



METHODOLOGICAL PROPOSITION FOR LIFELONG LEARNING IN THE BUSINESS AND WORKING SECTORS (PR7)

Leading organization:

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1. Introduction

This report explores the intersection of green policies, climate change, and the business sector across five European countries: France, Spain, Portugal, Italy, and Belgium, within the framework of the Erasmus+ OpenPass4Climate (OP4C) project.

Entitled "Methodological proposition for lifelong learning in the business and working sectors — PR7", this seventh deliverable of the project aims to develop a European methodological framework for integrating Open Badges and the OpenPass4Climate platform into professional and work-based learning environments.

Building upon national focus groups and expert contributions, this report provides a comparative analysis of the existing climate governance structures, the role of private-sector stakeholders, and the level of business sector engagement in sustainable transitions. It emphasizes both the regulatory context (European and national) and the practical challenges that businesses and organisations face in aligning with decarbonization pathways while fostering lifelong learning and green upskilling among their workforces.

Through the insights gathered from professionals, employers, and alumni, the report identifies good practices and persistent gaps in corporate climate action and sustainability education. It also assesses the perceived value of digital micro-credentials, such as Open Badges, for recognizing sustainability-related competencies and promoting lifelong learning in professional contexts along with influencing recruitment and HR development strategies.

The findings serve as a basis for shaping a more inclusive and coherent methodology to engage business actors in climate education, green skills recognition, and policy implementation. Ultimately, this report contributes to the development of a European methodological approach that strengthens lifelong learning pathways in the business and working sectors, supports the adoption of Open Badges as credible tools for validating green competencies, and reinforces the role of employers as active agents of the ecological transition.

2. Green Policies Shaping the Business Environment in Europe: Implications for Lifelong and Professional Learning

This section provides an overview of EU-level legislation, strategic goals, funding mechanisms, and national-level initiatives relevant to sustainability and green transformation in the business sector. It examines how these policies shape corporate strategies, innovation, and workforce development across Europe. Particular attention is given to the conditions they create for professional training, the emergence of green skills, and the growing importance of lifelong learning within the European business environment.

2.1. EU Policies Driving the Green Transition in the Business Sector

This subsection summarizes the core legislative and regulatory instruments introduced by the European Union to guide and accelerate climate action in the business world. These include carbon pricing schemes, reporting directives, and strategic packages such as the European Green Deal and Fit for 55.

European businesses are operating in a context shaped by several interlinked EU legislative and strategic initiatives:

- European Green Deal (2019): The EU's flagship strategy to achieve climate neutrality by 2050, encompassing energy, biodiversity, agriculture, circular economy, and industrial decarbonization. ([European Green Deal – European Commission](#))
- Fit for 55 Package: A set of policy proposals designed to cut EU greenhouse gas emissions by 55% by 2030, including changes to carbon pricing, energy taxation, and sector-specific targets. ([Fit for 55 – European Commission](#))
- EU Emissions Trading System (EU ETS): The cornerstone of EU carbon pricing, it covers large emitters in the power, industry, and aviation sectors. The scope has been expanded to maritime transport and fuel for road and buildings. ([EU ETS - European Commission](#))
- Carbon Border Adjustment Mechanism (CBAM): Introduced to prevent carbon leakage, CBAM imposes a carbon price on imports of high-emission goods such as steel, cement, and fertilizers. ([CBAM – European Commission](#))
- EU Taxonomy Regulation (Regulation EU 2020/852): Provides a classification system

for sustainable economic activities, helping businesses and investors identify activities aligned with EU climate goals. ([EU Taxonomy – European Commission](#))

- Corporate Sustainability Reporting Directive (CSRD) (Directive EU 2022/2464): Mandates large companies and listed SMEs to report on climate risks, emissions, and sustainability performance using standardized metrics. ([CSRD – EU Finance](#))
- Renewable Energy Directive (RED III) and Energy Efficiency Directive (EED): These directives set binding national targets for renewable energy share and energy savings, requiring businesses to implement sustainable energy strategies. ([RED III and EED – European Commission](#))

Together, these EU policies not only set the direction for industrial and corporate decarbonisation but also create new demands for training, adaptation, and green skills within Europe's workforce.

2.2. EU Funding and Innovation for the Green Transition

This part presents the major EU programs available to support businesses and innovators in their sustainability efforts. It includes research and innovation funds, transition support for carbon-dependent regions, and investment tools for green infrastructure and technology.

