologies, biotechnology, defence and space industries. The **green transition** is also expected to create substantial additional employment demand, particularly in net-zero technologies, renewable energy, construction, industrial decarbonisation and circular economy activities.
- Education and training systems continue to face **challenges in delivering strong foundational skills**.
 - Performance in literacy, numeracy, science and digital skills remains a concern for all learners and particularly among disadvantaged learners and vulnerable groups.
 - Lifelong learning participation remains well below EU targets, with particularly low participation among low-skilled adults, disadvantaged groups and learners in rural or less-developed regions.
- The Recommendation calls on Member States to **address skills shortages in strategic sectors** through targeted skills policies and stronger cooperation between employers, education providers, employment services and public authorities.

Alongside these developments, the **Union of Skills**⁷ launched in March 2025 (Communication COM/2025/90 final⁸), provides a strategic framework for skills, education, workforce development and talent policies. The Union of Skills is the skills element of the Commission's effort to strengthen European competitiveness and support workforce adaptation to technological and economic change. It places emphasis on improving basic and advanced skills, supporting lifelong learning, strengthening workforce mobility and ensuring better anticipation of future skills needs. The Union of Skills and the EEA strategic framework are intended to operate in synergy where relevant.

Box 2. Selected governance developments under the Union of Skills

The Union of Skills provides for a **European Skills Intelligence Observatory**, intended to bring together data and foresight on skills needs and inform skills policy.

It also provides for a **European Skills High-Level Board**⁹, bringing together representatives from business, education and training providers and social partners. The Board has an advisory role and provides input to the Commission on skills development and labour and skills shortages.

⁷ For more detail visit: [Union of Skills - Employment, Social Affairs and Inclusion](#)

⁸ For more detail visit: [EUR-Lex - 52025DC0090 - EN - EUR-Lex](#)

⁹ For more detail visit: [European Skills High-Level Board - Employment, Social Affairs and Inclusion](#)

Beyond these horizontal initiatives, the European Commission has supported sector-specific cooperation through the **Blueprint for Sectoral Cooperation on Skills**¹⁰ and, under Erasmus+¹¹, **the Alliances for Innovation**¹². These initiatives bring together employers, trade unions, education providers, research organisations and public authorities to identify emerging skills needs, develop sectoral skills strategies and design training solutions tailored to specific industrial ecosystems.

In September 2026, the European Commission adopted the **Fair Labour Mobility Package**¹³, aimed at facilitating cross-border labour mobility while strengthening the protection of mobile workers. The package includes the **Skills Portability Initiative**¹⁴ as part of the Fair Labour Mobility Package. The Initiative comprises a proposal for a **Skills Portability Act**¹⁵, the proposed **European Social Security Pass (ESSPASS)**¹⁶ and measures to strengthen the European Labour Authority. The Skills Portability Initiative includes proposals to improve the transparency and portability of qualifications, simplify recognition procedures for regulated professions and establish common rules for the recognition of qualifications held by third-country nationals.

In parallel, the Commission is preparing a new **VET Strategy**¹⁷, intended to make vocational education and training more attractive, innovative and responsive to labour-market needs.

Taken together, these initiatives reflect a growing recognition that skills policy is closely linked to industrial policy, mobility and migration policies, labour market performance and long-term economic competitiveness. They also highlight the central role of employers and social partners in identifying skills needs and developing effective responses.

A further development concerns the proposed **Multiannual Financial Framework for 2028-2034**¹⁸. Under the Commission's proposals of July 2025, the European Social Fund would form part of the new National and Regional Partnership Plans, bringing together several EU funding streams under national and regional strategies. Employers would like to see the ESF+ remain a standalone fund and with a specific emphasis placed on support for skills development and, in particular in helping employers, where it is needed, to provide training to their workers. As negotiations on the future framework continue, its final design may have implications for the funding arrangements supporting skills development and sectoral cooperation.

¹⁰ For more detail visit: https://employment-social-affairs.ec.europa.eu/policies-and-activities/skills-and-qualifications/working-together/blueprint-sectoral-cooperation-skills_en

¹¹ For more detail visit: <https://erasmus-plus.ec.europa.eu/>

¹² For more detail visit: [Alliances for innovation - Erasmus+](#)

¹³ For more detail visit: [Fair Labour Mobility Package - Employment, Social Affairs and Inclusion](#)

¹⁴ For more detail visit: [Skills portability: Helping skills and qualifications travel across borders - Employment, Social Affairs and Inclusion](#)

¹⁵ For more detail visit: [Skills Portability Act](#)

¹⁶ For more detail visit: [A digital European Social Security Pass - Employment, Social Affairs and Inclusion](#)

¹⁷ For more detail visit: [Vocational Education and Training \(VET\) - Employment, Social Affairs and Inclusion](#)

¹⁸ For more detail visit: [EU budget 2028-2034](#)

1.2. BusinessEurope and the Access to Skills Agenda

As the leading representative organisation for employers at European level, BusinessEurope has long focused on the **issue of skills availability and labour market functioning**. Through its member federations, the organisation regularly identifies access to skills as one of the most significant constraints on business growth, investment and competitiveness.

BusinessEurope's work in this area is grounded in the view that skills policies should respond more effectively to labour market realities and support companies in accessing the talent they need. This includes promoting closer cooperation between education and training systems and employers, supporting lifelong learning, improving labour market intelligence and strengthening workforce mobility.

Recent research undertaken with European social partners has further contributed to understanding these challenges. The study on Improving **Skills Matching in Europe**¹⁹ examined how employers, workers' representatives and public authorities can contribute to reducing skills mismatches and improving labour market outcomes. The Study explored the role of social dialogue, skills anticipation, recruitment practices and training systems in supporting better matching between labour supply and labour demand.

Taking this work into account, the present **Access to Skills Study** focuses specifically on employers' experience of accessing the skills they need. Drawing on consultations with national employer federations, sectoral organisations at EU and national level, companies and employer organisations across the European Union, the Study examines the nature and drivers of current skills shortages as well as the policies and practices that can help address them. The following nine European sectoral employers' organisations have taken an active part throughout the project implementation: FIEC²⁰ (construction), WEC-Europe²¹ (agency work), EuroCommerce²², ECSA²³ (shipping), Euratex²⁴, Eurofer²⁵ (steel), ECEG²⁶ (chemical), Hotrec²⁷ (hospitality), EFCI²⁸ (cleaning).

The findings provide an employer perspective on one of Europe's most pressing competitiveness challenges and aim to inform future policy discussions at European, national and sectoral level.

¹⁹ For more detail visit: <https://www.besinesseurope.eu/publications/improving-skills-matching-in-europe-final-report-on-the-european-social-partners-integrated-project/>

²⁰ For more detail on FIEC, visit: [Home: FIEC](#)

²¹ For more detail on WEC-Europe, visit: [Home - World Employment Confederation Europe](#)

²² For more detail on EuroCommerce, visit: [Homepage - EuroCommerce](#)

²³ For more detail on ECSA, visit: [ECSA Home - ECSA](#)

²⁴ For more detail on Euratex, visit: [Homepage - EURATEX](#)

²⁵ For more detail on Eurofer, visit: [Home](#)

²⁶ For more detail on ECEG, visit: [European Chemical Employers Group \(ECEG\) | Bruxelles | eceg.org](#)

²⁷ For more detail on HOTREC, visit: [HOTREC – European Hospitality | HOTREC – European Hospitality](#)

²⁸ For more detail on EFCI, visit: [Homepage - efc.eu](#)

2. Objectives of the Access to Skills Study

2.1. Main Objectives

The main objective of this Study has been to provide **systematic knowledge on employers' concerns on skills access**, expertise on best solutions to address skills shortages and mismatches, and possible lines of action at EU and national level (hereinafter, policy pointers) to improve access to skills and talent, including through social dialogue. Thus, the Study findings include some learnings on whether training contributes to productivity growth.

To achieve this goal, specific objectives have been pursued:

- **Identifying effective solutions and approaches on employers' access to skills:** These solutions include, in relation to education and training systems, swifter procedures to build up and update curriculum, qualifications and training solutions. In relation to skills mobility, faster procedures to identify and recognise qualifications.
- **Understanding how to mobilise EU resources:** The analysis of best practices and solutions will consider specifically the use of EU funding and support tools, including as part of the Commission's support to structural reforms and the national recovery and resilience plans.
- **Analysing national and sectoral best practice examples:** A more coordinated and efficient skills landscape built on proven successful examples. The analysis of best practices has helped to build solutions, considering the diverse industrial relations, education and training contexts.
- **Identification of progress in the provision of skills required under the Net-Zero Industry Act by education and training systems:** Examples analysed have included initiatives and practices providing the skills needed due to the green transition, especially by growing clean energy sectors and occupations.

2.2. Expected Results

At a time when labour and skills shortages and mismatches are affecting businesses across sectors and Member States, this Study seeks to identify practical solutions that can help employers access the talent they need while supporting the broader objective of strengthening Europe's competitiveness and resilience.

The study goes beyond documenting challenges, policies and practices. Its primary purpose is to produce actionable evidence on how skills systems, education, training and labour market policies can better respond to employers' needs, thus contributing to economic growth and jobs. Through extensive consultation with national employer federations, European sectoral organisations, and companies, it identifies the barriers that limit access to skills and highlight effective approaches that can inspire reforms or scaled practices across Europe.

Thus, this Study addresses the issue of skills access by taking stock of **the sectoral and national dimensions of EU skills policies from an employers' perspective**, with findings intended to contribute, directly or indirectly, to the following:

- Deliver practical, employer-focused insights that support improved access to skills across Europe.
- Identify effective practices and conditions that help employers access the skills they need and support a faster adaptation of education and training systems to labour market demand.
- Highlight good practices from national and sectoral experiences that can be adapted or serve as inspiration in different Member States and industries.
- Understand the use of EU instruments and funding, helping stakeholders to discuss how European initiatives and resources can contribute to skills development and reform efforts.
- Improve understanding of skills recognition challenges, particularly for vocational education and training (VET) qualifications in occupations facing persistent shortages.
- Contribute to debates on labour mobility within the EU by identifying opportunities for greater coordination and mutual recognition of qualifications across Member States.
- Assess progress in sectoral skills initiatives, including developments linked to sector-specific skills partnerships (particularly Blueprint projects).
- Support social dialogue on skills, providing evidence to assist discussions between employers, social partners and policymakers at European, national, sectoral levels and company levels.
- Contribute knowledge to EU policy development, informing discussions on present and future EU initiatives.
- Provide policy pointers to ensure that skills systems are better aligned with current and future business needs, considering employers' perspectives, with the aim to enhance workforce availability and strengthen competitiveness.
- Complement the findings of the Skills Matching Study being conducted in parallel by BusinessEurope and EU Social Partners.

Ultimately, the value of the Study lies in its ability to support further policy development and social dialogue in addressing skills access challenges. By bringing together evidence from employers operating at European, national, sectoral and company level, it creates a basis for informed discussion between social partners on how to support workforce development and address labour shortages and skills mismatches in a manner that reflects the realities of labour markets. In doing so, it seeks to contribute to a more responsive skills ecosystem capable of supporting business growth, innovation and competitiveness across Europe.

3. Methodology

3.1. Methodology for the Conduction of the Study

The **methodology applied** to this Study consisted of the execution of the following activities:

- **Initial workshop** to establish the scope of the analysis and targeted initiatives.
- **Desk research** to review the available literature, policy documents, data and relevant national and sectoral initiatives.
- **Semi-structured national and sectoral consultations**²⁹, including interviews and written questionnaires³⁰. A total of 27 national consultations were conducted, covering 35 stakeholders and employer organisations, alongside 10 EU-sectoral consultations involving 16 stakeholders from European sectoral organisations and EU-level skills initiatives.
- **Online Company Survey** to gather company-level evidence on employers' experiences and practices. The survey received 209 responses from companies across 25 countries, 16 sectors and comprising 89 large companies and 120 SMEs.

In order to execute these activities, the research process has been conducted through:

- Information gathering and processing of sectoral and national initiatives.
- Identification of the issues of analysis – main topic questions to be addressed on this Study.
- Research of quantitative and qualitative information, allowing to map and review EU Blueprint initiatives and national stakeholders by identifying the areas in which actions are being developed to foster access to skills.
- Data and information processing to identify differential aspects of skills access and extract key conclusions and policy pointers.
- Iterative review processes with peers and stakeholders.

These works encompassing different consultative and analytical activities have been carried out at **3 levels: sectoral, national and employer**, allowing for a comprehensive approach towards skills access understanding and improvement for this Study.

The Company Survey is based on voluntary participation in an opt-in online questionnaire. While the quantitative results cannot be considered statistically representative of all European employers, participation was uneven across countries and sectors, with a comparatively higher concentration of responses in a limited number of countries and sectors. Results should therefore be interpreted as indicative rather than representative. Nevertheless, respondents provide valuable insights into employers' perceptions, challenges and practices regarding access to skills across countries and sectors, complementing the evidence gathered through the national and sectoral analyses, as well as the desk research.

²⁹ For information on the stakeholders consulted, please refer to Annex B.

³⁰ For information on the questionnaires' detail, please refer to Annex F.

3.2. Study Structure

This document is structured around **5 issues of analysis** to provide a comprehensive and comparative analysis of skills access. These thematic modules correspond to a core dimension of the challenges and responses related to access to skills, thus gathering the scope analysis under the employer's Skills Access Study:

1. **Barriers in Access to Skills.** Evidence on challenges and limitations to access to skills, either in the sense of employers finding the right talent and of facilitating workforce's access to training and lifelong learning.
2. **Identification of Skills Needs.** Skills intelligence practices (Statistics used, Models, AI, Sectoral committees, Company surveys, etc.) that enable the gathering of knowledge on these matters: Identification of shortages, vacancies and skills gaps; forecasting future needs; translation from professional profiles to skills requirements and referenced frameworks (ESCO, O*NET, EQF...); provisions for regular updates of the skills needs analysis; and successful examples and best practices on skills intelligence.
3. **Development of a Training Response.** As regards **formal education and training systems**, the analysis considers requirements, procedures and timing for curriculum update, as well as the development of new standards or qualifications based on identification of innovative or changed skills needs. Additionally, with a **lifelong learning approach**, an analysis of tailored solutions used by employers is included to provide relevant information on sectoral strategies and action plans – mainly, from Blueprints; continuous training programmes; education and industry alliances (e.g. to build joint training and innovation centres, sectoral partnerships, apprenticeship, etc.) and other schemes.
4. **Training Provision and Certification.** Includes two focuses. Considerations regarding the **provision of trainings**: Education and Training providers (public and private, formal and non-formal training); training models (e.g. apprenticeships, blended learning approaches, on-the-job trainings, modular programmes, individual learning accounts, etc.) and options for stackability and portability of short training modules and micro-credentials; used methods to evaluate the effectiveness of training programs in addressing identified skill needs, such as reducing skill gaps and mismatches, assessing the impact of training on the reskilling and upskilling of the workforce, and measuring satisfaction with the training; and collaboration models between employers and training providers.

Considerations regarding the **certification of trainings**: Formal and Non-formal Certification, identifying if and how training is certified through formal qualifications recognised in education and training systems, or through non-formal certificates; the role of Recognition of Prior Learning (RPL) procedures to validate informal acquisition of skills; reference to Qualifications Frameworks, determining if and how certificates are aligned with the European and/or National Qualifications Frameworks or other relevant reference frameworks; European/Transnational Scope, assessing the extent to which the scope of certificates is European or transnational, facilitating mobility and reflecting European standards; industry Recognition, evaluating if and how sectors, industries, or companies recognise the certificates; and certification by micro-credentials, analysing whether certificates can be considered as micro-credentials within the context of the EU recommendation.

5. **Cross-cutting Aspects**. Address transversal questions such as **skills policies governance**, considering also the European Union's principle of subsidiarity, and **alignment and coherence of strategies and frameworks**; employers' participation and the role of social dialogue and social partners' involvement; and **funding schemes**, including the use of EU and national funds.

Thus, the Study begins with a review of the **Challenges and Responses in Access to Skills** of each of these issues, detailing findings from the consultative and analytical activities, and closes with the **Conclusions**, gathering insights and policy pointers to improve access to skills based on the evidence compiled.

Annexes at the end of the document summarise key terms and acronyms used throughout the Study, list the stakeholders consulted, and facilitates comparisons on transversal areas of interest, among other.

4. Challenges and Responses in Access to Skills

This section provides a consolidated analysis of the main challenges and responses in access to skills, bringing together evidence from the EU-sectoral analysis, the national consultations and the company survey. It is structured around the five areas of analysis used throughout the Study: barriers in access to skills; identification of skills needs; development of training responses; training provision and certification; and cross-cutting aspects.

The sectoral analysis is based on 9 EU-level sectoral initiatives, with 10 interviews conducted and 16 stakeholders consulted – mainly, representatives from European and national sectoral employers' organisations, including both managers and technicians. **The national analysis** draws on 27 national consultations, reaching 35 stakeholders in 21 countries – mainly, representatives from national cross-industry employers' organisations, including both managers and technicians. **The company survey** complements these findings with 209 responses from companies across 25 countries and different sectoral ecosystems.

The purpose of this section is not to present three separate strands of evidence, but to read them together. Sectoral evidence shows how challenges and responses materialise in specific ecosystems. National consultations explain how skills systems, governance arrangements and policy instruments shape access to skills across Member States. The company survey adds an employer-level perspective, showing how companies experience these issues in practice, including differences between large companies and SMEs.

The analysis focuses on common patterns, differences across levels of evidence, and examples of practices that help address access-to-skills challenges. It also identifies areas where existing mechanisms appear less effective or where further action may be needed.

4.1. Barriers in Access to Skills

Barriers to access to skills are experienced across several levels. Sectoral stakeholders describe how labour shortages, attractiveness issues, skills mismatches and recognition barriers affect specific ecosystems. National employer organisations point to constraints linked to lifelong learning, demographic pressures, labour-market dynamics, governance and structural conditions. The company survey adds a practical employer-level perspective, showing how these barriers affect large companies and SMEs differently.

The two figures below show **how barriers were identified and ranked** in the sectoral and national strands of the Study. The sectoral figure reflects mentions across the EU-level sectoral interviews, while the national figure reflects the frequency of barriers identified through national consultations with employer organisations.

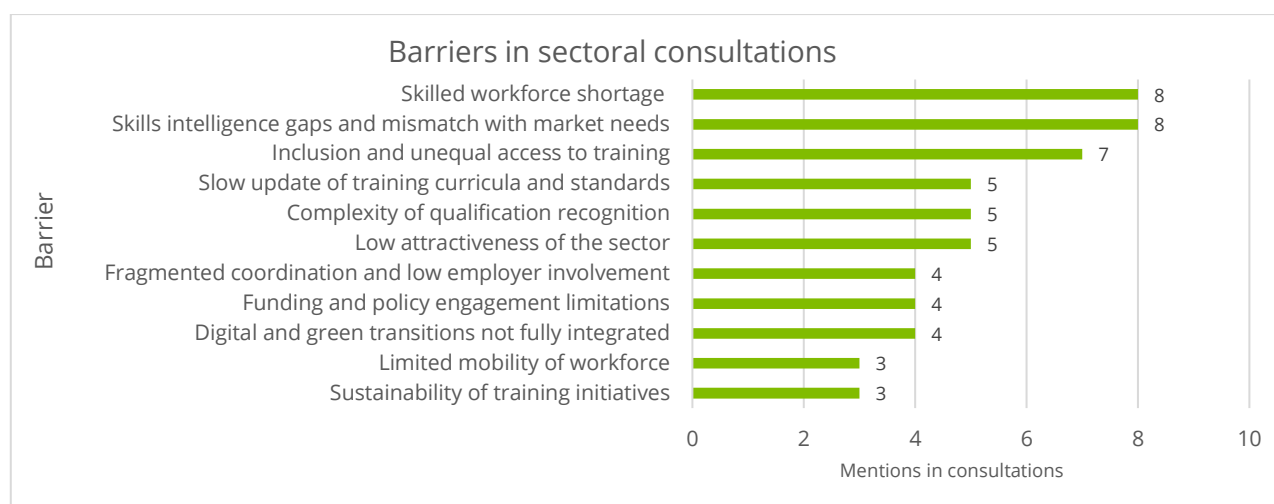


Figure 1. Incidence of access-to-skills barriers across sectoral consultations

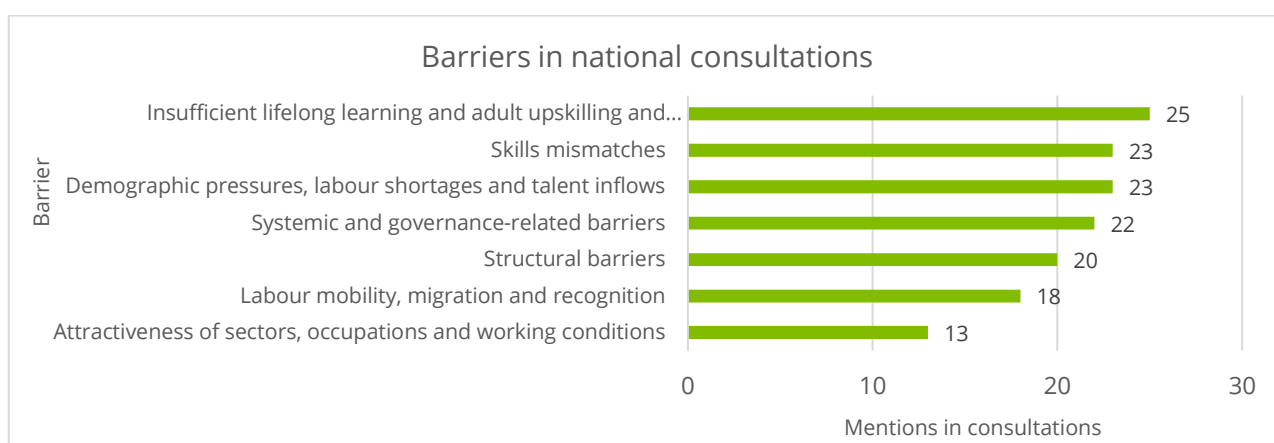


Figure 2. Incidence of access-to-skills barriers across national consultations

In order to consolidate the findings across the sectoral, national and company level, **the barriers have been grouped into six thematic clusters**. Where sectoral and national evidence referred to closely related issues using different terminology, these findings have been brought together under a single heading. For instance, sectoral evidence on skilled workforce shortages and low sector attractiveness has been integrated with national evidence on demographic pressures, labour shortages and talent inflows. Sectoral findings on mismatch with market needs, slow curriculum updates and the limited integration of digital and green transitions have been considered under the broader cluster of skills mismatches.

The company survey is used throughout the section as complementary company-level evidence to illustrate how barriers are experienced by employers in practice, including differences reported by large companies and SMEs.

Funding, policy engagement and long-term sustainability issues are addressed in greater detail under the cross-cutting aspects of the report. In this section, they are referenced only where they directly affect employers' access to skills.

On this basis, the barriers are analysed under the following six clusters: Labour shortages, attractiveness and talent inflows; Labour mobility, migration and qualifications' recognition;

Skills mismatches; Insufficient participation in lifelong learning and adult upskilling and reskilling; Structural barriers³¹; and Systemic, governance and coordination barriers.

Labour Shortages, Attractiveness and Talent Inflows

Labour shortages, difficulties attracting candidates and limited talent inflows appear as a prominent barrier across the evidence gathered for the Study. In the national consultations, **demographic pressures, labour shortages and talent inflows** were identified in 23 consultations, while **attractiveness of sectors, occupations and working conditions** was reported in 13 consultations. In the sectoral consultations, **skilled workforce shortage** was one of the most frequently mentioned barriers, appearing in 8 out of the 9 sectoral **initiatives examined in depth**, while **low attractiveness of the sector** was identified in 5 initiatives. The company survey also confirms the relevance of these barriers at company level, with most respondents reporting moderate or high difficulty in finding employees with the required skills, and low attractiveness and labour scarcity were the most reported difficulties.

At sectoral level, employers across nearly all ecosystems face intensifying demographic pressures, ageing workforces, insufficient new entrants and low attractiveness of certain occupations. In the Textile, Clothing, Leather and Footwear industries, the dual challenge of an ageing workforce – around 36% of the sector's workforce is aged over 50, while only 4% is under 25 – and negative perceptions of textiles as a “traditional” sector undermines recruitment, even as demand grows for more innovative profiles such as digital designers, sustainable materials experts and traceability specialists. Construction employers report similar difficulties in attracting young people to emerging profiles linked to energy efficiency and digital construction, despite strong labour demand.

These constraints are also visible in sectors associated with **Europe's green and digital transitions**. In the semiconductor sector, employers highlight that the industry remains relatively “invisible” to many STEM graduates, despite its strategic relevance for Europe's digital sovereignty. Companies therefore compete with more visible employers in IT, consulting or finance for scarce engineering talent. Additive manufacturing illustrates another dimension: the novelty and fragmentation of its technologies make it difficult to communicate coherent career pathways, reducing its appeal. In the clean-tech ecosystem, where gigafactories and renewable installations require large numbers of skilled technicians, employers consistently cite talent scarcity as the main bottleneck to scaling operations.

³¹ Structural barriers include, for example, workload and lack of time, difficulties releasing or replacing staff for training, limited organisational capacity, and administrative or eligibility constraints affecting access to training support.

Box 3. Clean tech gigafactories: skills as the true bottleneck

In the clean-tech ecosystem, stakeholders consistently underline that the main bottleneck is not technology but the availability of skilled technicians. While large-scale industrial plants, such as battery gigafactories, can be built in less than two years, training the workforce required to operate them takes significantly longer. Employers warn that without stable and predictable skills development, Europe risks losing ground in the global race for batteries and green hydrogen, despite its strong technological base.

National consultations confirm that **demographic decline and labour-market tightness are structural factors shaping access to skills** across Member States. Several employer organisations highlight ageing workforces and low replacement rates as a core challenge. In a number of Central and Eastern European countries, the volume of young people entering the labour market through initial education is insufficient to offset retirements, even where the adult population already shows relatively strong educational attainment.

According to Eurostat's educational attainment statistics³², countries such as Czechia, Slovakia, Poland and Latvia **display very low shares of adults with low educational attainment, below 10%**, combined with **high shares of medium-level qualifications, often exceeding 65%**. While this shows a comparatively strong base of upper-secondary and vocational qualifications, it doesn't automatically solve labour shortages. From an employer perspective, labour shortages cannot be addressed simply by expanding participation in initial education. Where demographic decline and low replacement rates reduce the number of new labour-market entrants, access to skills increasingly depends on **adult upskilling and reskilling, retention, better use of existing talent and, where relevant, additional labour inflows**.

Labour shortages are widespread, but their severity differs across national labour markets. In countries with very low unemployment rates, such as Czechia or Cyprus, employers report acute **difficulties in recruiting workers across qualification levels**. In countries where economic growth has slowed, such as Finland, **shortages are described as more cyclical**, becoming critical mainly during periods of stronger expansion. Territorial disparities can further intensify these dynamics, with **shortages often more acute in regions outside major urban centres** where labour supply is more limited.

Across countries, **shortages tend to be most pronounced at the lower and higher ends of the qualification spectrum**. Employers report difficulties in recruiting low-skilled and manual workers in sectors such as construction, manufacturing, transport, agriculture and hospitality. At the same time, persistent gaps are reported in higher-skilled profiles, notably in ICT, STEM fields, health and advanced manufacturing. This polarisation places pressure on employers' capacity to operate and grow, particularly in sectors undergoing digital and green transformations.

³² For more detail visit: [Educational attainment statistics - Statistics Explained - Eurostat](#)

Attractiveness-related issues further shape where shortages materialise. In labour-intensive industries and service occupations, factors such as working patterns, career visibility and prevailing perceptions of these occupations can influence recruitment and retention. This is particularly visible in hospitality and tourism, where employers report persistent **difficulties in attracting workers to operational roles** despite the existence of training routes. In other contexts, **attractiveness concerns are linked to education choices and social perceptions**. Employers in Austria and the Netherlands point to a strong preference for academic education, which reduces interest in vocational and technical careers even in areas with sustained labour demand.

Geographical factors also interact with attractiveness. Employers in countries such as Denmark and Portugal underline that **companies located outside major urban centres face additional constraints in attracting workers**, even where vacancies exist. Housing availability, connectivity and competition from larger labour markets reduce the effective supply of candidates, particularly for SMEs. These concerns reflect a broader tendency for economic activity and employment opportunities to be concentrated in larger urban locations.

The company survey brings this barrier down to company level. Among **large companies** participating in the survey, the average difficulty score in **finding employees with the required skills was 6.6 out of 10**, while **among SMEs it was 7.4 out of 10**. A very high difficulty (score of 8-10) was reported almost twice as frequently by SMEs (59%) as by large companies (33%).

Among large companies reporting very high recruitment difficulty, manufacturing accounts for the largest share of responses, followed by retail, construction and professional services. Their hardest-to-recruit profiles are skilled trade and manual workers, followed by STEM professionals. Difficulty attracting candidates was the most frequently ranked first barrier among large companies, ahead of labour scarcity and skills mismatch.

Respondents from **SMEs report a broader recruitment challenge**. Among SMEs giving a very high difficulty score, manufacturing is again the most represented sector, followed by professional services, retail and construction. Labour scarcity was the most frequently ranked first barrier among SMEs, followed by difficulty attracting candidates. **Skilled trade and manual workers were selected by half of the SME respondents** as difficult to recruit, but shortages also affect middle-management and corporate functions, sales and customer-facing roles, STEM professionals and lower-skilled workers. These results suggest that while large companies often have more structured recruitment channels and stronger employer visibility, these do not fully offset shortages in specialised and technical occupations. **SMEs are more exposed to local labour-market constraints and have fewer internal alternatives** when recruitment fails. For smaller companies, a single unfilled vacancy can quickly affect business continuity, especially where the role is operational or customer-facing.

Taken across the evidence base, labour shortages and attractiveness challenges are not confined to a small number of countries or sectors. **Sectoral evidence shows how shortages affect both traditional industries and strategic ecosystems linked to the green and**

digital transitions. National evidence shows that demographic change, territorial disparities and education choices shape the available talent pool. Company-level evidence confirms that these pressures are experienced differently by company size, with large companies facing acute shortages in specialised profiles and SMEs reporting broader recruitment difficulties across operational and customer-facing roles.

Labour Mobility, Migration and Recognition

Workers' mobility is perceived as one of the solutions to shortages in some contexts. However, insufficient labour mobility, skills mismatches and issues related to recognition of qualifications were identified as barriers in **18 national consultations**, while related issues also appeared in the sectoral analysis through **complexity of qualification recognition**, mentioned in **5 of the 9 sectoral initiatives examined in depth**, and **limited mobility of the workforce**, mentioned in **3 initiatives**. In the company survey, these barriers are reported less often, but they remain relevant in open responses, particularly where companies refer to work permits, cross-border recruitment, recognition of qualifications and the practical use of foreign-trained talent.

These issues are closely linked to the labour shortages described above. National consultations show that, in some countries, international workers are already important in sectors such as construction, hospitality, agriculture and certain technical occupations. Employers nevertheless present **mobility** – both between the EU Member States and from third-country nationals – **as partial responses rather than straightforward solutions**. Their contribution depends on admission procedures, the practical use of skills, qualifications and experience, integration support, language skills and the capacity of companies to recruit from wider labour pools.

Across national consultations, **labour mobility is described as structural adjustment mechanism rather than as primary sources of skills supply**. Employers generally recognise that domestic labour markets alone are not sufficient to meet demand in several sectors and occupations, especially in countries facing sharper demographic decline, persistent shortages, job replacement challenges or strong demand for technical profiles.

In several Member States, **demographic pressures are already creating stronger reliance on international workers**. Employers in Spain, Greece and Cyprus report that new hires increasingly come from third countries and other EU member states, particularly in construction, hospitality, agriculture and certain technical occupations. In Spain, stakeholders underline that **a significant share of newly created jobs is no longer filled by nationals, making international workers part of the labour-market functioning rather than a temporary response**. At the same time, persistent outward mobility of qualified young workers from some Southern and Eastern European countries can intensify shortages, increasing the need to attract workers from outside the domestic labour market.

Intra-EU mobility contributes only partly to addressing these shortages. Employers in Central and Eastern Europe, notably in Czechia and Hungary, report limited attractiveness for third-country nationals due to language barriers and wage differentials compared with neighbouring countries. Czech employers indicate that wage gaps reduce inflows from Western

Europe, while mobility from culturally and linguistically closer countries such as Slovakia or Poland plays a more relevant role. In these contexts, companies often place greater emphasis on upskilling existing workers rather than relying on external inflows.

Third-country nationals are viewed by many employers as a necessary lever, but its contribution remains constrained by social, policy and administrative factors. Several employer organisations refer to restrictive admission frameworks, lengthy procedures, limited integration support and difficulties recognising qualifications. Trade union concerns around working conditions and wage competition, together with negative public perceptions in some countries, can also reduce political willingness to expand labour mobilisation routes. These constraints affect employers' ability to complement the domestic workforce with third-country workers as a practical response to labour shortages, even where demand is clear.

Box 4. International Mobility and Recruitment

Across countries, international mobility and recruitment are increasingly seen by employers as part of the response to labour shortages and demographic decline. In several contexts, international workers already play a growing role in sustaining workforce supply. However, mobility within the EU and the recruitment of third-country nationals are not considered straightforward solutions. Their effectiveness depends on regulatory conditions, admission procedures, administrative requirements, recognition systems, language skills and integration support.

Employers also point to restrictive admission frameworks, difficulties in recognising qualifications and limited integration support. In addition, public opinion and trade union concerns may further limit policy flexibility.

As a result, international mobility and recruitment can complement the domestic workforce but are not sufficient on their own to address access-to-skills challenges, unless procedures are workable, qualifications can be used in practice, and integration mechanisms support effective labour-market participation.

Recognition of qualifications emerged as a relevant topic during both the national consultations and the Steering Committee discussions, although different perspectives were expressed depending on the type of qualification concerned. Most interviewees did not report significant **difficulties regarding the recognition of qualifications for regulated professions within the EU**, where the Professional Qualifications Directive.³³ establishes formal procedures and relatively short deadlines. However, some stakeholders pointed to **administrative burdens and procedural delays**, prolonging established deadlines, in specific cases.

Regarding non-regulated professions, several interviewees mentioned challenges related also to the recognition of these qualifications. By contrast, Steering Committee members argued that **formal recognition should not be a problem when it is not required for access to**

³³ For more detail visit: [Directive - 2005/36 - EN - EUR-Lex](#)

these occupations and that the main issue is **ensuring sufficient transparency** so that employers can understand the level and content of qualifications (e.g. through references to the European Qualifications Framework, diploma supplements...). Across both discussions, foreign qualifications emerged as a more consistent challenge, with employers highlighting lengthy procedures and difficulties in assessing qualifications and experience of third-country nationals. These challenges are addressed by European Commission proposals presented under the Skills Portability Initiative, including a revision of the Professional Qualifications Directive and a new framework for the recognition of qualifications of third-country nationals. The proposals aim to make **recognition procedures more transparent, consistent and easier to navigate** across Member States.

Some stakeholders also referred to the role of **Recognition of Prior Learning (RPL)** in facilitating the labour-market integration of international workers by validating skills acquired through work experience or non-formal learning. However, these procedures tend to target workers in the national labour market. As RPL primarily concerns training and certification rather than cross-border recognition of formal qualifications, this issue is discussed in more detail in the section on [4.4. Training provision and Certification](#).

Beyond the recognition of formal qualifications, sectoral stakeholders also highlighted challenges related to the **portability of sector-specific certifications and international accreditations**. Employers underline that qualifications and curricula are national competences, also in sectors and occupations where international standards or certificates are operating across borders. In non-regulated professions, formal recognition may be less relevant because employers assess competences directly, but **portability of international accreditations remain informal and uneven**. The additive manufacturing sector offers an example through the IAMQS (International Additive Manufacturing Qualification System).³⁴ framework, which aligns with international standards and is designed to provide quality assurance and strengthen employers' trust. The issue of lack of portability of international accreditations has been considered by some stakeholders to be particularly relevant where companies operate in multiple countries or depend on mobile technical workers.

By contrast, because of the lack of formal portability of international accreditations across Member States, several EU-level alliances and initiatives have just opted to issue attendance certificates or digital badges, which signal participation or achievement but do not necessarily constitute formally recognised micro-credentials, and may be valued informally by employers.

Sectoral evidence highlights the concentration of **specialised training and industrial activity in regional clusters and hubs**. Semiconductor training, for instance, is concentrated in countries such as Germany, France, the Netherlands and Ireland, reflecting the location of cleanrooms, laboratories and specialised facilities. Automotive production in Central Europe follows a similar pattern, with companies and specialised training providers concentrated in

³⁴ For more detail visit: [European Welding Federation](#)

established industrial ecosystems. **These clusters strengthen skills development and respond to industry needs, but they also rely on the availability of a mobile specialised workforce** able to move to where employment opportunities are concentrated.

The national analysis points to related challenges, with employers noting that the **required skills may be available in some regions but not where vacancies arise**. Housing costs, transport infrastructure and language barriers can all reduce effective labour mobility, particularly in countries with strong regional labour markets or a high concentration of employment in capital cities.

The company survey confirms that mobility and recognition are not the top-ranked barriers for most respondents, but they remain part of the wider access-to-skills picture. Low labour mobility was ranked first only by a small number of companies. Although recognition and portability appear less prominent than labour scarcity, difficulty attracting candidates and skills mismatch, some open responses refer directly to work permits, cross-border labour, recognition of skills and the need for more predictable procedures.

This survey evidence should be read carefully. The lower ranking of mobility and recognition does not mean that these barriers are unimportant. Rather, companies may experience them after the more immediate problem of finding candidates. Where companies are already struggling with labour scarcity or low sector attractiveness, mobility and recognition determine whether wider pools of talent can be used effectively. This is particularly relevant for SMEs and for companies in smaller or geographically constrained labour markets, where access to local talent is limited and international recruitment can become more important.

Language and integration support also affect the extent to which mobility contributes to access to skills. Employers in countries with strong vocational traditions, such as Austria, Germany and Denmark, report that **insufficient language skills can restrict access to apprenticeships, workplace learning and certification**, even where labour demand exists. Sectoral evidence from clean tech also points to the importance of combining technical training with cultural and language induction when recruiting third-country nationals for technician-level roles.

Box 5. Making mobility real for employers

Cross-border use of skills is easier when learning outcomes and credentials are transparent and comparable. References to common European tools, such as ESCO and the EQF, can help employers understand the content and level of skills acquired in different national or sectoral contexts, while common assessment arrangements can strengthen trust in sector-specific certifications. Where this transparency is lacking, employers may need to reassess workers' competences or require additional training before existing skills can be used in a new country or company context, increasing the time and effort involved in cross-border recruitment and mobility.

Overall, the evidence points to labour mobility, migration and recognition as enabling conditions for access to skills rather than standalone solutions. **Employers see mobility and**

migration as potential solutions in the context of demographic decline and persistent shortages, but their contribution depends on whether procedures are workable, qualifications can be used in practice, and workers receive the support needed to integrate into the labour market and the wider society. Sectoral evidence adds the issue of portability across industrial ecosystems and Member States, while the company survey shows that these barriers are less frequently ranked first but remain relevant in specific recruitment contexts. This suggests that mobility and recognition should be treated as part of the wider access-to-skills framework, particularly for sectors and regions where domestic labour supply is clearly insufficient.

Skills Mismatches

Skills mismatches were identified as one of the most significant barriers in the national consultations, with **23 consultations** referring to this issue. At sectoral level, related barriers were also highly visible: **skills intelligence gaps and mismatch with market needs** were mentioned in **8 of the 9 sectoral initiatives examined in depth**, while **slow update of training curricula and standards** appeared in **5 initiatives** and the limited integration of digital and green transitions in **4 initiatives**. The company survey confirms the relevance of this barrier at company level, with **skills mismatch** ranking among the main difficulties reported by both large companies and SMEs when trying to recruit employees with the required skills.

Skills mismatches can be related to basic and soft skills, as well as to changing requirements linked to technological change, green transition and restructuring. Across national consultations, employers consistently frame **access to skills as a problem of mismatch between available labour supply and actual workplace needs**. In several countries, this issue persists even where unemployment remains relatively high, suggesting that the barrier is not necessarily the number of available workers, but the extent to which their competences, qualifications and job-readiness correspond to current demand. Employers describe mismatches across different levels of education, fields of study, sectors and regions.

A first recurring dimension concerns gaps in **job-readiness and employable competences**. Employers in several countries report that available candidates often lack the competences required for open positions and need additional training before becoming fully operational. This is reflected, for example, in the Netherlands, where employers report that available workers often do not possess the competences required for vacancies, and in Sweden, where mismatch between available skills and employer needs is identified as a primary labour-market challenge. This problem is particularly evident among jobseekers with weaker labour-market attachment, including low-qualified adults and early school leavers. It is also consistent with international evidence such as the OECD Survey of Adult Skills (**PIAAC – Programme for the International Assessment of Adult Competencies**)³⁵, which measures adults' proficiency in

³⁵ For more detail visit: [PIAAC | OECD](#)

literacy, numeracy and problem-solving and highlights persistent gaps in foundational competences across the adult population.

Mismatch is also observed among higher-educated profiles. In Austria, for example, **employers report gaps in job-readiness among graduates**, particularly in more academically oriented programmes with limited work-based learning and weaker links to workplace requirements. A related concern is **horizontal mismatch**, where individuals hold qualifications or experience in fields that do not correspond to current labour-market needs. Employers in Austria and the Netherlands refer to **high numbers of university graduates whose studies do not correspond to available positions**. Although many students work during their studies, this experience is often unrelated to their field of education, limiting its value for school-to-work transitions.

At sectoral level, **mismatch is visible in the lag between what education and training systems provide and what employers need in fast-changing ecosystems**. The automotive sector illustrates this challenge in relation to software-defined vehicles, embedded cybersecurity, battery systems and AI-enabled mobility. In construction, VET programmes remain strongly anchored in conventional methods, while employers increasingly need competences in Building Information Modelling (BIM), modular off-site construction and circularity. Chemical employers report gaps in green chemistry, data-driven manufacturing and safe-by-design approaches, all of which are relevant for compliance with the Green Deal.

Other sectoral examples point in the same direction. In additive manufacturing, many courses remain oriented either towards academic research or generic short modules, leaving SMEs without the process-specific competences required for industrial uptake. In retail, training provision is still often focused on traditional cashier or merchandising profiles, while employers increasingly need competences linked to omni-channel operations, data-driven merchandising and ESG reporting. **Employers report the practical effects of these mismatches through higher onboarding costs, slower adoption of innovation and lost productivity opportunities.**

Outdated or insufficiently responsive curricula are repeatedly identified in the national evidence. Employers note that formal procedures for updating qualifications exist, but the time required to revise standards, complete approval processes and implement changes can span several years. This is particularly relevant in areas affected by digitalisation, automation and the green transition, where workplace practices can evolve much faster than formal training content.

Employer-led training, like in VET dual systems and adult training programmes and can help to adjust more rapidly to labour-market needs. These examples are addressed in more detail in the section on [4.3. Development of Training Responses](#), where the report examines how identified skills needs are translated into training content and curricula.

The company survey provides additional evidence of mismatch at employer level. Around **one fifth of respondents identified skills mismatch as their main recruitment barrier**. The

view that formal qualifications do not sufficiently match employers' skills needs was more frequently reported by SMEs than by large companies, suggesting that smaller companies may experience greater difficulties in finding candidates with the required skills.

As described in the previous section on labour mobility, geographical factors can reinforce skills mismatches where the required skills are available in some regions but not where vacancies arise. This illustrates how labour shortages may persist despite the availability of skills elsewhere.

Digitalisation, automation and the green transition continue to reshape employers' skills requirements, increasing demand for hybrid profiles that combine technical, digital and transversal skills. As illustrated by both the national and sectoral evidence presented above, education and training systems often struggle to adapt at the same pace, particularly where curriculum updates remain slow.

Skills mismatches therefore appear across education levels, sectors and regions. They can reflect a misalignment between education supply and labour-market demand, insufficient job-readiness skills of candidates, slow speed at which curricula adapt, and difficulties by employers to close remaining gaps after recruitment. The company survey suggests that mismatch does not only affect recruitment; it also shapes the extent to which companies need to invest in training after entry, with SMEs facing greater constraints when training capacity is limited.

Insufficient Participation in Lifelong Learning and Adult Upskilling and Reskilling

Across the evidence gathered for the Study, insufficient participation in lifelong learning and adult upskilling and reskilling emerges as the **most frequently reported barrier in the national consultations, identified in 25 consultations.** The issue is not primarily described as a lack of formal training opportunities. In many countries, adult learning provision exists and is often publicly funded or subsidised. The barrier lies more in effective participation, flexible formats, responsiveness to employers' needs, workers' motivation and availability, and companies' ability to organise training in practice.

This finding is also reported in the sectoral consultations. Sectoral interviews refer to access to training and work-based learning, inclusion in upskilling and reskilling initiatives, and the operational difficulty of enabling workers to participate in training. These issues were particularly visible in ecosystems with a **high share of SMEs, seasonal activity or strong operational intensity**, such as retail and tourism, where release time and backfilling can become barriers even when training opportunities are available.

National employer organisations consistently point to the limits of relying on initial education alone. **In countries facing demographic decline or very low unemployment**, such as Czechia or Cyprus, the number of young entrants completing initial qualifications is insufficient to replace retiring workers. In Sweden, the issue is framed less as demographic scarcity and more as the **need to continuously realign adult skills with changing employer needs.** In

both cases, adult upskilling becomes a necessary part of the response to skills shortages rather than an additional policy option.

SMEs' capacity to engage in adult upskilling is reported as a recurrent barrier across the national consultations. Employer organisations in Austria, Czechia, Portugal and Greece refer to **lack of time and resources, limited administrative capacity and difficulties diagnosing skills needs**. Even where funding is available, application procedures, co-financing requirements and administrative effort can discourage participation. Larger companies are usually better placed to compensate for these shortcomings through internal training functions or direct cooperation with private providers.

The company survey supports this reading from a practical perspective. Companies report that training is widely used as a response to skills needs, but they also point to **constraints in organising it around day-to-day operations**. These constraints are particularly visible among SMEs, where limited staff availability, lack of time and reduced administrative capacity can restrict participation even when training needs are clearly recognised.

Worker motivation is another recurrent factor in the national consultations. Employer organisations in Sweden, Denmark and Cyprus report that some workers, particularly older and lower-skilled employees, do not always perceive an immediate need to train, even where provision is free or subsidised. **Rigid or lengthy training formats can also discourage participation**, especially where workers need to balance training with work and personal responsibilities. Some consultations link this to the **limited visibility of skills acquired and impact on career progression during working life**, which weakens incentives for adults to invest in further training.

Sectoral stakeholders underline similar participation barriers for groups that are often under-represented in upskilling and reskilling. **Women's participation remains low in several male-dominated technical sectors**, including automotive, additive manufacturing and clean tech. International workers may face language barriers, while low-qualified adults tend to participate less in non-mandatory training. In retail and tourism, employers point to the difficulty of organising training in SME-dominated environments, where even short absences can affect daily operations.

Participation in lifelong learning also depends on the foundational skills acquired earlier in life. Recent OECD assessments point to persistent weaknesses in these foundations. In PISA 2022³⁶, around 31% of students across OECD countries did not reach baseline proficiency in mathematics and roughly one quarter did not reach it in reading. Similarly, the 2023 Survey of Adult Skills (PIAAC)³⁷ shows that 26% of adults across participating OECD countries had low proficiency in literacy and 25% in numeracy. These findings reinforce the importance of

³⁶ For more detail visit: [PISA 2022 Results \(Volume I\) | OECD](#)

³⁷ For more detail visit: [Do Adults Have the Skills They Need to Thrive in a Changing World? | OECD](#)

ensuring strong basic skills in initial education and of providing accessible opportunities for adults to strengthen them later in life, as foundational skills underpin participation in further learning and adaptation throughout working life.