To support businesses in transitioning to sustainable models, the EU offers a wide range of funding mechanisms:

- Horizon Europe: The EU's main research and innovation program, financing green technologies, sustainable business models, and decarbonization projects across sectors. ([Horizon Europe – European Commission](#))
- LIFE Programme: A dedicated fund supporting climate and environmental action, with project calls open to SMEs, industry, and public-private partnerships. ([LIFE – European Climate, Infrastructure and Environment Executive Agency](#))
- European Innovation Council (EIC): Provides blended finance to high-potential start-ups and SMEs focused on breakthrough green technologies. ([EIC – European Innovation Council](#))
- Just Transition Fund: Supports the regions most affected by the transition, especially those economically dependent on carbon-intensive industries. ([Just Transition Mechanism – European Commission](#))
- InvestEU: Facilitates public and private investment in sustainable infrastructure, green innovation, and skills development through guaranteed schemes and technical assistance. ([InvestEU – European Commission](#))

Collectively, these European funding mechanisms and innovation programs create enabling conditions for national and regional actors to implement the green transition. They not only stimulate technological progress and industrial adaptation but also influence how European countries integrate sustainability, workforce development, and green skills into their own policy agendas.

2.3. National Initiatives in Partner Countries

This section explores how the main European policies and funding instruments are reflected in national strategies within the OpenPass4Climate partner countries. Belgium, France, Italy, Portugal and Spain are implementing national-level policies, strategies, and funding mechanisms aligned with European climate and sustainability goals. These examples help contextualize business sector engagement at a local level and illustrate how different national approaches contribute to the broader European green transition.

A) Belgium

Belgium's green transition strategy reflects a coordinated multi-level governance model, integrating federal and regional actions to achieve climate neutrality - through policies on energy, mobility, and circular economy - while maintaining economic competitiveness:

- **Ambitious Net-Zero targets by 2050**

The federal government enshrined the objective of climate neutrality by 2050 in its September 2020 [Declaration of Intent](#) and committed to carbon-neutral public buildings by 2040, with a midpoint goal of 50% reduction by 2030.

Each region [has defined](#) its own goals:

- a. **Brussels-Capital:** -40% emissions by 2030; -90% by 2050 (baseline: 2005).
- b. **Flanders:** -55% CO₂ by 2030 (vs. 2015), aiming for carbon-neutral buildings by 2045 and public building efficiency masterplans in place since 2023.
- c. **Wallonia:** -55% emissions by 2030, aiming for a 95% reduction by 2050 (1990 baseline), with public buildings net-zero by 2050.

- **National Energy Climate Plan (NECP)**

A [revised NECP](#) was agreed upon in November 2023 and officially submitted to the European Commission, aligning federal and regional measures under Regulation 2018/1999. The revised measures aim for a - 43% emissions reduction by 2030 under the 'with additional measures' scenario (compared to 1990).

- **Governance and coordination instruments**

A "regional-federal co-responsibility" mechanism was introduced in 2023: regions failing to meet minimum emission reductions must purchase CO₂ permits, with the federal government

bridging the gap to the 47% EU target [SGI Network](#).

Disputes remain: Brussels and Wallonia support the EU target (-47% by 2030), while Flanders capped its ambition at -40%, though a [partial accord was reached](#) in November 2023.

- **Fiscal and tax incentives to drive change**

The 2020 [Declaration of Intent](#) mentioned the adoption of a “polluter-pays” tax approach to discourage fossil fuel use. An [International Monetary Fund \(IMF\) analysis](#) in 2023 recommended Belgium setting a carbon tax of approximately €100/tCO₂ by 2030 for non-ETS sectors to enhance cost-efficient emission reductions.

- **Transport and mobility shift**

The [NECP](#) promotes “soft”, shared, and multimodal mobility. Mobility budgets for non-company cars and green stimuli for public transport, cycling, and rail are being implemented.

Federal policy supports rail investments via SNCB and Infrabel; regional authorities phase out fossil car sales. Through a [federal commitment](#), all new government-owned vehicles to be zero-emission by 2026; post-July 2024, only zero-GHG vehicles may be procured.

- **Circular economy: regional innovation hubs**

[Circular Flanders](#) is a collaborative platform (government–industry–research) aiming for a fully circular economy by 2050. Outputs include six strategic agendas targeting value chains like electronics, textiles, and wood, estimated to generate €1.2 bn extra value and 12,000 jobs by 2030.

- **Carbon Capture and offshore CO₂ infrastructure**

Belgium [has limited](#) CCS regulation regionally, in line with EU standards (e.g., Brussels decree of 2012, Walloon 2013 law, Flemish 2009 statute).

The [Carbon Connect Delta Program](#) - a cross-border Belgium–Netherlands initiative - aims to store 6.5 MtCO₂ annually by 2030 in the Scheldt-Delta area.

- **Green investment and financial sector**

The Federal holding and investment company is pivoting to divest from high-emission assets by 2030, aligning investments with [sustainability goals](#).

- **Monitoring, awareness and education**

Federal agencies like the [Federal Institute for Sustainable Development](#) and [Klimaat.be](#) maintain tools, calculators, and platforms (e.g., [my2050.be](#)) to promote public awareness and track progress toward 2050 neutrality.

These national and regional initiatives illustrate Belgium's pragmatic approach to combining green transition objectives with economic competitiveness. They also highlight emerging opportunities for collaboration between government, industry, and educational actors to promote workforce adaptation and the development of green skills. This emphasis on capacity-building and innovation provides a relevant context for understanding how businesses in Belgium engage with sustainability and lifelong learning challenges.

B) Italy

Italy pursues a comprehensive green transition strategy aligned with EU objectives, combining national planning, fiscal measures, and substantial investment tools to accelerate decarbonisation and sustainable growth.

- **PNIEC – Piano Nazionale Integrato per l'Energia e il Clima (2021–2030):** Defines Italy's targets for energy efficiency, renewables, and GHG reduction. ([PNIEC – Ministero dell'Ambiente e della Sicurezza Energetica](#))
- **PNRR – Piano Nazionale di Ripresa e Resilienza:** Italy's implementation of the EU Recovery Plan (NextGenerationEU), allocating over €70 billion for green transition investments (energy, transport, agriculture). ([PNRR – Governo Italiano](#))
- **Green New Deal Italia:** Managed by Cassa Depositi e Prestiti, this initiative supports environmental innovation and industrial decarbonization. ([CDP Green Deal](#)).

In recent years, Italian companies have shown a growing awareness of the urgent need to address climate change, implementing a variety of strategies to reduce their environmental impact. These strategies include achieving net-zero emissions, improving waste management systems, enhancing energy efficiency, adopting clean technologies, and using green-certified electricity.

According to the [CxO Sustainability Report 2023 by Deloitte](#) Italy—presented at the World Economic Forum in Davos—climate change is viewed as a critical priority by Italian business leaders. In fact, 42% consider it one of the top three issues their companies must address, just

behind economic concerns (44%). Additionally, 52% of C-level executives in Italy identified climate change as the most pressing issue in 2023. Only 8% of Italian companies have yet to begin their sustainability journey. Nearly 60% are in an early or intermediate phase of ESG integration, while over 30% are in an advanced stage, showing concrete progress in adopting responsible practices. A significant 63% of Italian executives believe climate change will strongly influence corporate strategy and operations. Italian companies are committed to using sustainable materials (71%) and adopting clean technologies (64%). Nevertheless, further action is needed to develop new environmentally responsible products, form sustainability-focused partnerships, and enhance company infrastructure to withstand extreme climate events.

Italy has implemented several green policies to support the ecological and energy transition, in alignment with EU goals. For instance, the recent “Energy Release 2.0” scheme provides discounted electricity to energy-intensive industries, on the condition that the savings are reinvested in renewable energy infrastructure, [according to Italia Domani](#).

National strategies for sustainable development in Italy include the National Strategy for Sustainable Development ([Strategia Nazionale per lo Sviluppo Sostenibile - SNSvS](#)) and the integration of green infrastructure and nature-based solutions (GI/NbS) into urban planning. The SNSvS integrates the principles of the 2030 Agenda into the socio-economic and political fabric of Italy, offering a roadmap to address challenges such as climate change and the promotion of a circular economy. GI/NbS, on the other hand, are conceived as multifunctional spaces that improve the quality of urban life, promoting sociality and community cohesion.

In 2021, the UN Global Compact Network Italy published the document “[Le imprese italiane verso la decarbonizzazione: una transizione giusta e inclusiva](#)”, presenting an analysis of the commitment of Italian companies in the fight against climate change. With the active contribution of major Italian UN Global Compact member companies particularly committed to Sustainable Development Goal 13 (Climate Action), it was highlighted how decarbonisation is a strategic challenge and an opportunity for innovation and sustainable growth.

Italy’s experience illustrates an advanced phase of the green transition, where national policy, corporate commitment, and innovation increasingly intersect. The growing focus on green finance, circular economy, and digitalisation is mirrored by a demand for new skills and professional profiles across industries.