Employers therefore place strong emphasis on more **flexible, short and modular opportunities**, particularly for adult learners and workers who cannot engage in long training pathways. Sectoral interviews refer to blended and short-cycle modules in textiles and tourism as examples of formats that can support workforce skilling. In clean tech, InnoEnergy's cooperation with the International Organisation for Migration illustrates how tailored technical training can be combined with language and cultural induction to support international workers. These approaches are seen as useful, but their scale remains limited.

Work-based learning is widely recognised by employers as an effective route to job-ready competences, but access to it remains uneven across sectors and Member States. In semiconductors and clean tech, employers highlight technician-level apprenticeships as important for scaling operations. However, opportunities for adults to engage in apprenticeships or other forms of continuing vocational education and training are not equally developed or accessible across systems. National consultations provide similar evidence: where adult learning is modular, employer-informed and linked to practical work requirements, it is more likely to support participation and respond to shortages.

The evidence therefore points to a **participation and implementation barrier** rather than a simple absence of provision. Adult learning opportunities may be available, but companies and workers do not always have the conditions needed to use them. For employers, especially SMEs, the key constraints are time, staff availability, administrative capacity and the ability to identify the right training. For workers, motivation, perceived relevance and recognition of acquired skills shape participation. This makes lifelong learning and adult upskilling central to access to skills, while also linking this barrier to later sections of the report on training responses, training provision and cross-cutting support mechanisms.

Structural Barriers

Structural barriers were identified in **20 national consultations**, making them one of the most frequently reported barriers to access to skills. In the company survey, these barriers are also clearly visible through respondents' references to workload, lack of time, limited staff availability and organisational capacity. At sectoral level, similar constraints appear most clearly in SME-dominated ecosystems, particularly retail and tourism, where employers report difficulties releasing workers for training or providing backfilling even when training opportunities are available.

Across national consultations, employers point to a set of structural barriers that limit access to skills even in countries where training provision, funding instruments or skills intelligence systems are well developed. These barriers operate at a practical level, affecting companies' ability to make the best of available training opportunities. These barriers are particularly

relevant for SMEs, but they also affect larger companies, for example when training must be organised across shifts, sites or operational teams.

Regarding **time constraints and workforce availability**, employers report that releasing workers for training remains difficult where production pressures are high, replacement staff are scarce or margins are tight. This is especially visible in economies with a comparatively higher share of small companies, such as Portugal, Greece or Cyprus, and in sectors with strong seasonal or operational intensity, such as hospitality, retail and tourism. In these SME-dominated ecosystems, companies may struggle to provide release time or backfilling even when training opportunities are available. Employers therefore underline that time remains a binding constraint which funding alone cannot fully resolve, although shorter, flexible and modular formats can help reduce the operational burden.

The company survey strongly reinforces this point. **Workload and lack of time were ranked as the first barrier** to organising or providing training by the majority of respondents. **Lack of capacity to organise or provide training** was also selected by a significant number of companies, particularly SMEs.

For large companies, **structural barriers often relate to scale and coordination**. Training might be available, but releasing employees from operational duties, aligning schedules across teams, or coordinating provision across different sites can be difficult. For SMEs, the constraint is more immediate. A short absence can affect production, service delivery or customer-facing activity, particularly where teams are small and tasks are specialised. This difference in company size is relevant because it affects whether training support can be used in practice, even when the need for upskilling is recognised.

Workers also face availability and motivation constraints. These can range from limited time linked to work-life balance, low awareness of the benefits of lifelong learning for employability and career progression, or limited information and guidance on available training opportunities. In some consultations, employers also note that older or lower-skilled workers may not always perceive an immediate need to train, even where training is available or subsidised.

A second structural barrier concerns **administrative complexity and eligibility conditions** attached to publicly funded training. Across several Member States, employers rely on national and/or EU funding support and highlight that access to subsidised training can involve **restrictive eligibility rules, complex application procedures and burdensome reporting requirements**. Stakeholders also note that such programmes are not always sufficiently aligned with specific company needs, particularly where funding priorities are predefined or linked to broad policy categories or target groups rather than concrete occupational needs.

This administrative burden affects smaller companies more strongly. SMEs often lack dedicated HR, legal or funding teams and may find that the effort required to apply for support outweighs the expected benefit. In Portugal and the Netherlands, stakeholders note that catalogue-based or accreditation-based funding models can restrict flexibility, as training that

does not fit predefined frameworks becomes more costly or ineligible. In Spain, employers refer to eligibility constraints linked to employment status, place of residence or economic sector, which may limit workers' participation in training programmes.

Survey responses provide a similar picture at company level. **Almost half of respondents report receiving no financial or organisational support for training.** Where companies do not use available support, open responses frequently mention restrictive eligibility conditions, bureaucracy, lack of awareness, limited fit with company needs or the time required to apply. High training costs and limited resources are also identified as barriers, although they appear less prominent than workload, time constraints and organisational capacity. Overall, the survey suggests that **financial constraints matter, but employers more often point to the practical challenge of organising training around operational demands and administrative requirements.** These barriers are reported by both large companies and SMEs, although they tend to have a greater impact on smaller companies, where administrative capacity is more limited and training decisions are often driven by immediate operational needs.

Minimum scale requirements also emerge as a practical obstacle in some systems. Employers refer to minimum participant thresholds for publicly funded courses, which can prevent training provision in rural or low-density regions or for highly specialised skills needs. Such rules can weaken responsiveness even where demand is clear. Employers therefore argue for more proportionate and demand-driven financing models, where support follows actual training needs rather than predefined class sizes or standardised programme formats.

A further structural barrier concerns companies' own **capacity to diagnose and forecast skills needs and navigate available instruments.** Large companies are more likely to have internal HR and training capacity of identifying skills gaps, preparing training plans and engaging with providers or public schemes. SMEs often rely on managers, direct operational experience or informal assessment of needs. This does not mean that skills needs are not perceived; rather, the process is often less formalised, which can make it harder to access support schemes, organise training or engage with external training providers.

The national consultations also show that incentives are more effective when they address the **labour cost of participation.** Several stakeholders report that financial support to training actions alone is insufficient if it does not compensate for the loss of working hours and the difficulty of replacing workers during training. Wage compensation mechanisms during training, where available, are often perceived as more effective than complex reimbursement schemes for training courses. Similarly, tax-based incentives can be more attractive to companies when they are simple to use and do not require lengthy application or reporting procedures.

Structural barriers therefore sit at the point where training policy meets business organisation. Employers may recognise the need for upskilling and reskilling, and training opportunities may formally exist, but **participation depends on whether companies have time, staff availability and motivation, administrative capacity and sufficient flexibility to make use**

of them. This is especially important for SMEs, where the same barrier can combine operational pressure, lack of HR capacity and limited access to suitable information or support.

These structural barriers are linked to a broader cross-cutting discussion on funding and governance. In this section we refer the structural barriers for companies and workers to participate in skills development. Issues related to funding schemes, state aid or long-term financial sustainability are addressed in more detail later, under the [4.5. Cross-cutting Aspects](#) section.

Systemic, Governance and Coordination Barriers

Systemic, governance and coordination barriers were identified in 22 national consultations, making this one of the most frequently reported barriers in the national analysis. At sectoral level, related issues appear under fragmented coordination and **low employer involvement**, mentioned in 4 of the 9 sectoral initiatives examined in depth, as well as in the governance-related aspects of EU-level sectoral initiatives. The company survey provides less direct evidence on governance but reinforces the practical consequence of weak system design: companies often need support mechanisms that are easier to access and better aligned with how training and recruitment are organised in practice.

Across national consultations, employers point to the way skills systems are organised, coordinated and steered as a barrier to access to skills. **These barriers cut across education, employment and economic policy**, and can limit the effectiveness of instruments that are otherwise considered useful. Employers most frequently refer to fragmented governance, weak links between identified needs and policy decisions, lengthy procedures and limited employer influence over the design and timing of responses.

A recurring issue concerns the **fragmentation of responsibilities across ministries, agencies and levels of government**. In several national contexts, this institutional dispersion complicates coordination between skills intelligence, funding decisions and training provision. It can also delay or dilute policy responses, as reported in countries such as Austria, Ireland and Latvia. From an employer perspective, the difficulty is not always the absence of initiatives, but the lack of a clear route from identified skills needs to concrete action.

In the national analysis, employers also underline that **governance arrangements influence the speed at which skills systems adapt**. Procedures for updating curricula or introducing new training offers are described as lengthy and complex in several countries, particularly in formal education systems. Bulgaria, Greece and Portugal are among the examples where stakeholders refer to slow or burdensome procedures. This issue links closely to later sections on [4.2. Identification of Skills Needs](#) and [4.3. Development of Training Responses](#), but it is relevant here because delays in decision-making can themselves become a barrier to accessing the skills employers need.

Employer involvement is another important dimension. National consultations show that employers are formally involved in many systems through advisory bodies, supervisory boards or tripartite and bipartite structures. However, the degree of influence varies considerably. In some cases, employers describe their role as decision-oriented and structured. In others, participation is perceived as mainly consultative, with limited influence over funding priorities, the timing of reforms or the design of eligible training programmes. This distinction matters

because employer involvement is most useful when it affects the content, timing and practical relevance of skills responses.

Sectoral evidence points to similar governance issues at EU level. Several sectoral initiatives have developed valuable qualification frameworks, training modules, platforms or recognition tools, but employers report difficulties in ensuring that these outputs are embedded into national curricula and training provision. Since qualification design and curriculum decisions remain national competences, EU-level sectoral outputs can remain difficult to scale when there is no clear route into national systems. **This limits the visibility and practical effectiveness of some initiatives for employers.**

Fragmented coordination also affects the sustainability of employer-led or sector-led initiatives. Sectoral stakeholders generally recognise the value of EU-level initiatives, including Blueprints, in identifying and addressing sectoral skills needs. However, many initiatives remain project-based. When governance structures are not maintained beyond the project period, tools and methodologies may lose visibility, become outdated or fail to influence training provision at national level. This point will be addressed more fully under the [4.5. Cross-cutting Aspects](#) of the report, but it is relevant here as a governance barrier affecting access to skills.

For the purposes of this barriers section, **funding and long-term sustainability are treated only where they directly affect access to skills through governance or coordination.** The broader questions of funding models, state aid, administrative burden, incentives and financial sustainability are developed under the [4.5. Cross-cutting Aspects](#) of the report.

4.2. Identification of Skills Needs

The identification of skills needs is a central element to inform guidance, curricula design, education and training provision and certification systems and keep them relevant to employers. Evidence from the national consultations, sectoral analysis and company survey shows that skills intelligence has become more developed across Europe, but also that its practical use remains uneven.

At national level, skills needs are identified through a combination of labour-market data, employer surveys, sectoral committees, forecasting tools, dashboards and observatories. At sectoral level, intelligence exercises often rely on expert consultations, sectoral boards and surveys, with some ecosystems developing more advanced forecasting and labour-market analytics. At company level, the survey shows a more practical approach on the ground: companies most often identify skills needs through direct discussions with managers and performance reviews, while large companies make also use of more sophisticated HR tools and workforce planning than SMEs.

The purpose of this section is therefore to **examine not only how skills needs are identified, but whether the resulting intelligence is timely, usable and connected to decisions.** Across the evidence, employers value robust data and foresight, but repeatedly underline that skills intelligence has limited impact if it does not feed into curricula updates, training provision, funding priorities or company-level planning. This issue is particularly relevant for SMEs, which often lack the internal capacity to interpret complex data or translate it into training decisions.

In order to consolidate the findings across the three strands of the Study, **this section groups the evidence into five clusters.** The first cluster covers the methods and governance structures used to identify skills needs, including statistical data, employer engagement, sectoral dialogue and social-partner mechanisms. The second focuses on the outputs of skills intelligence exercises, such as qualification frameworks, occupational profiles, digital hubs and sectoral taxonomies. The third addresses anticipatory approaches, reflecting the growing need to detect emerging skills, like those linked to digitalisation, the green transition, artificial intelligence and advanced manufacturing. The fourth cluster examines a recurring concern across both national and sectoral evidence: the difficulty of translating skills intelligence into concrete decisions. This includes delays between diagnosis and action, weak links with curricula or funding decisions, and challenges in maintaining project-based intelligence systems over time. The final cluster brings in the company-level perspective from the survey, showing how employers identify needs internally and how this differs between large companies and SMEs.

Methods and Governance of Skills Intelligence

Across the EU, **skills needs are identified through a combination of statistical and administrative data, employer surveys, sectoral consultation and forecasting tools.** National statistical offices, education authorities and public employment services typically provide information on employment trends, vacancies, enrolments, apprenticeships and qualifications. These sources are increasingly complemented by dashboards, observatories and vacancy-monitoring tools, including, in some cases, automated or AI-supported analysis. Together, these methods provide different perspectives on labour-market developments and changing skills requirements.

The availability of evidence has improved, but the organisation of skills intelligence still differs considerably across Member States. **Some countries have developed relatively coordinated arrangements** in which a national body or shared structure connects the collection and interpretation of evidence with policy planning. Ireland's approach, linked to the Expert Group on Future Skills Needs, provides one example. In other systems, responsibilities are distributed across ministries, public employment services, statistical bodies, regional authorities and sectoral organisations. This can provide a broad range of evidence, but may also result in parallel exercises, differences in methodology and a less direct connection with decision-making.

National platforms, observatories and shared information systems can help bring together evidence produced by different institutions and make it more accessible to policymakers, education and training providers and employers. Their value depends not only on the amount of information available, but also on the clarity of institutional responsibilities and the extent to which evidence can be compared, interpreted and used. More specifically forward-looking national systems, including those developed in Poland and Estonia, are examined in the subsection on anticipatory approaches.

International classifications can also support comparability between labour-market and education systems. The European Skills, Competences, Qualifications and Occupations classification, ESCO, is used in some contexts to organise information on occupations and competences and provide a more common language across countries and sectors. Its practical application nevertheless needs to accommodate national and sectoral differences, as well as changes in occupations and technologies, which can be a time-consuming process and may mean that the classification struggles to stay up to date in situations where occupational profiles are evolving or updated on a more frequent basis. Use at company level remains uneven, particularly among SMEs, which may lack the time or analytical capacity to translate complex classifications and datasets into workforce-planning decisions.

At sectoral level, **skills needs are commonly identified through expert consultations, interviews, employer surveys, sectoral boards and social-partner structures.** These methods can provide detailed insight into changes taking place within particular ecosystems, including developments that may not yet be visible in official statistics. In the textile, clothing, leather and footwear sector, consultations identified emerging requirements related to sustainable materials, digital design and supply-chain traceability. In construction, employers pointed to gaps in digitalisation and energy-efficiency competences, while also noting that some existing diagnostics remain focused on more traditional occupations and working methods.

The balance between quantitative and qualitative methods varies by sector. Some ecosystems rely primarily on employer consultation and expert assessment, while others combine these sources with labour-market projections, vacancy data and occupational modelling. Quantitative evidence can help indicate the scale and direction of change, while employers and sector experts are needed to interpret how developments affect specific jobs, tasks and competences. The more structured forecasting arrangements used in certain high-technology sectors are discussed under anticipatory approaches.

Direct employer involvement remains essential across both national and sectoral systems. Regular employer surveys, sectoral dialogue, social-partner arrangements and feedback mechanisms can identify changes that are not always captured promptly through statistical data. Employers' organisations, trade associations and employer-union committees may also help validate identified needs, define occupational requirements and inform discussions on training and curriculum priorities. Where these arrangements are stable and embedded in the wider skills system, intelligence is more likely to reflect actual workplace requirements.

Box 6. Social-Partner Governance in Skills Development (VNO-NCW, Netherlands)

The Netherlands provides an example of how sectoral and social-partner structures can connect the identification of skills needs with wider education and training discussions. Councils, trade associations and employer-union committees provide structured forums in which labour-market developments and occupational requirements can be assessed and validated. These arrangements can also inform discussions on occupational standards,

curricula and training priorities. In some cases, these structures are complemented by expert groups and foresight exercises examining medium- and long-term developments in areas such as digital technologies, artificial intelligence and the green transition. Their relevance lies in combining analytical evidence with the operational knowledge of employers and worker representatives, rather than relying on either source in isolation.

The company survey adds a practical reminder that skills intelligence is ultimately used at company level. While national and sectoral systems may produce sophisticated evidence, employers often identify needs through internal channels, especially through managerial input and operational experience. This company-level perspective is developed in more detail at the end of this section.

Sectoral Outputs and Qualification Frameworks

Skills intelligence exercises increasingly produce structured outputs intended to make skills needs more visible and operational. Across the sectoral and national evidence, these outputs include qualification frameworks, occupational profiles, skills taxonomies, dashboards, digital hubs and sectoral reports. Their purpose is to translate broad labour-market signals into a language that can be used by employers, training providers and public authorities when discussing current and emerging skills needs.

At sectoral level, the type and maturity of these outputs vary considerably. Several initiatives have produced qualification frameworks or job profiles, while others have developed portals or platforms to make information more accessible. In retail, consultations identified **ten priority profiles**, including emerging roles such as **E-commerce Manager** and **Sustainability Officer**, reflecting the sector's shift towards hybrid commerce and ESG-related requirements. In chemicals, employer surveys and expert input identified gaps in **green chemistry**, **automation** and **safe-by-design** skills. Clean tech employers, particularly in renewable energy and hydrogen, highlighted urgent shortages across engineering, system design and project management roles, as well as installation, assembly and operations profiles.

Tourism provides a different example, with stakeholders developing a **Skills Intelligence Monitoring System** intended to allow periodic updates and support benchmarking against evolving digital, green and social skills. This type of output can be relevant in a sector where SMEs represent a large share of employment and where skills needs are affected by changing business models, digital platforms and post-pandemic shifts in demand. Its practical value, however, depends on regular maintenance, awareness among users and the extent to which companies and training providers can make use of the information.

Additive manufacturing provides an example of how sectoral skills intelligence can be converted into structured occupational and competence profiles. The sector has identified profiles including operators, designers, engineers and supervisors, and described the competences associated with different functions and technological applications. Mapping these profiles against reference tools such as **ESCO** and the **European Qualifications Framework (EQF)** can support a more consistent description of occupational requirements and facilitate

dialogue between employers, training providers and public authorities. At this stage, the relevance of the example lies in the structure and transparency of the skills intelligence output. The resulting training pathways and certification arrangements are examined in Sections [4.3. Development of Training Responses](#) and [4.4. Training Provision and Certification](#) respectively.

At the same time, the **evidence points to differing views on the practical value of these outputs**. Some stakeholders see sectoral frameworks, taxonomies and platforms as useful tools to create a common language and improve visibility of emerging needs. Others are more cautious, particularly where outputs remain linked to EU project cycles, are not sufficiently maintained, or are not clearly connected to national qualification systems and training provision. **Blueprint-type initiatives** are viewed positively in some sectors, including tourism, although stakeholders also note that translating their outputs into widespread company uptake can remain challenging.

National evidence points in a similar direction. **Skills intelligence outputs are increasingly used to support evidence-based decision-making by policymakers**, training providers and employers. These outputs can take the form of national skills bulletins, sector-specific reports, dashboards, aggregated datasets, shortage occupation lists or structured qualification frameworks. In some contexts, ESCO is used to classify and organise skills information, supporting comparability across sectors and countries. Qualification frameworks also help structure the relationship between identified needs and formal descriptions of occupations, competences and qualifications. Across several systems, these frameworks define the knowledge, skills and abilities required for specific occupations or sectors. They can provide a basis for clearer recognition and, in some cases, for modular pathways. The design of such pathways is addressed later in the report under [4.3. Development of Training Responses](#) and [4.4. Training Provision and Certification](#). In this section, the focus is on the role of these frameworks to structure skills intelligence outputs, and making changing skills needs more visible before they are converted into provision.

The company survey supports a more cautious reading of these outputs. **Sectoral frameworks, reports and digital tools can be useful, but they do not typically become part of company planning**. Their value depends on whether they are visible, regularly updated and expressed in a language that employers can use in recruitment, workforce planning or training decisions.

The evidence therefore suggests a need to distinguish between the production of skills intelligence outputs and their practical uptake. **Sectoral frameworks, occupational profiles and digital hubs can improve the clarity of skills needs**, particularly in fast-changing ecosystems. National dashboards and qualification frameworks can support comparability and policy planning. For employers, however, these tools only have value if they are accessible, regularly updated and expressed in a way that can inform practical decisions.

Anticipatory Approaches and Emerging Skills

Across the evidence gathered for the Study, skills intelligence is gradually moving beyond the **identification of current shortages towards more anticipatory approaches**. One-off forecasts and static labour-market assessments are increasingly seen as insufficient in a context shaped by digitalisation, the green transition, demographic pressure and changing production and business models. National and sectoral stakeholders therefore refer to a growing use of approaches that combine labour-market data, employer consultation, sectoral expertise and forward-looking analysis.

This development is not taking place evenly across Member States or sectors. **Some systems have established regular forecasting and foresight mechanisms, while others continue to rely mainly on current vacancy information, periodic studies or stakeholder consultation**. These sources remain valuable, but employers underline that their usefulness declines when they are not updated frequently enough or when changing needs are identified too late to inform recruitment, training capacity or education planning.

At national level, **anticipatory exercises may combine statistical projections with qualitative input from employers, social partners and sector experts**. In some cases, they consider changes over a three-to-five-year period and examine how technologies, investment patterns and demographic developments may affect occupations and competences. At the same time, several stakeholders caution that labour-market developments cannot always be forecast accurately. They therefore place equal importance on observation systems that can detect new developments quickly and allow institutions to react as circumstances change.

Poland provides an example of a skills intelligence ecosystem that combines several sources of evidence. The **Human Capital Balance (BKL)**³⁸ is a large-scale research initiative that provides information on labour-market trends, employer demand and skills needs. It offers a broad analytical basis for understanding developments across the workforce and education and training systems. **The Occupational Barometer (*Barometr Zawodów*)**³⁹ complements this national evidence with a local-to-national forecasting methodology. It draws on consultations with local experts and labour-market stakeholders to identify occupations expected to face shortages, balance or surplus. This territorial approach can capture variations that may be hidden in national aggregates and helps show where occupational demand differs between regions.

Sectoral councils add a further layer by bringing together employers, trade unions and education and training representatives to discuss changing requirements and their implications for training priorities. Taken together, these mechanisms illustrate the value of **combining large-scale research, local labour-market knowledge and sectoral dialogue**. Nevertheless,

³⁸ For more detail visit: [Monitoring of the demand for competences on the labour market, unique on a Polish and European scale - PARP - SME Development Centre](#)

³⁹ For more detail visit: <https://barometrzwodow.pl/en/>

stakeholders continue to identify limitations in the availability of timely and sufficiently detailed evidence on emerging skills, particularly at sectoral level.

Estonia's OSKA system (*Oskuste arendamise koordineerimisüsteem*)⁴⁰, provides another example of a structured national approach to skills anticipation. OSKA produces detailed and forward-looking analysis of labour-market developments and future skills needs, providing a basis for discussions on workforce and education planning. Its value lies in moving beyond current vacancy information and examining how changes in economic activity and occupational demand may affect future requirements. This example also illustrates an important distinction between analytical capacity and implementation. A structured system may produce relevant and forward-looking evidence, but its influence on education and training provision still depends on the institutional processes through which findings are considered and acted upon. This wider question is examined in the following subsection on the [translation of evidence into action](#).

Box 7. Digital Platforms and Real-Time Skills Monitoring

The gradual integration of digital platforms and real-time data automated analytics is also identified as a trend throughout the course of the stakeholder consultations. Tools such as aggregated online vacancy trackers, apprenticeship databases, and labour-market statistics provide near-term signals of emerging skills demand. While adoption is uneven, these platforms enable an agile monitoring of changing labour-market conditions and can support rapid adjustments in training provision.

The sectoral analysis shows why anticipatory capacity is increasingly important, particularly in areas in which designing and implementing training responses necessarily take time. In automotive, **employers emphasise the need to anticipate transformation in vehicle software, embedded cybersecurity, battery systems and AI-enabled mobility**. These are areas where curricula and training offers may lag technological change if skills needs are only identified once shortages have already become visible.

Additive manufacturing points to a similar dynamic. **Sectoral foresight exercises identify future needs linked to digital twins, lightweighting and sustainable feedstock usage**. These skills are connected to wider changes in production processes and materials, and they require early identification because companies may need to adapt roles, equipment, training content and recruitment strategies at the same time.

Tourism provides a different example. **Stakeholders point to changes in business models and the increasing use of hybrid and digital platforms following the COVID-19 pandemic**. Emerging needs relate not only to new occupational profiles, but also to changes in service organisation, customer interaction and the use of digital tools. This is particularly relevant for

⁴⁰ For more detail visit: <https://oska.kutsekoda.ee/en/>

SMEs, which need information that can be translated into practical recruitment and training decisions rather than broad forecasts that remain difficult to apply.

High-technology sectors illustrate the potential of more structured forecasting. In semiconductors, employers have access to annual surveys, econometric models and labour-market projections that quantify both immediate shortages and future occupational needs. This has enabled the sector to estimate a shortfall of **75,000 professionals by 2030**, disaggregated by profiles such as hardware engineers, data analysts and technicians. The sector is often cited by employers as an example of how granular intelligence can support recruitment planning, engagement with training providers and investment decisions.

Box 8. Good Practice: Skills Intelligence in Semiconductors⁴¹

The semiconductor sector illustrates how robust skills intelligence directly benefits employers. By combining statistical analysis, annual company surveys, and labour market projections, the industry has produced increasingly structured forecasts of occupational demand to 2030, as a basis to develop a training response (e.g. European Chips Skills Academy and related sectoral initiatives). This granularity enables companies to size recruitment pipelines, engage with training providers, and anticipate workforce costs with greater certainty. Employers in other sectors consistently point to semiconductors as a model worth replicating.

Company-level evidence points in the same direction. **Anticipatory capacity tends to be stronger where employers have structured workforce-planning systems and can connect external intelligence with recruitment, training and investment decisions.** This is more common among larger companies. SMEs tend to identify needs closer to day-to-day operations and may have less capacity to engage with forecasting tools or translate external evidence into longer-term plans. The difference is developed further in the [Company-level skills planning and SME capacity](#) subsection below.

Overall, **anticipatory skills intelligence needs to combine different time horizons and sources of evidence.** Labour-market statistics and vacancy monitoring can indicate where pressures are emerging. Forecasting and foresight can consider how demand may evolve over the medium term. Employers and sector experts can explain how these developments are changing occupations, tasks and competence requirements.

For employers, however, the value of this information ultimately **depends on whether it is timely, sufficiently detailed and relevant** to the sector, occupation or region concerned. Anticipation is only useful where the resulting evidence can inform decisions. The institutional process through which skills intelligence feeds into curricula, funding priorities and training provision is examined in the following subsection.

⁴¹ For more detail visit: [ECSA](#)

From Evidence to Action

A recurrent issue across the national and sectoral evidence is that skills intelligence does not always translate into timely decisions. **Many systems have improved their capacity to collect data, consult employers and identify emerging needs.** However, employers frequently report a gap between the production of evidence and its practical use in education planning, curricula updates, funding priorities or training capacity. The issue is therefore not only whether skills needs are identified, but whether identification leads to action within a timeframe that is meaningful for companies.

At national level, **this translation gap is visible even in countries with relatively strong analytical systems.** The availability of good information tools or skills reports does not imply its automatic or rapid uptake by decision making bodies. Sweden and Ireland, for instance, combine high-quality data and structured skills intelligence mechanisms, yet employers still report delays in turning evidence into policy or capacity decisions. In Estonia, the OSKA system produces detailed and forward-looking insights on labour-market developments and future skills needs, but the translation of this intelligence into education and training provision depends on institutional processes and is not always systematic.

This matters for employers because **timing is often as important as accuracy.** If evidence on skills needs does not translate quickly into updated curricula, training provision or public funding decisions, companies continue to face skills shortages and mismatches for longer than necessary. In fast-moving areas such as digital technologies, artificial intelligence, green transition-related occupations and advanced manufacturing, delays in adapting education and training systems prolong these bottlenecks, slowing companies' ability to adopt new technologies and expand their activities.

The sectoral analysis confirms a similar concern. Several sectoral initiatives have produced qualification frameworks, occupational profiles, surveys or foresight exercises, but these outputs are often linked to project cycles. Where evidence production is not maintained, updated and connected to national systems, its relevance can weaken over time. Employers consulted at sectoral level repeatedly stress that skills intelligence requires continuity beyond the life of individual projects if it is to support investment, recruitment planning and curriculum reform.

This is particularly visible in sectors where **skills needs are evolving quickly.** In textiles, consultations identified emerging needs in sustainable materials, digital design and supply-chain traceability, but employers warned that findings risk becoming outdated without cyclical updating. In tourism and retail, surveys and consultations provide useful insight into changing business models and occupational needs, but their strategic value depends on whether the evidence is sufficiently representative, repeated and connected to decision-making structures.

Box 9. The limits of Qualitative Methods

Textiles, tourism, and retail employers acknowledge the value of consultations and surveys, but caution against over-reliance only on qualitative and non-representative tools. In many cases, surveys capture fewer than a thousand responses EU-wide, limiting statistical validity. Without stronger quantitative evidence, employers risk basing investment and planning decisions on insights that, despite its value, may be partial or outdated.

The company survey reinforces this issue without changing the overall finding. **Employers often rely on information generated close to the workplace, while external sources of skills intelligence appear less central in day-to-day company practice.** This underlines the importance of making national and sectoral intelligence usable for employers to support them in longer-term planning, particularly for SMEs with limited analytical capacity.

The evidence also suggests that the **use of skills intelligence depends on trust and relevance.** Employers are more likely to act on evidence when it is **granular, regularly updated and clearly connected to their sector, occupation or region.** Broad forecasting exercises may help frame policy debate, but companies need information that can inform concrete choices: which profiles to recruit, which skills to build internally, which training providers to use, and whether future demand justifies investment in new training capacity.

The translation gap is therefore not limited to the production of evidence. Curriculum updates, modular training, funding priorities and certification frameworks all depend on whether identified needs are converted into provision. Where evidence remains disconnected from decision-making, employers may perceive skills intelligence as descriptive rather than actionable. Where the link is stronger, intelligence can support earlier planning, better targeting of training and a more credible dialogue between companies, education providers and public authorities.

Company-level Skills Planning and SME Capacity

The company survey adds a practical layer to the evidence on skills intelligence. While national and sectoral systems may produce forecasts, dashboards, qualification frameworks or sectoral reports, companies identify skills needs first and foremost through internal channels. This is especially important for the final report, as it shows that the value of skills intelligence depends not only on the quality of external evidence, but also on whether companies have the capacity to interpret it and use it in their own planning.

Across the survey, **discussions with managers and performance reviews** emerge as the most commonly used method for identifying skills needs, being selected by the vast majority of companies irrespective of size. This suggests that, even where more formal data sources are available, company-level identification of skills needs remains strongly anchored in managerial judgement, performance management and direct knowledge of workplace requirements.

Large companies are more likely to complement these internal discussions with structured HR tools. **Internal HR tools**, including training plans, workforce planning and dialogue with workplace representatives, were selected by **72 large-company respondents**, compared with **61 SMEs.** **Vacancy and turnover data** were also used more frequently by large companies,

with **50 large-company respondents** selecting this option, against **42 SMEs**. These figures reflect the stronger internal capacity that larger organisations often have to formalise skills planning, connect it with recruitment needs and link it to wider workforce strategies.

The open responses in the survey illustrate this difference. Several large companies refer to annual HR cycles, skills matrices, workforce analysis, learning analytics, individual development plans and strategic competence management. In these cases, identifying skills needs is not treated as a one-off exercise, but as part of broader workforce planning. This is consistent with the national evidence, which notes that larger companies are often better able to compensate for weaknesses in external systems through internal diagnosis and training capacity or direct cooperation with providers.

SMEs tend to identify skills needs in a less formalised way. This should not be read necessarily as a lack of awareness. **In many smaller companies, managers have close knowledge of roles, workloads and performance gaps.** Skills needs may be identified through direct operational experience, conversations with employees, immediate recruitment difficulties or the requirements of specific projects. The main difference is that this knowledge is less likely to be captured through formal tools, structured HR processes or analytical systems.

The survey confirms this point. A significant number of SMEs report having no formal methodology to identify skills needs, while this is comparatively rare among larger companies. **This distinction matters because informal identification may be sufficient for immediate operational decisions, but it can make longer-term planning more difficult.** It can also limit SMEs' ability to use external skills intelligence, apply for support schemes or engage systematically with training providers.

External sources of skills intelligence are used, but less frequently than internal channels. Sectoral reports, employer associations, public employment services and private recruitment companies all play a supporting role in identifying skills needs, although their use is less widespread than manager discussions and performance reviews. This does not mean that external intelligence lacks value. Rather, it suggests that such evidence often needs to be translated into more accessible and practical formats before it can effectively inform company-level decisions, particularly among SMEs.

This finding is relevant when read alongside the sectoral analysis. **Sectoral initiatives often produce occupational profiles, qualification frameworks, surveys and digital tools.** Some of these outputs may help employers understand emerging needs, especially in fast-changing ecosystems. However, the survey indicates that such outputs do not automatically become part of company planning. Their usefulness depends on visibility, maintenance, practical language and the capacity of companies to apply them to recruitment, training or internal mobility decisions.

The national analysis points in the same direction. Employers frequently note that **SMEs face constraints in time, resources and analytical capacity.** They may have a more reactive approach to skills needs and, in some cases, limited awareness of what future skills needs may arise. This is particularly relevant in the context of digitalisation, artificial intelligence and the green transition, where skills needs may evolve before they are fully visible in day-to-day operations.

The company survey also shows that skills identification is closely linked to training planning. Companies that describe more structured approaches often connect skills needs to onboarding plans, annual training plans, role-specific training, health and safety requirements, equipment use, individual development plans or career progression frameworks. **Large companies more often describe systematic approaches, while SMEs tend to describe practical arrangements linked to immediate business needs**, such as onboarding, on-the-job learning or training required for specific tasks.

This difference has consequences for access to skills. When a company can identify skills needs early and translate them into a training plan, it is better placed to **decide whether to recruit, train existing workers, reorganise tasks or work with external providers**. Where skills needs are identified informally and under time pressure, the response is more likely to be reactive. This is not necessarily ineffective, but it can make it harder to anticipate future needs requiring longer-term solutions or to benefit from support schemes that require documentation, planning or evidence of training priorities.

The survey therefore reinforces a central message from the wider evidence base: skills intelligence has to be usable at company level. **National dashboards, sectoral reports and qualification frameworks can strengthen the overall evidence base, but their impact depends on whether companies can use them in practice**. For large companies, the challenge is often to connect external evidence with internal workforce planning. For SMEs, the more immediate need is often simpler guidance, clearer signposting and support in turning operational knowledge into training decisions.

This company-level evidence shows that the value of skills intelligence depends on whether companies can translate it into training plans, recruitment decisions or internal development pathways, but not about whether companies can use this information to help influence curriculum design and updating. This link is explored further in the following section on the [4.3. Development of Training Responses](#), where the report examines how identified skills needs are converted into concrete training and workforce measures.

4.3. Development of Training Responses

The development of training responses is the point at **which identified skills needs are expected to become concrete learning programmes and opportunities for students, workers and companies**. Evidence from the national consultations, sectoral analysis and company survey shows that this process is increasingly shaped by employer involvement, modular approaches, sector-specific job profiles and the capacity of education and training systems to update content in line with changing skills needs.

Across Member States, training responses are developed through different forms of cooperation between employers, social partners, education and training providers, public authorities and, in some cases, public employment services. At sectoral level, EU initiatives have produced job profiles and associated modular curricula and training courses, as well as digital resources linked to specific ecosystems. At company level, the survey shows that employers most often respond to skills needs through continuous staff training, recruitment followed by training upon entry, internal reorganisation and internal upskilling or reskilling.

This section examines **how training responses are designed, how far they reflect employer needs, and where implementation remains constrained**. Issues linked to delivery, certification, formal recognition and portability are addressed in greater detail in the following section on Training Provision and Certification. Funding models, state aid and long-term financial sustainability are covered under Cross-cutting Aspects.

To consolidate the evidence, **this section groups the findings into four areas**. The first examines how identified skills needs are translated into training responses, including the role of employer involvement and the tension between responsiveness and formal procedures. The second focuses on curriculum design, occupational standards and qualification updates in VET, higher education and adult learning. The third looks at job profiles, modular curricula and learning pathways developed at sectoral or national level. The final area brings in the company survey more directly, showing how companies respond to skills needs in practice and how these responses differ between large companies and SMEs.

From Skills Needs to Training Responses

The development of training responses is where skills intelligence is expected to become operational. **Once skills needs have been identified** – through labour-market data, employer consultations, sectoral frameworks or company-level planning – **employers need those findings to be reflected** in training content, curricula, learning formats and workforce measures that can be used in practice. The national and sectoral evidence both point to the same difficulty: the identification of needs has improved, but the translation into timely and relevant training responses remains uneven.

Across Member States, **training responses are increasingly developed through processes involving employers, social partners, education and training providers, public authorities and, in some cases, public employment services**. This cooperation is not always organised in the same way. Employer involvement is generally more visible in VET, apprenticeships and adult learning, where companies can contribute more directly to occupational profiles, training content and work-based learning. By contrast, higher education institutions operate under diverse governance arrangements, reflecting their institutional autonomy, and the extent of employer involvement varies considerably across Member States and institutions. In public employment service-led training, employer input is often channelled through dedicated consultation mechanisms or specific programmes, which can make the link with operational skills needs less immediate.

Box 10. Good Practice: Dual VET Systems in Germany and Switzerland

Germany provides one of the best-known examples of how structured employer involvement can support the alignment of vocational education and training with labour-market needs. Employers' organisations, chambers, trade unions and public authorities play a central role in defining and updating occupational standards and training curricula. The dual VET system combines company-based apprenticeships with vocational school education, supporting the development of job-ready skills and smoother transitions from education to employment.

Switzerland follows a similar dual VET logic, with strong involvement of employers, sectoral bodies and professional commissions in updating curricula and training content when new skills needs are identified. This supports regular adaptation of vocational profiles to technological and organisational change, while preserving the credibility of formal qualifications. In both systems, employer involvement helps maintain the labour-market relevance of VET, although formal updates still require coordination, validation and quality assurance.

Comparable principles are also found in other dual or apprenticeship-based systems, including Austria, where employer participation contributes to the practical relevance of vocational pathways.

In several national systems, **sectoral training arrangements and structured partnerships with VET or higher education providers help employers engage in programme design.** Denmark and Portugal are referred to in the national analysis as examples where such arrangements support employer involvement, particularly in VET and adult learning. National stakeholders also highlight the role of EU-supported initiatives in developing and expanding reskilling programmes, inclusion pathways and cooperation between employers and public employment services. The contribution of national and EU funding instruments to these initiatives is discussed in more detail in the [4.5. Cross-cutting Aspects](#) section on funding and governance.

The national evidence also shows that training systems face a recurring tension between responsiveness and formality. In general, most lifelong learning systems can update short courses, modular provision or employer-led programmes relatively quickly. **More formal curriculum revisions, particularly in VET and in some parts of higher education, are subject to longer quality assurance, accreditation and regulatory procedures, as well as multi-stakeholder validation.** Employers recognise the importance of trust in formal qualifications, but they also note that long update cycles can reduce the relevance of education and training in areas where technologies and work organisation are changing quickly.

Ireland provides an example of an agile approach in certain fields, particularly through university micro-credentials and upskilling and reskilling programmes. Higher education institutions, together with initiatives such as **MicroCreds**⁴² and **Skillnet**⁴³, developed in close collaboration with employers, are reported as enabling relatively rapid updates to training content, particularly in digital technologies and ICT. **The relevance of these examples lies in their ability to complement existing education and training provision** through a combination of institutional flexibility, employer engagement and modular course design, allowing programmes to respond more quickly to emerging skills needs.

At sectoral level, the same issue appears through the need to convert skills intelligence into concrete outputs for companies. EU-level sectoral initiatives have developed job profiles,

⁴² For more detail visit: [Home – MicroCreds | Short, Flexible, Accredited Courses](#)

⁴³ For more detail visit: [Building Competitiveness Through Skills | Skillnet Ireland](#)

modular curricula, training modules, qualification frameworks and training roadmaps in response to employer-identified needs. In the TCLF sector, modular units linked to digital design, sustainable materials and traceability respond to emerging occupational requirements. In construction, the piloting of new modules on energy efficiency, circularity and digitalisation reflects the shift towards job-ready competences aligned with changing work practices.

Other sectoral examples illustrate how identified needs can inform more targeted training planning. In semiconductors, sectoral foresight has been used to develop industry-validated training roadmaps addressing anticipated demand for technicians, engineers and data-related profiles. This shows how **sufficiently detailed intelligence can help define the scale, occupational focus and sequencing of a sectoral training response.**

These EU-level sectoral outputs can add value when they are sufficiently specific, regularly updated and used by employers and training providers. Sectoral initiatives can often develop profiles, modules and roadmaps more quickly than formal systems. However, **their integration into national curricula, qualifications and training provision remains uneven.** Communication with the national bodies responsible for these areas is not always effective, even where national organisations participate in sectoral consortia. Some outputs also remain tied to individual project cycles, with no clear arrangements for their continued updating or wider use once funding ends. The key issue is therefore not simply whether sectoral initiatives produce useful outputs, but whether **those outputs are taken up and converted into training that companies and workers can access in practice.**

Company-level responses are examined at the end of this section, including the widespread use of continuous training and recruitment followed by training after entry. These practices show how employers respond when formal education and training systems do not provide all the competences required at the point of recruitment.

Overall, the evidence points to an **implementation challenge.** Skills needs may be identified at national, sectoral or company level, but this intelligence only becomes useful when it leads to timely and relevant training content, informed by employers and suited to real working conditions. Where this connection is weak, companies are more likely to address gaps through their own training arrangements. Where it is stronger, education and training systems can respond earlier, before shortages become more acute or mismatches place further constraints on business activity, investment and growth.

Curriculum Design, Job Profiles and Modular Pathways

Across both the national and sectoral evidence, employers emphasise the **importance of timely updating curricula and qualification frameworks** in a way that is sufficiently structured to maintain trust, while still allowing training content to adapt to changing technologies, production processes and business models.

At national level, skills intelligence is increasingly expected to feed into structured outputs such as qualification frameworks, occupational standards, sector-specific reports, dashboards and

competence descriptions. These outputs help define and update the knowledge, skills and abilities required for particular occupations or sectors, and can provide a basis for more targeted training responses. However, **employers also report that the connection between identified needs and concrete curriculum updates remains uneven.**

In initial education and training system, particularly VET and, in some cases, higher education, translating identified skills needs into updated curricula often involves **long procedures and several stages**. In VET systems, employers frequently contribute through sectoral committees or advisory bodies that bring together industry representatives, education providers, social partners and public authorities to review occupational standards and training content. **The composition and responsibilities of these bodies and the frequency they meet vary across Member States.** Where they operate on a stable permanent basis, they can provide an important mechanism for keeping curricula aligned with labour-market developments.

In higher education, **Universities' autonomy results in more heterogenous arrangements.** Some universities maintain close partnerships with employers that enable relatively rapid adaptation of programmes, while others operate within more academically driven governance structures where curriculum changes follow longer institutional procedures.

Across both VET and higher education, however, curriculum updates typically require multiple stages of quality assurance, institutional validation and administrative or legislative approval, expanding frequently over several years, and making it difficult for formal provision to keep pace with rapidly evolving skills needs.

Curricula are increasingly adopting a modular structure. In general, **modular design is perceived to be a practical approach.** The sectoral analysis shows how targeted job profiles and modular curricula can help make training responses more relevant to changing needs. It can help also to bridge formal education and training with shorter adult lifelong learning activities. In the TCLF sector, modular units linked to digital design, sustainable materials and traceability respond to emerging needs in a sector where employers are seeking to reposition occupations that are often perceived as traditional.

Box 11. Employers' Preference for Modular Training

Employers consulted at sectoral and national levels emphasise the value of modular curricula. Shorter modules make it easier to build flexible training pathways. They also facilitate to release workers for training without disrupting production cycles or service delivery. In construction and additive manufacturing, employers referred to short micro-modules, including formats of around four to six hours, as more compatible with operational constraints.

Modular design is valued where it allows companies to respond to urgent needs while creating progression routes over time. Employers do not see short modules necessarily as a substitute for full qualifications in every case. Their value lies in allowing workers to acquire targeted skills, with the possibility of accumulating or stacking learning where systems provide the right framework.

Additive manufacturing illustrates how **occupational profiles can be translated into modular training pathways**. Building on profiles identified for functions such as operators, designers, supervisors and engineers, training can be organised into competence units linked to particular technologies, processes and industrial applications. This allows learners to follow pathways suited to their role and level of responsibility, rather than completing a single generic programme covering the sector as a whole.

The progression from operator-level to engineering-level functions also shows how modular design can combine immediate skills development with longer-term occupational progression. Individual units can address specific production processes or technologies, while a structured sequence of modules can support movement towards more advanced roles. This is particularly relevant for SMEs, which may need specialised, process-specific skills but lack the capacity to develop complete training programmes internally. The certification and wider recognition of these competence units are considered in Section [4.4. Training Provision and Certification](#).

National evidence also points to the role of qualification frameworks in translating labour-market language into education and training systems. Frameworks can help ensure that occupational requirements are expressed in a way that training providers and public authorities can use to tailor learning outcomes. At the same time, **employers report that frameworks are only useful if they remain connected to current workplace needs and can be updated without excessive delay**.

Box 12. CompetentNL: bridging labour-market language and education systems

The Netherlands has developed CompetentNL as a national initiative to translate labour-market and employer-reported needs into structured skills language that can be used by education and training systems. According to stakeholders, the tool represents an important step in converting job requirements into more standardised skills descriptors, helping to bridge communication between employers and training providers. CompetentNL builds on internationally recognised skills classifications, including ESCO, adapting them to the Dutch labour market and education system while providing a common language for describing occupations and skills. Stakeholders also note that further development is needed to ensure full integration with the Dutch National Qualifications Framework. This would strengthen coherence and support more systematic alignment between skills intelligence outputs, formal education and training pathways, and employment opportunities.

Micro-credentials and modular courses also appear in the national evidence as part of the development of more responsive training responses. At this stage of the report, **their relevance is mainly linked to training design**: a modular design allows skills needs to be translated into shorter learning units, not requiring full qualification reviews, and enabling diversified pathways. Formal recognition, portability and quality assurance of micro-credentials are addressed in the following section on [4.4. Training Provision and Certification](#).

The tension between speed and institutional recognition remains visible throughout the evidence. Employers can often identify new skills needs and adapt internal training faster than

formal systems can update curricula or qualification standards. This creates a gap between the pace of business change and the pace of institutional adaptation.

Box 13. The obsolescence paradox

Employers can identify needs and adapt training content to new technologies within months, yet the transfer of skills intelligence into formal national recognition, updated modules or curriculum reform can take years. Even when the work to identify skills needs and translate them into new training content has been done in EU-level sectoral initiatives or national Skills Intelligence mechanisms, these outputs are not effectively connected to the complex formal updating procedures. This disconnection can slow recruitment, duplicate efforts and weaken portability, even where employers across countries agree on the qualifications required. The issue is particularly visible in sectors most affected by rapid technological change, where training content risks becoming outdated before formal procedures have fully absorbed the latest skills needs.

Company-level evidence from the survey confirms the **importance of targeted and practical training responses**. Companies cannot just rely on institutional education and training. They often respond to skills needs through continuous staff training, recruitment followed by training upon entry, internal reorganisation and internal upskilling or reskilling. Open responses in the survey also refer to role-based training plans, onboarding, skills matrices, career ladders, annual training needs assessments and structured development pathways. These examples show that companies frequently build their own training responses around concrete roles and operational needs, even where such responses are not formally linked to external qualification frameworks.

Large companies are more likely to formalise this process through internal academies, HR cycles, learning platforms or workforce-planning tools. SMEs are more likely to translate identified needs into immediate task-specific training rather than structured curricula or formal pathways. This reflects differences in organisational capacity rather than a lack of engagement.

Employer-led and Flexible Training Responses

Adult learning systems generally offer greater potential for responsiveness because formats are shorter and delivery models can be more flexible. The national evidence shows that, **where training is organised through sectoral structures or directly with employer involvement, programmes are more easily adapted to specialised occupational requirements and changing demand.** In these cases, learning objectives and outcomes can be adjusted more rapidly to labour-market needs. Publicly managed adult learning programmes often work differently. Where they rely on predefined catalogues or centralised design, they may respond more slowly to emerging or highly specific needs, and provision may focus more on broad transversal skills than on concrete occupational profiles.

Box 14. Rapid Co-design of Adult-Training Programmes

A notable good practice identified across consultations is the use of joint employer-trade union committees to co-design short adult-training programmes linked to clearly defined job profiles. Once skills needs are identified, these committees agree on learning outcomes, training content and delivery formats, allowing new courses to be developed and launched within weeks or months. This model combines strong labour-market relevance with national recognition and is particularly effective in addressing urgent skills shortages without waiting for full curriculum reform cycles.

Denmark is presented in the national analysis as a prominent example of a demand-driven adult learning model. The adult and continuing training model (AMU)⁴⁴, enables the rapid development of short, nationally recognised courses linked to skills identified by social partners. The model allows training provision to be adjusted quickly to labour-market needs, supports participation among adults who cannot engage in long programmes, and facilitates companies' ability to release workers for training. Evidence points to positive outcomes, particularly for low- and medium-skilled and older workers.

Box 15. Denmark's AMU Adult Vocational Training System

Denmark's AMU system is highlighted as a strong example of responsive adult upskilling. Short, modular, job-specific courses are developed through sectoral tripartite committees and can be launched within weeks once a need is identified. Training is nationally certified, stackable towards full qualifications, and supported through collectively funded schemes that reimburse companies for wage costs during training. This model combines speed, labour-market relevance and accessibility, contributing to high participation rates and positive employment outcomes, particularly for low-skilled and older workers.

The same responsiveness challenge appears in sector-specific contexts. In the Spanish textile industry, employers report that administrative timelines to update training catalogues can exceed one year, limiting responsiveness to technological change. In systems more reliant on large-scale public programmes, such as Greece and Bulgaria, employers also report more limited responsiveness, with training offers updated more slowly and less closely aligned with specific occupational needs. These examples show that flexibility is not only a question of course format; it also depends on the governance and procedures through which training content is approved and updated.

Sectoral initiatives also show the importance of tailoring responses to specific learner groups and labour pools. In clean tech, training pathways developed with the International Organisation for Migration combine technical training with language and cultural induction.

⁴⁴ For more detail on the design and labour-market impact of Denmark's adult and continuing training model (AMU), see the tripartite publication *A Danish Model for Adult and Continuing Training* (2025), published by the Council for Adult and Continuing Training (VEU Council), which includes representatives of the Confederation of Danish Employers, trade unions and public authorities: [a-danish-model-for-adult-and-continuing-training.pdf](#)

This is relevant where companies rely on international talent to meet workforce demand and where technical readiness alone is not enough to support labour-market integration.

Box 16. Migrant training pathways in clean tech

A pilot programme in the clean-tech ecosystem trained and relocated Libyan workers to Germany, combining solar installation skills with cultural integration and language learning. Employers highlight this as an example of how tailored training can help unlock new labour pools while supporting employability and workplace integration. The example illustrates that training responses may need to address technical competences together with language, cultural and integration needs, particularly in sectors where scaling depends on access to international workers.

The company survey is consistent with this evidence but should be read only as a practical illustration. Companies report using a broad range of training responses, from internal development and external providers to more practical forms of workplace learning.

Large companies and SMEs use flexible responses differently. Larger organisations report being more likely to combine internal and external training, use learning platforms, structure development through HR processes or operate internal academies. SMEs tend to rely on more immediate approaches, including practical upskilling, external providers, mentoring and direct workplace learning. This reflects operational realities: smaller companies often need training that is short, accessible and compatible with daily activity, while larger companies are better placed to organise longer or more structured pathways.

The evidence supports a shift towards employer-informed, flexible and digitally enabled training responses. Formal education and training systems remain essential, especially where recognised qualifications are required. Formal qualifications can be modularised and allow flexible curricula, with some parts open to be tailored to more specific company's needs, particularly in apprenticeships. Faster responses to changing skills needs often come through adult lifelong learning, modular approaches, blended delivery and social-partner or employer-led co-design. The central challenge is to preserve labour-market relevance and quality while ensuring that these responses can be accessed by companies of different sizes and by workers with different levels of availability, motivation and prior experience.

Company-level Responses and Support Needs

The company survey provides a practical perspective on how employers respond once skills needs have been identified. **Continuous staff training** emerges as the most common response, confirming that companies increasingly view training as a regular component of workforce management rather than as an occasional intervention. **Recruiting candidates who do not yet possess all the required skills and providing training after recruitment** also appears as a widespread practice, suggesting that recruitment and training are often used together rather than as separate strategies.

This illustrates how employers manage skills mismatches in practice. In tight labour markets, companies frequently recruit candidates who only partially match job requirements and close the remaining gaps through internal or external training after entry. Waiting for fully prepared candidates is often not considered a viable option where shortages are persistent. Alongside recruitment and training, **companies also make extensive use of internal reorganisation**, including internal mobility, skills matrices, career pathways, cross-training and mentoring, to make better use of existing capabilities within the workforce.

When respondents were asked which actions had been most effective in improving access to skills, **internal upskilling and reskilling** emerged as one of the strongest company-level responses. This is consistent with the national and sectoral evidence presented throughout the report, where employers repeatedly emphasise the importance of training that is closely aligned with workplace requirements and adaptable to changing occupational profiles. Companies also highlight collaboration with training providers, universities and VET centres, improvements in recruitment processes, retention measures, and the automation or digitalisation of selected tasks as complementary responses.

While employers of all sizes rely heavily on training, the survey indicates that organisational capacity shapes how these responses are implemented. Larger companies are more likely to **integrate training into broader workforce planning** through strategic skills management, internal academies, learning platforms, talent marketplaces and structured development pathways. These approaches make it easier to link identified skills needs with recruitment, internal mobility, training budgets and long-term workforce planning, while also **supporting more structured collaboration with education and training providers**.

SMEs also invest significantly in workforce development, but their responses tend to be more operational and immediate. Training is commonly delivered through **onboarding, mentoring, direct knowledge transfer, external providers and workplace learning**. Rather than reflecting lower commitment to skills development, this largely reflects differences in organisational capacity. Smaller companies frequently emphasise the need for training that is accessible, practical and compatible with day-to-day business operations, as well as the challenges of finding sufficient time and administrative capacity to organise it. This is consistent with the barriers identified earlier in the report, where **workload and limited organisational capacity** emerge as the main constraints affecting participation in training.

The survey also highlights the importance of collaboration with external actors, although the nature of these relationships differs across companies. Collaboration with training providers, universities and VET centres is frequently identified both as an effective response and as an area where additional support would be beneficial. **Larger companies are more likely to develop structured partnerships**, talent pipelines and co-designed programmes, whereas **SMEs typically seek practical cooperation through accessible courses, trusted providers and training that can be adapted** to operational schedules.

Overall, the company-level evidence adds an important implementation perspective to the wider findings of the report. Employers are already **combining recruitment, continuous**

training, internal mobility, organisational adaptation and upskilling to respond to changing skills needs. The central challenge is therefore not whether companies recognise the need to invest in skills, but whether training responses can be organised and delivered in ways that reflect differences in company size, sectoral requirements and operational realities. This is particularly important for SMEs, where practical, proportionate and easily accessible solutions are essential to enable sustained participation in skills development.

4.4. Training Provision and Certification

Training provision and certification are the stages at which skills responses become accessible to companies and workers in practice. While the previous section examined how training responses are designed, this section considers **how training is delivered, which providers and formats are used, and how learning outcomes are assessed, recognised and certified.**

The evidence gathered through the national consultations, sectoral analysis and company survey points to a **diverse training landscape.** Provision involves vocational education and training (VET) and higher education institutions, adult learning centres, public employment services, private providers, sectoral organisations and companies themselves. It also covers a broad range of work-based learning, from informal on-the-job learning and peer support to apprenticeships, dual VET and structured workplace training. In several sectors, employers are directly involved in shaping or delivering training through partnerships, internal academies and sector-specific training centres.

However, access to training remains uneven across sectors, regions and company sizes. Sectoral evidence highlights particular constraints where provision requires specialised infrastructure, up-to-date equipment or highly qualified trainers. The company survey also shows that the main barriers to organising training are practical rather than purely financial. Workload and lack of time were by far the most frequently ranked as the main barrier, followed by limited capacity to organise or provide training and high training costs or lack of resources. This suggests that suitable provision may exist, but **companies can still struggle to fit training around day-to-day operations, particularly where staffing and organisational capacity are limited.**

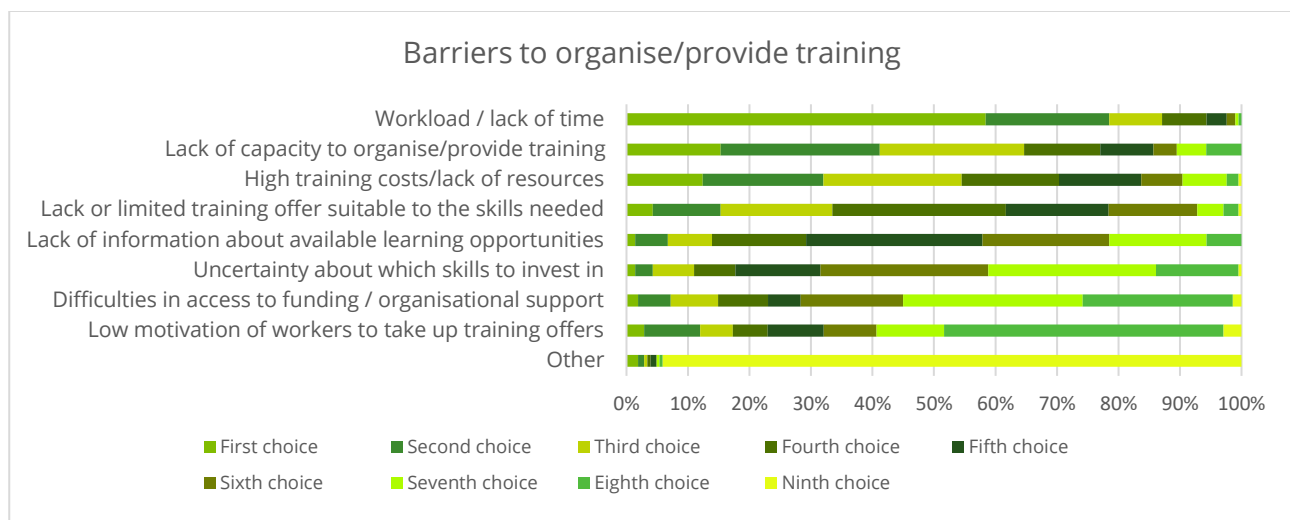


Figure 3. Barriers to organising or providing training within companies

Certification and recognition are closely linked to training provision. Employers value learning that is trusted, transparent and relevant to workplace needs, but certification practices remain fragmented. Formal national qualifications continue to be the most widely used means of certifying skills, particularly in regulated occupations, safety-related activities and areas governed by recognised sectoral standards or national qualifications frameworks. By contrast, company-based learning and practical workplace experience may be highly valuable in operational terms but remain less visible and portable outside the employing organisation. **This sits uneasily with the growing skills-first approach, which places greater emphasis on demonstrated skills even where they are not supported by a formal qualification.**

The section is organised around five areas. It first examines training provision and delivery models, including internal and external providers and different forms of work-based learning. It then considers access arrangements and individual training opportunities, such as training leave, individual learning accounts and vouchers. The third part focuses on flexible, modular, digital and innovative provision. The fourth addresses certification, micro-credentials and recognition of prior learning. The final part considers quality assurance and governance, including the role of employers in maintaining the relevance and credibility of training provision.

Training Provision and Delivery Models

Training provision across Europe is delivered through a broad ecosystem of actors, reflecting the diversity of national education and training systems and the **different ways in which employers access skills development.** National consultations point to a mix of VET and higher education institutions, adult learning centres, public employment services, private training providers, sectoral bodies and companies themselves. This diversity gives employers several possible routes to training, but it also means that the information of available opportunities is sometimes difficult to navigate, and that access, flexibility and quality differ significantly across countries, sectors and company sizes.

At national level, **employers increasingly engage with both formal education institutions and private or sectoral providers.** VET and higher education remain central for initial qualifications and longer learning pathways, while adult lifelong learning and private provision are often perceived more necessary and more flexible routes for upskilling and reskilling. Larger companies are usually better placed to combine these different channels and tailor to their needs, either through internal academies, dedicated training functions or direct partnerships with providers. SMEs tend to rely more on external standard provision, local training centres or publicly supported schemes, particularly where internal HR and learning capacity is limited.

The sectoral analysis shows that provision architectures vary widely by ecosystem. In tourism, initiatives such as PANTOUR combine VET providers, universities, tourism operators and public bodies. In the TCLF industries, the sectoral partnership coordinated by EURATEX with COTANCE and CEC connects a European network of TCLF training providers, including VET institutions, universities, competence centres and companies. The partnership supports coordination and the development and dissemination of common sectoral outputs, while

training is delivered by the relevant national and sectoral providers. In semiconductors, the European Chips Skills Academy seeks to connect fragmented national initiatives through a common framework, although provision remains strongly concentrated in universities and research centres. Automotive combines higher education institutions, VET providers and company-based academies.

This diversity is particularly visible in sectors where training requires specialised infrastructure. Semiconductor training is often concentrated in locations where cleanrooms, laboratories and research facilities are available. Additive manufacturing provision depends on access to specialised equipment and training centres capable of reproducing relevant industrial processes. Clean-tech provision, by contrast, has been scaled in some cases through combinations of company-led initiatives, university partnerships and cooperation with NGOs, including where training has been tailored to migrant workers through language and cultural induction. Chemicals are at an earlier stage, with training providers only beginning to be mobilised through pilots.

Box 17. Choosing delivery partners

Training provision is most effective when employers can work with accessible local VET institutions, universities or specialised training providers. These partnerships allow training content, schedules and delivery methods to be adapted to local labour-market needs and company constraints. They can also facilitate work-based learning and, where specialised infrastructure is required, the shared use of equipment, workshops or training facilities. Broader sectoral or national coordination can complement these local relationships by supporting consistency in learning outcomes and helping employers understand how different training offers relate to one another.

Sectoral platforms and “skills hubs” can support this coordination by bringing together information on training providers, available courses, learning outcomes and certification routes. Their usefulness depends on the quality and regular updating of the information, as well as their integration into existing systems. For larger companies operating across several countries, these tools can reduce the time and effort required to identify and compare suitable provision. For SMEs, they are most useful when the information is simple, visible and linked to practical and locally accessible training opportunities.

The company survey provides a practical perspective on how employers use training provision. Most respondents report using some form of training, and many combine internal and external approaches. **Mixed provision is particularly common among large companies, with around four out of five of them using both internal and external training.** SMEs also combine the two, although they are more likely to rely exclusively on either internal or external provision, depending on the nature of the training, available resources and sectoral requirements.

Box 18. Work-based learning: from informal workplace learning to apprenticeships

Work-based learning covers a continuum ranging from informal learning embedded in day-to-day work – such as direct instruction, peer support, mentoring and onboarding – to structured workplace training, apprenticeships and dual VET. These forms differ in their degree of organisation, assessment and certification, but all connect skills development closely to occupational practice.

The company survey highlights the importance of distinguishing between informal and formal forms of workplace learning. On-the-job training is the most widely used training format, particularly among larger companies, whereas **apprenticeships and other formal work-based learning programmes are used by only around one out of five of respondents**. Widespread workplace learning should therefore not be interpreted as equally broad participation in formal apprenticeship or dual-training systems.

Employers value apprenticeships and dual VET because they combine formal learning with practical experience and support the development of job-ready competences. Participation nevertheless remains uneven. SMEs may face production pressures, limited capacity to host or supervise learners, a lack of replacement staff and complex administrative requirements. Existing frameworks may also be difficult to access for adults, workers recruited from third countries or people moving from declining or restructuring sectors. More flexible arrangements, proportionate administrative requirements and support for workplace trainers can help broaden participation while preserving the quality of learning outcomes.

External training providers are also widely used, followed by self-guided or online learning, classroom-based training and professional certifications. National consultations show a similar reliance on external provision, particularly where companies require specialised or accredited training.

Sectoral stakeholders also highlight the need for **delivery models that can be adapted to different company contexts**. In construction, EU-aligned curricula on sustainability and digitalisation have been translated and adapted to national contexts, helping to combine coherence with local relevance. In retail and tourism, delivery models tend to be broader and more flexible, using micro-learning platforms, employer-led training and public VET participation to accommodate SMEs that cannot release staff for long periods. In traditional industries such as TCLF, provision remains anchored in regional VET centres and industry clusters, supported in some cases by European-level virtual campuses acting as skills hubs.

Delivery capacity remains a recurring concern. National consultations refer to **shortages of qualified trainers, outdated infrastructure and limited access to appropriate equipment** as constraints on the implementation of updated training provision. These issues are particularly relevant in technical sectors, where new equipment, digital tools or specialised facilities may be needed for training to reflect workplace conditions. **Private providers can sometimes respond more quickly than public provision, but cost may limit accessibility, especially for SMEs.**

Territorial access also matters. **Training provision is often stronger in industrial clusters, urban centres or regions with established provider networks.** Employers in some national contexts report that companies outside major urban centres face more limited access to suitable provision, particularly where training requires specialised infrastructure or where minimum participant thresholds make courses difficult to organise in low-density areas. This is relevant for sectors such as construction, manufacturing, tourism and semiconductors, where demand for training may be geographically uneven.

The company survey reinforces the importance of accessible delivery. Open responses refer to the need for **practical, sector-specific training that is compatible with working schedules, as well as stronger cooperation with VET centres, universities and training providers.** These arrangements are particularly important for SMEs, which often depend on accessible external provision to avoid disrupting day-to-day operations.

Training provision therefore remains highly diverse, with formal education, adult learning, company-based training and private provision operating alongside each other. **Employers value this diversity where it gives them access to relevant and flexible options.** Difficulties arise when provision is too distant from workplace needs, too slow to update, too costly to access or too difficult for smaller companies to navigate. The evidence points to the importance of delivery models that combine practical relevance, accessibility and sufficient structure to maintain trust in learning outcomes.

Access Arrangements and Individual Training Opportunities

Access to training provision is shaped not only by the availability of courses, but also by the arrangements that determine whether workers and companies can use them. National consultations show that many Member States have introduced rights, entitlements or support mechanisms intended to motivate and widen individuals' participation in lifelong learning, including rights like training leaves, and personal-driven mechanisms like individual learning accounts or vouchers, and a wide variety of publicly funded adult learning offers. **These instruments are designed to motivate and support** access over the life course, but **employers often argue that their effectiveness** depends on how far they remain connected to labour-market needs and company realities.

Across the national evidence, **arrangements supporting individuals' access to training are a growing element of lifelong learning policy**, which is gaining traction in policy debates and social dialogue. Countries such as France, Denmark, Portugal, Belgium and Spain **have different mechanisms supporting access to training, including training-hour entitlements, leave arrangements and other forms of support.** In several cases, these arrangements can be accumulated over time to be used to access approved training courses. The underlying policy objective is to make training more accessible for individuals, including those who may not otherwise participate in adult learning, need to change occupation or sector, or do not have access to training in their companies.

At the same time, **employer organisations express caution where individual entitlements are weakly linked to labour-market demands.** The concern is not with individual access as

such, but with the risk that publicly supported training choices may not respond to actual shortages, sectoral needs or company priorities. Participation in training disconnected from production needs does not contribute to reduce skills shortages and mismatches, nor to increase productivity, growth and jobs. This concern is reported in relation to broad individual learning schemes, where eligible training is not sufficiently aligned with identified skills needs. Some countries have sought to address this by limiting eligible courses to labour-market-oriented catalogues, agreed with employers, or by combining individual access with employer-led or sectoral training routes. Another concern that employers have is that the people most likely to take up individualised opportunities are those that are already well skilled and adaptable, while others miss out.

Box 19. Education and training leave and workers' right to training

In France, the right to training was monetised through the *Compte Personnel de Formation*, allowing workers to use an individual entitlement to enrol in training included in an approved catalogue. This model inspired the EU Recommendation on Individual Learning Accounts. Following the recommendation and a European Commission's Mutual Learning Programme, several countries are considering or testing individual learning account-type mechanisms. For example, Cyprus has tested ILA-type approaches for specific groups with ESF+ support, while other countries have developed more limited voucher-based schemes. Individual accounts or vouchers have been established in countries where companies enjoy a similar mechanism, that allow them to receive funding support for the training of their choice.

While individual accounts and voucher systems are not controversial for employers in countries, like France, where they are well established, employers from other countries are more reluctant to these kinds of mechanisms, particularly if training in companies is not supported.

Employers' organisations identify two main points of caution. The first concerns financial sustainability where entitlements are broadly generalised. The second concerns labour-market relevance where individual choices are not sufficiently linked to skills shortages or employer demand.

Training leave arrangements raise some related issues. First, the impact on the company operations. When leave is extended or paid, the agreement of employers is often required, to balance workers' access to training with operational constraints. Spain's *Permiso Individual de Formación*⁴⁵, is an example. These longer leaves are reported as being used mainly for HE and require employers' agreement. A second issue is the compensation of working hours. In Austria's former education leave was discontinued for budgetary reasons and is being replaced by other instruments covering labour costs during leave.

The sectoral evidence adds a more operational perspective to these access arrangements. In retail and tourism, where SMEs account for a large share of employment, employers report that

⁴⁵ For more detail visit: [PIF](#)

even when training opportunities are available, **companies may struggle to release workers or provide backfilling**. In these sectors, access to training depends less on the formal existence of provision and more on whether learning can be organised around working time, seasonal activity and limited staff availability. **Shorter and more flexible formats are therefore viewed as especially relevant for SME-dominated ecosystems**. These access constraints also affect apprenticeships and other structured forms of work-based learning, particularly for SMEs and adults who need to reconcile longer pathways with employment and family responsibilities.

The company survey is consistent with these findings. Employers' open responses point to the need for training support that is easier to access, clearer to navigate and more compatible with working schedules. **Several companies call for simplified procedures, clearer information on available schemes and training offers that are more closely tailored to sectoral needs**. Administrative complexity and delays in approval or reimbursement are also identified as factors discouraging the use of available support, particularly among SMEs.

A further issue concerns the balance between individual choice and employer involvement. Access arrangements are more likely to support workforce development where workers can participate in training without disconnecting provision from business needs. **Where individual rights exist, employer organisations tend to favour models in which they are complemented by mechanisms that ensure relevance, such as approved labour-market-oriented catalogues, employer agreement for longer leave periods, sectoral guidance or links with recognised occupational needs**.

These arrangements are particularly sensitive for smaller companies. **Where a worker's absence has an immediate effect on production or service delivery, the practical design of training leave, vouchers or learning accounts becomes central**. Short courses, modular provision, wage compensation during training and clear information points can make participation more feasible. Without such features, individual rights may exist formally but remain difficult to use in the companies and sectors where training needs are strongest.

Flexible, Modular, Digital and Innovative Provision

Flexible, modular and digital provision is increasingly important in making training accessible to workers and usable for employers. National consultations show that **modularisation, blended learning and workplace-integrated delivery are being used to reduce disruption** to working time and make training more closely aligned with job requirements. The same trend appears in the sectoral analysis, where several ecosystems are testing shorter, more practical and digitally supported formats to respond to changing skills needs.

This shift is particularly relevant for adult learning. **Shorter formats are easier to organise around work schedules and can be more rapidly adapted** when new technologies or regulatory requirements change the content of occupations. Employers consulted at national level underline that modular provision is most useful when it allows workers to acquire specific skills without having to enter a long qualification pathway from the start. In some systems, these shorter learning units can later be combined into broader pathways, although the

effectiveness of this approach depends on whether the modules are clearly structured and recognised.

Digital and blended delivery are also gaining ground. National stakeholders refer to online modules, self-paced asynchronous learning, workplace-integrated formats and practical sessions as ways to widen access, particularly for adult learners and workers with limited time. These approaches can reduce barriers linked to geography and availability, but they do not replace the need for practical or face-to-face components where skills require demonstration, equipment use or safety-critical assessment.

At sectoral level, **several initiatives are testing digital, immersive and blended approaches that reflect their particular learning environments.** These examples, summarised in Box 20, show how technology can support experiential learning, combine online and practical components, and widen access where equipment or specialised facilities are limited.

Box 20. Digital and immersive training formats in sectoral initiatives

Several sectoral initiatives are experimenting with digital tools to bring training closer to workplace conditions. TCLF stakeholders refer to virtual and augmented reality simulations for shop-floor learning, automotive hubs combine online platforms with in-person workshops, and additive manufacturing initiatives are testing gamified and mobile tools for technical learning. These formats are not presented as substitutes for practical training. Their value lies in making learning more accessible and repeatable and in preparing learners for practical work, particularly where access to equipment, trainers or specialised facilities is limited.

The company survey confirms that digital provision is already part of company training practice. **Self-guided learning or online training** was selected by **over half of respondents**, while **classroom-based training** was selected by a similar number. This suggests that online and in-person formats are often used alongside and complementing each other rather than as competing models. Open responses also refer to learning platforms, recorded sessions, digital training portals, webinars and AI-supported training.

AI is present, but not yet mainstream. In the company survey, **a relatively small number of companies reported using AI to support training provision.** The open responses suggest different uses: some companies mention AI-powered training materials, AI agents for technical training, AI-supported learning guidance and supervision or AI-generated training videos. These practices are still uneven and appear more developed where companies already have digital learning infrastructure or internal capacity to experiment with new tools.

Box 21. AI literacy as an emerging training need

As AI becomes more widely used in the workplace, AI literacy is also becoming increasingly relevant for workforce upskilling and reskilling. The European Commission has developed a repository of AI literacy practices⁴⁶ to support learning and exchange among training

⁴⁶ For more detail visit: [AI talent, skills and literacy | Shaping Europe's digital future](#)

providers and the wider public. At sectoral level, targeted approaches to AI literacy training could also be developed through relevant skills partnerships, including Pact for Skills initiatives, helping to adapt provision to the needs of particular sectors and occupations.

The use of digital and blended formats also varies by company size. Larger companies are more likely to have learning platforms, structured internal academies or digital HR systems that support blended provision. SMEs generally require simpler and more accessible formats involving limited administrative preparation, such as short online modules that can be combined with practical sessions.

The **national evidence also points to limits in scaling pedagogical innovation.** Time constraints, operational pressure and limited digital skills among trainers or learners can reduce engagement with modular and blended formats. Some adults, particularly low-skilled workers or workers with limited motivation to train, are less likely to participate unless training is clearly relevant to their job and supported by the employer.

This is where the link with delivery capacity becomes important. **Digital provision can widen access, but only where the underlying content is relevant, trainers are prepared, and companies can organise and motivate participation.** In sectors requiring specialised equipment or hands-on demonstration, digital tools may support theory, simulation or repetition, while practical learning still heavily depends on access to workshops, laboratories, equipped training centres and real workplace environments.

Flexible, modular and digital provision therefore sits between accessibility and quality. Employers value formats that are short enough to fit working realities and targeted enough to respond to concrete skills needs. At the same time, these formats need sufficient structure to support progression, credibility and trust in learning outcomes. **This balance is particularly important where training is intended to support occupational mobility, sectoral transitions or the accumulation of learning over time.**

Certification, Micro-credentials and Recognition of Learning

Certification and recognition determine whether education and training outcomes can be trusted, compared and used beyond the immediate learning setting. Across the national consultations, sectoral evidence and company survey, employers value training that is closely linked to workplace needs, but they also underline that learning outcomes need to be transparent and credible if they are to support progression, mobility or recruitment decisions. This is especially relevant where **training is delivered outside formal education systems, through company-based learning, private providers, sectoral bodies or short modular provision.**

National evidence shows that micro-credentials and recognition of prior learning are becoming more prominent in European upskilling and reskilling strategies.

Micro-credentials are increasingly used to recognise shorter learning units, particularly in areas where rapid technological change can outpace traditional curriculum reform. Transparency of micro-credentials is often provided through references to the National and European Qualification Framework levels, and stackability can serve as motivation and facilitate broader learning pathways – although AMU courses are not, as a general rule, designed to be

stackable towards full qualifications, they can facilitate progression and support the recognition of prior learning, but do not in themselves provide a direct or automatic pathway to obtaining a full vocational qualification. Moreover, micro-credentials can be a useful tool where they address concrete labour-market needs and, thus, should remain flexible and employer-relevant rather than becoming an objective in themselves, for instance, to just build broader learning pathways. In some systems, such as Flanders, higher education micro-credentials are ECTS-based, quality-assured and aligned with the principles of the 2022 EU Recommendation on micro-credentials.

The national consultations nevertheless point to uneven implementation. Micro-credentials often remain fragmented, with **varying links to national qualification frameworks or European-level tools such as the EQF, ESCO and Europass**. Employers report that transparency and portability can be limited, particularly where credentials are issued by different providers, sectors or companies and their learning outcomes, level or quality assurance are not sufficiently clear. At the same time, some employer organisations caution that systematic referencing to qualification frameworks may reduce the flexibility and speed with which short-form training can be updated. Their **added value** therefore depends on whether they are transparent, quality-assured, relevant to labour-market needs and understood and used by employers, rather than on the creation of additional certificates as an end in itself.

Recognition of prior learning is another route for making skills visible, especially where they have been acquired through work experience, informal learning or previous professional practice rather than through a formal qualification. Many countries formally provide mechanisms to validate these skills, but employers report that such mechanisms are not always widely used, sufficiently visible or easy to navigate. Where recognition of prior learning is difficult to access or poorly understood, skills acquired in employment may remain invisible, limiting opportunities for progression, retraining or access to formal qualifications.

Several national consultations point to more pragmatic approaches. Employers in Denmark and Switzerland describe pathways where workers can access complementary training or shortened vocational routes to reach national standards without full requalification. These approaches are particularly relevant in vocational and technical occupations, where the objective is often to validate existing competences and close specific gaps rather than require workers to restart a full qualification pathway.

Box 22. Modular certification and recognition of prior learning

As mentioned in the previous section, the Danish AMU system is based on short, nationally recognised modules that can be combined into broader qualifications. It also integrates RPL, allowing individuals to validate existing skills and shorten training pathways. This model supports flexible progression and enhances the portability and accumulation of skills.

Some sectors have developed certification arrangements that connect sector-specific learning outcomes with recognised frameworks and quality-assurance requirements. Building on the modular pathways described in Section [4.3. Development of Training Responses](#), the International Additive Manufacturing Qualification System links competence units to defined occupational requirements and European qualification levels. Common

assessment arrangements and a network of authorised training bodies help ensure that credentials are based on demonstrated learning outcomes and are understood consistently by employers.

Welding provides a related precedent in which internationally agreed occupational standards, assessment requirements and provider quality assurance support the labour-market recognition of sectoral qualifications across countries. Both examples suggest that sectoral credentials are more likely to achieve wider recognition where learning outcomes are clearly specified, assessment is based on demonstrated competence, providers meet consistent quality requirements and certificates are connected to recognised qualification frameworks or international standards.

Other sectoral initiatives use **digital badges, certificates of attendance or micro-credentials to recognise participation in shorter training programmes**. Automotive and semiconductor stakeholders are piloting badge-based recognition systems for short modules, while retail and tourism initiatives are linking courses to EQF levels and relevant ESCO skills or occupational profiles to improve transparency and comparability. These tools can help employers identify the specific skills acquired through targeted training, but their value varies considerably. Portability and employer trust may remain limited where learning outcomes are unclear, assessment or provider quality assurance is absent, credentials are not connected to recognised systems, or certificates merely confirm attendance rather than the acquisition of competences.

Box 23. The European certification paradox

Although several industries have common skills requirements, strongly rely in international standards (e.g. ISO in welding, aviation, chemicals) and have developed international training content, national qualifications systems need to replicate efforts to include these skills in their curricula. This creates a structural tension: while employers can rapidly identify emerging skills needs and adapt training content at company or sector level, embedding these developments into national VET or university curricula is uneven and often requires lengthy procedures.

The company survey adds a more practical reading of certification. **Professional certifications, micro-credentials or partial qualifications** were selected by half of **respondents** as a type of training used most often. Open responses reveal a broad range of practices. Some companies rely on accredited training providers, sectoral certification schemes, national qualification frameworks or recognised external certification bodies, while others issue internal certificates of attendance or completion. Certification is mentioned most frequently in relation to safety, compliance, technical and regulated training. Examples include training and qualifications linked to ISO standards; certification by TÜV organisations (*Technischer Überwachungsverein*, translated as Technical Inspection Association); GxP requirements, a collective term for regulated 'Good Practice' standards, including Good Manufacturing Practice (GMP); work-at-height training; remote-pilot licences; and training related to information security, safety and organisational resilience.

A recurring distinction appears between external and internal learning. **Where education and training are provided by external bodies, universities, VET centres or accredited**

providers, certification is more likely to be formalised. Internal company training is often recorded, validated by managers or documented through internal procedures, but it is **less often formally certified or portable outside the company**. This does not make internal learning less valuable for performance. It does, however, make it less visible and limits mobility in the wider labour market.

Several survey responses reflect this distinction directly. Some respondents state that internal courses are not certified, while external upskilling opportunities are selected partly because they lead to recognised certificates. Others describe **mixed arrangements, where mandatory or regulated training is externally certified, while role-specific internal training remains company-based**. This pattern is consistent with the sectoral evidence: formal certification is strongest where regulation, safety, sectoral standards or national frameworks require it; company-based learning is more unevenly recognised.

Recognition of foreign qualifications adds another layer. National consultations note that recognition within regulated professions is shaped by EU rules, **including Directive 2005/36/EC on the recognition of professional qualifications**. Employers report that these systems can work more clearly for regulated occupations, although procedures may still take time. Recognition of qualifications from third countries, especially in less regulated occupations, remains more heterogeneous. ENIC-NARIC networks have improved processing in some contexts, but employers continue to report lengthy procedures and uncertainty, particularly where skills have been acquired outside formal European qualification systems.

Recognition is also linked to recruitment and labour mobility. **In countries and sectors relying on migrant workers or internationally trained professionals**, employers underline that skills supply depends not only on admission procedures, but also on **whether existing qualifications and experience can be used in practice**. Some stakeholders refer to more pragmatic approaches in Denmark and Switzerland, where complementary training or shortened vocational pathways can help workers reach national standards without full requalification. These approaches are especially relevant in vocational and technical occupations, where the aim is often to close specific gaps rather than restart a whole qualification pathway.

The **Skills Portability Initiative** addresses several of these issues. Under the proposed Skills Portability Act, qualifications included in national qualifications frameworks would be supported by standardised digital attestations, stronger referencing to the EQF, more complete and interconnected national qualification information and an enhanced qualification comparison tool through Europass. The proposal also provides that, to the extent possible, Member States should include micro-credentials in their national qualification frameworks. Together with measures to simplify and accelerate recognition procedures, these developments could make it easier for employers to verify, compare and use qualifications obtained in other Member States. The proposal does not create further recognition mechanism for short courses, sectoral certificates or company-based learning that fall outside national qualification frameworks. The cross-border usability of these forms of learning therefore continues to depend on their transparency, quality assurance and, where relevant, their reference to European and national qualifications frameworks.

Certification, micro-credentials and recognition of learning therefore sit at the intersection between flexibility and trust. **Short modules, company-based learning and practical upskilling can respond quickly to evolving skills needs.** Formal recognition, quality assurance and portability provide the confidence needed for wider labour-market use. The evidence shows that both dimensions are developing, but not always at the same pace.

Quality Assurance and Governance of Provision

Quality assurance and governance are essential to maintain trust in training provision, particularly as systems become more diverse and flexible. Employers value modular, blended and workplace-based training, but these formats need **clear standards if learning outcomes are to be credible** for companies, workers and training providers.

National consultations show that quality assurance is closely linked to **national qualification systems, provider accreditation, assessment standards and the role of sectoral or tripartite bodies.** These mechanisms help ensure that training provision remains reliable and that certificates or qualifications have value beyond a single provider or company context.

Company responses nevertheless suggest that quality assurance should focus **not only on processes and formal requirements, but also on the outcomes achieved.** Employers call for training and support schemes to place greater emphasis on demonstrated skills gains, employability, productivity and practical relevance, rather than relying predominantly on participant volumes or rigid input requirements.

Employer involvement is particularly important. Where employers participate in defining occupational standards, validating training content or monitoring provision, training is more likely to reflect workplace requirements. This is visible in systems with strong apprenticeship systems, sectoral training bodies or funds, and social-partner involvement in governance bodies.

Sectoral evidence further suggests that quality assurance works best when responsibilities are clearly allocated between providers, assessment bodies, sectoral organisations and public authorities. Common learning outcomes and assessment requirements can support consistency across providers, while periodic employer input can help ensure that quality standards remain relevant as technologies and occupational requirements evolve.

At the same time, governance arrangements can also create complexity. Particularly in decentralised or highly regulated systems, **overlapping responsibilities, rigid catalogues of approved provision or lengthy accreditation procedures** can make training harder to update and more difficult for companies to navigate. This is particularly relevant for SMEs, which often depend on clear information, trusted providers and simple quality assurance routes.

Quality assurance therefore needs to support **both credibility and responsiveness.** Training provision must be sufficiently structured to generate trust, but not so rigid that providers and employers cannot adapt content to new skills needs. **Employer involvement, transparent provider standards and regular updating mechanisms** are central to maintaining that balance.

4.5. Cross-cutting Aspects

This section distils the transversal features that shape how sectoral skills initiatives and national efforts translate into employer-relevant outcomes across Europe. Looking beyond individual projects, four systemic dimensions recur across ecosystems shaping how skills systems function in practice: (i) Governance and Stakeholder Alignment; (ii) Funding Schemes and Financial Sustainability; (iii) Alignment and Coherence of Regulatory Frameworks; and (iv) Monitoring, Evaluation and Evidence Use. These aspects cut across policy domains and levels of governance, influencing the effectiveness, coherence and implementation of measures aimed at improving access to skills.

Governance and Stakeholder Alignment

Governance has come up as a key question on access to skills, especially the manner in which employers and social partners are brought together into the skills dialogue, along with national authorities, sectoral representatives, training providers and EU bodies.

When analysing the **sectoral actions at EU level**, there is some scepticism from national stakeholders regarding the added value of skills initiatives at this level – nonetheless, the limitations to EU action needs to be understood in terms of the Principle of Subsidiarity⁴⁷ to Member States and of the autonomy and particular characteristics of each national labour market. EU action can be beneficial when it can complement, support or reinforce national efforts, for example in terms of resources and mutual learning support. While a uniform approach across all Member States risks overlooking contextual and structural diversity – **one size does not fit all** –, EU action can provide added value in some cases. This could be potentially the case, for example, of sectors and occupations strongly influenced across countries by technologies, particularly if they have not been developed in the EU, in sectors dominated by multinational operating under common standards and organisational arrangements or relying on international certificates, in sectors under restructuring across countries, or in transitions driven by EU political action (like clean energy and green transitions). In these contexts, skills intelligence work carried out by EU-level sectoral initiatives, could avoid duplication of efforts and support further development and adaptations at national level. The problem here is the ineffective communication channels to convey EU-level findings and outputs at the national level and the reform of procedures to facilitate national uptake without needing to restart the work from zero. Some national stakeholders, however, highlight that these EU initiatives are still to prove their added value through impact assessments.

At EU-sectoral level, effective governance is the hinge on which sectoral strategies become implementable training and recognised credentials. **Where employer organisations, social partners, education providers and public authorities collaborate through stable**

⁴⁷ For more detail visit: [The principle of subsidiarity | Fact Sheets on the European Union | European Parliament](#)

structures, training updates are faster and closer to business needs. However, governance models differ from one alliance to another.

For instance, in manufacturing ecosystems with strong coordination traditions – such as additive manufacturing, where an umbrella federation has internationally convened stakeholders – outcomes are managed coherently, enabling comparison and implementation across borders, in contrast to other initiatives that have been more reliant on projects with specific funding. On another hand, retail and tourism show how broad employer representation, together with VET/HE partners, can translate qualification frameworks into modular offers for SMEs; however, governance remains lighter and more project-dependent, which slows national referencing. Finally, the chemicals sector can show the complexity of governing diverse sub-sectors under a single umbrella: progress depends on methodical engagement with national systems and regulators.

Box 24. What “good governance” looks like

For employers, the most useful arrangements provide: a single contact/coordination point; effective participation in decision-making at different stages (from skills intelligence to education training design and delivery); time-bound procedures to update curricula; explicit roles for social partners; and EU-national level coordination.

At national level, the engagement of employers in education and training is a shared objective across countries. Employers are involved both **collectively and individually**. Collectively, they participate in the governance of education and training systems through advisory committees, supervisory bodies and tripartite or bipartite boards, at sectoral, cross-sectoral, national and sometimes EU level. Individually, beyond organising and facilitating the training of their own employees, companies host apprentices, provide information and expertise, and often cooperate directly with education and training providers.

Across countries, employers are involved at **different stages of the education and training policies cycle**. In skills intelligence, they may provide data through company surveys and participate in sectoral committees or other consultation mechanisms; however, they tend to have a limited role in decisions to translate intelligence into specific priorities and actions. In the design of training responses, they often contribute to the development and updating of occupational profiles, qualifications and training content; however, their capacity to influence issues like the timing for approval or the specific programmes design and eligibility rules is, again, limited. In delivery, their role is particularly visible in apprenticeships, work-based learning and employee training; however, they are far away from the allocation of funds and more general provision of lifelong learning programmes, VET and HE offerings. These decisions tend to be taken by ministries, agencies or public employment services with limited consultation. Finally, while employers often participate in overall governance boards in charge of monitoring and evaluating the education and training policies, they frequently report to feel informed rather than consulted.

The degree of participation and influence varies significantly across countries, depending both on industrial relations and traditions, as well as on the architecture of education and training systems. The most **direct business involvement** is generally found in apprenticeships and in

employee training, while the strongest decision-making role is typically associated with **bipartite bodies**, often rooted in collective bargaining, though in some cases also embedded in institutional arrangements. There are also bipartite bodies established by the Government, as part of the institutional architecture, like the *Opérateurs de Compétences* (OPCOs)⁴⁸ in France, which manage part of the training levies collected, assisted by the government. **Tripartite governance bodies** are also relatively common in agencies, training institutions and public employment services. Some employers reported a satisfactory level of participation and influence, like in the case of the French agency *France Compétences*.

However, lower levels of satisfaction tend to be reported where these bodies are not perceived as genuinely tripartite (e.g. when social partners have lower weight and representation than public authorities) or where employers' participation is primarily consultative – these concerns were reported in countries like the Czechia, Portugal and Spain. Finally, in many other cases, consultation takes place through more **informal or advisory mechanisms**, with no real decision-making capacity. In best examples, employers report that an honest consultation takes place, and their views are taken into consideration, while in other cases the perception is of an information exercise or even just pure formality.

Overall, evidence suggests that while employers (and trade unions) are formally involved in most systems, the degree of influence varies significantly across countries. Governance arrangements in which employers have a clear, structured and decision-oriented role tend to generate higher trust, employer's commitment and participation, resulting in swifter and more responsive policies and funding priorities.

Finally, regarding company-level feedback, the **role of employers is still limited, especially from SMEs and micro-companies**, which are hindered by operational, time and resource constraints, as well as by the difficulty to manage relationships with multiple stakeholders, particularly training providers. In this sense, the need for flexible support mechanisms that reflect companies' capacity to organise and provide training is crucial for them, thus requiring stronger cooperation between employers and training providers, and alternative options, like easier access to foreign talent and better information and awareness of available programmes. In such scenarios, EU and sectoral initiatives can have a supportive role to foster SMEs and micro-companies access to skills.

Funding Schemes and Financial Sustainability

The concept of financial sustainability arises primarily at sectoral level regarding the access to EU funding. Practically all EU-level alliances and initiatives analysed are catalysed by EU funds. This has enabled rapid experimentation, but it also exposes a continuity risk when project cycles end. Employers working at EU-sectoral level emphasise the need for predictable, multi-annual arrangements to maintain platforms, update content and assure quality.

⁴⁸ For more detail visit: [Trouver mon OPCO - France compétences](#)

In terms of financial sustainability, the clean-tech InnoEnergy initiative stands out as an example of self-sufficiency. It is important to note that this initiative is not a Blueprint, but the first Knowledge and Innovation Community (KIT) launched by the European Institute of Innovation and Technology (EIT). In 2025, following a Memorandum of Cooperation, InnoEnergy became a financially sustainable member of the EIT Community, continuing to operate with greater autonomy while aligning with the EIT model. This autonomy was achieved by InnoEnergy thanks to a business model approach towards education, by which training offer and certification is sold as part of the initiative's revenue. This approach, however, is not feasible for all types of initiatives nor contexts – mainly since training is regarded as a right rather than a business in the EU and most countries provide plenty of free options. However, this example can help identify options for value generation, such as other certification services, support for companies, or development tailored to special needs that can get co-financed.

Traditional sectors such as TCLF and construction have used Erasmus+ Blueprint funding to develop competence frameworks, training modules and digital platforms. In the TCLF ecosystem, additional support has also been provided through the Single Market Programme for TCLF SkillBridge. A key challenge is ensuring sufficient resources for the continued maintenance, translation and updating of these outputs, as well as for trainer development, once initial project funding ends. Service ecosystems such as retail and tourism, which are largely composed of SMEs, face different constraints and may benefit from accessible cost-sharing mechanisms, vouchers or levy-funded support to offset release time and backfilling costs. High-tech ecosystems, including semiconductors and additive manufacturing, face more capital-intensive training requirements due to the need for specialised facilities and equipment, which can constrain the expansion of technician-level VET and adult reskilling without stable co-investment. Clean tech illustrates a different model, where public-interest objectives can be combined with paid services for companies, allowing some training activities to become partially self-financing. Overall, the evidence suggests that sustainable funding models need to reflect the characteristics of each sector and the type of training provision involved.

Box 25. From project to platform

The initiatives that outlive their initial grant typically diversify revenues (tailored skilling packages, employer memberships, fee-for-service assessments) and secure public anchoring (national or regional support for QA and referencing). A purely commercial catalogue or a purely grant-funded portal rarely remains current or trusted.

However, funding concerns especially national stakeholders: most of them identify funding arrangements as one of the most decisive cross-cutting factors shaping access to skills. Thus, whereas at EU level the question is more on how and whether to grant sustainability and continuation to specific initiatives, at national level the issue relates more to the management and organisation of larger funding schemes and the combination of different sources to ensure individuals' skills development and employers' access to skills. While initial education and training are predominantly financed through general taxation and often provided free of charge, funding models for adult learning are more diverse, combining public resources, employer contributions and levies and individual investment, alongside EU financial support.

However, across national stakeholders was pointed out that funding mechanisms, state-aid interpretations and levy rules can unintentionally hinder efforts of training provision initiatives if not well framed.

Thus, funding is a sensitive area in which some stakeholders emphasise that **there is no one-size-fits-all model**. While most countries formally allocate substantial public resources to education and training, the effectiveness of funding models depends not only in the overall investment, but also on how resources are collected, governed, distributed and used in practice.

A. Training Levies and Training Funds

A significant number of Member States have established **training levies or compulsory employer contributions** – typically calculated as a share of payroll – earmarked for training. These schemes exist, in different forms, in countries such as France, Spain, Ireland, Portugal, Denmark, Czechia, Hungary, Greece and Cyprus, while other countries do not rely on levy-based systems, such as Germany, or have discontinued specific levy-related arrangements, as reported in Finland in relation to employer-funded training leave mechanisms.

Money collected through levies often feed training funds used to finance a range of programmes, including apprenticeships, training accounts or vouchers, support for in-company training, continuous training, **upskilling and reskilling programmes, or paid training leave**. In some countries, employer contributions are agreed through collective agreements and managed by bipartite sectoral funds. In most cases, however, governments establish and collect the levies, and the funds are managed by public authorities or dedicated agencies, such as France Compétences⁴⁹. Their governance arrangements often include tripartite or bipartite bodies, but in a number of countries employers and trade unions have limited decision-making capacity, or funds are managed by government in a way similar to any other public budget line.

Where levies are in place, employers generally report broad acceptance of the principle of collective financing for skills, provided that resources are effectively earmarked for training, funded programmes are clearly aligned with labour-market needs, and employers are actively involved in governance.

On the other side, in countries where training levies don't exist or have a weaker implementation, stakeholders clearly reject the idea to introduce them. They see the mechanism as an additional and unnecessary labour cost, that can undermine job creation and competitiveness and is not suitable to their national traditions and institutional arrangements.

At the same time, consultations have shown that there are recurring concerns regarding both the **amount and use of levy-based contributions**. Firstly, levies increase labour costs; secondly, in several countries, employers report that a substantial share of collected resources remains underutilised or is diverted towards broader public objectives beyond workers' training. In Czechia and Spain, for instance, employers refer to persistent surpluses and significant unused resources, accumulated over time. Similar concerns about unused funds are also reported in Ireland and Denmark. Some employers describe this as a paradox: while

⁴⁹ For more detail visit: [Accueil - France compétences](#)

companies contribute to training funds, skills shortages persist and adult learning participation remains below EU 60% target for adult participation in learning by 2030⁵⁰.

Another source of tension concerns the **scope of eligible expenditure**. In some countries, levy-funded resources are used to finance activities perceived as only indirectly linked to workforce development, such as general education programmes, broader active labour-market policies or large-scale programmes for the unemployed – generally focusing only on digital, green or mainstream skills, not adapted to the job needs. While employers generally acknowledge the social value of such policies, they also argue that their approach may dilute the original purpose of the funds and weaken companies' incentives to engage with training systems.

Financial continuity over the economic cycle is also identified as a concern. Since levy revenues fluctuate with employment and wage levels, resources may decline precisely when training needs increase, for example during economic downturns or restructuring phases. Some employers therefore underline that current funding models can be insufficiently counter cyclical.

In sum, training levies are seen as an acceptable funding model for countries with this tradition when moneys are effectively assigned to support training programmes aligned with companies' needs, and employers have decision capacity over the priority and use of funds.

Box 26. Sectoral Training Funds Through Collective Bargaining

In Germany, the textile and fashion sector has developed a training fund through collective agreements rather than a statutory levy. Companies covered by the agreement contribute to a sectoral fund managed by a bipartite body. The fund supports further training initiatives proposed by either employers or workers, subject to company agreement.

In Denmark, training funds linked to collective agreements allow social partners to directly define priorities, determine eligible training and compensate companies for wage costs during training. These arrangements are often cited as enabling a high degree of responsiveness to labour-market needs.

In Spain, employers and workers in the construction collective agreement decided to top-up the national statutory training levy and create a bipartite body to manage the funds. This is an example of interaction between collective bargaining and national Institutional arrangements, as the government was asked to collect jointly the national levy and the agreed additional contributions, and transfer the top-up to the bi-partite sectoral training foundation (Fundación Laboral de la Construcción).

B. Funding Support to Businesses and Individuals

Across countries, employers broadly accept their **responsibility for training their employees**. A clear majority of participants in the Company Survey reported continuous staff training as a response to skills needs. This is broadly consistent with other European evidence. According to

⁵⁰ For more detail visit: [European Pillar of Social Rights Action Plan - Employment, Social Affairs and Inclusion](#)

Eurostat's Continuing Vocational Training Survey (CVTS, 2020)⁵¹, 67.4% of EU enterprises with 10 or more employees provided some form of continuing vocational training in 2020. More recent evidence from Eurofound's European Working Conditions Survey (EWCS, 2024)⁵² also shows that around half of workers report having undergone training paid for or provided by their employer. In Germany, employers' organisations report that companies are highly committed to training their staff despite not generally expecting public financial support for workforce training. Direct employer responsibility is more evident in larger companies, which often organise and finance their own training activities. However, costs, time and internal capacity remain relevant constraints, especially for SMEs, sectors under strong competitive pressure, and businesses affected by digital, green or restructuring-related transitions.

A range of funding schemes exists to support businesses, with the aim of improving productivity, competitiveness and innovation capacity. Beyond general tax deductions for investment, countries with levy-based systems often allow companies to reduce or recover part of their contribution in order to compensate training costs or time not worked during training. In some Member States, companies may also be compensated for longer training leaves. Apprenticeships are financially supported in some systems, like the case of France or Ireland.

For individuals, financial support is channelled through free adult education and training provision, as well as through instruments such as **Individual Learning Accounts and training vouchers**. Schemes such as the French personal training accounts or the Finnish adult education allowance⁵³ have been described as effective tools to stimulate participation. At the same time, as mentioned earlier, employers express caution where these instruments are weakly connected to labour-market demand or require excessive budgets. Greater support is usually expressed for **mixed funding models**, where support for individual choices is complemented by instruments allowing companies to steer funded training aligned with their real needs, as in Denmark and Ireland, or by parallel schemes funding also employer-chosen training.

C. State Aid Rules and Regulatory Constraints on Training Investment

The potential conflict between state aid rules and incentives for training investment was explored in the consultations. While this does not emerge as a general constraint across all countries, several stakeholders identified challenges linked to the interpretation and application of state aid rules, particularly regarding the exclusion of certain types of training – such as mandatory training – from public support, as well as the impact of overall aid ceilings.

Unlike administrative complexity, which primarily affects access to existing schemes, state aid constraints operate at a more structural level, shaping both the volume and the types of training that can be supported.

Three main issues emerge from the evidence. First, the **public nature of training funds** and the extent to which their use to support companies is considered or not state aid. Second, the **interpretation of what constitutes “mandatory training”**, in a context of expanding

⁵¹ For more detail visit: [Continuing vocational training in enterprises in the EU | CEDEFOP](#)

⁵² For more detail visit: [European Working Conditions Survey \(2024\) | Eurofound](#)

⁵³ For more detail visit: [Applying for an adult education allowance - Employment Fund - Suomi.fi](#)

regulatory training obligations. Third, the impact of state aid ceilings on the scope for training investment.

Regarding the nature of training funds, **resources financed through statutory levies** are generally considered public. However, employers underline that limiting their use to support company-based training may undermine the logic of employer-funded systems. While companies are required to contribute to funds earmarked for training, in some cases they face restrictions when seeking to use these resources to compensate training costs. At the same time, national approaches vary. In France, part of the funds is channelled through Competence Operators (OPCOs), and support for apprenticeships and SMEs is not generally perceived as constrained by state aid rules. In Denmark, training funds established through collective agreements are not considered public aid at all, allowing for wage compensation and employer reimbursement without such constraints. In other cases, such as Spain, certain reimbursement mechanisms may be subject to state aid limits, particularly in relation to restructuring sectors or specific types of training.

The interpretation of “mandatory training” also gives rise to diverging approaches. In Portugal, the legal entitlement to a number of annual training hours seems to be considered as mandatory training for the purposes of state aid, meaning that companies cannot access support until this threshold is fulfilled. In other countries, similar entitlements do not appear to limit access to funding, suggesting that barriers may stem as much from national implementation as from EU rules themselves. At the same time, employers highlight that **training obligations are expanding across policy areas** – ranging from occupational safety to data protection, environmental compliance, cybersecurity or equality policies. While these objectives justify the need for training, stakeholders argue that the associated costs for companies should also be taken into account when designing support mechanisms.

State aid ceilings are identified as an additional constraint. Training support may compete with other forms of public aid – such as investment or energy-related support – within the same de minimis thresholds. This can reduce the available space for training investment, particularly for companies that rely on multiple support instruments. Evidence suggests that this issue may be more relevant for larger company groups, given the application of thresholds at group level, although its impact may vary across contexts.

Uncertainty in the interpretation and application of rules further acts as a deterrent. In several countries, companies report **limited clarity on the eligibility of specific training measures**, leading to risk-averse behaviour and, in some cases, underinvestment. Smaller companies, in particular, may lack the administrative or legal capacity to navigate these frameworks.

Overall, employers do not call for the removal of competition safeguards, but for greater coherence between state aid frameworks and EU skills objectives. Consultations converge on the view that current interpretations insufficiently reflect the central role of continuous training in competitiveness, resilience and the green and digital transitions. Clarifying the status of employer-funded training, increasing ceilings or introducing a clear exemption for skills investment, including on mandatory training, are seen as necessary steps to unlock existing resources and align regulatory frameworks with policy ambitions.

D. EU financial support

Across consultations, stakeholders refer to a wide range of **programmes supported by EU funding**, particularly through the Recovery and Resilience Facility, ESF+ and Erasmus+. These resources have been used, for example, to modernise systems, develop qualification frameworks, strengthen skills intelligence, recognise prior learning, and implement upskilling and reskilling programmes linked to digital and green transitions.

While some of these activities are intended to become permanent features of education and training systems, their long-term financial sustainability remains uncertain where they depend heavily on EU funding. Employers are generally indirect rather than direct beneficiaries, since EU resources are primarily channelled through public authorities and programmes. In some cases, employers' organisations have participated directly in EU-funded projects, particularly through Erasmus+, either independently or as part of national or EU-level consortia. These experiences are generally viewed positively. For instance, in Czechia, stakeholders highlighted the role of EU funds in supporting skills monitoring initiatives⁵⁴, while in Estonia EU support has contributed to the development of advanced skills intelligence systems such as OSKA. However, such schemes tend to be more effective for one-off projects than for sustaining long-term training systems, with some larger ESF+-co-funded lifelong learning programmes being a partial exception. For example, this is the case of public continuous training programmes-funded by the ESF+ in several European regions

When asked about the possibility of using EU funds, especially ESF+, more directly for company training, most stakeholders express concerns about the **complexity and administrative burden** involved. This complexity is particularly visible in decentralised systems such as Belgium, where the coexistence of regional schemes and EU-level instruments can create overlapping requirements and reduce accessibility for companies, especially SMEs. Beneficiaries often report the need for dedicated staff simply to manage application, implementation and reporting requirements. Thus, a general perception is that EU-funding tools are not fit-for-purpose to target directly businesses – not to mention that this direct support could raise again the question of state aid rules.

Overall, national consultations suggest that funding challenges are not primarily about insufficient resources, but about governance, incentives, certainty and trust. Similar patterns are observed in Poland, where stakeholders point to a skills system that is strongly shaped by programme-based funding cycles. This tends to prioritise short-term project delivery over continuity, making it more difficult to sustain training provision, retain capacity and build long-term alignment with labour-market needs. Where employers perceive that they have a meaningful role and that financial contributions are effectively earmarked, transparently managed and responsive to real skills needs, levy-based systems and individual support tools are seen as effective enablers of lifelong learning. Where these links are weak, such models risk becoming disconnected from labour-market needs and from the practical realities of skills development.

⁵⁴ For more detail visit: [Czechia: aligning job descriptions and VET curricula to labour market needs | CEDEFOP](#)

Finally, companies consistently highlighted the **need for simpler and more accessible support mechanisms**, with bureaucracy and administrative complexity emerging as the most recurrent concerns. Companies thus called for increased financial support and better information on available schemes. While awareness and uptake vary, several employers acknowledged the **positive influence of EU initiatives and funding programmes** in shaping their training strategies.

However, when asked about whether they have benefited from any financial or organisational support to provide training, administrative complexity and the lack of available support emerged as the most frequently cited reasons by companies for not benefiting from training support schemes, along with limited awareness, eligibility restrictions and the preference to fund training internally (mainly in large companies).

Overall, at company level, around 31% of respondents to this question reported using state aid or tax incentives to finance training, and the findings suggest that existing support mechanisms are often perceived as complex, insufficiently accessible, attractive or aligned with companies' needs. Most companies that answered the survey believe that there is **scope for simplifying training support mechanisms** at national level, for instance through more user-friendly and streamlined support instruments.

Coherence and Simplicity of Regulatory Frameworks

Across countries, a recurring issue concerns the **fragmentation of policy and governance responsibilities**, which can lead to limited coordination and duplication across education, training, lifelong learning and employment systems, at different levels of governance (regional, national and EU).

Most EU sectoral alliances explicitly reference EU priorities and initiatives – like the Green Deal, digital transition, industrial alliances or the Union of Skills. This alignment is necessary but not sufficient: these stakeholders demand more coherence and communication between EU-level frameworks and national qualification procedures.

Construction and TCLF show how EU-anchored content can be translated into national curricula when ministries, qualification authorities and social partners are engaged early. In services, retail and tourism have built qualification frameworks connected with EU taxonomies (e.g. ESCO, DigComp), smoothing future referencing. High-tech sectors align closely with flagship policies (e.g. Chips Act, net-zero objectives), but the pathways to integrate or reference EU-level micro-credentials into national systems are unclear. Clean tech adds a pragmatic dimension: rather than creating parallel structures, it builds on existing sectoral intelligence and channels skills solutions directly into industrial scaling plans, reducing duplication and accelerating impact.

At national level, education and **training policies and resources are often fragmented**, between HE, VET, general education, adult learning and continuous training. Sometimes, training policies and budgets are embedded within more diverse and disperse public policies (e.g. employment, labour market and industrial policies, digital and green agendas, etc.). In the

absence of an overarching strategy and coordination mechanisms, this may result in competing priorities, limited coherence, untransparent information on training opportunities, and a lack of clear hierarchy in the allocation of resources, ultimately duplicating efforts and limiting employers and workers participation.

Administrative complexity emerges as a major constraint on the effective use of training funding. Employers consistently underline that complexity in design, access and reporting requirements can be more decisive than the overall availability of resources. Even in countries with substantial funding, including EU co-funded programmes, these factors significantly reduce absorption rates and weaken incentives for companies – particularly SMEs – to engage in upskilling and reskilling.

A recurrent issue relates to **access procedures and eligibility conditions**. Employers in countries such as Portugal, Czechia and Greece report that application processes for publicly supported training are often lengthy, highly technical and insufficiently adapted to business realities. Requirements linked to documentation, pre-financing, ex ante approvals and detailed ex post reporting frequently exceed SMEs' administrative capacity. As a result, companies may refrain from applying or rely on external intermediaries, increasing costs and reducing the net benefit of participation.

Beyond bureaucracy, incentives can be misaligned with motivation and barriers affecting employers and workers' behaviour. Several stakeholders consulted stress that **financial support alone is insufficient** if it does not address the core problems faced by companies, notably the loss of working time. In countries such as Austria and Hungary, wage compensation mechanisms during training are perceived as more effective than partial reimbursement of training costs. Similarly, tax-based incentives – when easily applicable – tend to be more attractive and effective than grants and subsidies requiring complex application and slow disbursement procedures. Where mechanisms do not address sufficiently motivations and barriers, participation tends to remain concentrated among larger companies with stronger capacities and greater financial buffers.

Capacity constraints within public administrations further compound these challenges. Employers in Bulgaria and Greece point to limited administrative capacity at regional and local level, resulting in delays in programme implementation, inconsistent guidance and fragmented communication. This undermines trust in public schemes and reinforces reliance on informal or privately funded training solutions.

Overall, national and company-level evidence suggests that **administrative simplicity, coherence of regulatory frameworks and well-designed incentives** are decisive determinants of policy effectiveness. Where access is straightforward, funding predictable and incentives aligned with real costs, employers are more likely to engage in training. Conversely, where complexity prevails, even well-funded systems struggle to translate available resources into effective skills outcomes, particularly for SMEs and workers most in need of upskilling. Finally, it should be emphasised that **European sectoral initiatives must be better aligned with, and better coordinated and communicated to, national systems**.

Monitoring, Evaluation and Evidence Use

A recurring gap at all levels is the **absence of robust monitoring and evaluation systems** to assess learning effectiveness and labour-market impact. Many sectoral alliances measure outputs (modules produced, learners reached) but lack more systematic indicators of both outcomes and impact. Semiconductors are a relative outlier: regular surveys and annual updates provide a moving picture of occupational demand, and course portfolios are iteratively adjusted. Construction and TCLF have piloted feedback loops from VET providers and employers, yet comparable impact metrics across countries remain limited. Retail and tourism track pilot uptake and learner feedback, with plans to strengthen evaluation as micro-credentials mature. Clean tech relies heavily on external sectoral evidence (e.g. jobs reports from industry associations) and employer feedback to avoid duplicating research; this ensures relevance but leaves a gap on comparable, EU-wide outcomes.

Box 27. Evidence that a course “works”

Sectoral alliances value four datapoints above all: (1) time-to-competence in real roles; (2) pass/fail rates in practical assessments under realistic conditions; (3) labour-market insertion rate of participants in the training programme/initiative compared with non-participants; and (4) assessment of whether there has been a career improvement and whether it is aligned with the skills developed. Where alliances publish these indicators, employers’ uptake increases.

National level monitoring and evaluation has also been highlighted as crucial, especially when trying to **assess the impact of new programmes or skills initiatives**. This should be conducted by responsible authorities of each scope of action. Although there are good examples of proper impact evaluation of public policies, many stakeholders report that authorities tend to publish descriptive monitoring statistics (e.g. participants, budgets, etc.) or, in the best cases, data on job insertion after training. However, counterfactual evidence is rarely available regarding the impact of policies and programmes on reducing skills mismatches and shortages. Even less on the impact on productivity and potential growth. In the absence of robust impact evaluations, it continues to be difficult to improve and prioritise initiatives.

Overall, **outweighing these cross-cutting aspects**, across ecosystems the ingredients of durable success are clear: stable governance with employer voice; predictable and accessible co-funding; credible monitoring and evaluation of initiatives; and interoperable EU and national frameworks. Where these conditions converge, companies report shorter time-to-competence, easier multi-site deployment and higher confidence to invest in new technologies; where they are missing, even sophisticated course catalogues struggle to provide the skills needed to convert investments into measurable competitive gain.

5. Conclusions

This section presents the Study's conclusions in a structured and policy-oriented manner, drawing together the key insights emerging from the analyses and stakeholder engagement activities. Rather than reiterating the detailed findings presented in previous sections, **it focuses on the main insights, highlighting both strengths and areas for improvement of each issue, for which policy pointers will be proposed.**

Thus, conclusions reflect the main realisations emerging from the Study and the priority areas requiring attention. Each insight includes policy pointers – suggestions intended to inform future discussions or propose possible decision-making enablers. These policy pointers do not constitute prescriptive recommendations; rather, they identify potential lines of action that stakeholders at both EU and national levels may wish to consider. They are informed by the overall evidence gathered throughout the Study, as well as by the perspectives and contributions of stakeholders, experts and peer reviewers consulted during the research process.

5.1. Main barriers in Access to Skills Reported by Employers

The evidence gathered across national, sectoral and company levels show a high degree of convergence regarding the main barriers affecting employers' access to skills. Although their intensity and practical implications vary across countries, sectors and company sizes, employers consistently point to workforce shortages, persistent skills mismatches, insufficient participation in lifelong learning, and difficulties in attracting, retaining and mobilising available talent.

These barriers are closely interlinked, but they should not be conflated. Training can help reduce skills mismatches and support the better use of the existing workforce, but it cannot by itself resolve labour shortages driven by demographic or labour-supply constraints, nor attractiveness challenges linked to career prospects, housing, transport or other territorial factors. Demographic pressures reduce the supply of available workers; limited mobility prevents talent from moving to where it is most needed; low sectoral attractiveness hampers recruitment and retention in certain industries and occupations; and insufficient engagement in lifelong learning makes it more difficult for workers to adapt to evolving skills needs and to overcome mismatches. **Improving access to skills therefore requires a coordinated approach that both broadens the available labour pool and strengthens the development and effective utilisation of existing talent.**

Employers are already responding through wider recruitment, workforce development, upskilling and reskilling, workplace learning and organisational adaptation. However, their capacity to do so varies considerably. Larger companies are generally better placed to rely on structured recruitment channels, internal training functions and workforce-planning tools, whereas SMEs are more dependent on local labour markets and have fewer resources to compensate when recruitment or training arrangements fail. **Policy responses consequently need to be proportionate, accessible and adapted to different organisational realities.**

Against this background, the findings point to three distinct but complementary priorities: widening the available labour pool in response to workforce shortages and demographic pressures; reducing skills mismatches through lifelong learning, upskilling and reskilling; and improving the attractiveness and retention capacity of sectors and occupations facing persistent recruitment difficulties.

The first priority concerns demographic pressure and the need to make labour mobility and migration more effective. Ageing populations, retirements and insufficient inflows of new labour-market entrants mean that shortages cannot be addressed solely through initial education. Activation and better use of the existing workforce, retention and adult skills development remain essential, but mobility and migration are also increasingly necessary to widen the available talent pool.

Labour mobility and migration should nevertheless be treated as enabling conditions rather than standalone solutions. Their contribution depends on whether workers can move to where vacancies exist, employers can understand and use their qualifications and experience, and regulatory and integration arrangements support effective labour-market participation and social inclusion. Mobility can be constrained by housing, transport and connectivity, as well as by lengthy procedures, language barriers and difficulties assessing or recognising qualifications obtained abroad.

To improve the contribution of mobility and migration to reducing shortages, the following policy pointers can be considered:

- **Further develop orderly labour mobility and migration policies connected to identified labour-market needs.** Within the EU, reinforce guidance and increase transparency of information of job opportunities beyond current EURES arrangements. Regarding migration, admission, recruitment and work-permit procedures should be more predictable and responsive to locations, occupations and sectors facing persistent shortages, while maintaining appropriate employment and social standards. EU initiatives, such as the Talent Pool, Talent Partnerships and Legal Gateways should facilitate such process in a coherent way. Check and review very restrictive frameworks in contexts where employers persistently report high difficulties to fill vacancies.
- **Improve the transparency and portability of qualifications and skills.** Where formal recognition is required, procedures should be proportionate, timely and easier to navigate, and compliance with the Directive deadlines for regulated professions should be monitored and ensured. Where formal recognition is not required, employers should have clear information on the level, content and learning outcomes of qualifications. Particular attention should be given to qualifications and skills obtained in third countries, including through approaches that facilitate their recognition and transparency while maintaining appropriate safeguards. Recognition of prior informal learning should also be used more effectively to validate international workers' skills and support progression towards formal qualifications.
- **Address the practical conditions affecting geographical mobility.** Labour-market and skills policies should, where relevant, be coordinated with measures addressing housing, transport, connectivity and relocation, particularly in regions facing persistent

shortages. National policies, for example taxation policies in these areas, should be assessed to check to what extent they hinder or facilitate intra EU mobility.

- **Combine recruitment and mobility measures with integration support.** Language training, workplace induction, career guidance and social and cultural integration can help workers use their skills effectively and support retention. A coordinated framework should be ensured for employers, public authorities, employment services and social partners in designing such support.

These policy pointers may also inform the forthcoming discussions on the legislative proposals included in the **Fair Labour Mobility Package**⁵⁵, where relevant.

The second priority is to reduce skills mismatches by placing lifelong learning more firmly at the centre of education, training and employment strategies and policies. Employers face not only a shortage of workers, but also a mismatch between the skills available and those required in the workplace. This includes gaps in foundational, transversal and technical skills, insufficient job readiness, qualifications that do not correspond to occupational demand and the growing need for profiles combining technical, digital and complementary competences.

Technological, environmental and organisational change is accelerating these mismatches. While employers can often adjust roles and internal training relatively quickly, formal education and training systems may take longer to update programmes and qualifications. Employers therefore increasingly recruit candidates who only partially meet job requirements and provide additional training after recruitment. This demonstrates companies' commitment to workforce development but also transfers a greater share of the adjustment burden to employers.

The main barrier is not necessarily the absence of training programmes, but the conditions determining whether companies and workers can participate. For employers, particularly SMEs, workload, limited staff availability, replacement difficulties, administrative and technical capacity and working-time organisation are often more restrictive than the direct cost of training. For workers, participation depends on **the ability to reconcile training with work and personal responsibilities**, motivation, information and the perceived value of training for employability and career progression.

Policy pointers to tackle these barriers include:

- **Strengthen basic skills as a foundation for lifelong learning.** Member States should ensure that compulsory and initial education equip learners with solid literacy, numeracy and digital foundations. Targeted and accessible basic-skills provision should also be available to adults whose insufficient foundational skills limit their participation in further training and sustainable labour-market integration. As basic skills are a prerequisite for participation in learning, work and society, public authorities shall ensure their accessibility and adequate funding. Funding models for further vocational and professional training may appropriately place greater emphasis on the participation

⁵⁵ For more detail visit: [Fair Labour Mobility Package - Employment, Social Affairs and Inclusion](#)

of employers and individuals, reflecting the more direct economic and personal returns that such training can generate.

- **Develop comprehensive and coordinated lifelong learning strategies.** While the initial education and training systems and lifelong learning frameworks are often disconnected, adult learning, upskilling and reskilling should be central components of an overall skills, employment and competitiveness policy and strategy, with clear links to labour-market needs and meaningful employer and social-partner involvement.
- **Expand flexible and accessible learning opportunities.** Short, modular, blended and workplace-connected formats can make participation more compatible with employment and personal responsibilities. Bridges between lifelong learning and formal systems can be reinforced to facilitate more flexible pathways. Provision should reflect differences in company size, sectoral conditions and workers' availability.
- **Provide financial and organisational support addressing the real cost of participation.** Support should not focus only on course fees but also working time, replacement costs and the organisational effort required to release employees. SME-focused measures should combine proportionate funding with practical advice and simplified procedures, as well as organisational support. Further coordination between training schemes and support to training leaves can be explored.
- **Reduce administrative and eligibility barriers.** Where financial support is available for companies, application, reporting and reimbursement requirements should be proportionate to the support provided. Eligibility conditions and predefined training catalogues should allow sufficient flexibility to respond to occupational and company needs.

The third priority concerns the attractiveness of sectors and occupations facing persistent recruitment and retention difficulties. In these cases, the problem is not only the size or skills of the available workforce, but also employers' ability to attract and retain candidates. Traditional perceptions of vocational and technical occupations, limited visibility of emerging roles, unclear career pathways, working conditions and competition from more visible sectors can influence education and employment choices. Geographic attractiveness also matters where opportunities are located in areas with limited housing, transport or services.

Attractiveness cannot be addressed through communication campaigns alone. Information and guidance need to be supported by credible career prospects, development opportunities and working conditions capable of attracting and retaining workers. The following policy pointers can be considered:

- **Reinforce lifelong career guidance and labour-market information.** Guidance mechanisms should be available to all workers through their working life. They should provide realistic and up-to-date information on occupational demand, vocational and technical pathways, evolving and emerging roles and progression opportunities.
- **Improve the visibility of sectors and occupations facing shortages.** Employer organisations, education providers, public authorities and social partners can develop

targeted initiatives showing how occupations are changing and highlighting opportunities linked to technological, environmental and organisational transformation.

- **Reinforce coordination of regional, industrial, employment and mobility policies in targeted regions.** Labour shortages in less populated and poorly communicated areas are increasing an unbalanced distribution of talent. It is important that a wide range of policies, including also transport, housing and services, are coordinated to support more effectively regional development and mobility, increasing attractiveness of job opportunities in these locations.
- **Strengthen career prospects and retention.** Measures to improve attractiveness should consider progression opportunities, access to continuous training, job quality, working arrangements and transferable career pathways, rather than focusing exclusively on recruitment.
- **Connect education more closely with workplace realities.** Early exposure to real work environments and labour market information from initial education, cooperation between employers and education providers, and practical or work-based learning can help learners understand career opportunities and make better-informed choices.

Overall, these lines of action are aimed at increasing the effective supply of talent, making better use of existing skills and enabling companies and workers to participate in skills development. Addressing access-to-skills barriers requires an integrated approach in which mobility, lifelong learning, attraction and retention policies reinforce one another and are supported by meaningful employer involvement.

5.2. Skills Intelligence to Match Needs

The evidence gathered at national, sectoral and company levels show that skills intelligence has become more developed and diverse. Labour-market statistics, administrative data, employer surveys, sectoral dialogue, forecasting exercises, observatories and digital tools are increasingly used to identify changing skills needs. Quantitative evidence can show the scale and direction of labour-market developments, while employers and sectoral organisations provide insight into **how occupations and skills requirements are changing in practice.**

Employer and social-partner involvement is another important strength. Sectoral committees, employer organisations and consultation mechanisms can identify developments not yet visible in official statistics and help translate broad trends into occupational profiles and qualification frameworks. National and sectoral systems are also producing more structured outputs, including reports, taxonomies, dashboards and digital platforms. **Their practical value, however, depends on whether they are regularly updated, accessible and connected to decision-making.**

The main challenge is therefore no longer simply to produce more information, but to coordinate it, maintain it over time and convert it into action. Three areas require particular attention: fragmentation and duplication, the connection between evidence and decision-making, and the capacity to anticipate future needs while remaining useful to companies.

Fragmentation remains a significant weakness. Responsibility for analysing skills needs is often spread across ministries, public employment services, statistical bodies, regional

authorities, sectoral organisations, education institutions and individual projects. This range of actors can provide complementary perspectives, but may also result in parallel exercises, inconsistent methodologies and weak communication.

In many cases, the problem is not a lack of information, but the difficulty of connecting and reusing what already exists. Similar needs may be assessed repeatedly at European, national, regional and sectoral levels, while differences in terminology make results difficult to compare. Sectoral tools may also become outdated once temporary funding or governance arrangements end.

The following policy pointers could be considered to improve coordination:

- **Establish permanent coordination arrangements between the spread of institutions and bodies performing skills intelligence tasks.** Coordinated frameworks can be established by identifying the diverse range of bodies assessing and projecting skills needs, developing a mechanism to compile and organise information collected, and clarifying responsibilities and roles in collecting, interpreting, updating and communicating information. The European Skills Intelligence Observatory, included in the Union of Skills strategy should be also considered in this context.
- **Improve communication of findings and make better use of existing evidence.** Along the project, a duplication of very similar efforts has been identified at different levels. It can happen between countries, or between EU initiatives and national procedures. Before launching new exercises, authorities and project promoters should identify and assess whether relevant and sufficiently recent information is already available to build on previous findings and integrate them more systematically within their process, avoiding duplications.
- **Improve interoperability between data sources and classifications.** Closer alignment of the terminology used to describe occupations, tasks and competences would make it easier to combine and understand labour-market, education and employer information. At EU level, references to EQF and ESCO can be useful. Moreover, the more tools like ESCO are used, the richer can be the feedback necessary for their permanent update.
- **Facilitate continuity where EU-level sectoral outputs demonstrate clear added value.** Where sectoral initiatives produce qualification frameworks, occupational profiles, training content or other skills tools that are demonstrably useful to employers and national systems, consideration could be given to maintaining and updating these outputs beyond the initial project cycle. **This may include support for activities such as updating and translating content, maintaining platforms and networks, and supporting trainers in the use of revised materials.** Any such support should remain proportionate, respect national competences and subsidiarity, and focus on outputs for which there is evidence of continued relevance and uptake.
- **Give employers and social partners a meaningful role throughout the process.** Best practices show that the employer's role is particularly useful when they receive all the skills intelligence data and are asked to provide a practical interpretation. They should contribute to defining priorities, interpreting results and deciding when information needs to be updated, rather than only commenting on completed studies.

A second area for improvement concerns the **connection between evidence and action**. Although the identification of current and emerging skills needs has improved, its use in decisions on curricula, qualifications, training provision and funding remains uneven. A need may be identified without leading to a timely response from the institutions responsible.

Timing is particularly important for employers. Long delays between identifying a need and adapting provision can prolong shortages and mismatches, especially in areas affected by rapid technological or organisational change. Without a clear route from analysis to decision-making, skills reports and forecasts risk remaining descriptive.

Policy pointers in this area include:

- **Create formal links between skills intelligence and policy and funding decisions.** Findings should be more concretely used in informing training priorities, curriculum and qualification reviews, new provision and the allocation of public support.
- **Clarify responsibilities and response times.** Close to real-time communication channels should be established, with a clear assignment of responsibilities and deadlines for assessing findings, deciding on action and monitoring implementation.
- **Allow training and funding priorities to adapt when new needs arise.** Support mechanisms lag behind actual changes in the labour market. Training catalogues, funding calls and eligibility frameworks should always retain enough flexibility to respond to changing occupational and sectoral demand.
- **Strengthen feedback between employers, training providers and public authorities.** Strengthen the mechanisms for employers' participation in the identification of needs, for example in permanent sectoral committees, etc. Employers should be able to indicate whether identified needs have been reflected in the available provision and whether the response is effective.
- **Assess practical use, not only the production of reports.** Monitoring should consider whether skills intelligence has influenced programmes, funding, workforce planning or company practices.

A third area concerns anticipation. Many systems still depend heavily on current vacancy data, periodic studies and retrospective information. These sources remain useful but may only reveal a need once shortages are already affecting recruitment or business operations. More forward-looking approaches are needed to understand how technological, environmental, demographic and organisational changes may affect occupations and skills.

Anticipation should not be limited to long-term forecasting. As change cannot always be predicted, systems must also identify new trends quickly and adjust when circumstances change. **Skills intelligence should therefore combine short-term monitoring with medium- and long-term foresight analysis.**

Company practices are also relevant: employers usually identify needs through managerial discussions based on direct knowledge of business operations or performance reviews. In this sense, larger companies are more likely to complement these methods with formal workforce planning and analytical tools, while SMEs, often aware of immediate needs, are less likely to

formalise this knowledge or connect it with external intelligence. Complex information may therefore remain unused when it is not presented in an accessible form.

The following policy pointers can be considered:

- **Combine different time horizons, sources and levels of detail.** Skills intelligence should bring together short-term labour-market signals with medium- and long-term forecasting, combining statistics and vacancy information with employer consultation and sectoral expertise. Evidence should also be sufficiently detailed by sector, occupation and, where relevant, region to identify where future pressures are likely to emerge.
- **Move towards regular and dynamic updating.** One-off studies should be complemented by mechanisms that monitor changes in occupations, tasks and skills requirements on a recurring basis. Digital tools, including vacancy-monitoring platforms, dashboards and automated analysis, can improve timeliness and analytical capacity where appropriate, but their findings should be interpreted alongside employer and sectoral input.
- **Combine foresight with the capacity to respond to unexpected change.** Medium and long-term projections can help anticipate structural developments, but not all changes can be predicted accurately. Skills intelligence systems should therefore also be able to detect emerging needs and adjust assessments as labour-market, technological and business conditions evolve.

A related issue concerns the practical use of skills intelligence by companies: **making skills intelligence more usable for companies, particularly SMEs**. Clear occupational descriptions, shared competence terminology and concise sectoral guidance can help employers translate external intelligence into recruitment, training and workforce-planning decisions. Employer organisations, sectoral bodies and public employment services can play a supporting role, particularly for smaller companies with limited analytical capacity.

Overall, skills intelligence would benefit from becoming a more connected and practical system. Better coordination, clearer links with decision-making, regular updating and more accessible outputs would help ensure that identified needs lead to timely education, training and workforce responses.

5.3. Training Responses for Improving Access to Skills

Employers across sectors face a common challenge: updating training solutions that can respond to changing skills needs. The analysis shows that companies are increasingly looking for training approaches more closely connected to workplace realities. Across countries and sectors, employers highlight similar priorities, including closer involvement in training design, more flexible learning formats and stronger links with the workplace Is.

However, the Study has shown some good practices and **strengths of training responses** across training systems at national, sectoral and company levels.

Firstly, education and **training design is increasingly driven by employer involvement and multi-stakeholder cooperation**, with employers, social partners, education and training

providers, and public authorities jointly shaping curricula, occupational standards and learning pathways, helping to ensure labour-market relevance. This is especially visible at sectoral level, where skills alliances establish solid governance frameworks, and examples from countries with strong employer-led or dual training systems also illustrate how close collaboration between employers and training providers can combine responsiveness and recognised qualifications, creating training systems that are better aligned with labour markets trends, technological changes, workforce needs and economic competitiveness.

Secondly, somehow similar to national qualification and occupational standards, sectoral **initiatives have successfully translated skills intelligence into practical outputs** in rapidly changing contexts, including job profiles, qualification frameworks, training roadmaps and specialised curricula. This is an example of tailoring of training responses adapted to very specific labour-market needs and bringing together employers and training providers.

Finally, **employers widely recognise the value of continuous training**. Most companies themselves show a strong capacity to design and develop effective training responses through continuous training, onboarding, upskilling, reskilling and internal mobility, often complementing formal education systems' offer. Nonetheless, this is mostly the case of large companies; SMEs do also rely strongly on continuous training, although their responses are usually more operational and limited depending on circumstances. Smaller companies often combine targeted hiring with on-the-job learning, especially when fully qualified candidates are difficult to find. Thus, internal flexibility is important, particularly for SMEs, as they may need to adapt existing roles or redistribute tasks when skills are scarce.

On the other hand, within this issue, some **areas for improvement** have been identified:

Traditional **curriculum revision and update processes continue to play an important role** in formal education and training systems, **but they are often too complex and slow** to respond to rapidly changing technologies and business models, thus prolonging the gap between skills intelligence and training provision.

Employers place increasing value on training solutions that can be developed and deployed quickly once new skills needs are identified; as such, the most effective approaches are those that reduce the time between identifying a workforce requirement and making relevant training available. While skills needs identification has improved significantly, the translation of identified needs into timely and relevant training responses remains uneven, with the risk of training content becoming outdated before revised programmes are approved, particularly in fast-moving sectors such as digital technologies or in contexts of organisational change. As a result, many systems, and companies themselves, are expanding the use of shorter training programmes that can be updated and delivered within shorter timeframes. In order to tackle this difficulty, some policy pointers are provided below:

- Establish **permanent mechanisms for curricula updates**, with the involvement of businesses capable of informing decisions along with national education and training authorities. Such permanent structure should overcome the limitations of update procedures implemented only at irregular intervals or where the business' voice is not

influential. Within the permanent mechanisms, faster review cycles can be implemented, especially in sectors or occupations undergoing rapid technological change or innovation needs to keep up competitiveness, as well as options for expedited approval procedures for occupations experiencing critical skills shortages or mechanisms for temporary recognition of emerging skills while formal qualification updates are underway.

- Enable more **flexibility in tailoring parts of the curriculum** to a specific company, sector or location, e.g. defined through apprenticeships or on-the-job training modules, so as to reduce the tension between responsiveness and formal review of full qualifications. This is particularly relevant in contexts where employers have more heterogeneous needs and where they demand faster adaptation of training content, while education systems maintain quality assurance and qualification standards that require longer procedures to review full qualifications. Built-in curricular flexibility could help to overcome the structural trade-off between speed and legitimate institutional quality requirements.
- Regarding lifelong learning, **support the rapid design and implementation of tailored training actions by companies and sectoral organisations**. While procedures to create and update the content for lifelong learning programmes is more flexible and faster than in initial education and training, courses receiving financial support typically require approval procedures to be included in catalogues that can become obsolete too. However, sectoral organisations and companies, particularly larger ones, have the capacity to rapidly identify new or changed skill needs and translate them into new training programmes. Lifelong learning systems should support and facilitate these activities and make more flexible the inclusion of these new courses in training Catalogues. Take into consideration training responses that needed to **combine technical skills with complementary needs** such as language training, cultural and social integration support, digital literacy and career transitions. This is particularly relevant for international workers, older workers and individuals changing occupations.

Another area for improvement concerns the **diverse employer involvement across education and training systems**, which is generally stronger in VET, apprenticeships and adult learning than in higher education. This can create disconnections between company practices and formal systems, particularly in general and higher education where employers have to compensate for slow institutional responses through internal training, onboarding, upskilling and reskilling, with the risk of these company-developed skills not being formally recognised or made portable across employers and sectors. For employers, speed matters because delays in training provision often translate into longer recruitment processes and additional onboarding requirements, among others. This matter especially affects **SMEs, who have less capacity to engage** in curriculum design, workforce planning or structured training pathways, requiring more practical and less administratively burdensome training solutions – existing systems do not always reflect SME operational realities and limitations. As such, some policy pointers include:

- Expand **structured employer participation in training response design**, not only in VET and apprenticeships but also in higher education. For instance, reinforcing institutional participation with the establishment of some sort of sectoral skills advisory boards. Build on excellent examples of University-industry partnerships, trying to replicate cooperation schemes throughout different contexts.

Provide **dedicated guidance and support for SMEs**, adjusted to their operational realities; facilitating access to external expertise that can help SMEs detect skills gaps, identify adequate training responses and develop workforce training plans; Overall, these lines of action are aimed at fostering more responsive training solutions without sacrificing quality and recognition.

5.4. Training Provision and Certification of Skills

Strengths can be highlighted in training provision and certification across national, sectoral and company levels. As in the development of training responses, this issue is characterised by a **diverse and multi-actor ecosystem**, combining VET and higher education institutions, adult learning providers, public employment services, private providers, sectoral organisations and company-based training, giving employers and workers multiple pathways for skills development.

Another major strength is the widely positive valuation and use of **work-based learning**, ranging from informal on-the-job learning and mentoring to apprenticeships and dual VET systems, which helps ensure that training remains closely connected to workplace realities and supports the development of job-ready competences. Moreover, the growing adoption of **flexible, modular, blended and digital learning formats** further increases accessibility, allowing workers and companies, particularly SMEs, to engage in training that fits operational constraints and changing skills needs.

In terms of certification and recognition, evidence points to a gradual strengthening of systems along with the willingness to **make skills more visible and portable**. National qualifications frameworks, professional certifications, recognised sectoral standards and quality assurance mechanisms continue to provide trusted forms of validation for employers and workers. The growing use of modular certification (like micro-credentials) and recognition of prior learning (RPL) offers more flexible routes for upskilling and reskilling while supporting lifelong learning and occupational mobility.

Nonetheless, some areas for improvement on this issue include:

Promoting **flexibility in delivery models** with public and private participation building on successful models of partnerships between companies, educational institutions and training providers. The following policy pointers can be proposed:

- Promote the **expansion of work-based learning**, ranging from apprenticeship schemes, dual learning systems (which should also be considered at university level) and internships, to more informal on-the-job learning. The project has identified the relevance of shorter on-the-job learning actions for companies, which suggest that a particular support and better recognition of these learning activities should be explored.

- Improve access to integrated **one-stop-shop information** and guidance services where companies and workers can easily navigate information on training opportunities, funding schemes, certifications and recognition procedures. Where possible, these services should build on or connect existing national, regional and sectoral platforms rather than creating parallel structures. Clear governance arrangements, responsibility for maintaining and regularly updating content, and effective links with existing training and funding systems are essential to ensure their long-term usefulness.

Furthermore, **innovation in methodologies and sufficient delivery capacity** to meet emerging skills needs should be reinforced in most systems: shortages of qualified trainers, outdated equipment, limited training infrastructure and insufficient specialised facilities constrain the implementation of modern training offers. In several sectors, training provision struggles to keep pace with technological developments because the necessary learning environments are not widely available and training providers often lack the resources needed to deliver it effectively. As such, policy pointer on this matter can include:

- **Innovation in methodologies**, for instance: digital and blended models, use of EdTech (including AI-enabled tools) to personalise learning processes, investment schemes for the modernisation of training infrastructure (e.g. laboratories, simulation environments and tools like virtual and augmented reality, or digital learning equipment), etc. These technologies can support the development of practical skills, particularly where access to specialised equipment or working environments is limited. Nonetheless, employers generally view these tools as a complement to hands-on training rather than a substitute for it, so supervised practice should continue to play an important role in technical sectors alongside these innovations.
- Launch dedicated **programmes to train trainers**, with a multiplier potential, particularly in digital, green and emerging technology fields so as to keep up with labour market's changing trends and new occupations.
- Strengthen **sectoral centres of excellence** and regional hubs that can centralise innovations and disseminate expertise and training materials across provider networks.

On a transversal perspective, **training opportunities should be better encouraged**, on the one hand for training programmes organised by companies and, on the other, for individuals wishing to undertake training, provided that the skills they receive are aligned with the needs of the labour market. As potential policy pointer the following can be highlighted:

- Expand **co-financing models** by establishing schemes in which costs are shared among public authorities, employers and individuals according to their specific roles and expected benefits. In such schemes, it would be beneficial to consider the contexts of different types of companies regarding size (special support for SMEs), and, on the workers side, of special attention collectives such as low skilled workers, long-term unemployed workers at risk of displacement and in restructuring sectors, or workers at risk of inclusion (in terms of nationality, language, age, gender, etc.)

- Introduce **SME-focused training support packages**, combining funding and advisory services on skills with simplified access procedures.
- Develop further **compensation mechanisms**, that can combine training, time away from work and replacement costs, to support companies and workers to engage more in lifelong learning activities.
- Encourage **employer investment**, for example by matching employers' expenditure on company-led training programmes, using tax incentives, levies exemptions, etc.

Finally, **certification is still fragmented and portability of skills limited**. For instance, skills acquired through company-based learning and workplace experience remain insufficiently recognised outside the employing organisation. As a friction, companies value practical skills acquisition, while education and qualification systems require formal recognition mechanisms that are not always aligned with workplace learning practices. Micro-credentials, digital badges and sectoral certificates are growing but remain unevenly understood and recognised against national and European frameworks. Policy pointer may include:

- Strengthen recognition and certification systems that enable the development of longer training pathways through **accumulative modules**. Although employers strongly value modular and short-form learning, implementation varies considerably across countries and sectors and thus, mechanisms for stacking modules into recognised qualifications are still underdeveloped in many systems. Thus, continuing to foster modularisation as a move towards flexible and agile systems facilitate access to training and the accumulation of short courses into recognised qualifications.
- Facilitate further the **recognition of prior learning** and foreign qualifications to shorten training periods by simplifying lengthy or difficult access that currently hinder labour mobility and skills utilisation.
- Encourage the **promotion of the outcomes** of Blueprints and other sectoral initiatives at EU and national level, supporting greater transparency and understanding of validated sectoral outputs across national systems, while taking into account national specificities and governance arrangements. Sectoral partnerships have produced occupational profiles, modular units and micro-credentials referenced to ESCO and the European Qualifications Framework. European tools, including the Skills Portability Initiative, can support their transparency and cross-border usability, while decisions on qualifications, curricula and certification remain within national governance arrangements.
- Explore **outcome-based quality assurance frameworks** focused on demonstrated skills acquisition and labour-market relevance rather than purely procedural compliance. Moreover, sector-specific initiatives demonstrate how competence-based certification linked to recognised standards can achieve strong labour-market value and international recognition.
- Introduce **fast-track accreditation procedures** for modular courses and emerging skills programmes while maintaining minimum quality standards to facilitate portability of skills, combined with regular review mechanisms to ensure that modular training

formats remain aligned with occupational standards and labour-market needs based on skills intelligence.

Overall, training provision and certification could benefit from the growing preference for modular and stackable learning pathways as well as from mixed training delivery models that adapt to both employers and worker's needs.

5.5. Cross-cutting Aspects Influencing Skills Access

Across all issues of analyses, there are strengths that can be highlighted regarding the efforts to improve the effectiveness of skills systems and access to training.

Firstly, as aforementioned, there is a broad **recognition of the importance of stakeholder cooperation** and employer involvement in governance. More significantly, it has been depicted that structured and meaning participation of a wide variety of stakeholders (especially, employers and sectoral alliances along with training providers and social partners) contributes to greater trust and responsive skills policies and training solutions better aligned with labour-market needs.

Secondly, there is evidence of diverse and generally well-established **funding mechanisms** for skills development, recognising the importance of education and the need to engage in lifelong learning. Examples of public funding, training levies, sectoral training funds, collective bargaining arrangements, employer investment and EU funding instruments (such as ESF+, Erasmus+ and the Recovery and Resilience Facility) provide multiple channels to support upskilling and reskilling. Many stakeholders acknowledge the positive role these mechanisms have played in expanding skills initiatives and lifelong learning opportunities at least at an initial stage; further action still has room for improvement.

Finally, there is **increasing alignment between skills policies and labour-market trends**, for instance supported by sectoral skills strategies and intelligence exercises. Across sectors, efforts are being made to connect training systems with digital, green and industrial transformation priorities, while fostering greater coherence between education/training and employment priorities.

Nonetheless, several cross-cutting areas for improvement remain. A recurring one concerns **monitoring and evaluation**. Stakeholders often report that existing skills schemes need to be strengthened or adapted rather than replaced, but evidence on their outcomes and impact is frequently limited.

This measurement gap is particularly relevant to the relationship between training, skills utilisation and productivity, for instance. Evidence gathered through the Study points to the importance of skills and human capital for productivity and competitiveness. A key finding is that employer involvement in identifying training needs and shaping training provision is crucial to ensure that it meets current and future labour market demands.

Against this background, the following policy pointers could be considered:

- **Conduct impact assessments** to evaluate the effectiveness and results of skills initiatives, including skills gains, employment outcomes, workplace performance and, where feasible, productivity, so as to inform decision-making and the future continuation or adaptation of initiatives. Any action or initiative, regardless of the level at which it is taken, shall deliver measurable benefits for companies and address real skills needs. In this sense, EU skills initiatives should focus on measures that deliver tangible results and to address skills shortages and mismatches. Conduct an **initial assessment** before launching a new skills initiative to establish its need and added value, ensuring that its objectives and scope respond to identified employer needs and do not unnecessarily overlap with existing initiatives.
- Strengthen **feedback loops** between employers and training providers to assess whether training responses are effectively addressing identified needs and to support adjustments to provision and resource allocation where necessary.

Regarding governance, the **degree of coordination of stakeholders** is still weak in many systems: responsibilities for skills identification, qualification development, curriculum revision and training delivery are frequently distributed across multiple institutions whose scope of action do not meet with employers. This often leads to duplications and fragmented responses. As such, policy pointers may aim to:

- Promote comprehensive and coordinated strategies and multilateral forums with **business involvement** – having the capacity to influence decisions – at various levels (from institutional participation in strategy formulation, through needs assessment and the definition of content, to apprenticeships and lifelong learning), moving beyond purely consultative mechanisms.
- Foster **intersectoral collaboration** in areas in which synergies may arise (for instance, between sectors like tourism and hospitality), developing pilot initiatives.

Finally, **strengthening financial support mechanisms** for skills access remains a key priority. Rather than adopting a uniform approach, efforts should focus on increasing the effectiveness and accessibility of support schemes to address the diverse needs of employers and sectors.

- Regarding financial support to companies' upskilling and reskilling activities, reduce administrative complexity and **improve accessibility of funding**: simplifying application, reporting and reimbursement procedures, particularly for SMEs, and ensure that support mechanisms reflect companies' operational constraints, including time and resource limitations. At company level especially, administrative processes should be streamlined to reduce complexity and encourage greater uptake.
- **Introduce simplified access arrangements for micro and small enterprises.** In sectors where micro and small companies represent a large share of employment, funding and support schemes should take account of their limited administrative capacity. Simplified procedures, lump sums or unit costs, pre-approved training offers and intermediation by employer organisations, chambers or sectoral bodies could help make support more accessible. Requirements should remain proportionate so that

administrative complexity does not prevent smaller companies from making effective use of available schemes.

- Align funding mechanisms with **labour-market needs and employer governance**, ensuring that training levies and public funding schemes are transparently managed, effectively earmarked for skills development, and that employers play a meaningful role in priority-setting and allocation decisions. In particular, where training levies or sector-specific funding mechanisms exist, these resources should be dedicated to workforce development initiatives, with companies playing a central role in determining how funds are allocated and utilised to maximise their impact on skills development and business competitiveness. On the other hand, where individual learning schemes exist (e.g. Individual Learning Accounts or vouchers), ensuring labour market relevance of the training funded and complementing these schemes with instruments supporting company-driven training would be appropriate. Moreover, coherence and complementarity between these schemes and entitlements to paid training leaves should be ensured, as well as employers' concerns on the relevance of the training that is being financed. In particular, employers worry about whether Individual Learning Accounts may contribute to a mismatch between training demand and the actual skills needs of businesses. While empowering individuals to choose their own learning pathways can increase participation in training, it may also weaken the link between course uptake and labour market demand, thereby reducing the effectiveness of skills investments and exacerbating existing labour and skills shortages.
- Ensure **coherence between state aid rules and skills policy objectives** – for instance, by clarifying the treatment of training investments and reduce disincentives to employer-funded training, ensuring that regulatory frameworks support (rather than constrain) skills development efforts. In this context, a general exemption of all training investment, including mandatory training, should be considered in the revision of state-aid rules.

In short, it has been noted efforts are put in place and that strengthening these conditions does not necessarily require the creation of new instruments, but to ensure that the existing ones work coherently to support employers' role as key actors in Europe's skills ecosystems.

5.6. Strengthening Effectiveness on Access to Skills

In conclusion, this Study aims to provide a holistic view on the perspectives at different levels when seeking to access the skills they need.

Overall, the results and findings point out **9 key takeaways** for stakeholders to consider in their decision-making:

1. **European action should support bottom-up, context-sensitive approaches.** European cooperation can add value, but initiatives should be informed by national stakeholders and employers. Frameworks must remain flexible enough to respond to different labour markets and education and training systems.
2. **Skills shortages and mismatches require an integrated response.** Education, lifelong learning, activation, attraction and retention policies must work together with

effective labour mobility. Mobility and international recruitment can help, but they are not stand-alone solutions and depend on complementary policies.

3. **Skills intelligence should be better connected and drive action.** Stronger transparency, interoperability and coordination can reduce duplication across fragmented skills intelligence initiatives. Findings should be embedded in decision-making procedures, so they prompt updates to curricula and qualifications and influence funding priorities and training provision.
4. **Training content must be regularly updated while remaining flexible enough to meet specific needs.** Systems should provide continuous curriculum review, faster update cycles and, where appropriate, expedited procedures for rapidly changing occupations or critical shortages. But programmes should also allow parts of their content to be tailored to sectoral, regional or company needs without requiring a full formal revision.
5. **Learning opportunities must be accessible and encourage participation.** Learning opportunities should be easy to find and use. Accessible one-stop services should help policymakers, employers and workers navigate skills intelligence, training and funding options, while facilitating comprehensive knowledge of available resources and reducing duplications or inefficient resource allocation. Short, modular, blended and work-based formats can improve access and responsiveness. Digital, immersive and AI-supported methods can widen participation but should be combined with hands-on learning where needed. Short modules and recognition of prior learning can create clear pathways for people to build, certify and transfer skills.
6. **Lifelong learning policies must address the practical barriers faced by companies and workers.** Providing courses is not enough. Companies must manage not only training fees but also working time, workloads and organisational costs. SMEs may need funding, but also guidance, simpler procedures and flexible working arrangements. Workers need shorter, more flexible formats and a clearer link between training and prospects.
7. **Employers should have a meaningful role throughout the skills-policy cycle.** Consultation alone is not enough. Employers should help to identify needs, set priorities, co-design content, govern funding arrangements and evaluate outcomes.
8. **Funding should be accessible, well governed and aligned with labour-market needs.** Investment matters, but impact depends on how resources are prioritised, managed and used. Employers should have a meaningful say in funding priorities, particularly when schemes are financed through their contributions. Funds should transparently support labour-market-relevant skills, while application, reporting and reimbursement procedures should be proportionate and easy to navigate, particularly for SMEs.
9. **Monitoring and impact assessment should drive continuous improvement.** Skills initiatives at every level should be measured not only by spending, participation and outputs, but also by skills gained, employment outcomes, workplace performance and, where feasible, productivity. Before launch, new initiatives should be tested against a clear need and checked for duplication. The wider relationship between human capital, skills and productivity also warrants further analysis.

6. Annex A. Glossary of Acronyms

Below is a summary of the key terms used throughout the Study as acronyms:

Acronym	Term
AM	Additive Manufacturing
BIM	Building Information Modelling
DigComp	European Digital Competence Framework for Citizens
ECTS	European Credit Transfer and Accumulation System
ESCO	European Skills, Competences, and Occupations
ESF+	European Social Fund Plus
EU	European Union
GreenComp	European sustainability competence framework
HE	Higher Education
HR	Human Resources
ILA	Individual Learning Account
NQF	National Qualifications Framework
OPCOs	French Opérateurs de Compétences
RPL	Recognition of Prior Learning
SME	Small and Medium Enterprise
TCLF	Textile, Clothing, Leather and Footwear
VET	Vocational Education and Training

7. Annex B. List of stakeholders consulted

This annex presents the organisations and initiatives that contributed to the national and EU-sectoral consultation strands of the Access to Skills Study. Their input informed the analysis of skills challenges, training provision, employer engagement and potential responses across different national and sectoral contexts.

7.1. National consultations

Structured consultations were conducted with national employer organisations and relevant national skills initiatives. **A total of 27 national consultations were carried out, involving 35 stakeholders** and covering a broad geographical range and diverse institutional approaches to skills governance, training provision and employer engagement in education and labour-market policies.

The findings presented in the national analysis reflect the perspectives shared by the organisations and initiatives listed below. They illustrate national practices and challenges in access to skills and should not be interpreted as an exhaustive assessment of each country's education, training or labour-market system.

Country	Organisation / Initiative
Austria	IV – Federation of Austrian Industries
Belgium	VBO-FEB – Fédération des Entreprises de Belgique
Bulgaria	BIA – Bulgarian Industrial Association
Cyprus	OEB – Cyprus Employers & Industrialists Federation
Czechia	New Skills Monitor Initiative Confederation of Industry of the Czech Republic
Denmark	Confederation of Danish Employers HORESTA – Danish Hospitality Industry Association
Estonia	Estonian Employers' Confederation
Finland	EK – Confederation of Finnish Industries
France	MEDEF – Mouvement des Entreprises de France
Germany	BDA – Confederation of German Employers' Associations Textile + Mode

Country	Organisation / Initiative
Greece	SEV – Hellenic Federation of Enterprises
Hungary	VIMOSZ – Hungarian Hospitality Employers’ Association
Ireland	Future Skills IE IBEC – Irish Business and Employers Confederation
Latvia	LDDK – Latvian Employers’ Confederation
Malta	Malta Business Bureau
Netherlands	VNO-NCW – Confederation of Netherlands Industry and Employers
Poland	Polish Confederation Lewiatan
Portugal	CIP – Confederação Empresarial de Portugal CENFIM – Centro de Formação Profissional da Indústria Metalúrgica e Metalomecânica
Spain	CEOE – Spanish Confederation of Employers’ Organisations TEXFOR (The Confederation of the Textile Industry)
Sweden	Confederation of Swedish Enterprise
Switzerland	Swiss Employers’ Association

7.2. Sectoral consultations

Structured consultations were also conducted with European sectoral organisations and EU-level skills initiatives, including Blueprint projects, sectoral alliances and industry-led training partnerships. **A total of 10 sectoral consultations were carried out, involving 16 stakeholders⁵⁶** and covering 9 sectoral initiatives from a range of industrial ecosystems.

The sectoral consultations covered different approaches to skills intelligence, training design and provision, certification, and employer engagement in education and labour-market policies. The findings presented in the report reflect the perspectives shared by the organisations and initiatives listed below and provide an employer-informed view of access-to-skills challenges, practices and responses across sectors.

⁵⁶ The consultations with CEEMET and the Automotive Skills Alliance (ASA) informed the analysis of the same automotive sector initiative.

These initiatives typically bring together employer organisations, industry representatives, education and training providers, public authorities and social partners. Employers generally play a central role in identifying emerging skills needs, validating occupational requirements and shaping relevant training responses.

Initiative
PANTOUR – Pact for Next Tourism Generation Skills
Innoenergy Skills Institute (established by the European Institute of Innovation and Technology)
EURATEX – European Apparel and Textile Confederation
SKILLS4RETAIL
FIEC – European Construction Industry Federation
CEEMET – Council of European Employers of the Metal, Engineering and Technology-Based Industries
ASA – Automotive Skills Alliance
Chemskills – Blueprint coordinated by ECEG (European Chemical Employers Group)
SAM – Skills for Additive Manufacturing
ECSA – European Chips Skills Academy

8. Annex C. National Comparative Tables

As part of the national analysis, the following comparative tables have been complemented by consulted stakeholders to capture information on 3 key training support mechanisms and employer's views on their effectiveness, namely: Individual Learning Accounts; Training Funds; and Compensation of Training Costs/Working Hours.

The information collected has allowed to develop a comparative overview across participating countries.

8.1. Individual Learning Accounts (ILA)

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
ARBEITGEBER (SWITZERLAND)	No (no unified system)	No national ILA system	Continuing education is organised individually; funding mainly by individuals and employers	Decentralised, individuals and employers	Neutral	System works due to strong VET and continuous education market as well as well accepted flexible lifelong learning
BDA (GERMANY)	No	-	-	-	-	-
CENFIM (PORTUGAL)	Yes (partially)*	Cheque-Formação (Training Voucher) and Passaporte Qualifica (Qualifica Passport)	Cheque-Formação provides direct public funding for training chosen by employed and unemployed adults registered with IEFP, supporting lifelong learning and upskilling. Passaporte Qualifica is an individual digital record and guidance tool that tracks qualifications and helps adults plan learning pathways.	National management by IEFP (Training Voucher) and ANQEP/Ministry of Education and Labour authorities (Passaporte Qualifica).	Neutral to Positive	Employers generally welcome support for worker upskilling and flexibility in training choices. However, the system is not a full individual learning account with an accumulated personal budget and remains dependent on public programmes and eligibility rules.
CEOE (SPAIN)	No (under discussion)	Not applicable (Instrument under discussion – Cuenta Individual de Aprendizaje)	The instrument is currently under debate in Spain but has not been implemented as part of the national system. Potentially aimed at providing individuals with training entitlements or accounts, but	Not defined (potentially national with social partner involvement)	Neutral / Cautious	Employers do not oppose the concept in principle, but express significant concerns about its potential design. Risks include lack of alignment with labour market needs, weak governance and demand capture by training providers. CEOE stresses that, if introduced, any such

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			design, scope and governance remain undefined.			instrument must ensure that training is relevant and has a measurable impact on employability and company competitiveness.
CONFEDERATION OF DANISH EMPLOYERS	No		Denmark does not operate a universal individual learning account system. Instead, access to continuing vocational education and training (CVET) is ensured through publicly funded programmes and collective agreement-based schemes targeting both employees and unemployed.		Negative	Evidence suggest that the people having the most benefits from ILA are the ones who already have a lot of education, so a ILA will not help the group we really want to target. And in Denmark we have a flexible and very affordable system for CVET both public and in the collective agreement.
EK (FINLAND)	No	-	-	-	-	There used to be system called "aikuiskoulutustuki" (adult education subsidy) that could be seen as ILA that system has been discontinued
ESTONIAN EMPLOYERS' CONFEDERATION	No	-	-	-	-	-
IBEC (IRELAND)	No	-	-	-	-	-
IV (AUSTRIA)	Yes	-	-	-	Neutral	Assessment depends on the specific design in terms of labour market orientation and financial sources of the learning account
LDDK (LATVIA)	Yes	Stars	Training for employees (MN) The application for training is open, inviting employed and self-employed people aged 18 and over to acquire professions, improve	National	Neutral	ILAs used for publicly governed training programs, employers do not participate in it.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			professional competences and medium and high level (DigComp 4-6) digital skills with a co-payment of 0-30% of the total tuition fee.			
LEWIATAN (POLAND)	Pilotage	Indywidualne Konta Rozwojowe + Individual Development Accounts	The pilot project aims to explore an instrument supporting the development of adult competencies. The program aims to increase participation in lifelong learning and help individuals acquire qualifications tailored to labour market needs. Funding comes from the European Fund for Social Development 2021–2027 (FERS).] Support will be provided to adults (18+) living in the project areas. Participants will be divided into two groups: Group A (minimum 60% of participants): unemployed, economically inactive individuals, job seekers, parents of children up to 6 years of age or parents of children with disabilities (regardless of the child's age), or caregivers of individuals requiring support in daily life, individuals 55+, individuals	The pilot program is managed nationally by the Polish Agency for Enterprise Development. Regional pilot operators may include entrepreneurs, business environment institutions, organizations promoting employment and human capital development, social and economic partners, employer organizations and trade unions, universities, and associations with the participation of local government units. These entities are obligated to conduct pilot activities in selected counties in Poland, in 11/16 regions.	Neutral	In the opinion of employers, individual development accounts, the equivalent of individual training accounts, will not be an instrument that meets the needs of employers. Since the pilot program is modelled on the French solution, where beneficiaries, adults, can choose from educational activities without any connection to the labour market, employers' demand for competencies is growing. There is a risk of allocating very large public funds to programs that are purely hobby-based. Furthermore, given that the Polish state has for years refused to increase allocations to other national funding mechanisms (e.g., the National Training Fund), it seems unlikely that after the end of ESF+ funding, the Polish state will be able to afford this instrument. The search for further solutions to address the low participation rate of adult Poles in learning can be considered a positive development.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			with disabilities. Group B (maximum 40%): individuals aged 18-54, regardless of professional status.			
MALTA BUSINESS BUREAU	No	-	-	-	-	-
MEDEF (FRANCE)	Yes	Compte personnel de formation (CPF)	Universal, portable account open from labour-market entry to retirement. Rights are accrued in euros (generally EUR 500/year up to EUR 5,000) and used at the holder's initiative for eligible training, skills assessments, career development or retraining. Employers and public bodies can top up rights.	National public scheme: The "Caisse des Depots et consignation" manages "Mon Compte Formation" for the State; France competences finances/regulates the wider system. Employers, regions, France Travail and the Sectoral skills operators "OPCOs" may co-finance selected projects and may top up training projects online with the skills needed in the workplace and in the labour market.	See reply in the attached summary	Strengths: <i>portability, individual access and a large digital marketplace; growing employer co-construction can align CPF with company skills strategies.</i> Limits: <i>individual choice may not match company priorities; eligibility/co-financing rules are evolving; fraud/quality concerns and the mandatory employee contribution have tightened use, although this does not apply to everyone: jobseekers and employees benefiting from employer co-financing (through a top-up contribution) are exempt.</i>
OEB (CYPRUS)	Yes	Individual Learning Accounts (ILAs)	Within the framework of the Cohesion Policy Programme "THALIA 2021-2027", the Human Resource Development Authority has undertaken the implementation of the project "Individual Learning	Pilot implementation through ESF+ governed by HRDA (The HRDA is governed by a tripartite Board of Directors of 13 members, comprising government, employer and trade union	Negative	OEB shares BusinessEurope's sceptical position towards Individual Learning Accounts, while remaining fully supportive of lifelong learning and continuous skills development. The main concern is that ILAs risk disconnecting training provision from actual labour market and

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			Accounts" (hereinafter referred to as "the Project"), which is co-funded by the EU. The aim of the Project is to promote lifelong learning by offering ILA holders opportunities to enhance their knowledge and skills through participation in training programmes implemented under the Scheme «Standard Multi-Company Training Programmes» governed by HRDA The Project involves the pilot implementation of Individual Learning Accounts (hereinafter referred to as "ILAs"), which provide credits to eligible groups of employed and unemployed individuals in order to attend training programmes aimed at acquiring new knowledge and/or enhancing existing skills. Eligible participants include: (a) Employees with an education level up to upper secondary education (i.e., Lyceum or Technical/Vocational School),	representatives. In specific, five members represent the government and the other eight represent the employer and trade union organisations. <i>The HRDA reports to the Government through the Minister of Labour and Social Insurance.</i>		business needs. This scepticism is further reinforced by the financing dimension of such schemes, particularly in the event that they are no longer supported through ESF+ funding, as experience in other countries has shown that similar approaches have not always been successful.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			and (b) Long-term unemployed individuals (unemployed for more than six (6) months). Funding The ILA credits, amounting to €2.400, are used to cover participation fees/tuition costs for training programmes.			
SEV (GREECE)	No	-	-	-	-	-
SPCR (CZECH REPUBLIC)	No	Proposed Individual Learning Accounts (no official scheme implemented yet)	The Czech Republic is discussing the introduction of ILAs in the framework of the National Recovery Plan and ESF+. Current adult learning support is mainly project-based (e.g. Labour Office training schemes), without a universal individual entitlement. Target groups include jobseekers, low-skilled workers and employees at risk of labour market transition.	Currently fragmented (public employment services, ESF+ projects); a future scheme would likely be centrally coordinated (Ministry of Labour and Social Affairs / Ministry of Education) with involvement of social partners.	Neutral	Employers support the concept but stress the need for strong alignment with labour market needs, co-financing incentives, and low administrative burden.
SVENSKT NÄRINGSLIV (SWEDEN)	No (no formal ILA system)	Student Finance System (Studiestödssystemet); Transition Study Support (Omställningsstudiestödet)	Sweden does not operate a formal Individual Learning Account system. Instead, lifelong learning is supported through the general student finance system and the Transition Study Support scheme, which allows eligible workers to take up to 44 weeks of study leave with	National. Managed by CSN (Centrala studiestödsnämnden) with support from social partners and the state.	Positive	Employers support measures that strengthen lifelong learning and labour market adaptability. However, greater coordination between education providers, transition organisations and employers could further improve effectiveness.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			financial support of up to 80% of salary. A public guidance and counselling system complements the scheme.			
TEXTILE+MODE (GERMANY)	No, not as a fully implemented nationwide ILA system	No comprehensive national Individual Learning Account currently in place; related instruments include education vouchers and public training support schemes	Germany does not currently operate a universal, portable individual learning account in the strict sense. However, there are several publicly funded instruments that support individual participation in continuing vocational education and training, such as the Bildungsgutschein, Aufstiegs-BAföG and regional voucher schemes. These instruments are generally eligibility-based and linked to specific labour-market or qualification objectives rather than being individual accounts with accumulated training rights.	Mainly public governance, depending on the instrument: Federal Employment Agency / Jobcentres for labour-market-related training support, federal structures for advancement training support, and federal state-level schemes for some regional instruments.	Neutral	From an employers' perspective, existing public instruments can be useful, but they are not equivalent to an ILA and are not always directly aligned with company-specific training needs. Access usually depends on eligibility checks, approval procedures and recognised training providers. Therefore, these instruments are helpful in specific cases but are not perceived as a central mechanism for employer-led workforce development in the sector.
VBO-FEB (BELGIUM)	Not yet, in the process of being created	ILA	Account for each individual on working age. Degrees of regular education will be included as well as an overview of federal an individual training rights and incentives. The individual can complete with other obtained certificates or trainings.	Federal/Regional	Neutral, waiting for implementation for further assessment	-

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
VIMOSZ (HUNGARY)	No (under phased implementation)	Egyéni Tanulási Számla (ETSZ) – Individual Learning Account	Hungary has developed the ETSZ concept under the HUN-ILA project. The system is intended to provide individuals with personal learning entitlements through a digital platform, supporting lifelong learning and access to accredited training. Full implementation is planned by 2030.	National (Ministry of Culture and Innovation, with European Commission support during the design phase).	Neutral	Employers generally support flexible lifelong learning instruments, including blended and work-based learning. However, the ETSZ is still under development, so its effectiveness cannot yet be assessed in practice.
VNO-NCW (THE NETHERLANDS)	No	-	-	-	-	-

8.1.1 Additional information on Individual Learning Accounts:

CENFIM (PORTUGAL)

- <https://www.iefp.pt/cheque-formacao>
- <https://www.qualifica.gov.pt/>

IV (AUSTRIA)

- See all instruments tagged as “grants for individuals”: <https://www.cedefop.europa.eu/en/tools/financing-adult-learning-db/instruments-map>

LDDK (LATVIA)

- <https://stars.gov.lv/>

LEWIATAN (POLAND)

- [Indywidualne Konta Rozwojowe wystartowały. Pilotaż wspiera rozwój kompetencji na rynku pracy - PARP - Centrum Rozwoju MŚP](#)

MEDEF (FRANCE)

- [16923-un-cpf-co-construit-pour-des-parcours-choisis.pdf](#)

OEB (CYPRUS)

- [Link](#)

SPCR (CZECH REPUBLIC)

- <https://www.planobnovy.cz/>

SVENSKT NÄRINGSLIV (SWEDEN)

- [Flexibility, adaptability and security in the labour market - Government.se](#)
- [English - CSN](#)
- [TRANSITION+SUPPORT+2023.pdf](#)
- [TRR: We make development possible – all working life | TRR](#)
- [Information in other languages](#)

TEXTILE+MODE (GERMANY)

- [OECD – Support for developing Individual Learning Accounts in Germany](#)
- [Federal Employment Agency – Bildungsgutschein](#)
- [Aufstiegs-Bafög](#)

VIMOSZ (HUNGARY)

- [IBSH – Adult Education and Training Funding in Hungary](#)

8.2. Training Funds

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
ARBEITGEBER (SWITZERLAND)	Yes (partially)	Government covers courses for basic competencies, various sectoral funds are in place.	Government support for courses concerning basic competencies, collective training funds exist in some sectors via social partners	Government, Sectoral, bipartite	Positive	Close alignment with labour-market needs
BDA (GERMANY)	No	-	Germany does not have a central, nationwide training fund or unified scheme. Instead, some sectors have collective arrangements, but these are not comprehensive and are often limited to specific topics or industries.	-	-	-
CENFIM (PORTUGAL)	No (no dedicated levy-grant training fund)	ESF+ / Pessoas 2030 funding for VET and adult learning	Portugal does not operate a classic employer levy-based training fund. Vocational training is largely financed through public budgets, EU funds (ESF+) and specific programmes. ESF+ and Pessoas 2030 provide substantial support for skills, VET and adult learning activities.	Primarily public governance, involving national managing authorities and EU-funded programmes.	Neutral	Employers benefit from publicly funded training opportunities but may face fragmented funding arrangements. The absence of a dedicated training levy fund reduces collective employer ownership compared with systems in some other EU countries.
CEOE (SPAIN)	Yes	Vocational Training Levy (<i>Cuota de Formación Profesional</i>)	Mandatory levy paid by employers and workers to finance training for employed and unemployed individuals. Funds are channelled through SEPE and FUNDAE and support different training initiatives (company-based training,	Tripartite governance (public authorities, employers and trade unions)	Negative / Mixed	While the system provides substantial resources and coverage, employers identify important inefficiencies: excessive administrative burden, limited accessibility for smaller companies and insufficient focus on outcomes. A key concern is the structural underuse of funds (around €1 billion per year,

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			subsidised training, training leave).			accumulating to approximately €20 billion over 20 years). The issue is therefore not funding availability, but coordination failures and lack of a clear national strategy.
CONFEDERATION OF DANISH EMPLOYERS	Yes	In the collective agreements e.g. within the Industrial Agreement, collective training funds have been established by the social partners.	Sector-based training funds financed as a part of collective agreements. They support participation in adult education and training, often covering course fees, and and guidance. Targeted primarily at employees within the given sector.	Bipartite	Positive	Collective training funds are agreed between employers' organisations and trade unions, ensuring strong ownership on both sides. This joint governance helps ensure that training reflects real labour-market needs and company priorities. It also strengthens the Danish model, where responsibility for skills development is shared between employers and employees.
EK (FINLAND)	No	-	-	-	-	-
ESTONIAN EMPLOYERS' CONFEDERATION	Yes	Training aid by Unemployment Fund	Unemployed as well as employees with outdated skills and employers facing technological changes are supported when training is needed	tripartite / public governance	Positive	Instrument is well targeted and necessary
IBEC (IRELAND)	[Yes	National Training Fund	The National Training Fund was established under the National Training Fund Act 2000 as a dedicated fund to support the training and upskilling of Ireland's workforce. Under this legislation it has three primary goals, providing training for those seeking employment,	Public	Neutral	The NTF is an important asset for funding critical skills development programmes and driving innovation in education and training delivery with the development and scaling of programmes such as microcredentials and Skillnet business networks. Businesses strongly rely on these initiatives to support the upskilling of their workforce in emerging skills

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			providing upskilling opportunities for those in employment and supporting research on the skills needs in the economy. It is funded by employers through a 1% levy on reckonable earnings collected through the PRSI system. The NTF is used to fund programmes including apprenticeships, further education and training, subsidised higher education programmes, Skillnet business networks and skills intelligence systems. Recent legislative changes to the National Training Fund Act has allowed for funding from the NTF to be used to support core funding of higher education as well as capital investment. Investment decisions regarding the NTF are made by the Department of Further and Higher Education, Research, Innovation and Science (DFHERIS). The National Skills Council provides a forum where employers can provide advice to the Minister on spending decisions regarding the NTF.			areas. However, there are fundamental governance challenges in the NTF which lead to the underutilisation of a critical resource. Firstly, income in the NTF has outpaced expenditure consistently over the last number of years leading to the accumulation of unspent employers' contributions to the NTF of nearly €2bn at the end of 2024. While the government has put in place a 'plan' to drawdown €1.5bn of this surplus over a six-year period, it does not provide a permanent mechanism to prevent the continued accrual of unspent employer funding, which is estimated to reach €3bn by 2030 even with the €1.5bn spending package. Secondly, between 2018 and 2020 the Government made a decision to increase the levy paid by employers from 0.7% to 1% with a commitment to reform the governance and management of the fund. This included specific actions to enhance enterprise engagement in the oversight of the fund and improve the monitoring an evaluation of the fund. While comes progress has been made, the reform agenda remains largely incomplete with many actions unfulfilled and no clear pathway for their implementation. As it stands, employers have no clarity as

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
						to how spending decisions are made, even though the fund is a result of their contributions. This is primarily because there is no mechanism for businesses to input into decision making process with clear impact. The situation is further exacerbated by the lack of a framework for monitoring and evaluating the impact of funded programmes. Third, funding from the National Training Fund lacks a clear strategic direction. Ireland lacks a national skills strategy to guide investment decisions regarding lifelong learning, workforce development and upskilling and reskilling. While the landmark OECD Review of Ireland's Skills Ecosystem provides a strong assessment of the challenges and opportunities facing Ireland's skills ecosystem as well as potential ways forward, it remains a set of recommendations without a clear implementation plan, responsible actors or timeline for delivery. This creates a lack of a multiannual funding model for workforce development where programmes are often piloted without any certainty regarding future viability. At the same time, programmes that have demonstrated considerable success and have strong industry demand remain

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
						significantly underfunded. Recent years has seen the stagnation in funding for workforce development programmes such as Skillnet business networks, which are recognised by the European Commission as a global best practice model for workforce development. Funding of these networks has languished resulting in a reduction of the number of training places available and significant unmet industry demand. Similarly, with the conclusion of the NTF funded Human Capital Initiative, the number of free and subsidised training places in higher education has fallen. Finally, one of the latest concerns regarding the strategic direction of the NTF relates to the recent updates to Ireland's National Training Fund Act. Legislative changes have allowed funding to be directed to higher education core funding to help close the funding gap in the university sector, as well as to provide capital investment. However, we are concerned that the updated legislation goes beyond the original purposes of the NTF - for workforce development - and risks critical employers funding being used for projects such as the decarbonisation of building stock.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
IV (AUSTRIA)	Yes	-	-	-	Negative	The links between employers' funding and actual usage of financial means for training are not strong enough
LDDK (LATVIA)	No	Prasmju fondi	Training Funds approach is being developed for three sectors.	tripartite	Neutral	The Funds are under establishment phase.
LEWIATAN (POLAND)	Yes	National Training Fund	The National Training Fund (KFS) is a financial instrument operating within the Labor Fund, whose primary goal is to support the continuing education of employees and employers in Poland. It was introduced to prevent job losses and facilitate businesses in adapting employee competencies to the changing needs of the labor market, including technological and organizational changes. Employers of all sizes, from microenterprises to large companies, can benefit from KFS funding. The Fund finances a wide range of development activities, such as vocational courses and training, postgraduate studies, examinations leading to qualifications and certificates, as well as necessary medical and psychological examinations related to training. Funds are distributed at the local	public	Positive	Although the KFS is considered an effective tool supporting skill development, it operates on a co-financing basis, meaning that employers – except for micro-enterprises in specific cases – share the training costs. At the same time, the system is strongly focused on the real needs of businesses, ensuring that the supported activities are directly linked to the practical application of acquired skills in the workplace. Consequently, the KFS constitutes an important element of labor market policy in Poland, particularly important for companies that want to invest in the development of their employees while simultaneously reducing the costs of these investments. However, the availability of funds (under-allocation) and the bureaucratic application process remain a significant problem. Furthermore, the lack of a common standard for distributing funds between poviats (counties), which results in significant discretion on the part of county labor offices in awarding funding, remains a significant problem.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			level through district labor offices, which announce applications and make decisions on granting funding. This means that both national and regional priorities, established annually and often focusing on areas such as digital skills, shortage professions, and support for specific employee groups, such as older workers, play a significant role.			
MALTA BUSINESS BUREAU	Yes	MySkills Scheme	Reimbursement of up to 80% of training costs for employed persons and 100% for those not in employment, capped at €5,000 per application.	Co-financed by the European Social Fund Plus (ESF+) under the Training for Employment Project (ESF+.01.195)	Neutral	
MEDEF (FRANCE)	Yes	Sectoral Skills Operators (OPCO/Opérateurs de compétences) and statutory vocational training/apprenticeship contributions.	France has 11 approved sectoral skills operators. They finance apprenticeship and professionalisation contracts, support the skills development plan for companies, and assist branches on workforce planning and certifications. Contributions are collected centrally and distributed by France Compétences.	Mixed public/sectoral and bipartite governance. OPCOs are approved nationally, organised by branches/sectors, and managed jointly by employer and employee representatives. France competences allocate funds and regulates financing at system level.	See reply in the attached summary	Limits: levy costs, changing funding rules, budget pressure and administrative complexity.
OEB (CYPRUS)	Yes	Trainings subsidized through HRDA	The Human Resource Development Authority of	HRDA - The HRDA is governed by a tripartite	Positive	OEB is positive towards the Human Resource Development Authority's

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			Cyprus (HRDA) is a semi-government organisation which started operating in 1979 and is governed by the Human Resource Development Law 125(I)/99 as amended from time to time. The HRDA reports to the Government through the Minister of Labour and Social Insurance. It is governed by a tripartite Board of Directors of 13 members, comprising government, employer and trade union representatives. The HRDA's mission is to create the prerequisites for the planned and systematic training and development of Cyprus' human resources, at all levels and in all sectors, with a view to meet the economy's needs within the state's socio-economic policies. To accomplish its mission and to exercise its responsibilities and powers, it is funded by the Human Resource Development Fund. Every employer is required to pay to the Fund a Levy of 0,5% of the emoluments of each employee. The Government, as an employer, is exempted from this obligation.	Board of Directors of 13 members, comprising government, employer and trade union representatives. In specific, five members represent the government and the other eight represent the employer and trade union organisations. <i>The HRDA reports to the Government through the Minister of Labour and Social Insurance.</i>		training funds, as they constitute a structured and well-established mechanism for supporting lifelong learning and skills development in Cyprus. They enable businesses, particularly SMEs, to invest in the upskilling and reskilling of their workforce in a targeted and cost-effective manner. Importantly, the HRDA framework links training to actual labour market and business needs, while operating within a quality-assured system. This ensures that training contributes not only to employee development, but also to productivity, adaptability and enterprise competitiveness. At the same time, participation in training is increasingly being constrained by the application of de minimis rules, which limit the ability of enterprises to fully utilise available training support. For this reason, OEB considers it important to preserve and strengthen training funding mechanisms that are directly linked to labour market and business needs, while ensuring that enterprises can access them effectively and without disproportionate restrictions. *OEB's analytical suggestion is attached – as this was submitted to the European Commission as well as BusinessEurope.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
SEV (GREECE)	Yes	Special Account for Vocational Training (ELEK)	Training levy on companies. Governed by social partners (both employers and trade unions)	Bipartite	Neutral	Bipartite governance model marks progress compared to the past. As the new system is still consolidating, results remain limited
SPCR (CZECH REPUBLIC)	No	No unified training fund (ESF+ and national ad hoc schemes)	Training is financed mainly through ESF+ programmes, Labour Office tools and company-level initiatives. There is no permanent levy-based or sectoral training fund.	Predominantly public (ministries, Labour Office), with limited involvement of social partners at sectoral level.	Negative to Neutral	Funding opportunities exist but are fragmented, short-term and administratively burdensome. Employers lack a stable, predictable and flexible funding instrument.
SVENSKT NÄRINGSLIV (SWEDEN)	Yes	Job Security Councils / Transition Organisations (e.g. TRR, TSL, Omställningsfonden); Sectoral Training Funds	Sweden relies on collectively agreed adjustment funds rather than a traditional state training fund system. Funds are financed through employer contributions and provide career guidance, retraining support and financial assistance. Additional lifelong learning opportunities are available through Komvux, Higher Vocational Education (YH), universities and labour market training programmes.	Primarily bipartite governance through social partners; complemented by public education and training systems.	Positive overall, with room for improvement	Employers highly value transition organisations and Higher Vocational Education due to strong labour market relevance and employer involvement. Challenges remain regarding capacity constraints, regional disparities and the need for more flexible lifelong learning opportunities.
TEXTILE+MODE (GERMANY)	Yes, but not as a general national system; sector-specific and collectively agreed	Tarifvertrag zur Aus-, Fort- und Weiterbildung	In the textile and clothing sector, continuing training can be supported through a collectively agreed sectoral fund. Employers contribute a fixed annual amount per employee. When employees participate in eligible further training, the company can receive reimbursement from	Sectoral and bipartite governance. The mechanism is based on collective bargaining and is managed jointly by the employer side / sector organisation and the trade union side.	Positive to neutral	The fund is a useful and established mechanism where it applies, and bipartite governance provides legitimacy and trust. However, it should not be presented as the only route for continuing training. Companies and employees may also agree on training independently, without relying on a collective agreement or fund mechanism.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
	mechanisms exist		the fund for training costs. The fund supports training course costs, but it does not generally compensate labour costs during training leave.			In such cases, the assumption of costs, the treatment of training time and whether the training is counted as working time are negotiated freely between employer and employee.
VBO-FEB (BELGIUM)	Yes	Depending on sector	Employers contribute to the funds based on a certain % of global wages	Sectoral	Positive	Each sector can use the funds to optimize effect for their companies and workers. They can assess the needs on sectoral level and make sure the funds are used to maximize impact.
VIMOSZ (HUNGARY)	Yes	ESF+ co-funded training programmes (e.g. GINOP Plus)	Publicly funded programmes, largely co-financed by ESF+, support workforce upskilling and reskilling. Funding is mainly targeted at SMEs, unemployed people and priority sectors.	Public (national government and ESF+ Managing Authorities).	Neutral	Employers value the availability of training support, particularly when programmes are aligned with labour market needs. However, administrative requirements and limited SME capacity can reduce accessibility and effectiveness.
VNO-NCW (THE NETHERLANDS)	Yes	Divers, National SLIM private collective agreements, local several	-	-	-	-

8.2.1. Additional information on Training Funds:

ARBEITGEBER (SWITZERLAND)

- <https://www.sbfi.admin.ch/de/grundkompetenzen-erwachsener>

CENFIM (PORTUGAL)

- [The ESF+ in Portugal | European Social Fund Plus](#)
- <https://portugal2030.pt>

CONFEDERATION OF DANISH EMPLOYERS

- DA: [Kompetencefonde](#)
- DI: [Kompetenceudviklingsfonde - DI](#)
- DE: [Kompetencefonde](#)

ESTONIAN EMPLOYERS' CONFEDERATION

- <https://www.tootukassa.ee/en/karjaarikujundajale/oskuste-arendamine>; <https://www.tootukassa.ee/en/tootaja-leidmine-ja-koolitamine>

IBEC (IRELAND)

- Access to Ibec's position paper on the NTF: <https://www.ibec.ie/influencing-for-business/ibec-campaigns/our-business-ambition/our-skill-ambition>

IV (AUSTRIA)

- <https://www.cedefop.europa.eu/tools/financing-adult-learning-db/search/social-and-further-training-fund-temporary-work-austria-0>

LEWIATAN (POLAND)

- [Krajowy Fundusz Szkoleniowy - Ministerstwo Rodziny, Pracy i Polityki Społecznej - Wortal PSZ](#)

MALTA BUSINESS BUREAU

- [Explore personal schemes - New opportunities for you](#)

MEDEF (FRANCE), the 11 OPCO (Sectoral skills operators):

- www.afdas.com
- www.opco-atlas.fr
- www.ocapiat.fr
- www.unifformation.fr
- www.constructys.fr
- www.lopcommerce.com
- www.akto.fr
- www.opco2i.fr

- www.opcomobilites.fr
- www.opcoep.fr
- www.opco-sante.fr

OEB (CYPRUS)

- [Link](#)

SPCR (CZECH REPUBLIC)

- <https://www.esfcr.cz/>

SVENSKT NÄRINGS LIV (SWEDEN)

- [TRR: We make development possible – all working life | TRR](#)
- [Information in other languages](#)
- [Byggbranschens Yrkesnämnd, BYN](#)
- [English \(engelska\) - Skolverket](#)

VIMOSZ (HUNGARY)

- <https://eurydice.eacea.ec.europa.eu/eurydia/hungary/financing-adult-education-and-training>
- https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/06/the-role-of-subnational-governments-in-adult-skills-systems-country-notes_258f2060/hungary_d463f8dd/562d2c1a-en.pdf

VNO-NCW (THE NETHERLANDS)

- Leeroverzicht.nl - Geld - Financieringen

8.3. Compensation of Training Costs/Working Hours

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
ARBEITGEBER (SWITZERLAND)	Mostly, yes.	Employer co-financing + limited public support	Training co-financed by public authorities, employers and individuals (in IVET: employers	Mixed	Positive	Shared financing ensures labour-market relevance

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			pay for work-based learning, public authorities pay for education and training in VET schools)			
BDA (GERMANY)	No	-	-	-	-	-
CENFIM (PORTUGAL)	Yes	Mandatory Continuing Training (Formação Contínua Obrigatória) under the Portuguese Labour Code	Employers must provide a minimum of 40 hours of certified training per employee per year (subject to legal conditions). Training time is treated as working time and paid accordingly. If training is not provided, training-hour credits may accrue to the employee and may give rise to compensation when employment ends. Employers bear training costs.	Governed by the Labour Code; monitored by public authorities (ACT), implemented by employers.	Positive	Employers recognise the role of continuous training in productivity and skills development, although some consider compliance and reporting requirements burdensome, particularly for SMEs.
CEOE (SPAIN)	Yes	Company-based training (Formación programada por las empresas) and Individual Training Leave (Permisos Individuales de Formación – PIF)	Companies can recover training costs through social security rebates (bonification system). Workers are also entitled to paid training leave linked to working time. These instruments aim to support participation in training without reducing income or increasing company costs.	Mixed governance (public administration via SEPE/FUNDAE with social partner involvement)	Negative / Mixed	Employers value the existence of financial support mechanisms but highlight significant limitations. The system is perceived as overly complex and rigid, with administrative requirements that discourage participation—especially among SMEs. Additionally, the formal definition of eligible training often excludes more flexible and innovative learning formats required by companies.
CONFEDERATION OF DANISH EMPLOYERS	Yes	VEU-godtgørelse (refund for companies from the mandatory contribution, when they send employees to training)	Compensation schemes that provide income support when employees participate in approved training. VEU-godtgørelse primarily targets	Mixed governance	Positive	These schemes lower the financial barrier for both employees and employers by compensating for lost income during training. They support

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
		and SVU (State Educational Grant for Adults)	vocational training, while SVU supports education in general. Compensation typically replaces part of lost wages during training periods.			broad participation in CVET and are well-integrated with the social partners.
EK (FINLAND)	Yes	koulutuskorvaus	VET providers may pay training compensation for companies on apprenticeships but this is not mandatory. Amount of compensation is agreed case by case between employer and VET provider.	VET providers pay the compensation. There is no separate funding instrument for this compensation	Positive	It is fair the employers are compensated for their work of training apprenticeships
ESTONIAN EMPLOYERS' CONFEDERATION	Yes	Study leave	Employers are obliged to maintain employee's salary for 20 days study/training leave per annum	Public authority governance	Neutral	It is useful but burdensome for SMEs and sometimes used for training unlinked to work perspectives
IBEC (IRELAND)	Yes	Enterprise Ireland, IDA Training Grants	Subsidised training programmes are available at the point of entry for programmes such as Skillnet Ireland where training programmes are subsidised frequently at a rate of 40-60% below market prices. Other programmes such as Skills to Advance also provide subsidised training at point of entry. Modern apprenticeships also have built-in incentive rates for employers. Specific training grants are available through Ireland's state agencies Enterprise Ireland and the IDA.	Public authority	Positive	Overall, the programmes are positively received by employers who avail. The grants are assessed on a case-by-case basis and form part of a deeper skills assessment and strategy for the organisation which is undertaken with the state agency. Funding is applied and assessed with no guarantee of receipt. Ibec have called for the introduction of a comprehensive national training voucher scheme funded by the NTF which would provide employers a rebate on their unspent contributions to the NTF and also allow employers more direct control on funding programmes which best meet their

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			IDA is Ireland's agency aiming at attracting FDI to Ireland, and it offers a wide range of incentives including the cofounding of training of newly established companies in Ireland. Eligible costs include course costs, training advisory services, trainer's salary and indirect costs for training hours, trainees' salaries, cost directly related to training delivered such as travel expenses and supplies. Each grant is assessed on a case-by-case basis, the grant rate is determined by assessing the scope and ambition of the project and how well it meets IDA's four strategic priority areas. A maximum of 50% of the training costs may be grant aided, not exceeding €3m in 3 years. Enterprise Ireland is Ireland's agency for the development of indigenous enterprise, and it also provides training grants. Eligible costs include trainer and trainee personnel costs for the training hours, trainer and trainee operating costs, external expert advisory services. The maximum grant rate is based on			specific needs while also allowing employers to work with training and education providers for the development of new programmes, particularly relevant for niche industries where training may otherwise not be available.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			a percentage of eligible costs and depends on company size 70% for small, 60% for medium and 50% for large. Maximum funding allowed is €3m per training project. Skillnet Ireland has also received NTF funding to pilot a new SME incentive scheme to support SMEs who avail of their training programmes to offset the indirect costs of training, but this programme is yet to launch.			
IV (AUSTRIA)	Yes	-	-	-	Positive	
LDDK (LATVIA)	No	-	-	-	-	-
LEWIATAN (POLAND)		-	-	-	-	-
MALTA BUSINESS BUREAU MALTA BUSINESS BUREAU	Yes	Investing in Skills	Working-time compensation arrangements - €30.90/hour for trainers and €10.80/hour for trainees' wages	Investing in Skills is a scheme co-financed by the European Social Fund+ (ESF+), the Maltese Government and the Employers and falls under Malta's Operational Programme 'Fostering the socioeconomic wellbeing of society through the creation of opportunities for all and investment in human resources and skills' for	Negative	The application process may be overly bureaucratic - as a tangible example, an application from a specific SME was rejected due to the absence of the trainer's ID card number.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
				the 2021-2027 Programming Period.		
	Yes	Skills Development	The training provided shall upgrade existing skills of employees, address skills shortages, facilitate re-skilling, tackle skill gaps and strive towards developing a knowledge-based workforce. The scheme covers wage costs of trainees and internal trainers, as well as air travel expenses.	Governed and administered by Malta Enterprise, through local funds.	Positive	MBB has been in contact with several SMEs who have benefitted from this scheme, and the feedback received has been positive.
MEDEF (FRANCE)	Yes	Plan de développement des compétences (Skills Development Plan); Projet de transition professionnelle (PTP / CPF de transition); Pro-A (reconversion ou promotion par alternance).	The employer-initiated skills plan covers training for job adaptation, maintaining employability and developing skills. Training during working time is treated as working time and pay is maintained. PTP lets eligible employees take paid leave for certifying retraining; Transitions Pro may cover tuition, pay and related costs within applicable rules and ceilings.	Mixed governance. The employer designs and funds the skills plan; OPCOs can cover training. Regional Transitions Pro associations assess and finance PTP requests within a national legal and financing framework.	See reply in the attached summary	Employers meet legal training duties and keep employees employable. Constraints are direct wage/time costs, operational absence and paperwork. PTP is employee-driven and can support mobility outside the current employer.
OEB (CYPRUS)	Yes	A) Scheme for the Training of Long-term Unemployed Persons in Enterprises/Organisations B) Scheme for the Employment and Training	A) The aim of the Scheme for the Training of Long-term Unemployed Persons in Enterprises/Organisations (hereinafter "the Scheme") is to provide opportunities for long-term unemployed to enter/re-enter employment while	HRDA - The HRDA is governed by a tripartite Board of Directors of 13 members, comprising government, employer and trade union representatives. In specific, five members	Positive	OEB views these initiatives positively, as they support the practical integration of unemployed persons and young graduates into the labour market through employment-based training. The schemes respond directly to the needs of enterprises by allowing training to be tailored to specific job

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
		of Tertiary Education Graduates	acquiring the necessary knowledge and skills related to the needs of a specific job. The Scheme provides incentives for enterprises/organisations to employ and train the long-term unemployed—registered with the Public Employment Service (PES) for more than six consecutive months—by designing a personalised four-month training programme. Financial Coverage A subsidy is paid to the employer, amounting to €1,398 per month, against the costs incurred by the employer for the training of the unemployed. Minimum Salary of the Long-term Unemployed Person The HRDA sets the minimum gross salary to be paid by the employer to the unemployed during the training period and the first two months of employment at €1,088 per month. For professions where a higher minimum wage is set, the employer is obliged to pay the wage stipulated either by ministerial decree or collective agreement during both the training period and the	represent the government and the other eight represent the employer and trade union organisations. <i>The HRDA reports to the Government through the Minister of Labour and Social Insurance.</i>		requirements, while also reducing part of the cost and risk for employers through targeted subsidies. At the same time, they contribute to addressing skills mismatches, strengthening employability, and facilitating smoother transitions into sustainable employment. For long-term unemployed persons, the scheme provides an important route back into work, while for tertiary education graduates it supports their first structured work experience and helps enterprises benefit from new knowledge and talent. Participation in training is increasingly being constrained by the application of de minimis rules, which limit the ability of enterprises to fully utilise available training support. For this reason, OEB considers it important to preserve and strengthen training funding mechanisms that are directly linked to labour market and business needs, while ensuring that enterprises can access them effectively and without disproportionate restrictions. *OEB's analytical suggestion is attached – as this was submitted to the European Commission as well as BusinessEurope.

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			subsequent two-month employment period. B) The aim of the Scheme for the Employment and Training of Tertiary Education Graduates (hereinafter "the Scheme") is to improve the organisation and management of enterprises and organisations through the employment and training of new tertiary education graduates, as well as the smooth integration of the graduates into suitable employment positions. The Scheme provides incentives for enterprises/organisations to offer employment positions, practical training, and six-month's work experience to graduates under the age of 30. Financial Support A subsidy is paid to the employer , amounting to €1,548 per month, against the costs incurred by the employer for the training of the graduate. Minimum Graduate Salary The HRDA sets the minimum gross monthly salary to be paid by the employer to the graduate during the training period and			

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
			the first two months of employment at €1,248.			
SEV (GREECE)	Yes (partially)	N/A	Compensation of training costs as above. Working-time compensation does not apply	As above	Neutral	-
SPCR (CZECH REPUBLIC)	Yes	Labour Office training and retraining support; tax deductibility of training costs	Public schemes provide financial support for retraining (mainly for jobseekers and selected employees). Employers may deduct training costs from the tax base. Temporary schemes (e.g. short-time work measures) have included compensation for training periods.	Public authority (Labour Office, ministries), with partial employer involvement	Neutral	Support exists but is often limited in scope, temporary or administratively demanding. A comprehensive and systemic framework is missing.
SVENSKT NÄRINGSLIV (SWEDEN)	Yes	Employer-funded training arrangements; Transition Support Schemes; Educational Leave Act provisions	Training required for the current job is considered working time and must be fully paid by the employer, including salary and training costs. Voluntary education is not subject to a compensation requirement unless agreed by the employer. Employers can use publicly funded retraining schemes and transition funds to support employee development. Training expenses are generally tax-deductible. Employees also have a statutory right to educational leave.	Mixed governance involving employers, public authorities and social partner-managed transition schemes.	Positive	The framework provides legal clarity and encourages employer investment in skills development. Employers view training as a strategic investment, although balancing operational needs with employee study leave can sometimes create practical challenges.
TEXTILE+MODE (GERMANY)	Yes, through several mechanisms,	Public training subsidies, Qualifizierungsgeld, educational leave /	Compensation can take different forms. Public instruments may subsidise training costs and, in	Mixed governance: public authorities for statutory support	Neutral to positive	Employers value the flexibility of having several possible routes. Public subsidies can reduce financial barriers, and

Stakeholder	Mechanism exists?	Name of the instrument / mechanism	Short description / main features	Governance / management	Employers' assessment	Rationale for assessment
	but no single uniform model	Bildungsurlaub or Bildungszeit, and company-level agreements	some cases, wage costs or income replacement during training. Educational leave laws in most federal states provide paid time off for recognised training, although the details differ by federal state. Separately, companies and employees may freely agree on further training outside collective agreements or public funding schemes, including who pays the training costs and whether training time is treated as working time.	instruments; Federal States for educational leave; social partners where collective agreements apply; company-level negotiation for individual arrangements.		educational leave can support individual upskilling. At the same time, the system is fragmented, eligibility criteria and administrative procedures can be complex, and not all training needs are covered. For company-specific training, freely negotiated arrangements between employer and employee often remain important in practice.
VBO-FEB (BELGIUM)	Yes	Depending on region. VOV (FL) and CEP (Bxl and Wall) are the most known ones	Combination of financial support for the training itself or working-time compensation arrangements	Public authority	Positive	Government plays its role as partially responsible for lifelong learning by contributing to the cost of training and/or working hours.
VIMOSZ (HUNGARY)	Yes	Publicly funded employer training support schemes (e.g. GINOP Plus)	Certain public support schemes cover part of eligible training costs, including training fees and, in some cases, employees' wage costs during training undertaken in working hours.	Public authority	Neutral	While financial support is available, administrative requirements and programme-specific eligibility conditions may limit uptake, particularly among SMEs.
VNO-NCW (THE NETHERLANDS)	Yes	collective agreements	Different in collective agreements	-	-	-

8.3.1. Additional information on Training Funds:

CENFIM (PORTUGAL)

- <https://www.cedefop.europa.eu/en/tools/financing-adult-learning-db/search/vocational-training-continuing-training-0> ;
<https://www.iefp.pt/formacao>

CONFEDERATION OF DANISH EMPLOYERS

- <https://virk.dk/vejledning/aub/aub-arbejdsgiver/aub-veu/#kontakt/>
- <https://svu.dk/>

ESTONIAN EMPLOYERS' CONFEDERATION

- [Study leave | CEDEFOP](#)

IBEC (IRELAND)

- <https://www.ida-ireland.es/getmedia/67cd8c4b-1aed-4f36-9259-e9bf97d76f9f/Training-Grant-Client-Guide-2026.pdf>
- <https://www.enterprise-ireland.com/documents/company-development-training-grant-terms-of-reference-docx-en-171966.docx>

IV (AUSTRIA)

- See all instruments tagged as “grants for companies”: <https://www.cedefop.europa.eu/en/tools/financing-adult-learning-db/instruments-map>

MALTA BUSINESS BUREAU

- [Exclusive Employer schemes: apply quickly and easily](#)
- [Skills Development | Malta Enterprise](#)

OEB (CYPRUS)

- [Training Plan for the Long-Term Unemployed in Businesses/Organizations](#)
- [Scheme for the Employment and Training of Tertiary Education Graduates](#)

SPCR (CZECH REPUBLIC)

- <https://www.uradprace.cz/>

TEXTILE+MODE (GERMANY)

- [BMAS / Federal Employment Agency – Qualifizierungsgeld and continuing training support](#)
- [Cedefop – educational leave in Germany](#)
- [information on Bildungsurlaub / Bildungszeit](#)

VBO-FEB (BELGIUM)

- [Vlaams opleidingsverlof | Vlaanderen.be](#)
- [Congé éducation payé - Emploi et Formation professionnelle en Wallonie](#)

VIMOSZ (HUNGARY)

- [IBSH – Adult Education and Training Funding in Hungary](#)

9. Annex D. EU-Sectoral Fiches

This annex presents the desk-research fiches prepared for the EU-sectoral analysis. They cover selected Blueprint projects, sectoral alliances, skills academies and related initiatives.

Each fiche summarises the initiative's scope, governance, duration and funding, and examines its approach to identifying skills needs, developing training responses, and providing and certifying training. The fiches are based primarily on publicly available information and, where relevant, were complemented by evidence from the sectoral consultations.

9.1. Construction sector Blueprint (FIEC)

Outline

Link	Home - Construction Blueprint
Origin	Developed under the EU Skills Blueprint initiative and coordinated by Fundación Laboral de la Construcción (Spain) with participation of EU bodies such as FIEC, EBC, and EFBWW
Sector/Industry	Construction industry
Owner	Led by Fundación Laboral de la Construcción
Description	Aimed at aligning workforce skills with the evolving needs of the construction industry—particularly energy efficiency, circular economy, and digitalisation—by developing strategic sectoral approaches and adapting vocational training accordingly
Duration	4 years (January 2019 – December 2022)
Funding	Funded by the 2018 Call of the Erasmus+ Programme of the European Union. Budget: 4.000.000 €
Follow-up / continuity	Yes. Construction Blueprint 2 (2025–2028) directly builds on the first Construction Blueprint, updating the sectoral skills strategy, Construction Skills Observatory and training offer, while supporting implementation of the Pact for Skills in Construction.

Identification of skills needs

The Construction Sector Blueprint conducts extensive research and engages in active consultations with industry stakeholders to identify the key future skill requirements in the construction sector. These efforts are especially focused on critical areas such as energy efficiency, digitalisation, and the circular economy, as these are the driving forces for transformation in the industry.

To gather and structure this intelligence, the project employs several tools and approaches, including an interactive map of good practices that highlights successful initiatives addressing skill gaps at national and regional levels. This map helps stakeholders across Europe identify and learn from effective solutions that have already been implemented. Additionally, the skills observatory provides valuable insights by gathering data and offering continuous monitoring of sector-specific skill needs, with a particular emphasis on emerging trends. The competency frameworks developed by the project serve as essential guides for aligning training programmes with the identified needs, ensuring that the workforce is adequately prepared to meet future industry demands.

The Blueprint initiative not only uses data from labour market intelligence but also incorporates input from various industry partners, including employers, trade unions, and educational bodies, to ensure that the skill requirements reflect the true needs of the sector. This collaboration is central to the project's success, as it helps ensure that training programmes and curricula are relevant, up-to-date, and aligned with evolving industry challenges.

Development of a training response

In response to the identified skill gaps, the Construction Sector Blueprint focuses on developing new and updated training curricula that address the current challenges and technological advancements in the construction sector. This includes creating Massive Open Online Courses (MOOCs), pilot training programmes in key areas, and updates to existing occupational profiles to reflect new skills in energy efficiency, digitalisation, and circular economy practices.

The Blueprint promotes lifelong learning and continuous professional development, which are essential for ensuring that workers remain adaptable in a rapidly changing sector. It supports cross-border mobility by promoting greater transparency and comparability of training outcomes across European countries, helping employers, workers and training providers to better understand skills and learning outcomes developed in different national contexts. Furthermore, the initiative seeks to improve the attractiveness of the construction sector to underrepresented groups, such as women and younger generations, by advocating for more inclusive training approaches and providing guidance on integrating these groups into the workforce.

In addition to these efforts, the Blueprint is also focused on developing training methodologies that reflect best practices in the industry. This includes adopting modern VET methodologies and updating traditional training approaches to incorporate new digital tools and sustainable construction practices. By aligning with EU-level strategies such as the European Skills Agenda and the Pact for Skills, the initiative ensures that the training responses are relevant and impactful in addressing both current and future challenges in the construction sector.

Training provision and certification

The Construction Sector Blueprint initiative promotes modern Vocational Education and Training (VET) methodologies and uses European reference tools, including the European Qualifications Framework (EQF), to support transparency and comparability of learning outcomes. It works in close partnership with training providers to ensure that the training programmes offered are consistent and of high quality, meeting both national and European level requirements.

A key focus of the initiative is on making learning outcomes more transparent and comparable across different national contexts. The Blueprint develops common sectoral learning outcomes and uses European reference frameworks such as the EQF to facilitate their understanding by employers, workers and training providers. Such alignment can support mobility and the wider use of training outcomes, but does not in itself imply automatic recognition of qualifications across Member States. Formal certification and recognition remain subject to the competent providers and applicable national qualification arrangements.

In addition to this, the Blueprint supports the development of training resources that are accessible to all. This includes providing digital learning options such as MOOCs, blended learning, and face-to-face training sessions. The diverse training provision helps to address the varying needs of the construction workforce, making it easier for individuals to gain the skills they need to stay competitive in the sector.

The certification process is supported by the development of sector-specific standards, ensuring that all training aligns with the key industry trends, such as energy efficiency, digitalisation, and sustainability goals. These arrangements can improve the transparency and credibility of training outcomes for employers and workers and support greater mobility within the European construction sector, while formal recognition remains governed by the relevant national qualification and certification systems.

9.2. Automotive skills alliance (CEEMET)

Outline

Link	https://skills-hub.eu/home
Origin	The Skills Hub is part of the Automotive Skills Alliance, coordinated by CEEMET, which emerged from the DRIVES project
Sector/Industry	Automotive industry
Owner	Managed by the Automotive Skills Alliance (ASA) under CEEMET
Description	It is an online platform that supports upskilling and reskilling in the automotive sector, focusing on new technologies like electric mobility and automation. It provides training resources, job roles, and skills frameworks for workers and employers
Duration	Ongoing, with the platform developed as part of the DRIVES project (2018-2022)
Funding	The project was co-funded by ERASMUS+ Programme of the European Union under the DRIVES project.
Follow-up / continuity	Yes. The Automotive Skills Alliance (ASA) and its Skills Hub provide continuity to the DRIVES project, maintaining and expanding its skills framework, job-role definitions, training resources and learning platform.

Identification of skills needs

The Skills Hub focuses on identifying and addressing emerging skill needs within the automotive sector, particularly in areas such as electric vehicles (EVs), automation, and digitalization. The initiative uses a combination of labour market intelligence, industry feedback, and sector-specific competency frameworks to assess and understand the skill gaps in the workforce. These competency frameworks are developed through collaboration with key stakeholders, including industry associations, trade unions, and training providers.

One of the key tools provided by the Skills Hub is the Apprenticeships Comparison Tool, which helps identify skill shortages by comparing current apprenticeship offerings against emerging industry needs. This tool enables professionals and employers to pinpoint areas where skills gaps exist, facilitating the development of targeted training programs. Additionally, the platform includes a Good Practice Resource, which collects innovative approaches to apprenticeship schemes, helping to share best practices and improve training initiatives across Europe.

The Job Roles and Skills Reference Definitions Search Portal is another vital resource. It allows users to explore trending job roles, their required skills, and the associated competencies across the European automotive sector. By providing easy access to this information, the platform enables stakeholders to better understand workforce needs and ensure that training

programs are aligned with market demands. This comprehensive approach supports the automotive industry's transition towards new technologies, such as EVs and digital manufacturing, and ensures that the workforce is equipped with the skills necessary to meet future challenges.

Development of a training response

In response to the identified skills gaps, the Skills Hub develops a variety of tailored training solutions designed to upskill and reskill the automotive workforce. These training programs are modular, allowing for flexibility in learning and enabling professionals to acquire the specific competencies needed for roles in electric mobility, advanced manufacturing, automation, and digitalization. The platform offers a blend of digital and face-to-face training options, ensuring that learning is accessible and adaptable to different needs.

A central feature of the Skills Hub is the provision of learning paths that guide individuals through a structured sequence of training modules, ultimately helping them reach a desired job role within the automotive sector. The training is continuously updated to reflect the latest technological developments, ensuring that the content remains relevant and aligned with industry trends, such as the transition to green mobility solutions and the integration of digital technologies.

The platform also supports the revision of existing curricula in vocational education and training (VET) programs, ensuring that these educational frameworks incorporate the skills necessary for the future of the automotive industry. These revisions help educational institutions keep pace with technological advancements, such as automation in manufacturing and the rise of electric vehicles, making sure that workers stay competitive in an ever-changing job market.

Training provision and certification

The Skills Hub offers a range of accredited training courses designed to equip professionals with the necessary skills to thrive in the rapidly evolving automotive sector. The training programs are developed in close collaboration with industry experts and educational institutions, ensuring that the content is not only up to date but also meets industry standards. The platform emphasizes a flexible learning approach, incorporating both blended learning models and Massive Open Online Courses (MOOCs). This flexibility ensures that individuals can access training at their own pace and convenience, whether through digital platforms or in-person instruction.

Training developed through the Skills Hub may use European reference frameworks, including the European Qualifications Framework (EQF), to support the transparency and comparability of skills and learning outcomes. Such references can help employers, workers and training providers understand the level and content of training across different contexts, but do not in themselves imply automatic recognition or portability across Member States. Where training leads to formal qualifications or certificates, recognition depends on the competent provider and the applicable national qualification and quality-assurance arrangements.

In addition to the training itself, the platform promotes social dialogue between trade unions, employers, and educational bodies. This collaboration ensures that the training programs offered are not only aligned with industry needs but also consider the views of key stakeholders

within the sector. By fostering such dialogue, the Skills Hub helps to create a more inclusive and effective training environment that supports the automotive sector's transition to a more sustainable and digitally advanced future.

9.3. “Skillsea” project of maritime shipping industry (ECSA)

Outline

Link	SkillSea "Futureproof Skills for the Maritime Transport Sector" - SkillSea
Origin	Developed under the Erasmus+ program as part of a Sector Skills Alliance initiative.
Sector/Industry	Maritime shipping industry
Owner	Project coordinated by STC-Group
Description	Ensure Europe’s maritime professionals acquire critical digital, green, and soft management skills necessary for meeting the evolving demands of the maritime transport sector.
Duration	The project ran from January 2019 to June 2023
Funding	The project received funding through the European Maritime and Fisheries Fund (EMFF) and the Erasmus+ program, as well as contributions from EU member states’ national funds.
Follow-up / continuity	Yes. The European Maritime Skills Forum (EMSF), launched in 2025, explicitly builds on the outcomes of SkillSea and brings together social partners, training providers and other maritime stakeholders to continue work on green, digital and leadership skills.

Identification of skills needs

The SkillSea project undertook a thorough and forward-looking analysis to determine both the current and future skills required within the maritime sector, with particular emphasis on the impact of digitalisation, automation, and sustainability. This research was guided by expert institutions within the project consortium, which assessed sectoral trends and emerging challenges to formulate evidence-based recommendations for educational development. The resulting insights underpinned the creation of a set of innovative tools, designed to support maritime education and training in adapting to rapidly evolving industry needs.

Among these tools were the Strategy Direction Location (STRA.D.L.), which helps align maritime training with strategic industry objectives, and the Transcript International Transfer (Trans.I.T.), developed to ease the cross-border recognition and mobility of qualifications. The Strategic Evaluation MET Tool was introduced to assess the effectiveness and relevance of maritime education and training programmes, while the Stakeholder Cooperation for MET Tool (S.CO.MET.T.) was aimed at enhancing collaboration between educators, regulators, and industry actors. Finally, the Shipping Employability AHP Based Anticipating Tool (S.E.A.B.A.N.T.) was developed to forecast future employability trends and ensure training remains responsive to the evolving labour market. These tools were instrumental in shaping a coherent, strategic response to the skills challenges facing the sector.

Development of a training response

In direct response to the skill gaps identified through these analyses, SkillSea designed and implemented a suite of seven modular educational packages. These packages addressed the most pressing skills needs in the sector, focusing on green skills, digital competencies, leadership, innovation, intrapreneurship, and STEM (Science, Technology, Engineering, and Mathematics). Each package was crafted to be adaptable to various educational contexts across Europe and included clearly defined learning outcomes, appropriate pedagogical approaches, and assessment methods to ensure high-quality learning experiences.

Recognising the importance of educator preparedness, SkillSea also developed a comprehensive train-the-trainer programme. This initiative was crucial to ensuring that instructors were fully equipped to deliver the newly developed content effectively. The goal was to support the modernisation of maritime curricula, aligning educational offerings with current and future sector demands while embedding a forward-thinking, sustainable perspective into training provision.

Training provision and certification

The training developed under the SkillSea project was delivered through a blended learning approach that combined traditional classroom instruction with practical, hands-on experiences and digital simulations. This method was chosen specifically to reflect the complex, technologically advanced, and varied nature of modern maritime work environments. By accommodating the different learning preferences and professional circumstances of maritime personnel, the blended model ensured both accessibility and pedagogical effectiveness.

Upon successful completion of the training, participants received certificates linked to defined learning outcomes and referenced, where relevant, to European and national qualifications frameworks. Such referencing can support transparency and comparability across countries but does not in itself imply automatic recognition of qualifications. Formal certification and recognition remain subject to the competent providers and applicable national and sector-specific arrangements.

To support the continuity and further development of high-quality maritime education, SkillSea also established the Maritime Education and Training Network (MET-NET). Comprising eleven maritime education and training providers from across Europe, this network aims to promote sustained cooperation, mutual learning, and the continuous updating of training programmes in line with sectoral developments.

9.4. Tourism: PANTOUR

Outline

Link	https://nexttourismgeneration.eu/pantour/
Origin	Erasmus+ project developed as a follow-up to the Next Tourism Generation Skills Alliance (NTG)
Sector/Industry	Tourism and hospitality sector
Consortium lead	Led by the Spanish Confederation of Hotels and Tourist Accommodations (CEHAT), the PANTOUR consortium comprises 13 partners from 10 EU countries: CEHAT; Satakunta University of Applied Sciences (SAMK); Technological University Dublin (TU Dublin); Italian Federation of Tourism Industry (Federturismo Confindustria); Gestlabor; University of the Aegean; European Tourism Association (ETOA); Hungarian Hospitality Employers' Association (VIMOSZ); Zangador Research Institute; Breda University of Applied Sciences (BUas); European Association of Institutes for Vocational Training (EVBB); Turismo de Portugal; and European Federation of Rural Tourism (RURALTOUR).
Description	Address the skills gap within the European tourism sector focusing on digital, green, and social competencies. The project produces key resources such as the Sectoral Skills Intelligence Monitor, Skills Lab, Resource Books for Trainers, and a Skills Strategy Plan for 2026-2036.
Duration	2022-2026
Funding	Co-funded by the Erasmus+ programme of the European Union
Follow-up / continuity	PANTOUR is itself a follow-up to the Next Tourism Generation (NTG) Skills Alliance. Beyond the project, continuity is foreseen through the Tourism Skills Strategy and Action Plan 2026–2036 and the National and Regional Skills Partnerships developed under the Pact for Skills. No separate successor project has been identified to date.

Identification of skills needs

The PANTOUR project is dedicated to identifying both the current and future skill needs of the tourism sector across Europe, with a specific focus on digitalisation, sustainability, and personalised services. These areas are recognised as essential for the sector's long-term growth and resilience, particularly as technological advancements, environmental sustainability, and evolving customer preferences continue to shape the industry. Digitalisation, for example, requires tourism professionals to develop competencies in areas such as online marketing, data analysis, and digital customer engagement. Similarly, sustainability is increasingly at the forefront, with a growing demand for eco-friendly practices and responsible tourism.

To effectively track these evolving needs, PANTOUR utilises the Sectoral Skills Intelligence Monitoring System. This tool offers real-time data that highlights the current state of skills in the tourism sector, identifies emerging trends, and pinpoints skill gaps. By collecting data from across Europe, the system provides a comprehensive overview of where the industry is heading and what competencies are necessary to address future challenges. For example, the system can reveal areas where there is a shortage of skilled professionals in digital tools or green technologies, helping to target these gaps in the training provided.

In addition to using digital tools, PANTOUR takes a collaborative approach by engaging a broad range of stakeholders, including employers, trade unions, education providers, and industry associations. This collaboration helps create a clear understanding of sector-specific competency frameworks that define the skills needed for various roles within the tourism industry. The project also conducts thorough skills gap analyses, which not only identify the gaps that currently exist but also anticipate future needs based on emerging trends and market shifts. This proactive approach ensures that the training programmes designed by PANTOUR are tailored to the real, evolving demands of the sector, ensuring workforce readiness for upcoming challenges.

Development of a training response

In response to the skill gaps identified, PANTOUR develops targeted training programmes that focus on the essential competencies required to meet the needs of a digital, sustainable, and customer-focused tourism sector. The training is designed to address the digital, green, and social competencies that have been identified as crucial to the sector's future. For example, digital skills such as data analytics, social media marketing, and online booking systems are integrated into the curriculum, ensuring that tourism professionals are equipped to thrive in an increasingly online world. Green competencies cover sustainability-focused skills such as waste management, energy efficiency, and the promotion of eco-tourism. Social skills, including customer service excellence, communication, and cultural sensitivity, remain a core component of the training.

To ensure that these training programmes are as relevant as possible, existing curricula are continuously updated. For instance, digital transformation is a core element of the training, focusing on how technology is reshaping customer interactions, marketing strategies, and operational efficiency. Similarly, sustainable tourism practices are embedded into the training materials, equipping professionals with the knowledge needed to operate in an environmentally responsible manner.

Moreover, PANTOUR leverages digital platforms to facilitate flexible, accessible learning. By delivering training through these platforms, PANTOUR ensures that tourism professionals across Europe have the opportunity to engage with the content at their own pace and convenience, reducing barriers to access. These platforms support both online and blended learning models, which combine the flexibility of digital learning with the benefits of in-person sessions, fostering a holistic learning experience. This hybrid approach is particularly important given the diverse learning preferences and geographic distribution of the tourism workforce. By providing training that is both accessible and adaptable, PANTOUR enables tourism professionals, whether they are based in urban or remote areas, to upgrade their skills and stay competitive in the evolving market.

Training provision and certification

PANTOUR provides blended learning opportunities, combining online learning with face-to-face training to ensure that the training is both accessible and engaging. This approach recognises that tourism professionals have varied learning styles and time constraints, offering them the flexibility to engage with training in a manner that suits their personal preferences and schedules. The online modules provide the opportunity for participants to learn key concepts and theories at their own pace, while the face-to-face sessions offer practical, hands-on experiences, where learners can apply their new skills in real-world contexts. This combination enhances the overall learning process, ensuring that professionals not only gain theoretical knowledge but also develop the practical skills necessary for the workplace.

The training packages developed by PANTOUR cover a wide range of skills, with a particular focus on digital, green, and social competencies. For instance, professionals are trained in digital marketing, using social media tools to engage customers, and in implementing sustainable practices, such as reducing carbon footprints and promoting responsible tourism. The materials are crafted using innovative content and teaching methods to ensure that the training is both engaging and effective. For example, interactive simulations, case studies, and scenario-based learning modules are used to bring the content to life, ensuring that learners can relate the training to their everyday work in the tourism sector.

PANTOUR training outputs are structured to support transparency and comparability of skills and learning outcomes, including through references to the European Qualifications Framework (EQF). Such referencing can help employers and training providers understand the level and content of learning outcomes, but does not in itself imply automatic recognition or portability across Member States. Where training leads to formal certification or recognition, this depends on the competent providers and the applicable national qualification and quality-assurance arrangements.

9.5. Steel sector “European Steel Skills Agenda” (EUROFER)

Outline

Link	https://www.estep.eu/projects/estep-projects/essa/essa-project
Origin	Erasmus+ co-funded Sector Skills Alliance project developed as a model for sector skills cooperation to address the evolving skills needs of the steel industry
Sector/Industry	Steel industry
Owner	European Steel Technology Platform (ESTEP)
Description	ESSA develops a coordinated, industry-driven skills strategy for the European steel sector, addressing digital, technological, and environmental challenges. It fosters collaboration among stakeholders to align training with evolving workforce needs. The project delivers targeted, forward-looking training solutions and skills intelligence tools.
Duration	The initiative started in 2018 and has been implemented over several years as a long-term strategy to support workforce development in the steel industry
Funding	Co-funded by the Erasmus+ programme
Follow-up / continuity	Yes. Skills4EII (2025–2028) explicitly takes up the results of ESSA, together with those of SPIRE-SAIS, and further develops them within the Large-Scale Partnership for Energy Intensive Industries under the Pact for Skills.

Identification of skills needs

The European Steel Skills Agenda (ESSA) focuses on identifying both current and future skill needs in the steel industry, with a particular emphasis on digitalisation, sustainability, and technological innovation. As the steel industry faces increased pressure to adopt sustainable practices and integrate advanced technologies, ESSA uses a comprehensive approach to anticipate these evolving demands. To achieve this, the project established the European Steel Technology and Skills Foresight Observatory, which conducts regular expert panels and labour market analyses. These analyses help identify both existing and emerging skills gaps, which are crucial for ensuring the sector’s continued competitiveness.

The observatory gathers insights from a wide range of industry stakeholders, including steel companies, educational institutions, and research bodies. Through this collaboration, ESSA develops skills intelligence tools, competency frameworks, and skills gap reports that highlight the specific areas where the workforce needs reskilling or upskilling. These reports provide key data that inform the development of training content, allowing ESSA to align workforce strategies with the long-term goals of the steel sector, particularly in areas such as green steel production, automation, and digitalisation.

In addition, ESSA regularly consults with stakeholders through surveys, workshops, and expert panels to ensure the identification of both immediate and future skill needs. This helps the project stay ahead of industry trends, ensuring that training and workforce development efforts address the real-world challenges faced by steel companies across Europe.

Development of a training response

In response to the identified skill gaps, ESSA has developed modular and flexible training programmes specifically tailored to the steel industry's evolving needs. The training programmes focus on key areas such as digital transformation, green steel production, and social competencies. By incorporating the latest technological advancements, such as automation, data analytics, and green steel technologies, these training programmes aim to reskill and upskill the workforce, ensuring they are equipped to handle the sector's future challenges.

The modular approach allows workers to build their skills gradually, with each module designed to be flexible and easily integrated into their professional lives. This structure accommodates the needs of both experienced workers who require advanced skills in areas like automation and digital technologies, as well as new entrants who need foundational knowledge of modern steel production techniques and sustainable practices. By offering flexible learning paths, ESSA aims to ensure that all workers can enhance their skillsets at their own pace, without interrupting their work responsibilities.

A key focus of ESSA's training response is to make the steel industry more attractive to new talent. By modernising training content and addressing the growing importance of green steel and digitalisation, ESSA aims to change perceptions of the steel sector, highlighting its role in sustainability and technological innovation. This, in turn, helps ensure a future-ready workforce that is prepared for the challenges of a rapidly changing industry.

Moreover, ESSA places a strong emphasis on lifelong learning and continuous professional development. By fostering an environment where workers can continually enhance their skills, ESSA ensures that the steel workforce remains competitive and adaptable in the face of future technological and market changes.

Training provision and certification

ESSA's training provision adopts a collaborative and adaptive approach, involving a diverse range of stakeholders such as industry experts, education providers, and social partners. This ensures that the training content is both relevant to the steel sector and aligned with the real-world needs of the workforce.

The training is structured in a modular format, which allows workers to gradually build up their skills in a flexible manner. This is particularly important in the steel sector, where workers often have specific professional responsibilities that need to be balanced with training. The modular training approach helps ensure that workers can enhance their skills without significantly disrupting their work duties, leading to more efficient and effective learning outcomes.

ESSA's training content uses European reference frameworks, including the European Qualifications Framework (EQF), to support the transparency and comparability of skills and learning outcomes across the steel sector. Such references can facilitate employers' and

training providers' understanding of the level and content of training and support mobility, but do not in themselves imply automatic recognition or portability of qualifications across Member States. Where training leads to formal certification or recognition, this depends on the competent providers and the applicable national qualification and quality-assurance arrangements.

Through the ESSA initiative, training is not only about addressing immediate skills gaps but also about ensuring that the steel workforce is equipped to meet long-term challenges. By emphasising digitalisation, green steel production, and social competencies, ESSA's training programmes support the European steel industry's contribution to wider EU goals such as the Green Deal and the Digital Strategy.

In conclusion, ESSA provides a comprehensive and forward-thinking approach to skills development in the European steel industry, ensuring that the workforce is well-prepared for the technological, economic, and environmental demands of the future. By focusing on modular, flexible training, transparent and credible certification arrangements, and a commitment to lifelong learning, ESSA ensures that workers continue to grow, while also supporting the sustainability and competitiveness of the steel sector.

9.6. "Skills4retail" (Eurocommerce)

Outline

Link	Skill4Retail: Transforming Europe's Retail Through Education
Origin	It stems from a collaborative effort initiated by EuroCommerce and UNI Europa under the European Commission's Pact for Skills
Sector/Industry	Retail and wholesale sectors
Owner	JA Europe
Description	It aims to address emerging skills needs in digital, green, and resilience areas by developing a new Retail Skills Strategy and Vocational Education and Training (VET) programs. The project seeks to bridge the digital skills gap and prepare the EU workforce for future industry challenges
Duration	Launched in August 2023, ongoing
Funding	Co-funded by the Erasmus+ programme and Partnerships for Innovation with a budget of €4.8 million. The funding supports various partners across multiple EU countries, including Austria, Ireland, Hungary, Romania, and others
Follow-up / continuity	The project is ongoing until 2027. No formal successor project has yet been established, although a follow-up pipeline is being developed, including potential Erasmus+ VET and Centres of Vocational Excellence initiatives and stronger links with the Retail and Wholesale Large-Scale Skills Partnership.

Identification of skills needs

Skills4Retail is committed to ensuring the retail and wholesale sectors are equipped with the skills needed to thrive in an increasingly digital, sustainable, and resilient landscape. Through its comprehensive approach, the project identifies both current and future skill requirements, addressing key industry challenges such as digitalisation, sustainability, and resilience. In particular, the project focuses on areas such as e-commerce, digital marketing, data analytics, and customer experience management, which have become vital as the retail sector adapts to rapid technological advancements and shifting consumer expectations.

To effectively identify these skills gaps, Skills4Retail employs a variety of strategies. It leverages labour market intelligence, drawing on detailed data analysis and sector-specific trends to better understand the skills that are in demand. The project also engages with industry stakeholders, such as retailers, educators, and policymakers, through consultations and surveys, ensuring that the needs of both businesses and workers are represented. Skills audits, which evaluate the current competencies of the workforce, are also a key component in this

process. These audits provide insights into the areas where there is a lack of proficiency, allowing for the development of targeted training initiatives that will help close these gaps.

Moreover, Skills4Retail goes beyond short-term needs by considering future skills requirements. This includes identifying emerging trends such as the growing importance of green technologies, sustainability practices, and data-driven decision-making in retail. The European Retail Skills Strategy, one of the project's main deliverables, outlines a roadmap to close these skills gaps and supports the transformation of the retail industry through a workforce that is both adaptable and forward-thinking.

Development of a training response

Once the key skill gaps are identified, Skills4Retail moves swiftly into the development of targeted training responses. These programmes aim to equip retail workers with the digital, green, and resilience-related skills necessary to stay competitive in a rapidly evolving marketplace. The project recognises the pressing need for training in emerging areas such as e-commerce management, social media strategies, and advanced customer service techniques, all of which are central to enhancing the customer experience and driving business growth.

A key feature of the training response is the continuous updating and redesigning of curricula to reflect the ever-changing demands of the retail sector. Educational programmes are designed not only to teach technical skills but also to foster a customer-centric mindset that is essential for modern retail roles. The integration of digital tools into the training ensures that workers are prepared for the new realities of the workplace, such as using analytics to drive business decisions or engaging with consumers through digital channels.

Skills4Retail champions the use of blended learning approaches, combining online and offline training to maximise accessibility and flexibility. This model ensures that workers, especially those in part-time or shift-based roles, can access learning at their own pace, wherever they are located. Blended learning allows for a more personalised learning experience, giving employees the flexibility to balance their professional responsibilities with training opportunities. By offering a combination of traditional classroom learning and digital platforms, Skills4Retail provides a diverse learning environment that caters to different learning preferences and career stages.

Training provision and certification

The provision of training under Skills4Retail is designed to be both comprehensive and flexible, providing a mix of in-person and digital learning formats. The project focuses heavily on work-based learning and offers modular, short-term courses that can be tailored to meet the specific needs of individual workers and businesses. This approach allows workers to upskill in areas that are most relevant to their day-to-day roles while also gaining documented learning outcomes and, where applicable, qualifications or certificates recognised under the relevant national arrangements.

Skills4Retail uses European reference tools, including the European Qualifications Framework (EQF), to support the transparency and comparability of learning outcomes. Such references can help employers, learners and training providers understand the level and content of

training across different contexts, but do not in themselves establish automatic recognition across Member States. Where programmes lead to formal qualifications or certification, recognition depends on the authorised provider and the applicable national qualification and quality-assurance arrangements.

The certification process ensures that workers who complete Skills4Retail's training programmes gain recognised qualifications that enhance their employability and career progression. By aligning its training courses with industry needs, the project ensures that the skills acquired are not just theoretical but directly applicable in the workplace. This results in a more qualified, flexible workforce ready to meet the challenges of an increasingly complex retail environment.

9.7. Skills for Smart Textile, Clothing, Leather and Footwear Industries 2030 (SKILLS4SMART TCLF 2030)

Outline

Link	https://s4tclfblueprint.eu/
Origin	The initiative originated from the European Commission's Blueprint for Sectoral Cooperation on Skills, aimed at addressing skills needs in the textile, clothing, leather, and footwear sectors
Sector/Industry	Textile, Clothing, Leather, and Footwear (TCLF) industries
Owner	Coordinated by EURATEX (The European Apparel and Textile Confederation)
Description	The initiative aimed to boost the competitiveness and modernization of the EU's textile, clothing, leather, and footwear sectors. It focused on developing a sustainable upskilling and reskilling strategy, supported by a communication campaign targeting key stakeholders
Duration	January 2018 – June 2022
Funding	Co-funded by the Erasmus+ programme of the European Union
Follow-up / continuity	Yes. METASKILLS4TCLF (2023–2027) is a direct follow-up to Skills4Smart TCLF 2030. Its results are also being further developed through AEQUALIS4TCLF, the TCLF Skills Alliance and TCLF SkillBridge.

Identification of skills needs

The *Skills4Smart TCLF 2030* initiative was launched in response to the growing mismatch between the skills traditionally available in the Textile, Clothing, Leather, and Footwear (TCLF) sectors and those emerging as essential due to rapid industrial transformation. From the outset, the identification of skills needs was conceived not as a one-time diagnostic, but as a foundational, continuous pillar of the strategy. This reflects the understanding that the sector is undergoing ongoing structural change—driven by digitalisation, sustainability pressures, shifting consumer preferences, and new business models.

To accurately identify and forecast these needs, the project undertook an ambitious, multi-pronged skills intelligence process. This began with sector-specific labour market research and was complemented by employer surveys, expert focus groups, and desk-based policy and trend analysis. Notably, the project integrated both **quantitative** and **qualitative methodologies**, ensuring that hard data (e.g. employment trends, vacancy analysis) could be enriched by insights from practitioners and sector stakeholders.

One of the cornerstone innovations of the initiative was its **competence mapping** methodology. This involved deconstructing key occupational roles into detailed knowledge,

skills, and competence requirements, which were then systematically referenced against two major European frameworks: **ESCO** (European Skills, Competences, Qualifications and Occupations) and **EQF** (European Qualifications Framework). This ensured the results were not only comprehensive and technically precise, but also fully interoperable with EU-level systems and usable for curriculum and qualification development across Member States.

Special attention was paid to cross-cutting, future-oriented competencies. Digital and green skills were prioritised not as isolated skill sets, but as integral dimensions across all profiles. For example, the role of a textile product designer was redefined to include digital 3D prototyping and sustainable material selection. In parallel, traditional skills (such as leather treatment or pattern-making) were updated to reflect new technologies and circular economy imperatives.

By combining occupational analysis with strategic foresight, the project anticipated demand in areas such as:

- Smart textiles and wearables
- Automation and robotics in production
- E-commerce and digital marketing
- Supply chain traceability and product lifecycle management

This intelligence fed directly into the formulation of a **Sectoral Skills Strategy** that served as the roadmap for training development and policy advocacy at both EU and national levels.

Development of a training response

Following the robust identification of skills needs and emerging occupational trends, *Skills4Smart TCLF 2030* developed a strategic training response designed to be modular, scalable, and aligned with real labour market needs. The goal was not only to address existing shortages, but to modernise the educational architecture of the TCLF sector in Europe and foster a culture of lifelong learning.

The training development process was deeply rooted in **co-creation**. Stakeholders from industry, education, training institutions, and social partners were actively involved in translating the competence frameworks into curricula, ensuring both relevance and feasibility. The guiding principle was adaptability: training had to respond not only to current employer demands, but also to anticipated sectoral evolution over the coming decade.

Curricula were developed across eight priority occupational profiles, covering a range of functions from digital communication to sustainable production. Each training offer was designed as a **modular structure**, facilitating flexible learning paths that could be tailored to different learner needs (e.g. initial training, upskilling, or reskilling). Importantly, this modular approach made it easier for training elements to be updated as technologies and requirements evolve.

Another strategic emphasis was the **integration of transversal competencies** such as innovation thinking, digital literacy, and environmental awareness. These were not treated as optional extras but embedded throughout the content. For instance, a course on footwear production would also include modules on circular design principles and lifecycle impact.

In terms of delivery formats, the initiative embraced the opportunities offered by digital learning. Blended models combining online modules with face-to-face workshops were encouraged to maximise both reach and impact. The project also explored **immersive learning technologies**, including VR simulations, to replicate complex manufacturing environments for training purposes without requiring physical machinery.

Beyond content creation, *Skills4Smart TCLF 2030* also engaged in advocacy and structural alignment efforts. It actively worked to promote the **mainstreaming of new curricula** into national Vocational Education and Training (VET) systems. This included building bridges with national qualification authorities, ensuring compatibility with existing standards, and advocating for public co-financing to support rollout.

Training provision and certification

The training provision dimension of *Skills4Smart TCLF 2030* was grounded in the ambition to make high-quality, future-relevant training widely available across the European TCLF ecosystem. The project recognised early on that the success of any upskilling or reskilling effort depends not just on good content, but also on effective delivery mechanisms and the credibility of the certification attached.

One of the most visible outputs of the initiative was the development and launch of **eight MOOCs (Massive Open Online Courses)**. Each MOOC was tied to a specific TCLF occupational profile and included multi-language content, real-life case studies, and interactive exercises. Topics ranged from digital production and traceability systems to sustainable fashion and online sales. These courses were hosted through the project's online **Skills4Smart Academy** platform and were made freely accessible to both current workers and jobseekers, significantly lowering the entry barrier for skills acquisition.

The MOOCs were particularly effective in supporting SME participation, which is critical in a sector where micro and small enterprises dominate but often lack internal training capacity. In addition, these open-access resources supported outreach to youth and career changers, helping to improve the attractiveness of the sector.

On the certification side, *Skills4Smart TCLF 2030* adopted a **multi-layered approach**:

- **Formal certification:** The project worked to align its curricula with national qualification systems, enabling integration into formal VET programmes. EQF levels were assigned to training modules to support transnational transparency and comparability.
- **Micro-credentials:** A pioneering step was taken toward issuing recognised micro-credentials for completed training units, including documentation of learning outcomes, documented workload and learning outcomes, and relevance to labour market needs. These micro-credentials are designed to support stackability, transparency and potential use across different education and training contexts, subject to the relevant national and institutional arrangements.
- **Quality labelling:** In collaboration with industry partners, the project also contributed to the creation of a **TCLF Quality Label**. This serves as an assurance that training programmes are developed with and endorsed by the sector, increasing their acceptance by employers and education providers alike.

Furthermore, the project embedded **impact evaluation mechanisms** into its training provision. Learner satisfaction, knowledge gain, behavioural change (on-the-job application), and career progression were monitored through both self-assessment and employer feedback.

The commitment to certification was not just administrative – it was strategic. By supporting greater transparency and potential portability of training outcomes, the initiative empowered workers to build meaningful, flexible learning pathways and enabled employers to better assess candidate competencies.

Finally, the project linked its efforts to wider EU and national strategies, such as the **Pact for Skills**, advocating for continued funding and policy alignment to scale up successful approaches. The training architecture established by *Skills4Smart TCLF 2030* thus laid the groundwork for a sustainable and inclusive European skills ecosystem in the TCLF sector.

9.8. METASKILLS4TCLF

Outline

Link	https://www.metaskills4tclf.eu/
Origin	It is an Erasmus+ project that builds on the previous "Skills4Smart TCLF Industries 2030" blueprint. It aligns with the EU's PACT4SKILLS TCLF Charter
Sector/Industry	Textile, Clothing, Leather, and Footwear (TCLF) industries
Owner	Centro Tecnológico do Calçado de Portugal (CTCP)
Description	The initiative aims to modernise TCLF sector skills by integrating digital and green competencies, using innovative methods like VR and AR to engage youth and align training with industry demands
Duration	The project started after June 2022, as a continuation of the Skills4Smart TCLF blueprint, and is currently ongoing
Funding	Co-funded by the European Union under the Erasmus+ programme
Follow-up / continuity	The project is ongoing until 2027. It forms part of the broader continuation of the original TCLF Blueprint together with AEQUALIS4TCLF, the TCLF Skills Alliance and Regional Skills Partnerships. No separate successor project has yet been identified.

Identification of skills needs

METASKILLS4TCLF is a 30-partner Erasmus+ Blueprint project led by CTCP. It links research, education and regional cooperation so that the TCLF industries can anticipate and respond to the skills required by the green and digital transitions. The project runs from September 2023 to August 2027 and updates the foundations created by Skills4Smart TCLF Industries 2030.

Its skills-intelligence method combines desk research, stakeholder surveys, interviews and sector analysis. Companies, technology providers, vocational and higher-education institutions, social partners, clusters and public authorities contribute evidence on occupational change, recruitment, training supply and the competences needed for circular production, digital design, advanced manufacturing, data use and traceability. The annual reports provide a common evidence base that can be updated as the sector evolves.

The findings inform European and national skills strategies, Regional Skills Partnerships and the European networks of TCLF education providers and regions. ESCO, the European Qualifications Framework and national frameworks provide the reference language for occupations, competences and learning outcomes. This work also supplies structured sector evidence for the wider TCLF Skills Alliance and for the development of a shared TCLF skills-observatory function.

Development of a training response

The research is translated into six modular Inside Fashion curricula on circular economy and digital fashion, together with updated Skills4Smart curricula and optional learning pathways. Eighteen micro-credentials are being developed for focused learning in these areas. Employers and education partners validate the learning outcomes, content and level so that the courses reflect current workplace practice and can be combined with broader vocational or higher-education programmes.

The learning environment combines multilingual online courses, an e-book with augmented reality, virtual-reality training and practical resources for teachers, trainers and mentors. The European Virtual Fashion Campus provides a common access point for non-immersive learning resources, while twelve Metaverse Labs give learners guided access to realistic TCLF work scenarios through VR. Together, these tools make specialist training available in more flexible and engaging formats.

A train-the-trainer programme, mentoring guidance and an international training circuit prepare teaching staff to use the new content and tools. Curricula and resources are then tested through practical workshops, pilots and transnational exchanges. Feedback from learners, trainers and companies is used to refine the materials before they are shared through the project's European education network.

Training provision and certification

Vocational education and training providers, higher-education institutions, research and technology centres and industry partners deliver the pilots and integrate suitable materials into their own provision. CTCP coordinates the European project, and the European Virtual Fashion Campus supports access to resources and collaboration across the provider network.

The project establishes common design principles for its micro-credentials and supports the recognition of new or adapted curricula within participating countries. Learning outcomes are described with reference to the European Qualifications Framework, national qualifications frameworks and ESCO. Authorised education and training providers assess learners and issue the relevant certificates in accordance with their national arrangements.

Quality assurance combines industry validation, a shared piloting method, learner and trainer feedback and review by the participating providers. Europass Mobility can document learning completed through an exchange, while formal credit and recognition are determined by the responsible provider and the competent national system.

9.9. AEQUALIS4TCLF

Outline

Link	https://aequalis4tclf.eu/
Origin	Erasmus+ Blueprint project that complements METASKILLS4TCLF and extends the TCLF skills partnership to seven additional European countries
Sector/Industry	Textile, clothing, leather and footwear (TCLF) industries
Owner	Coordinated by EURATEX through a consortium of 19 partners
Description	Extends skills intelligence and education cooperation to seven further countries, developing strategies, curricula, flexible learning pathways and inclusive learning programmes for the green and digital transitions
Duration	1 February 2024 to 31 January 2028 (48 months)
Funding	Co-funded by Erasmus+ under Alliances for Innovation, Lot 2, Alliances for Sectoral Cooperation on Skills, project 101139988
Follow-up / continuity	The project is ongoing until 2028. It complements METASKILLS4TCLF and extends the work initiated under Skills4Smart TCLF 2030 to additional countries. No separate follow-up project has yet been identified.

Identification of skills needs

AEQUALIS4TCLF is a 19-partner Erasmus+ Blueprint project coordinated by EURATEX. It extends the country scope to Czechia, Croatia, Finland, Lithuania, the Netherlands, Serbia and Slovenia, taking the combined reach of the Blueprint network from eleven to eighteen countries. Its purpose is to make skills development more responsive, inclusive and accessible as the industries move through the green and digital transitions.

The project combines desk research, surveys, interviews and focus groups with companies, education providers, sector organisations, public authorities and other labour-market stakeholders. Annual monitoring follows changes in green, digital, technical and transversal competences, training provision and labour-market conditions. The analysis pays particular attention to unequal access to training and employment, including the barriers experienced by women, third-country nationals and other under-represented groups.

This evidence underpins the EU TCLF Skills Strategy and seven national skills strategies, with attention to economic and regulatory change as well as the capacity of national and regional education systems. A formal collaboration plan aligns the work with METASKILLS4TCLF and the TCLF Skills Alliance. It also supports Regional Skills Partnerships and reinforces the European network of education providers, while cooperation with Skills4Circularity Blueprint connects the evidence to the developing TCLF Skills Observatory.

Development of a training response

AEQUALIS4TCLF maps existing education and training, identifies gaps in provision and develops a common vocational core curriculum with modular learning pathways for priority green, digital and emerging skills. Employers, vocational and higher-education providers and research partners co-design and validate the learning outcomes so that they respond to workplace needs and can be adapted to different national systems.

The curriculum is developed into short courses, modules and micro-credentials that can support initial education, continuing training and reskilling. The learning materials combine online, classroom and work-based activities, with interactive formats such as augmented reality, gamification and simulation. The TCLF Learning Hub, hosted through DigiCampus, brings the resources together and supports access by learners, teachers and companies.

Programmes are tested with learners and trainers in the participating countries, including through mobility and peer exchange. Results from the pilots are used to improve the content and delivery model. Workshops, practical guidelines and a TCLF Diversity Manifesto embed equality, innovation and well-being across the learning offer and help providers create more inclusive training and workplaces.

Training provision and certification

Vocational and higher-education partners develop and pilot the programmes, working with companies, research organisations and sector bodies in the 19-member consortium. EURATEX provides overall coordination, while the education partners deliver learning and integrate validated materials into their national or institutional offer.

The quality-assurance framework aligns the programmes with EQAVET for vocational education and the Standards and Guidelines for Quality Assurance in the European Higher Education Area. Common monitoring, validation and evaluation arrangements help providers compare results across the seven countries and improve the programmes after piloting.

The project prepares proposals for formal recognition and describes learning outcomes so that modules and micro-credentials can be understood within European and national qualifications frameworks. Assessment, credit and the issue of certificates are handled by authorised providers and competent national institutions, enabling the common curriculum to be used within the rules of each participating education system.

9.10. TCLF Skills Alliance (EURATEX)

Outline

Link	https://pact-for-skills.ec.europa.eu/about/industrial-ecosystems-and-partnerships/textiles_en
Origin	Large-Scale Partnership for the TCLF ecosystem under the European Pact for Skills, launched in December 2021
Sector/Industry	Textile, clothing, leather and footwear (TCLF) industries
Owner	Coordinated by EURATEX (Chair), CEC and COTANCE
Description	A community of 222 signatories that coordinates shared commitments on upskilling, reskilling, skills intelligence, education and training, equality, attractiveness and regional cooperation
Duration	Ongoing since December 2021, with commitments to 2030
Funding	The Alliance is a commitment and cooperation framework, not a funding programme. Activities are supported by signatories and by separately funded projects, including Erasmus+ Blueprint projects and TCLF SkillBridge under the Single Market Programme
Follow-up / continuity	Ongoing continuity framework. The Alliance is the Large-Scale Skills Partnership for the TCLF ecosystem under the Pact for Skills and provides a long-term framework through which initiatives such as METASKILLS4TCLF, AEQUALIS4TCLF and TCLF SkillBridge are connected and their results can be carried forward.

Identification of skills needs

The TCLF Skills Alliance is the Pact for Skills Large-Scale Partnership for the textile, clothing, leather and footwear ecosystem. It brings together industry, education and training providers, regional authorities, social partners and policymakers. It was launched in December 2021, is coordinated by EURATEX as Chair together with CEC and COTANCE and has grown to 222 signatory organisations.

The Alliance provides the common governance and commitment framework for sector skills action. Its evidence base is developed through the successive Blueprint projects, the emerging TCLF Skills Observatory and other recognised studies. Regional Skills Partnerships add local knowledge of companies, employment and training provision. The Alliance brings these sources together to maintain shared priorities and connect European, national and regional action.

The agreed priorities cover the green and digital transitions, an ageing workforce, the attractiveness of TCLF careers, the modernisation of vocational and higher education, equality and inclusion, and stronger cooperation between industry and education. The EU Textiles Ecosystem Platform Skills and Education Working Group gives ongoing projects a forum in

which to share results and practices, while the Alliance's Regional Skills Partnerships turn the common priorities into territorial work programmes.

Development of a training response

The Alliance translates the TCLF Pact for Skills Charter into shared commitments and a coordinated portfolio of work. Its members commit to lifelong learning, apprenticeships and mentoring, support for SME digitalisation, modern education and training, stronger industry-education cooperation, skills monitoring, regional partnerships, equality and a more attractive image of TCLF careers.

Its headline objective is that, by 2030, 20% of the TCLF workforce, estimated at about 300,000 people, participates in upskilling or reskilling each year. Signatories pursue this objective through their own activities and through jointly developed projects. Regional Skills Partnerships organise cooperation around local priorities, and the Alliance shares results so that successful approaches can be transferred between regions and organisations.

The main implementation projects have complementary roles. METASKILLS4TCLF develops skills intelligence, curricula and immersive learning resources. AEQUALIS4TCLF expands strategic and curriculum work to seven further countries with a strong equality and inclusion dimension. TCLF SkillBridge strengthens regional governance and finances tailored services for SMEs. The Alliance connects this work, promotes its uptake and provides continuity beyond the lifetime of individual grants.

Training provision and certification

Training is delivered by vocational and higher-education providers, competence centres, companies and other authorised organisations within the Alliance and its projects. These organisations adapt common outputs to their learners and national context, while the Alliance supports cooperation, visibility and the transfer of good practice.

Project curricula may use the European Qualifications Framework, national frameworks, ESCO, Europass and the principles of the Council Recommendation on micro-credentials to improve transparency and portability. Authorised providers assess learning and issue qualifications or certificates under the relevant national rules. The Alliance's role is to make the approaches easier to understand and compare across the TCLF ecosystem.

The partnership framework mobilises action through its signatories and through separately funded initiatives. Erasmus+ supports the Blueprint projects, and the Single Market Programme supports TCLF SkillBridge. Long-term impact comes from providers embedding validated content in their regular offer, regions maintaining their partnerships and signatories continuing to invest in the shared commitments.

9.11. TCLF SkillBridge

Outline

Link	TCLF SkillBridge - European Footwear Confederation
Origin	Single Market Programme project that supports Regional Skills Partnerships under the TCLF Pact for Skills
Sector/Industry	Textile, clothing, leather and footwear (TCLF) industries
Owner	Coordinated by EURATEX with CEC and COTANCE
Description	Supports the formation and operation of Regional Skills Partnerships, peer learning, progress monitoring and tailored services that help TCLF SMEs upskill and reskill their workforce
Duration	1 March 2024 to 28 February 2027 (36 months)
Funding	Co-financed by the European Commission under the Single Market Programme, managed by DG GROW
Follow-up / continuity	The project is ongoing. It supports the longer-term continuity of the TCLF Skills Alliance through Regional Skills Partnerships and concrete services for SMEs. No separate successor initiative has yet been identified.

Identification of skills needs

TCLF SkillBridge is a 36-month Single Market Programme project coordinated by EURATEX with CEC and COTANCE. It builds Regional Skills Partnerships that bring together public authorities, industry associations, social partners, clusters, chambers and education and training providers. Each partnership combines European sector evidence with local information from companies and providers to define the skills priorities of its territory.

The project identifies regions with a strong TCLF presence, maps and engages stakeholders, organises regional workshops and helps them agree governance, objectives and a practical work programme. Its contractual target is at least eight multi-stakeholder partnerships, with a wider ambition to engage up to 25 European regions. Peer-learning events and mobility exchanges allow regional partners to compare governance models and adapt tested approaches to their own industrial context.

Coordination with METASKILLS4TCLF, AEQUALIS4TCLF and the TCLF Skills Alliance gives the partnerships access to common skills intelligence, strategic priorities, education networks and learning resources. The regional work programmes then add place-based evidence on SME needs, available training, delivery capacity and the actions required to close local gaps.

Development of a training response

Each Regional Skills Partnership prepares a work programme that turns local needs into agreed actions. TCLF SkillBridge supports this process with guidance, mentoring, peer exchange and a

dedicated EUR 450,000 call for services. The call is designed to support at least ten projects and benefit at least 200 SMEs.

The supported services are tailored to the participating companies and can include training programmes, coaching and mentoring, generational knowledge transfer, apprenticeships and mobility. Qualified regional organisations design and deliver each service in response to the partnership's work programme and the needs of its SMEs. This allows the project to support different skills priorities across Europe's specialised TCLF regions.

The project records progress, service results and practical experience in a shared knowledge repository and contributes skills content and community exchange to the Commission's textiles ecosystem platform ([EU Textiles Ecosystem Platform](#)). Each partnership also prepares a sustainability plan covering its future governance, priorities and access to funding after the project ends.

Training provision and certification

Services are delivered by the regional organisations selected through the call for services and by the vocational and higher-education providers, companies, clusters and other competent bodies involved in each partnership. EURATEX coordinates the project, while CEC and COTANCE support implementation and connect the regional work with the European TCLF industries.

Where a service includes assessed learning, the responsible provider applies its established quality procedures and the relevant national rules. It issues any certificate or credit attached to the service, so that recognition remains connected to an authorised provider and the education or qualifications system in which the learning takes place.

Monitoring covers the delivery and results of the services, the development of the partnerships and their prospects for continuation. This provides evidence of what works for SMEs and regional skills ecosystems, supports peer learning between regions and helps the Alliance carry successful approaches into future regional and European action.

9.12. ChemSkills Project: European Chemical Employers Group (ECEG)

Outline

Link	ChemSkills Project
Origin	EU Blueprint for Sectoral Cooperation on Skills under Erasmus+, aligned with the EU's Chemicals Strategy for Sustainability and the European Green Deal
Sector/Industry	Chemical industry
Owner	European Chemical Employers Group (ECEG) (Project Coordinator) and ClIFF (Technical Coordinator)
Description	A European initiative aimed at supporting the green and digital transformation of the chemical industry through the identification of skill needs, curriculum enhancement, and cross-sectoral cooperation
Duration	4 years, with an expected completion by the end of August 2027
Funding	Co-funded by the EU through the Erasmus+ programme
Follow-up / continuity	The project is ongoing until August 2027. No specific follow-up project has yet been identified. ECEG is also involved in other skills initiatives, including Skills4EII, but this should not be presented as a direct successor to ChemSkills.

Identification of skills needs

The ChemSkills project, led by the European Chemical Employers Group (ECEG) with ClIFF as technical coordinator, aims to future-proof the chemical sector's workforce by conducting in-depth skills intelligence research. Rooted in the EU Blueprint for Sectoral Cooperation on Skills and aligned with the EU Green Deal and Chemicals Strategy for Sustainability, ChemSkills identifies current and emerging competencies required to enable the chemical industry's green and digital transformation.

The project employs a range of analytical tools including sectoral surveys, job market analyses, and forward-looking modelling to map out skills gaps across sub-sectors such as plastics, rubber, consumer chemicals, fertilisers, and pharmaceuticals. It establishes competency frameworks for both traditional roles and emerging job profiles, identifying essential capabilities in digital manufacturing, green chemistry, data analytics, circular economy design, and safety management.

ChemSkills also considers social and environmental dimensions, integrating climate neutrality and safe chemical management as fundamental learning goals. It ensures the continuous involvement of industry stakeholders, education providers, and policymakers to refine and

validate its findings, thus anchoring its intelligence work in real sectoral needs. The final outputs serve as a foundation for building curriculum content and establishing sector-wide qualifications aligned with European skills standards.

Development of a training response

In response to the intelligence gathered, ChemSkills develops highly targeted training responses. The project updates existing curricula and co-develops new, modular training programmes that are tailored to the requirements of specific chemical industry sub-sectors. Particular emphasis is placed on green and digital skills, including sustainable process management, resource efficiency, and automation technologies.

Each training module is built in partnership with industry and higher education institutions, ensuring real-world applicability. ChemSkills also supports the creation of new job qualifications where needed, aligning occupational standards with sector expectations. In doing so, the initiative not only addresses workforce shortages but also raises the attractiveness of careers in the chemical sector.

The training strategy includes support for digitalisation of training environments through e-learning tools, virtual labs, and blended methodologies. Importantly, the project promotes inclusion by incorporating elements such as gender-sensitive training design and accessibility for small and medium-sized companies, which often struggle with reskilling resources.

Training provision and certification

Training within the ChemSkills initiative is delivered across a pan-European network of VET providers, universities, corporate academies, and online platforms. Delivery modes are diverse, ranging from traditional in-person formats to apprenticeships, MOOCs, and hybrid learning environments. This diversity ensures wide accessibility and flexibility for both new entrants and experienced workers.

ChemSkills develops training and certification approaches with reference to national qualification arrangements and European transparency tools, including the European Qualifications Framework (EQF). These references can support the comparability of learning outcomes and the development of modular pathways, but do not in themselves establish automatic portability or recognition across Member States. Formal certification, credit and recognition depend on authorised providers and the applicable national qualification and quality-assurance arrangements. The project also explores the use of micro-credentials for focused learning units.

Overall, ChemSkills aims not just to enhance training quality but to create systemic change in how the chemical industry approaches skills development. By embedding sustainability and digitalisation at the heart of its training and certification systems, the project lays the groundwork for a competent, agile, and future-ready chemical workforce.

9.13. EU Maritime Skills Forum (EMSF)

Outline

Link	N/A
Origin	The EMSF builds on the SkillSea project and supports broader EU initiatives like the European Year of Skills
Sector/Industry	Maritime sector
Owner	Jointly led by the European Transport Workers' Federation (ETF) and the European Community Shipowners' Associations (ECSA), with backing from the European Commission
Description	EMSF is a collaborative platform designed to tackle evolving skill demands in the maritime sector, focusing on challenges such as decarbonisation, digitalisation, and leadership development, by fostering stakeholder engagement and policy alignment
Duration	Ongoing initiative launched in 2025; no fixed end date specified
Funding	Supported by the European Commission; potential EU funding implied, though no specific figures disclosed
Follow-up / continuity	Ongoing initiative. The Forum is itself a continuation of the SkillSea legacy and was created to maintain cooperation on maritime skills beyond the original project. No further successor initiative has yet been identified.

Identification of skills needs

The EU Maritime Skills Forum (EMSF), officially launched in January 2025, represents a strategic initiative aimed at identifying and addressing the evolving skills landscape within Europe's maritime sector. Jointly led by the European Community Shipowners' Associations (ECSA) and the European Transport Workers' Federation (ETF), and supported by the European Commission, the EMSF builds on the outcomes of the SkillSea project and aligns with broader policy goals such as the European Green Deal and the European Year of Skills.

The Forum focuses its efforts on three core thematic areas—green transformation, digitalisation, and leadership development—which have been identified as priority domains due to ongoing decarbonisation efforts and technological innovation. One of the primary challenges acknowledged by the EMSF is that approximately 250,000 seafarers will need to be upskilled or reskilled by the end of the decade to meet new requirements linked to alternative fuels, automation, and sustainable logistics. This considerable figure underscores the urgency of developing a responsive and future-proof maritime workforce.

To identify these needs, the Forum collaborates with a wide array of stakeholders, including education and training providers, shipowners, seafarers' unions, and public authorities. These consultations generate vital insights into sectoral trends, occupational standards, and future

job profiles, ensuring that emerging gaps are precisely defined. The EMSF also gives attention to inclusivity and diversity in the maritime labour market, emphasising leadership training, career visibility, and gender balance as core components of its skills foresight agenda. In doing so, the Forum ensures that the transition to a greener, more digital maritime sector is socially inclusive and economically sustainable.

Development of a training response

In response to the skill gaps identified through its stakeholder consultations, the EMSF plays a catalytic role in guiding the modernisation of maritime training and education. Although the Forum itself is not a training provider, it functions as a coordinating body, setting the direction for curriculum reform and content innovation across the EU's maritime education landscape. This includes close cooperation with maritime training institutions, regulatory bodies, and industry representatives to ensure that new curricula reflect the rapidly changing demands of the profession.

The EMSF's training response prioritises the integration of green and digital competencies into both initial training and continuing professional development. Key focus areas include the use and handling of alternative fuels such as LNG and green ammonia, proficiency in automated systems and digital navigation tools, and the enhancement of soft skills such as crisis leadership, communication, and intercultural teamwork. The Forum encourages the embedding of these elements into structured learning pathways at both vocational and higher education levels.

Another central objective is to increase the accessibility and attractiveness of maritime careers, particularly among young people and underrepresented groups. This is achieved through the promotion of updated career guidance resources, awareness campaigns, and the facilitation of industry-academia partnerships that offer real-world training experiences. By aligning training development with current sectoral transitions and policy frameworks, the EMSF ensures that maritime professionals are not only better trained but also better positioned to lead the sector into its next era.

Training provision and certification

Although the EMSF does not directly deliver training, it exerts significant influence over the organisation and structure of training provision and certification within the maritime sector. It acts as a hub for strategic coordination, policy alignment, and standard-setting, ensuring that the education and training ecosystem remains responsive to evolving maritime challenges.

Training is primarily delivered by maritime education and training providers (METs), including national maritime academies, universities, and specialised institutions. The EMSF supports these providers by disseminating guidance on the inclusion of green and digital content, promoting pedagogical innovation, and supporting greater transparency, comparability and cooperation between maritime education and training systems, while respecting the applicable national and international regulatory frameworks governing maritime qualifications.

The Forum also works closely with certification bodies and maritime authorities to align training outcomes with the European Qualifications Framework (EQF) and relevant International

Maritime Organization (IMO) standards. The Forum also encourages the use of relevant European and international reference frameworks, including the European Qualifications Framework (EQF) and applicable International Maritime Organization (IMO) standards, to improve the transparency and understanding of training outcomes. Formal certification and recognition remain governed by the competent authorities, certification bodies and applicable regulatory arrangements.

In addition to formal qualifications, the EMSF supports initiatives to recognise short-term, modular learning achievements through micro-credentials. This flexibility enables both new entrants and experienced seafarers to continuously update their competencies in line with fast-moving technological and regulatory developments. The Forum's overarching goal is to ensure that training and certification processes not only meet present-day requirements but also anticipate the skills needed for the maritime sector of the future.

9.14. InnoEnergy Skills Institute

Outline

Link	https://innoenergy.com/
Origin	It is part of the EIT InnoEnergy group, responding to the increasing need for specialised skills in clean energy and innovation, aligned with EU climate goals and sustainable energy strategies
Sector/Industry	Energy sector, with a focus on sustainable energy, clean technologies, and the energy transition
Owner	Operated by InnoEnergy, a European innovation engine supported by the European Institute of Innovation and Technology (EIT)
Description	The Institute serves as a global hub for upskilling and reskilling the workforce to accelerate the transition to a net-zero economy through innovative training solutions in sustainable energy
Duration	Ongoing initiative; no fixed end date specified
Funding	Primarily funded through EU and national funds
Follow-up / continuity	Ongoing initiative. Rather than being followed by a separate project, the Institute continues to expand its activities through initiatives such as the Net Zero Industry Academies and the Energy Transition Talent Accelerator launched in 2026.

Identification of skills needs

The InnoEnergy Skills Institute, part of the EIT InnoEnergy innovation community, is a strategic response to the rapidly growing demand for specialised skills in the clean energy and green technology sectors. As Europe strives to meet its climate neutrality targets under the Green Deal and accelerate the transition to a sustainable, low-carbon economy, the Institute plays a pivotal role in mapping the competencies required to support this transformation.

Its identification of skills needs is grounded in extensive collaboration with over fifty industry partners across key clean energy verticals, including battery manufacturing, solar photovoltaics, energy storage, and green hydrogen. This industry-backed intelligence is complemented by data gathered from labour market research, feedback from Net-Zero Industry Academies, and alignment with the European Green Skills Taxonomy. Collectively, these insights enable the Institute to produce granular role profiles and competency matrices that reflect both current workforce shortages and emerging job categories.

The Skills Institute has so far defined more than 145 energy-related job roles, with detailed outlines of the technical and soft skills each position requires. These profiles serve as the foundation for designing educational content and for informing workforce planning strategies among employers, training providers, and policymakers. By embedding continuous feedback

loops into its assessment model, the Institute ensures its forecasts remain responsive to new technologies and shifts in policy. This dynamic approach makes it a leader in strategic skills foresight for Europe's energy transition.

Development of a training response

In light of the urgent need to upskill and reskill hundreds of thousands of workers across the European energy sector, the InnoEnergy Skills Institute has developed a robust and innovative training response. This response is anchored in the creation of flexible, modular training programmes that are tailored to both job-specific and cross-cutting competencies.

Courses are designed to address high-demand skills in areas such as battery cell production, solar panel installation, hydrogen system design, and energy storage management. In addition to technical content, the programmes also include essential transversal skills such as systems thinking, project management, and digital fluency. A distinctive feature of the training model is its use of real-world, hands-on learning experiences, such as virtual labs, industry case studies, and project-based assignments. These methods bridge the gap between classroom learning and workplace application.

The Institute also emphasises rapid delivery and scalability. Courses can be completed in weeks, not months, and are available in multiple languages to reach a diverse European workforce. Importantly, the Institute incorporates feedback mechanisms from employers and learners to continually refine course content and ensure continued alignment with industrial developments. This agile, demand-driven model enables fast skill acquisition and adaptability, making it especially valuable in a sector characterised by rapid technological evolution.

Training provision and certification

Training under the InnoEnergy Skills Institute is delivered through a pan-European digital platform in partnership with leading universities, corporate training bodies, and professional associations. This delivery model ensures both accessibility and consistency, allowing learners from all backgrounds and regions to participate in high-quality upskilling and reskilling programmes.

- Certification plays a central role in the Institute's approach. Courses and training outputs may be referenced to European and national frameworks, including the European Qualifications Framework (EQF), to improve the transparency and comparability of learning outcomes. Such referencing can support employers' understanding of the skills acquired and facilitate mobility but does not in itself imply automatic recognition across countries or sectors. Formal recognition of qualifications or certificates depends on the relevant provider, certification arrangements and applicable national frameworks.

In addition to individual learner certification, the Institute collaborates directly with employers to certify entire workforces through tailored training programmes that address company-specific skill gaps. These partnerships strengthen the connection between learning and employment outcomes, making training a strategic asset for business growth.

By combining rigorous standards, modular design, and strategic certification, the InnoEnergy Skills Institute ensures that Europe's energy workforce is not only better trained but fully equipped to lead in the global race toward sustainability.

10. Annex E. Survey methodology and Results

Context and purpose

The objective of this survey, run from March 3rd until May 29th, 2026, was to collect employers' and both internal and external HR professionals' perspectives on access to skills across Europe, focusing on how organisations identify their skills needs, recruit talent, organise training activities and address workforce development challenges. The survey aims to provide company-level evidence on recruitment difficulties, skills shortages, training provision, certification practices, the use of public support mechanisms, and employers' views on policies and measures that may facilitate access to skills.

The results will complement the national and sectoral analyses conducted as part of the BusinessEurope Access to Skills Study and contribute to the identification of common challenges, effective practices and policy recommendations across European countries.

Respondent base

The survey targeted employers, HR professionals and employer representatives across Europe. A total of 209 responses were collected from 25 countries (see *Question 3. Select your country* below in section [10.1 Company Profile](#)), comprising 89 large companies and 120 small and medium-sized enterprises (SMEs), including medium-sized, small and micro-enterprises. The sample covers a broad range of sectors and national labour-market contexts.

Interpretation of the findings

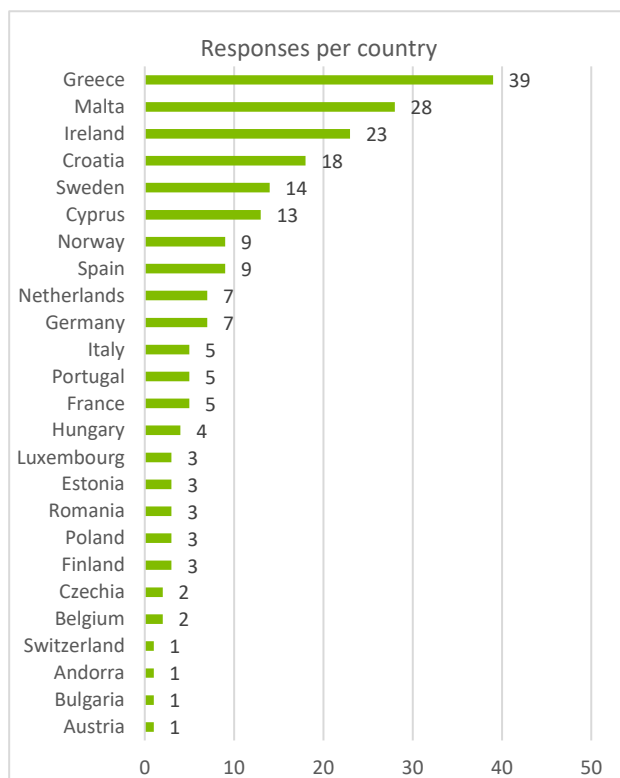
Disclaimer: The survey is based on voluntary participation in an opt-in online questionnaire and cannot be considered statistically representative of European employers. Participation is uneven across countries and sectors and the findings should therefore be interpreted as indicative rather than representative. As not all survey questions were mandatory, the number of responses varies across questions. Percentages are therefore calculated based on respondents to each individual question. The survey nevertheless provides useful company-level evidence on employers' perceptions, challenges and practices and complements the national and sectoral analyses and desk research.

This annex presents the questions included in Sections 2-7 of the survey together with the principal findings drawn from the responses. Quantitative distributions are intended to be presented through the corresponding figures, while open-ended responses are summarised through the main themes identified in the qualitative analysis.

10.1. Company Profile

This section describes the geographical, sectoral and company-size composition of the respondent base.

Question 3. Select your country



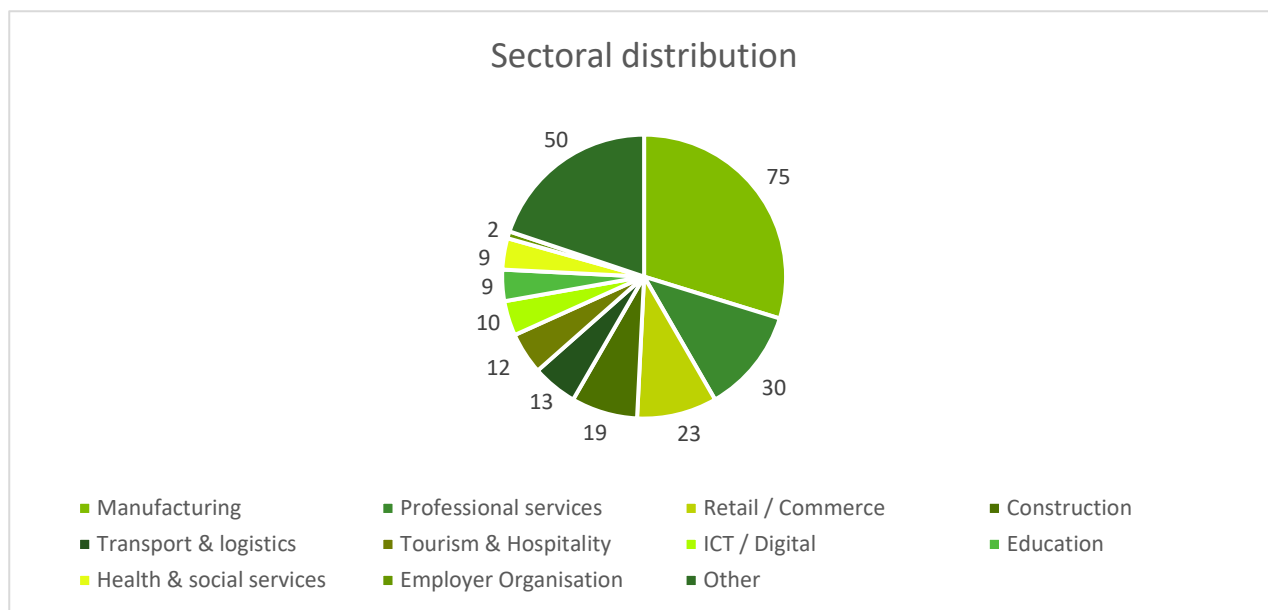
Large-scale company⁵⁷ responses come from a wide range of countries, with the highest participation from Greece, Ireland and Croatia. Germany, Norway and Sweden also provide a relevant share of responses. This gives the large-company sample a strong basis in markets where skills shortages affect both industrial employers and service-based groups operating at scale.

SMEs are more concentrated in Malta, Greece, Cyprus, Ireland, Sweden and Croatia. This gives particular visibility to smaller labour markets, where companies often face a narrower local talent pool and fewer alternatives when recruitment becomes difficult.

Overall conclusion. The survey covers 25 countries across Europe. Participation is uneven, so the results should be read as indicative rather than nationally representative. Even so, the mix of larger employers and SMEs provides a useful view of how skills challenges appear across different labour markets.

⁵⁷ Company size is following the Commission Recommendation 2003/361/EC, adopted on 6 May 2003, describing micro, small, and medium-sized enterprises (SMEs) in the EU, establishing criteria based on staff headcount and financial thresholds.

Question 4. In which sector does your organisation operate?⁵⁸



Key findings:

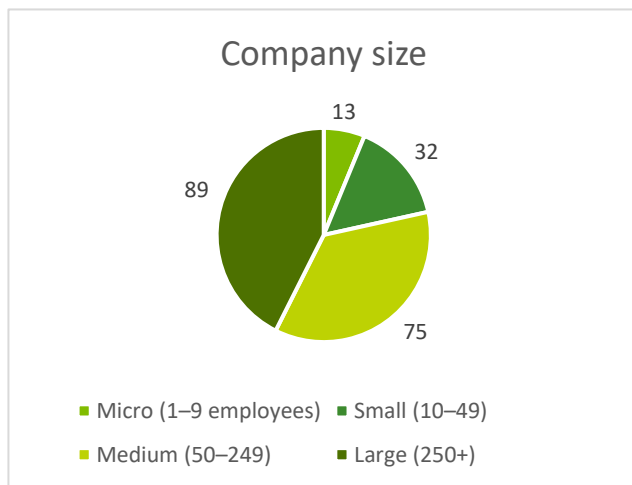
Large companies. Manufacturing accounts for the largest share of large-company responses, with 37 large companies operating in this sector. Retail, construction, professional services and ICT/digital companies are also represented. This means the large-company view is strongly shaped by employers with large workforces, technical roles and ongoing pressure to adapt skills to changing production, digital and operational needs.

Among **SMEs**, manufacturing is also the largest sector, but the distribution is more spread out. Professional services, construction, retail, tourism and transport/logistics all have a visible presence. This reflects a more diverse SME sample, with many respondents operating in sectors where skills needs are closely linked to day-to-day business continuity and local labour availability.

Overall conclusion. The survey captures input from a broad range of sectors. Manufacturing is the most represented sector overall, followed by professional services, retail and construction. This sectoral spread provides a useful picture of skills challenges across both industrial and service-based parts of the European economy.

⁵⁸ Respondents could select more than one sector. "Other" responses were subsequently reviewed and recoded into additional sector categories where appropriate, resulting in 16 consolidated sectors overall. Therefore, sectoral responses exceed the total number of survey respondents.

Question 5. Company size



Key findings

The respondent base includes 89 large companies and 120 SMEs, including medium-sized, small and micro-enterprises. Large companies account for a substantial part of the sample, but SMEs represent the majority when taken together. This balance allows the survey to compare how access to skills differs by company size: larger employers often describe more structured approaches to workforce planning and training, while SMEs provide

insight into the practical constraints faced by smaller organisations.

10.2. Talent Acquisition & Skills Needs

This section examines recruitment difficulties, the profiles most difficult to recruit, and the methods companies use to identify and plan for skills needs.

Question 6. Over the past 12 months, how difficult has it been for this company to find employees with the required skills?

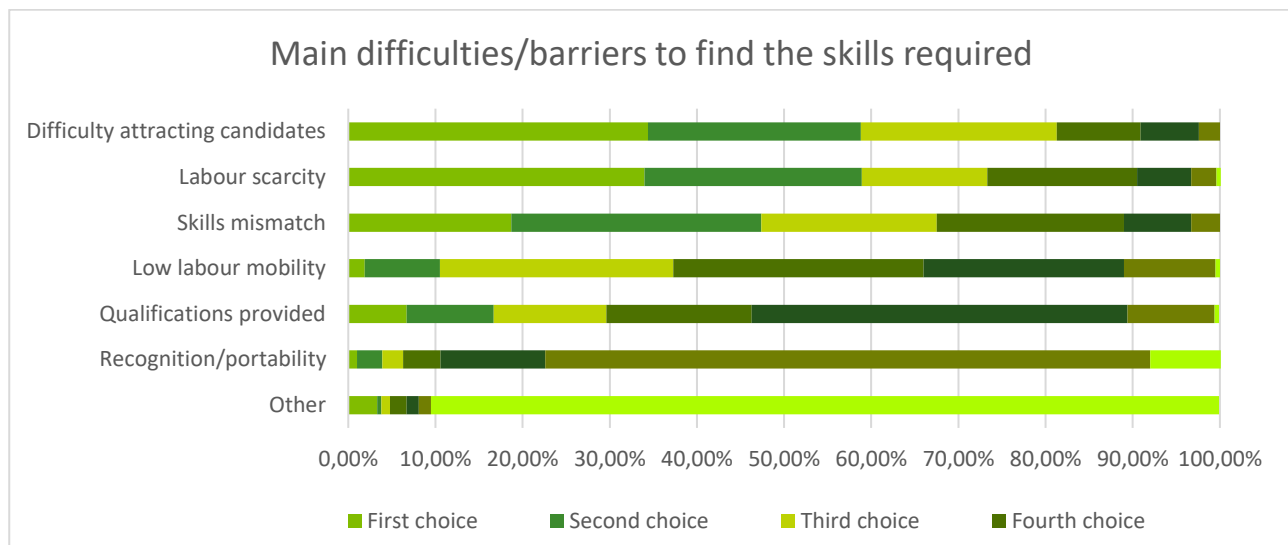
Difficulty level	Responses	%
Low difficulty (0-3)	13	6.2%
Moderate difficulty (4-7)	96	45.9%
High difficulty (8-10)	100	47.8%

Large companies generally report moderate to high difficulties in finding employees with the required skills. The highest difficulty scores among large companies are mainly observed in manufacturing, with additional pressure visible in retail, construction and professional services. This suggests that recruitment challenges are particularly relevant for large employers with technical, operational or sector-specific workforce needs.

SMEs report even more acute recruitment difficulties. Among the 71 SMEs (59% of SME respondents) reporting a very high difficulty score of 8-10, manufacturing is again the most affected sector, followed by professional services, retail and construction. Tourism, transport and logistics also appear among the sectors where smaller companies struggle to find suitable candidates.

Overall conclusion. Most respondents reported moderate or high difficulties in finding employees with the required skills. Almost half (47.8%) reported a high level of difficulty (8–10), while a further 45.9% reported moderate difficulty (4–7), suggesting that recruitment challenges remain widespread across employers of all sizes, especially in sectors with strong technical or operational labour needs.

Question 7. Please rank the main difficulties/barriers to find the skills required in your company (from most to least influential)



Among the 89 **large companies** surveyed, 37 (42%) ranked difficulty attracting candidates as the most influential barrier to recruitment, followed by 29 (33%) identifying labour scarcity as their main barrier. Skills mismatch was ranked first by a further 17 companies (19%).

SMEs point to the same barriers, but labour scarcity appears even more prominent in their responses. Smaller businesses are often more exposed to local labour market constraints, and their ability to attract candidates can be limited by company visibility, location or the resources available for recruitment.

Overall conclusion. Recruitment challenges are mainly driven by labour scarcity, difficulty attracting candidates and skills mismatch. Issues linked to the recognition or portability of qualifications appear less central in the ranking, suggesting that the core problem is the availability of suitable talent rather than formal recognition alone.

Question 8. If you have ranked other as influential in the previous question, please specify

Rank	Topic (Other responses)
First topic	Compensation and salary expectations
Second topic	Competition for talent and retention
Third topic	Technical skills shortages and changing skill needs
Fourth topic	Candidate attitudes and expectations
Fifth topic	Migration and work permit barriers
Sixth topic	Location, commuting and housing constraints
Seventh topic	Diversity and talent pipeline issues

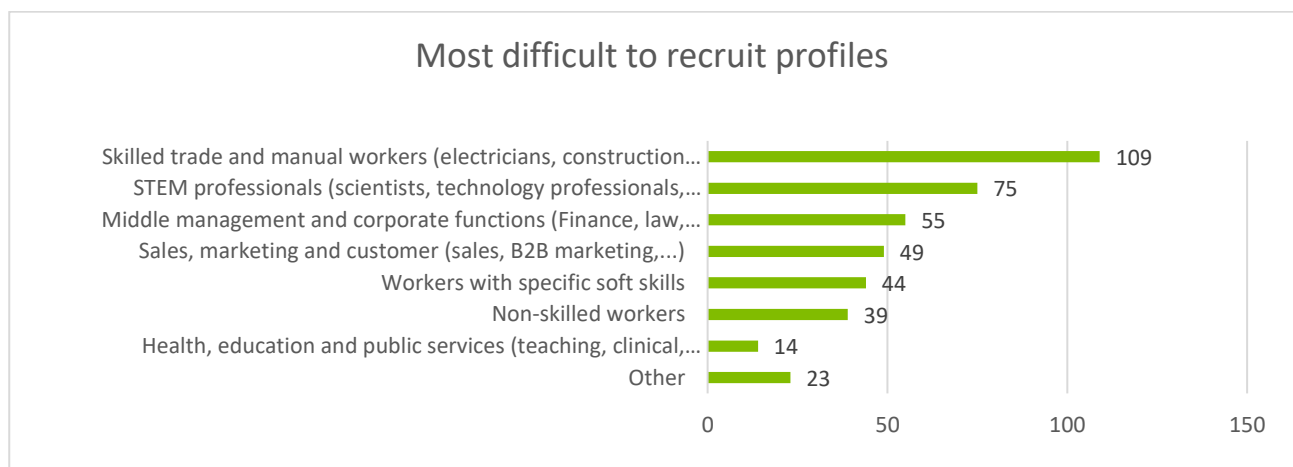
Large companies use the open responses to highlight barriers that sit beyond the standard categories. Competition for talent, retention pressures and changing skills requirements

appear frequently, while some respondents also refer to work permits, housing constraints and location-related challenges.

SMEs tend to focus on more immediate recruitment frictions, such as salary expectations, competition with larger employers and difficulties attracting candidates to specific roles or local areas. In several cases, smaller companies also mention work permit processes and limited access to specialised candidates as factors that make recruitment harder.

Overall conclusion. The additional responses confirm that skills shortages are shaped by wider labour market conditions. Pay expectations, competition between employers, migration procedures and the attractiveness of certain occupations all influence companies' ability to access the skills they need.

Question 9. Which types of profiles have been the most difficult to recruit? (select all that apply)



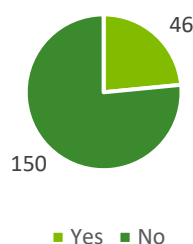
Large companies report the greatest difficulties in recruiting skilled trade and manual workers, closely followed by STEM professionals. These shortages are particularly relevant for manufacturing, energy, ICT/digital, construction and other sectors where companies depend on specialised technical capabilities.

SMEs also struggle most with skilled trade and manual workers, but their difficulties are spread across a wider set of profiles. Middle management, sales and customer-facing roles, STEM professionals and non-skilled workers all appear as relevant shortages, reflecting the broader range of hiring pressures faced by smaller companies.

Overall conclusion. Employers report the greatest recruitment difficulties for skilled trade and manual workers and STEM professionals. This points to a persistent shortage of technical and specialised profiles across the sample, although SMEs also show notable pressure in commercial, managerial and non-skilled occupations.

Question 10. Is there a specific difficulty in recruiting women in STEM profiles?

Difficulty in recruiting women in STEM



Large companies mostly indicate that they do not face a specific difficulty in recruiting women in STEM profiles, although 25 out of 89 large-company respondents (28%) report such challenges. Where difficulties are identified, they are usually linked to the limited availability of female candidates in technical fields rather than to recruitment processes alone.

SMEs show a similar pattern, with most respondents answering negatively but a smaller group reporting difficulties. For SMEs, the issue appears closely connected to the local availability of female STEM talent, as smaller companies are less likely to have dedicated programmes to widen the candidate pipeline.

Overall conclusion. Most respondents to this question (150 out of 196, 76.5%) do not identify a specific difficulty in recruiting women in STEM profiles. However, 46 respondents (23.5%) report such challenges, indicating that gender imbalances in STEM pipelines remain an issue for some sectors and occupations.

Question 11. If yes, does your company apply any specific practices to address this?

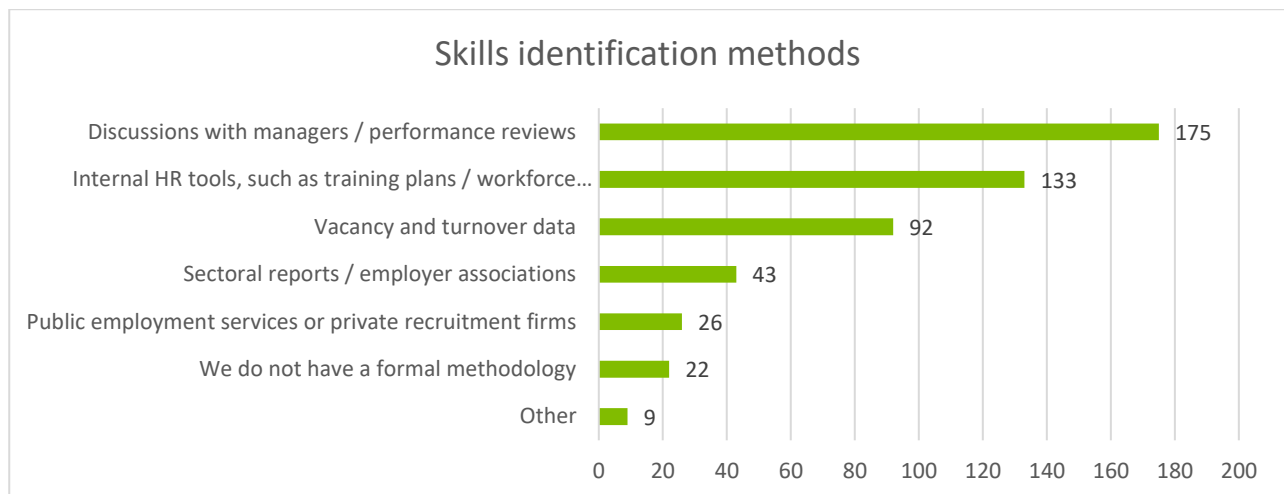
Rank	Topic identified
First topic	Partnerships with schools, universities and training centres
Second topic	Diversity, equality and inclusion initiatives
Third topic	Targeted recruitment and employer branding
Fourth topic	Mentoring programmes and female role models
Fifth topic	Talent pipelines, internships and graduate programmes
Sixth topic	Inclusive recruitment processes and gender-neutral job descriptions
Seventh topic	No specific measures / lack of female applicants

Large companies are more likely to describe dedicated measures to attract and retain women in STEM roles. These include targeted recruitment campaigns, cooperation with education providers, employer branding focused on technical careers, inclusive job descriptions and internal initiatives to support women's career development.

SMEs tend to describe less formal approaches. Some refer to inclusive recruitment or cooperation with local education providers, while others state that the main difficulty is the lack of female applicants with the required technical background. This suggests that many smaller companies see the issue as a pipeline constraint rather than something they can address through company-level initiatives alone.

Overall conclusion. Practices to improve female participation in STEM are more developed among large companies. Across the sample, the most relevant measures relate to education partnerships, recruitment outreach and inclusive hiring practices. At the same time, several responses suggest that company action needs to be supported by a stronger pipeline of women entering STEM education and technical occupations.

Question 12. How does your organisation identify its skills needs? (select all that apply)



Large companies rely heavily on discussions with managers and performance reviews, but they also make wider use of internal HR tools, workforce planning processes and vacancy or turnover data. Internal HR tools were selected by 81% of large-company respondents (72 out of 89), compared with 51% of SMEs (61 out of 120), while vacancy and turnover data were selected by 56% of large companies (50 out of 89) and 35% of SMEs (42 out of 120). This reflects a more formalised approach to identifying skills needs, especially in companies with established HR functions and larger workforces.

SMEs also rely mainly on discussions with managers and employees. Some use HR tools or vacancy data, but a larger share of SMEs report having no formal methodology. In practice, skills needs are often identified through operational experience and immediate business requirements.

Overall conclusion. Most organisations identify skills needs through internal channels, especially manager discussions and performance reviews. HR tools and vacancy data also play an important role, while external sources such as employer associations, recruitment companies or public employment services are used less frequently.

Question 13. If your company develops training plans, could you briefly describe them or share an example?

Rank	Topic identified
First topic	Annual training plans linked to business needs & workforce planning
Second topic	Skills gap analysis and competency matrices
Third topic	Performance reviews and individual development plans

Fourth topic	Onboarding and role-specific training
Fifth topic	Technical, safety and compliance training
Sixth topic	Internal academies, mentoring and on-the-job learning
Seventh topic	Leadership, soft skills and career development programmes
Eighth topic	Digital, AI and future skills training
Ninth topic	External partnerships with universities and training providers

Large companies usually describe training plans that are linked to business needs, role requirements and longer-term workforce planning. Many refer to annual training cycles, skills matrices, internal academies or competence management systems. Training is often connected to onboarding, technical requirements, leadership development and mandatory compliance needs.

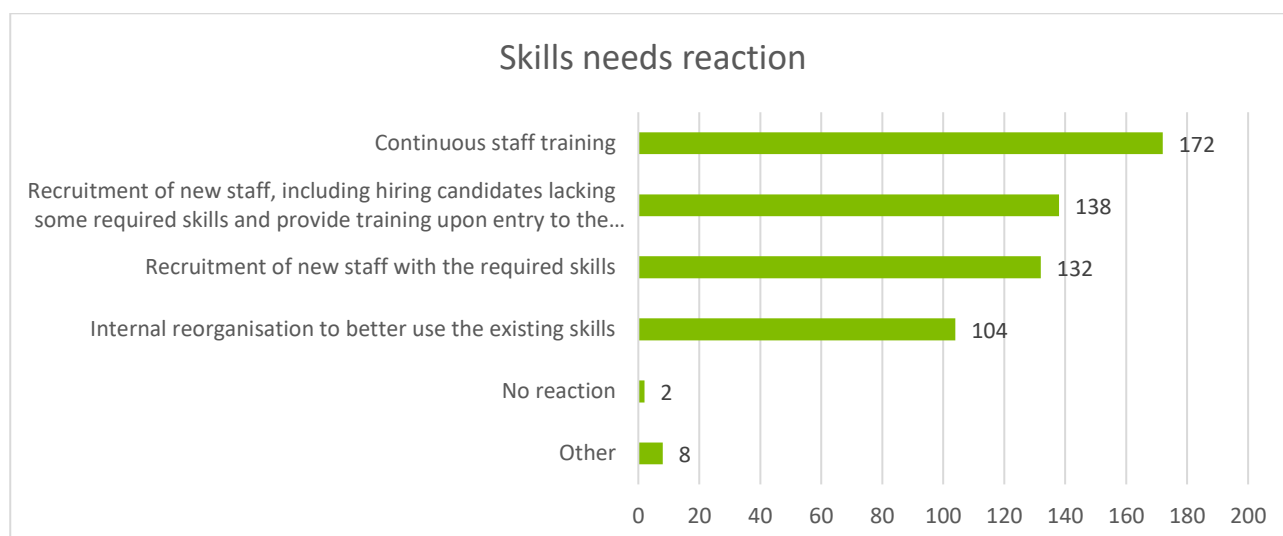
SMEs tend to describe more practical and role-specific training plans. These often focus on onboarding, health and safety, equipment use, mentoring and on-the-job learning. Some SMEs have structured annual plans or individual development plans, but many approaches remain closely tied to immediate operational needs.

Overall conclusion. Training plans are commonly used across the sample, although their level of formalisation varies considerably. Larger companies usually link training to workforce planning and structured skills assessment, while SMEs rely more on practical training linked to specific roles. Across both groups, training is most effective when it responds directly to business needs and can be integrated into day-to-day work.

10.3. Training, Upskilling and Reskilling

This section examines how companies respond to identified skills needs and the internal, external and technology-enabled training approaches they use.

Question 14. How does your company usually react to skills needs?

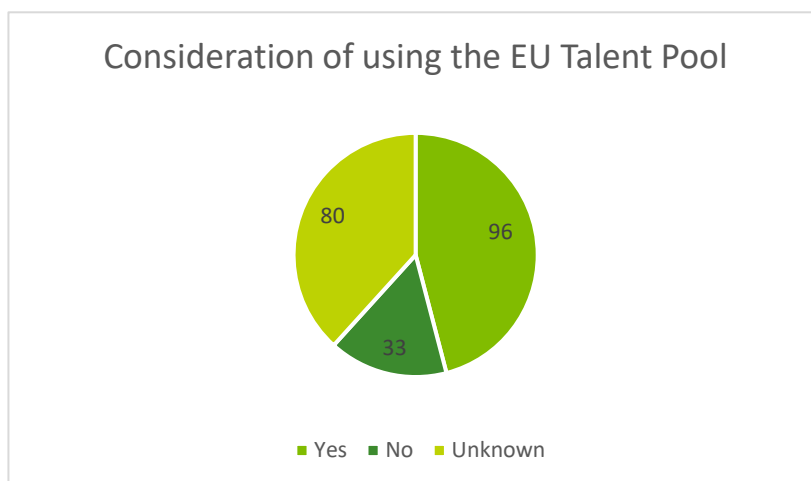


Large companies tend to respond to skills needs through continuous staff training, hiring and internal reorganisation. Many large employers also recruit candidates who do not fully meet the required profile at entry stage and then develop those skills internally. This suggests that larger companies often treat recruitment and training as connected processes rather than separate responses.

SMEs also rely strongly on continuous training, although their responses are usually more operational. Smaller companies often combine targeted hiring with on-the-job learning, especially when fully qualified candidates are difficult to find. Internal flexibility is particularly important for SMEs, as they may need to adapt existing roles or redistribute tasks when skills are scarce.

Overall conclusion. Organisations mainly respond to skills needs through continuous training and recruitment. A large share of companies are willing to hire candidates who lack some of the required skills and provide training after entry. Internal reorganisation is also widely used, while very few respondents report taking no action.

Question 15. Would you consider using the EU Talent Pool to match third-country workers with job opportunities?



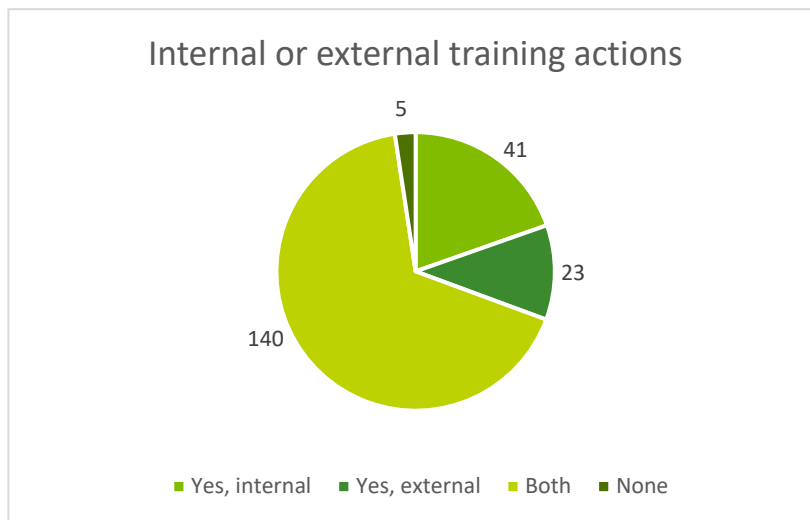
Large companies show a relatively positive attitude towards the EU Talent Pool, with 42 large-company respondents saying they would consider using it. Interest is particularly relevant for employers facing shortages in STEM, technical and skilled trade profiles. At the same time, a sizeable number of large companies remain uncertain, which suggests that the

instrument may need clearer positioning before it becomes widely used.

SMEs also express interest, although uncertainty remains high. For smaller companies, the EU Talent Pool could be useful where local recruitment channels are insufficient, but practical barriers may limit take-up. These include awareness of the tool, administrative capacity and experience with international recruitment.

Overall conclusion. Employers show a generally positive attitude towards the EU Talent Pool, with almost half of respondents indicating that they would consider using it to recruit third-country workers. However, a significant share remain uncertain, suggesting limited awareness or insufficient information about the initiative, while only a minority expressed no interest.

Question 16. Over the past 12 months, did your company provide internal or external training actions? Please specify whether internal or external.



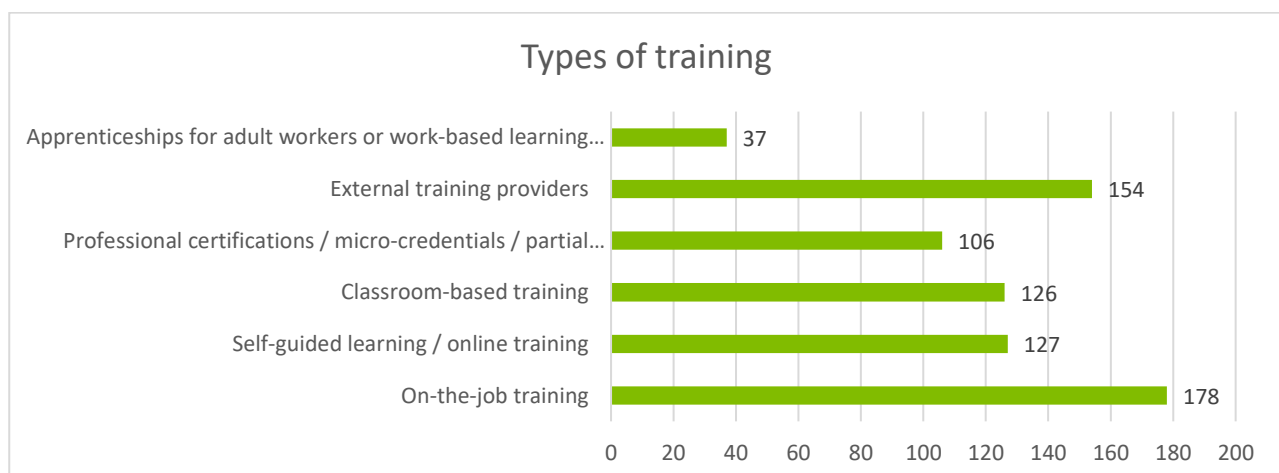
Large companies most often provide both internal and external training. In the survey, 71 large companies report using both approaches, while a smaller number rely only on internal or external provision. This reflects the fact that many larger employers have in-house training capacity but still turn to external providers for specialised courses, certifications or

technical expertise.

SMEs also use both internal and external training, although the balance is less pronounced than among large companies. Internal training is often linked to practical learning at work, while external provision is used when companies need certified training or expertise that cannot be delivered internally.

Overall conclusion. Most respondents combine internal and external training provision, with 67% of companies reporting the use of both approaches. A smaller share relies exclusively on internal or external training. This indicates that companies generally build training around a mix of in-house knowledge and external expertise.

Question 17. What types of training does your organisation use most often? (select all that apply)



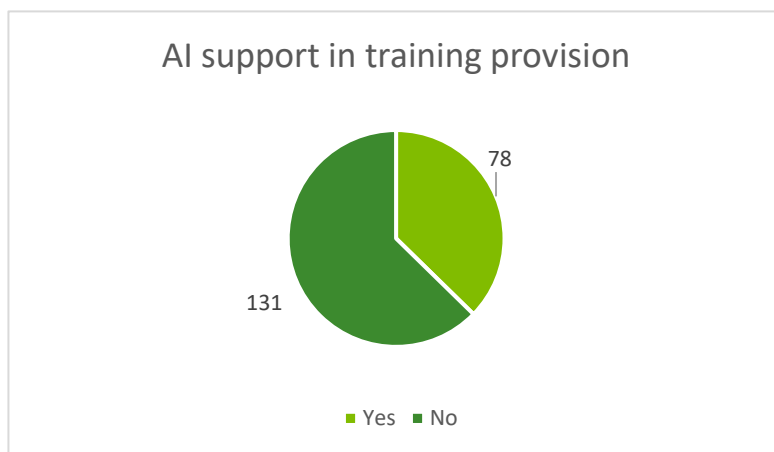
Large companies use a wide range of training formats. On-the-job training is the most common, but external providers, classroom-based courses, online learning and professional certifications are also widely used. Apprenticeships and work-based learning programmes

appear less frequently, although they remain relevant for some larger employers with structured training pathways.

SMEs rely most heavily on on-the-job training. External providers are also important, particularly when training needs to be certified or when specialist knowledge is required. Compared with large companies, SMEs make less use of apprenticeships for adult workers, which may reflect the time and organisational capacity needed to run these schemes.

Overall conclusion. Training provision is strongly centred on work-based learning. On-the-job training is the most widely used format across the sample, followed by external training providers. Online learning, classroom-based training and professional certifications are also commonly used, while adult apprenticeships remain less widespread.

Question 18. Does your company use AI to support training provision?



Large companies. are more likely than SMEs to use AI in training provision, with 37 large-company respondents reporting some use of AI. The examples provided point to digital learning platforms, AI-supported content creation and tools that help employees access relevant learning opportunities. In some cases, AI is also linked to broader skills management

practices.

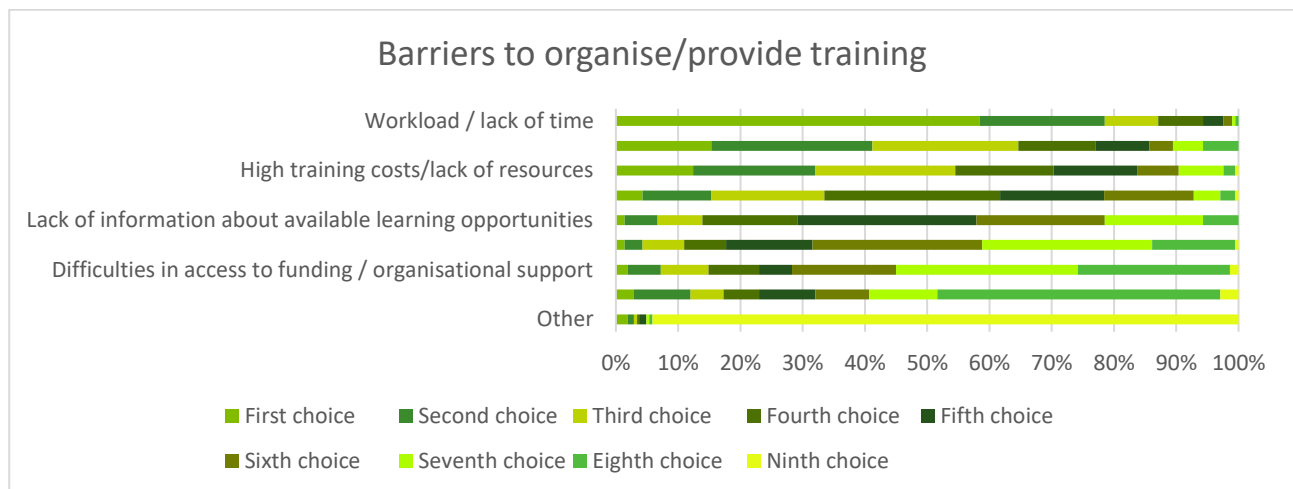
SMEs show a lower level of AI adoption, with 41 SME respondents reporting use of AI and 79 indicating that they do not use it. Where AI is used, it tends to support practical needs such as online learning, digital content or improving access to training materials. For many smaller companies, the main barrier appears to be capacity rather than lack of interest.

Overall conclusion. The use of AI to support training provision remains limited across the sample. Around one-third of respondents report using AI-based tools or approaches, while a clear majority do not yet rely on AI for training activities. Adoption is more visible among large companies, but AI is beginning to appear in SME training practices as well.

10.4. Barriers to Provide Training

This section considers the operational and financial barriers that affect companies' ability to organise or provide training.

Question 19. Please rank the following barriers to organise/provide training in your organisation (from most to least influential)



Large companies identify workload and lack of time as the clearest barrier to providing training, with 54 large-company respondents ranking it first. Cost and internal capacity also matter, but they appear less frequently as the top constraint. For larger employers, the challenge is often practical: training must be fitted around operational needs, production schedules and the availability of employees.

SMEs also rank workload and lack of time as the main barrier, although lack of capacity is more prominent than among large companies. Smaller companies often have fewer people available to organise training or cover absences while employees attend courses. Cost is also a relevant constraint, but the results suggest that time and capacity are the issues most likely to prevent training from taking place.

Overall conclusion. Workload and lack of time emerge as the main barrier to training provision across the sample. Organisational capacity and training costs follow as relevant constraints, while funding access, information gaps and employee motivation appear less often as the top-ranked barrier. The results suggest that companies are not questioning the value of training, but often struggle to make it work within day-to-day business operations.

Question 20. If you have ranked other as influential in the previous question, please specify

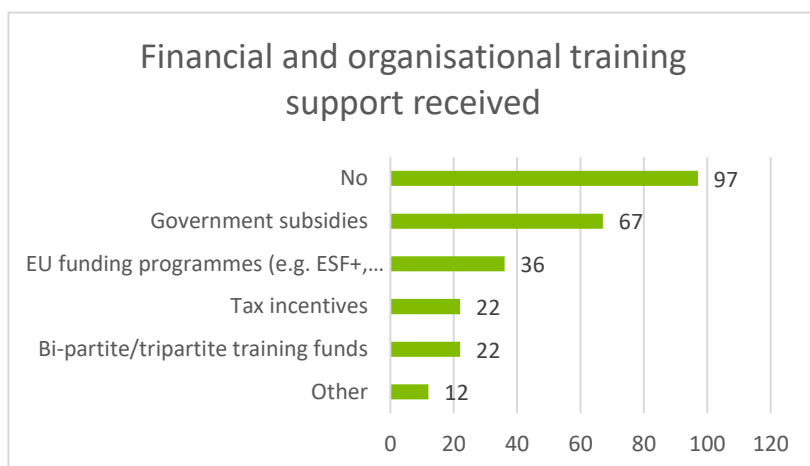
Rank	Topic identified
First topic	Operational constraints, shift schedules and lack of time
Second topic	Lack of motivation/engagement (employees or managers)
Third topic	No significant barriers reported
Fourth topic	Difficulty releasing staff for training
Fifth topic	Need for flexible timing / off-peak periods
Sixth topic	Complexity managing multiple training providers
Seventh topic	Diverse training interests across departments
Eighth topic	Regulatory/funding constraints

Large companies mainly use the open responses to describe practical barriers that are difficult to capture in a standard ranking. These include shift patterns, the need to schedule training during off-peak periods and the effort required to manage several external providers. Some respondents also mention limited interest from managers or employees, although a number of large companies state that they do not face additional barriers.

SMEs focus strongly on the difficulty of releasing staff from daily work. For smaller businesses, even short absences can affect operations, especially in sectors where staffing ratios, work schedules or customer demand leave little room for training time. A few responses also point to regulatory or funding-related constraints.

Overall conclusion. The open responses reinforce the importance of operational feasibility. Companies need training that can be scheduled around work patterns, delivered flexibly and adapted to business realities. Some respondents mention motivation, regulatory constraints or provider management, but the main message remains that training is often limited by time and availability rather than by lack of interest.

Question 21. Has your company benefited from any financial or organisational support to provide training to your employees? (select all that apply)



Large companies are split between those using support and those funding training without external assistance. Government subsidies are the most common form of support among large companies, while EU funding, training funds and tax incentives are used less often. Several large employers still report receiving no support, which points to either

limited relevance, eligibility issues or the administrative effort involved.

SMEs report no support more often than any single support instrument. Where support is used, government subsidies and EU funding are the most common sources, followed by tax incentives and training funds. The results suggest that publicly supported training exists, but access remains uneven for smaller companies.

Overall conclusion. Nearly half of respondents report receiving no financial or organisational support for training activities. Among those benefiting from support, government subsidies and EU funding programmes are the main sources. Training funds and tax incentives play a smaller role, which suggests that external support mechanisms remain underused across the sample.

Question 22. If your company has not benefited from any financial or organisational support to provide training, please specify the reason

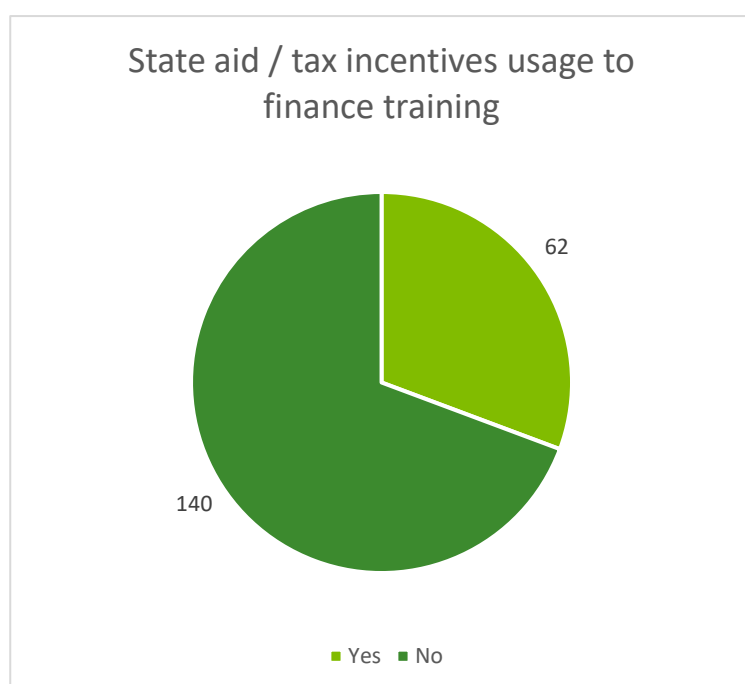
Rank	Topic identified
First topic	Bureaucratic burden and administrative complexity
Second topic	No support available / limited support schemes
Third topic	Lack of awareness or information about available support
Fourth topic	Not eligible for existing programmes
Fifth topic	Training funded internally / no need for support
Sixth topic	Lack of time or resources to apply
Seventh topic	Support does not match training needs
Eighth topic	Delays and low financial attractiveness of support

Large companies most often refer to bureaucracy, lack of fit with company needs or a limited incentive to apply. Some large employers indicate that training is funded internally as part of normal business operations, while others mention that available schemes are too complex or that eligibility criteria do not work well for their structure.

SMEs more often point to lack of awareness, lack of time to apply, ineligibility or the absence of suitable support. For smaller businesses, administrative effort can be enough to discourage applications, particularly where the expected financial benefit is modest or reimbursement is slow.

Overall conclusion. The main reasons for not using support are administrative complexity, lack of suitable schemes and limited awareness of available funding. Several companies also prefer or need to fund training internally. Overall, the findings suggest that support mechanisms are not always easy to access, easy to understand or sufficiently aligned with company training needs.

Question 23. Has your company used state aid or tax incentives to finance training?



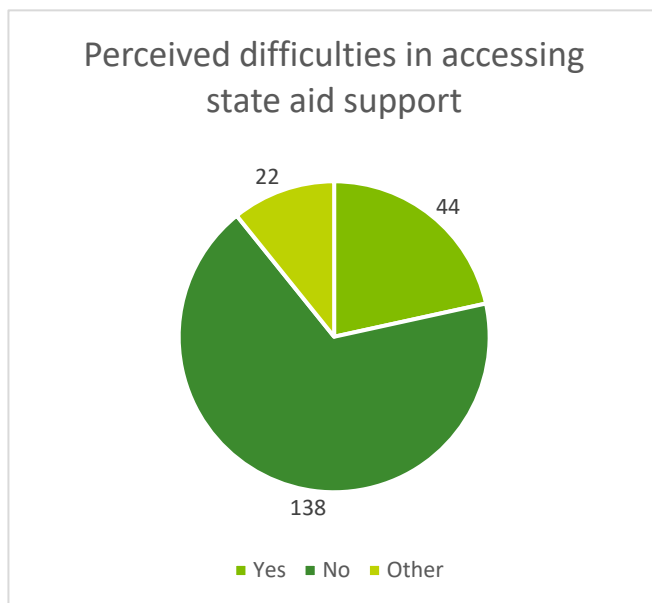
Large companies mostly report not using state aid or tax incentives to finance training, although 27 large-company respondents have used such instruments. The relatively low use may reflect internal funding capacity, limited eligibility or the perception that application processes require too much effort compared with the benefit obtained.

SMEs also show limited use of state aid and tax incentives, with most respondents indicating that they have not used them. Where SMEs do not use these instruments, the reason

often appears to be linked to limited awareness, administrative capacity or difficulty navigating the relevant procedures.

Overall conclusion. Most respondents have not used state aid or tax incentives to finance training activities. Around 31% of respondents to this question (62 out of 202) reported using these instruments, confirming that public financial support for training is not yet a routine source of funding for many companies.

Question 24. Have EU or national state aid rules created difficulties in accessing this support?



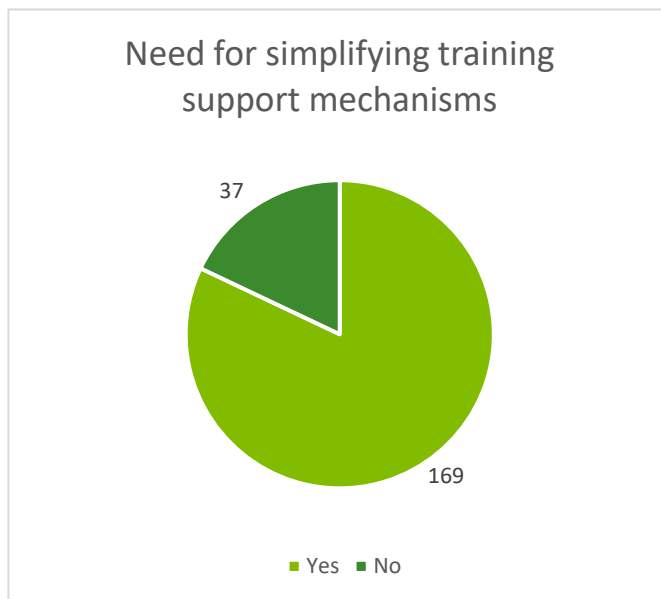
Large companies generally do not report major difficulties linked directly to state aid rules, although a minority indicate that access can be affected by bureaucracy or uncertainty around requirements. For these companies, the issue appears less about the principle of state aid and more about the way schemes are designed and administered.

SMEs are more likely to experience uncertainty or practical difficulty when dealing with support rules. Several smaller companies report that they have not used support at all, which makes it harder for them to assess the rules directly. Where difficulties

are mentioned, they tend to concern eligibility, lack of information and the administrative work required.

Overall conclusion. Most respondents to this question reported that EU or national state aid rules had not created significant difficulties in accessing training support (138 out of 204 respondents, 67.6%). A smaller group reported difficulties (44 respondents, 21.6%), while 22 respondents selected “Other”. This suggests that simplification should focus not only on formal rules, but also on guidance, eligibility checks and the practical steps companies must follow.

Question 25. Do you see room for improvement to simplify training support at national level (e.g. individual learning accounts)?



Large companies strongly support simplification, with 71 large-company respondents seeing room for improvement. Their concerns are mainly linked to bureaucracy, slow procedures and funding instruments that do not always reflect business needs. Larger employers often call for simpler processes and more flexible support that can be used at scale.

SMEs also strongly favour simplification, with 98 SME respondents answering yes. For smaller companies, the issue is often accessibility: support needs to be easier to find, easier to apply for and manageable

without specialist administrative resources. Clearer information and lighter requirements would make a practical difference.

Overall conclusion. A clear majority of respondents to this question (82%, 169 out of 206) believe that training support at national level could be simplified. The message is consistent across company sizes: support mechanisms need to be easier to access and less burdensome to manage. This is particularly important if funding is expected to reach companies with limited internal capacity, including small and medium-sized enterprises.

10.5. Practical Solutions

This section summarises the practical actions and forms of support that respondents consider most effective in improving access to skills.

Question 26. Which actions have been most effective in improving access to skills in your organisation? (select all that apply)



Large companies most often point to internal upskilling and reskilling as the most effective response, with 72 large-company respondents selecting this option. Collaboration with training providers, retention measures and partnerships with universities or VET centres are also widely used. This suggests that large employers are trying to build skills internally while strengthening external pipelines where the labour market cannot provide enough suitable candidates.

SMEs also identify internal upskilling and reskilling as the most effective action, followed by collaboration with training providers and improvements to recruitment processes. For smaller companies, external partnerships appear particularly important, as they can provide access to training capacity or expertise that may not exist in-house.

Overall conclusion. Internal upskilling and reskilling emerge as the most effective way to improve access to skills across the sample. Collaboration with training providers, recruitment improvements and retention measures also play an important role. International recruitment is used less frequently, although it remains relevant for companies facing persistent shortages in local labour markets.

Question 27. What additional support (at national or EU level) would help your organisation provide or improve training for employees? Have any EU policies or programmes already influenced your approach to training? Please specify.

Rank	Topic identified
First topic	Simplification of funding procedures and reduction of bureaucracy
Second topic	Additional financial support, subsidies and tax incentives
Third topic	Better information and awareness of available programmes
Fourth topic	More sector-specific and future-oriented training (AI, digital, green skills, technical profiles)
Fifth topic	Stronger cooperation between employers, universities and VET providers
Sixth topic	Greater flexibility in training delivery and work-based learning
Seventh topic	Recognition and portability of skills and certifications across countries
Eighth topic	Easier access to international talent and mobility mechanisms
Ninth topic	Wider use of digital learning platforms and AI-enabled training tools
Tenth topic	Positive impact of EU programmes and initiatives (ESF+, Erasmus+, H2020, NextGenerationEU, Pact for Skills)

Large companies mainly call for simpler access to funding and less administrative burden. Several respondents also ask for support that is more closely linked to sector-specific needs, particularly technical training, digital skills and AI-related capabilities. Large employers also refer to stronger cooperation with universities, VET providers and public authorities, especially where education systems need to respond faster to changing business needs.

SMEs place stronger emphasis on affordability, visibility of funding opportunities and practical access to support. Many smaller companies ask for clearer information, simpler application procedures and training support that can be used without placing too much pressure on daily

operations. SMEs also highlight the need for more sector-specific offers, including short or modular training that can be combined with work.

Overall conclusion. Respondents consistently call for simpler, more accessible and more practical support for training. The main priorities are reducing bureaucracy, improving access to funding, providing clearer information and ensuring that training provision is better aligned with company needs. EU and national programmes have influenced some organisations, particularly where funding has supported upskilling or cooperation with training providers, but take-up remains uneven.

10.6. Open Questions

This section summarises the main themes emerging from the survey's open questions on effective actions, good practices and certification.

Question 28. What actions (internal or external) would help your organisation access the skills it needs more effectively?

Rank	Topic identified
First topic	Stronger cooperation with universities, VET centres and training providers
Second topic	More internal upskilling, reskilling and on-the-job training
Third topic	Easier access to funding and reduction of administrative barriers
Fourth topic	Better alignment between education systems and labour market needs
Fifth topic	Greater use of apprenticeships, internships and work-based learning
Sixth topic	Improved access to international talent and EU talent pools
Seventh topic	Skills-based recruitment and stronger workforce planning
Eighth topic	More digital learning tools, AI-enabled solutions and online platforms
Ninth topic	Better information, transparency and awareness of available opportunities
Tenth topic	Sector-specific training and stronger links with industry networks

Large companies often refer to workforce planning, clearer skills forecasting and stronger links with education providers as key ways to improve access to skills. Several responses also point to internal mobility, skills-based recruitment and easier access to international talent. For large employers, the issue is not only finding more candidates, but making sure that training, recruitment and long-term business needs are better connected.

SMEs focus more on practical and immediate measures. They call for better access to funding, closer cooperation with training providers, more work-based learning and clearer information on available support. Many smaller companies also stress the need for education and training systems to reflect real labour market needs more closely, especially in sectors where technical or vocational skills are in short supply.

Overall conclusion. Respondents highlight the need to combine internal skills development with stronger external talent pipelines. Cooperation with universities, VET centres and training providers is a recurring priority, alongside better funding access, more work-based learning and closer alignment between education systems and company needs. International recruitment

and digital learning tools also appear as relevant solutions, but they are not the main focus for most respondents.

Question 29. Do you have any specific examples or good practices to share related to training, recruitment or talent management?

Rank	Topic identified
First topic	Internal academies, structured training programmes and continuous learning platforms
Second topic	On-the-job training, mentoring, buddy systems and knowledge sharing
Third topic	Collaboration with universities, VET centres and schools
Fourth topic	Apprenticeships, internships, graduate and early talent programmes
Fifth topic	Skills-based recruitment, competency assessments and structured interviews
Sixth topic	Talent management, career paths and succession planning
Seventh topic	Digital learning platforms, LMS and AI-enabled training tools
Eighth topic	Employer branding, retention culture and employee engagement
Ninth topic	Sectoral initiatives, training centres and industry collaboration
Tenth topic	Leadership development and management training programmes

Large companies share examples that are generally more formalised, including internal academies, talent marketplaces, structured competence management and partnerships with universities or sectoral training bodies. Some also refer to digital learning platforms and AI-supported tools, but these are usually presented as part of broader talent management systems rather than as standalone solutions.

SMEs tend to highlight more hands-on practices, such as mentoring, project debriefs, skills audits, behavioural interviews and practical training delivered at the workplace. Several examples show that small companies often rely on close manager-employee relationships and direct knowledge sharing to develop skills.

Overall conclusion. Good practices vary widely, but the strongest examples combine practical learning with clear links to business needs. Structured training systems are more common among large companies, while SMEs often rely on mentoring, workplace learning and close cooperation with local providers. Across both groups, effective practices are those that make skills development part of everyday work rather than an isolated training activity.

Question 30. Are training courses in your company or sector certified? If yes, how is this certification carried out (e.g. validation of learning within companies, cooperation with training centres, or alignment with national qualification frameworks)?

Rank	Topic identified
First topic	External certification through accredited providers/training centres
Second topic	No formal certification, especially for internal/on-the-job training
Third topic	Partial certification depending on course type
Fourth topic	Alignment with national qualification frameworks
Fifth topic	Mandatory/regulatory certifications, especially safety and technical training
Sixth topic	Internal validation, attendance certificates and company-based recognition
Seventh topic	Cooperation with universities, VET centres or professional bodies
Eighth topic	Sectoral or industry-specific certification schemes
Ninth topic	Micro-credentials and modular certification pathways

Large companies are more likely to refer to formal certification, especially for safety, technical, regulatory or sector-specific training. Certification is often carried out through accredited providers, industry bodies, universities or recognised national frameworks. However, several large companies also note that internal training is not always formally certified, particularly when it is designed for company-specific skills.

SMEs rely heavily on external providers when certification is required. Internal or on-the-job training is often recorded or validated informally, but not always certified. For smaller companies, certification tends to be used where it is mandatory, commercially useful or linked to a recognised professional standard.

Overall conclusion. Certification practices differ considerably across sectors and company sizes. External providers and accredited training centres are the most common route for certified training, especially for mandatory, technical or safety-related courses. Internal training is often less formally recognised, which suggests that there is still room to improve the visibility and portability of skills developed within companies.

11. Annex F. Questionnaires for Stakeholder Consultations

The national and sectoral findings presented in this Study were informed by structured consultations with national employer organisations, relevant national skills initiatives, European sectoral organisations and EU-level skills initiatives.

The consultations were organised around the main analytical areas of the Study: the identification of skills needs; the development of training responses; training provision and certification; and transversal issues relating to governance, funding, implementation, sustainability and impact. The questions were intended to provide a common framework for gathering evidence across different national and sectoral contexts and to support the comparative analysis presented in the report.

The following sections reproduce the consultation questionnaires used for the EU-sectoral and national strands of the Study. The questions are presented in their original wording and grouped according to the corresponding issue of analysis.

11.1. EU-sectoral consultation questionnaire

Issue 0. Transversal

1. How do you assess the Blueprint initiative overall, and what have been the main outcomes in your sector compared to the starting point?
2. Could the outcomes of your Blueprint initiative be scaled up or replicated in other sectors or regions, and how will they be sustained in the future in terms of economic viability, continued labour market relevance, added value for employers, and regular adaptation to sectoral changes?
3. Depending on the current stage of implementation of your blueprint, do you have in mind to submit a new application for a follow-up project, and if so, what would be your main goals with a new blueprint type of project in the next years?
4. As announced in the Union of Skills communication, the European Commission intends to assess, as part of the ongoing review of the General Block Exemption Regulation (GBER), whether the current state aid rules applicable to training may need to be updated. The objective is to provide stronger incentives for industry to invest in upskilling and reskilling initiatives. The application of the state aids regulation seems to have caused problems in some Member States, hindering the possibility to receive incentives for training activities. Do you have any experience of state aid rules either supporting or hindering investments in skills and the provision of training, particularly in the context of upskilling and reskilling efforts?
5. Having in mind the different EU initiatives that aim to support sectoral skills development (such as blueprints, the Pact for Skills, and skills academies), what would you consider to be the most effective way of framing future EU funding to help address

sectoral skills needs? Would you support the continuation and expansion of Blueprint initiatives to other sectors?

Issue 1. Identification of skills needs

6. Which skills intelligence methodologies have you used to identify the skills needed in your sector (e.g., statistical analysis, company surveys, AI-driven data analysis, consultations with sectoral committees, econometric models, or labour market projections)?
7. How have you identified labour shortages, vacancies, and skills gaps in your sector?
8. How have you translated those shortages into specific skills requirements or descriptions?
9. Have you used international or European reference frameworks (e.g., ESCO, O*NET, EQF) to define skills requirements? If so, how?
10. How have you anticipated future skills needs, and how were they integrated into the initiative's planning or outcomes?
11. Do you consider regular updates of the skills needs analysis? If yes, please specify frequency and updating methodology.
12. Is there a role for apprenticeships in your sector in addressing the skills shortages/gaps that were identified through the blueprint analysis? How does this relate to the need for national reforms to promote adults' participation in apprenticeships?

Issue 2. Development of a training response

13. How has the blueprint initiative helped to develop training sectoral strategies or actions plans?
14. If you developed training content/programmes how was this done?
15. How do you think your training programmes could be used to update national VET curricula to better meet labour market needs, and what best practices do you consider for the update process in terms of procedures and timing?
16. To what extent have you developed new competency or qualification standards, and how could they be applied at national or European level? Do you see potential for the development of common training principles (common European content, tests, certification, ...) as per the possibility in the Professional Qualifications Directive?
17. Has any collaboration been set up and carried out? Please describe your governance and relationship model.

Issue 3. Training provision and certification

18. How many people have participated in the training programmes you developed, and what are your projections for future participation?
19. Which training providers (public or private; formal or non-formal) do you relate with more in skills development within your sector?

20. Which training models do you find the most appropriate to rapidly develop skills within your sector (apprenticeships, blended learning approaches, on-the-job trainings...)? Why?
21. Which methods are used to evaluate the effectiveness of training programs in addressing identified skill needs?
22. How is training certified (e.g., through European or national formal or non-formal certifications, micro-credentials referenced to the levels of the European or National Qualifications Frameworks), and how are these certifications aligned with the relevant frameworks?
23. To what extent can certificates be considered micro-credentials, as described in the EU Recommendation (2022/C 243/02)?
24. Are micro-credentials effectively designed to be modular, inter-operable (i.e. in higher education, companies, and vocational training) and flexible, and to meet employer's needs?
25. How has the certification process been managed to ensure credibility and recognition by industry stakeholders?
26. To what extent does the scope of certificates facilitate mobility of workers?

Issue 0. Final transversal questions

27. What have been the main challenges or information gaps encountered throughout the different phases of the Blueprint initiative?
28. What impact has the initiative had on skills development in your sector, and what key lessons have been learned that could inform future skills anticipation and development projects?

Other comments

29. Please include any additional considerations you may find relevant from your blueprint initiative or sector for the purposes of this analysis.

11.2. National consultation questionnaire

Issue 0. Transversal

1. How would you assess your country's overall approach to skills development and anticipation in recent years? What have been the main achievements and shortcomings in addressing and preventing skills shortages?
2. How do EU initiatives and funds (e.g. ESF+, Pact for Skills, Union of Skills, Erasmus+/Blueprints) connect with national priorities on skills development? Do you see alignment or duplication?
3. From your national perspective, what have been the main challenges and opportunities to ensure funding for education and training, including upskilling and reskilling?
4. From your experience, what are the main barriers that keep SMEs from sending staff to training (e.g. difficulty freeing up people from daily work, lack of replacement staff, costs,

language, or administration)? Have you come across solutions that have helped to overcome these barriers?

5. How effectively do ESF+ interventions complement other EU and national instruments (e.g. RRF, Erasmus+, Just Transition Fund, national training levies)? Are there coordination mechanisms to avoid overlaps and ensure complementarity? To what extent do you identify synergies between skills reforms identified under the European semester process and the use of EU funding instruments, notably the ESF+?
6. What have been the main challenges in absorbing or managing ESF+ funds for skills-related actions (e.g. administrative capacity, co-financing requirements, monitoring frameworks)? What lessons have been learned from previous ESF programming periods?
7. As announced in the Union of Skills communication, the European Commission is reviewing the General Block Exemption Regulation (GBER) and the state aid rules applicable to training, with the aim of providing stronger incentives for industry to invest in upskilling and reskilling. In your country, have these rules (in particular the provision that 'aid shall not be granted for training which undertakings carry out to comply with national mandatory standards on training') created challenges or limitations? If so, how have they affected employers' ability to receive effective incentives for training activities? By contrast, do you have any evidence from the national level on how the conditions for state aid support can be optimised and used of good effect by companies for their skills related investments?
8. Do you have experience in cooperating with your government in some skills related reform projects supported by the EU technical support instrument TSI, i.e. Commission's reform support to Member States?
9. Does your country operate a training levy or compulsory contribution system? If so, who contributes (employers, workers) and how is it collected? Which body manages the funds and how are social partners involved in governance? How are the funds typically used (e.g. reimbursement to employers, apprenticeships, dedicated training fund, individual learning accounts, reskilling, training during short-time work)? Overall, what do you see as the main strengths and weaknesses of this system? Do you have any relevant experience in targeting resources to support SMEs (e.g. administration, replacement of workers during training)?
10. What forms of collaboration have been set up nationally (e.g., governance structures, partnerships between ministries, social partners, education providers)? Do you consider that additional cooperation is needed to deliver on your skills priorities?

Issue 1. Identification of skills needs

11. Which skills intelligence methodologies have you used to identify the skills needed in your country (e.g., statistical analysis, company surveys, AI-driven data analysis, consultations with national committees, econometric models, or labour market projections)? Please describe. Does the skills intelligence that you gather feed into wider national/sectoral discussions on skills needs?

12. Are International/European reference frameworks (e.g., ESCO, O*NET, EQF, or EU sectoral studies like the blueprints) used to identify and describe skills requirements? Please specify how they have been used.
13. How are future skills needs anticipated?

Issue 2. Development of a training response

14. When new skills needs are identified in your country, how are they used to design or update training programmes and curricula (both VET and university)? On average, how long does it take from identifying the need to having the updated training or curricula in place? Could you share any best practices from your country?
15. If new training programmes have been developed, how were they designed (e.g., through ministries, VET providers, partnerships with employers)?
16. Several initiatives at EU and international level (e.g. Blueprints, Pact for Skills) identify emerging skills needs and develop or update professional profiles, competency standards and training programmes. To what extent are these outputs used to update national standards and training programmes in your country? Do you see potential for greater coordination to develop common training principles (for example, shared European sectoral content)?
17. To what extent has ESF+ funding been used to support the development of new training programmes, curricula or sectoral partnerships? Are there examples where ESF+ has helped accelerate reforms or pilot innovative training schemes?

Issue 3. Training provision and certification

18. Could you briefly describe how education and training are organised in your country, distinguishing between initial education and training (e.g. schools, VET, universities), secondary and higher education and lifelong learning (e.g. adult training, reskilling and upskilling)? Who are the main providers involved (public, private, companies, partnerships)?
19. Are companies in your country able to finance the necessary investments in skills training equipment on their own? Is there any specific sustainable financial mechanism enabling this kind of investments? Do public financial support or loans/guarantees at EU (e.g. Invest EU / EIB skills related window) or national level play a supportive role?
20. Are VET institutions and universities managing to close the gap between the skills they provide and labour market needs? How is provision organised (public or private providers, partnerships, face-to-face or online training, role of micro-credentials)? Could you share any best practices or successful examples?
21. How is your country monitoring progress towards the EU objective of 60% of adults participating annually in lifelong learning? What policies or initiatives have been introduced to increase participation rates, and what results have been observed so far? In particular, what is the profile of adults who participate the most (e.g. age, gender, employment status, education level), and what measures are in place or would be needed to improve participation among underrepresented groups such as the long-term unemployed, women, migrants or low-qualified adults?

22. Do employers and individuals (workers, jobseekers) have sufficient access to education and training programmes that address their needs? How accessible are these opportunities in practice (e.g. geographic coverage, affordability, flexible formats, digital access)? Which training providers do they most often turn to for upskilling and reskilling, and what are the main factors influencing this choice (e.g. flexibility, cost, low bureaucracy, on-the-job learning opportunities)?
23. Which training models are considered most effective in your country to rapidly develop skills (apprenticeships, micro-credentials, blended learning, on-the-job training)? Why? To what extent a skills first approach serves employers needs and what are the implications for recognition of the skills developed? What are the relevant trends in terms of qualifications-based training approaches?
24. To what extent do apprenticeships and work-based learning play a role in addressing skills shortages and gaps in your country? Are there national reforms or initiatives to promote participation in apprenticeships, particularly among adults and workers in need of reskilling or upskilling?
25. Which methods are used to evaluate the effectiveness of training programs in addressing identified skill needs? Are there evaluation systems linked to ESF+ interventions or performance indicators?
26. Beyond formal Education and Training qualifications, are training and skills certified in a different way (e.g., European certifications, micro-credentials...)? Are micro-credentials, as described in the EU Recommendation (2022/C 243/02), implemented in your country? To what extent are they modular, interoperable (across higher education, companies and vocational training) and flexible to meet employers' and learners' needs?
27. To what extent does the system for recognising qualifications and certificates obtained in other countries facilitate labour mobility and improve employers' access to skills?

Issue 0. Final transversal questions

28. What have been the main challenges or information gaps encountered throughout the different phases of the national policies or initiatives development?
29. What impact have the national policies and initiatives had on skills development in your country, and what key lessons have been learned that could inform future skills anticipation and development projects?

Other comments

30. Please include any additional considerations you may find relevant for the national analysis of this study.



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