C) Portugal

Portugal has positioned sustainability at the core of its national development strategies through integrated climate and energy plans that guide investment, innovation, and its green transition:

- **RNC2050 – Roteiro para a Neutralidade Carbónica 2050:** Sets a long-term vision for net-zero emissions. ([RNC2050 – Portugal Environment Agency](#))
- **PNEC 2030 – Plano Nacional Energia e Clima:** Operational strategy for the 2021–2030 period, aligning climate action with economic and energy planning. ([PNEC – Portugal Ministry of Environment and Energy](#))
- **Government programs** provide incentives for:
 - Eco-innovation and decarbonization projects.
 - Sustainable tourism and green entrepreneurship.
 - Support for energy communities and digital sustainability tools.
- **Agência para o Clima (Agency for Climate):** It was created in the end of 2024 to accelerate the climate transition, raising awareness among society, support organizations and local governments implementing green measures and to coordinate public policies on this topic. [Agência para o Clima: um novo impulso para a sustentabilidade em Portugal](#)
- **Roteiro Nacional para a Adaptação 2100 (RNA 2100):** The National Roadmap for Adaptation evaluates the vulnerabilities for the Portuguese territory, when facing climate changes, raise awareness among society and guides adaptation's public policies. [rna2100](#)
- **Local and technological projects:** Support of municipality adaptation plans, recovery of green infrastructures and low carbon technological solution for cities.
- **Mercado voluntário de carbono:** Voluntary Carbon Market is a system that allows people and organizations to buy and sell carbon credits, on a voluntary basis. This initiative give economic incentives to enhance the implementation of initiatives and projects that reduce greenhouse gases emissions or carbon sequestration. [Home - Mercado Voluntário de Carbono](#)
- **Corporate Sustainability Reporting Directive:** Portugal have transposed the CSRD "Corporate Sustainability Reporting Directive" to the Portuguese law. This means that from 2024 on Portuguese organizations have to comply with the reporting of sustainability strategy and performance. <https://www.iapmei.pt/NOTICIAS/Transicao-ESG-Reporte-de-Sustentabilidade-das-Em.aspx>

Portugal's approach to the green transition combines long-term vision with strong local engagement and innovation capacity. New governance instruments such as the Agência para o Clima and the Roteiro Nacional para a Adaptação 2100 illustrate how national and regional actors are mobilising to meet sustainability goals. This evolving ecosystem connects policy, business, and education, fostering the green skills and lifelong learning needed to sustain the country's ecological transformation.

D) Spain

Spain pursues a comprehensive green transition strategy aligned with EU and national sustainability goals, combining ambitious climate legislation, energy transition policies, and innovation programmes to foster decarbonisation, competitiveness, and social inclusion.

- **Spain's Ley de Cambio Climático y Transición Energética (2021)** sets binding national climate targets, including 100% renewable electricity by 2050 and carbon neutrality across sectors, and a 23% reduction in greenhouse gas emissions by 2030 (compared to 1990) ([Law 7/2021 – BOE](#)).
- **The Plan Nacional Integrado de Energía y Clima (PNIEC 2023-2030)** defines operational targets, 48% renewable energy in final consumption and 81% renewable electricity generation, supported by an investment framework of over €300 billion through 2030 ([PNIEC – Gobierno de España](#)).

The complementary initiatives include:

- **España Circular 2030:** a national circular economy strategy promoting sustainable production and consumption patterns (MITECO, 2020).
- **Plan de Recuperación, Transformación y Resiliencia (PRTR):** Spain's Recovery and Resilience Plan dedicating nearly 40% of its budget to green transition investments, including renewable energy, sustainable mobility, and building renovation ([Recovery and Resilience Plan](#) ; European Commission, 2021).
- **Estrategia de Transición Justa:** ensuring a fair transition for workers and regions affected by the phase-out of carbon-intensive sectors (Instituto para la Transición Justa, 2020).

These national instruments operate within the framework of EU-wide commitments under the European Climate Law and contribute to Spain's compliance with the Fit for 55 package requirements.

Spanish companies play an active role in advancing the ecological transition through renewable energy projects, sustainable infrastructure, and green skills development. Leading corporations in energy (Iberdrola, 2024; Repsol, 2024), construction (Acciona, 2023; ACS, 2023), transport (Renfe, 2023; CAF, 2023), Agro-food (Mercadona, 2023; Ebro Foods, 2023) and High tech (Telefónica, 2023; Indra, 2023) sectors integrate sustainability into their business models, while SMEs increasingly adopt ESG frameworks and participate in green innovation networks such as Forética and Grupo Español de Crecimiento Verde.

Spain's approach illustrates the connection between robust regulatory frameworks and private-sector engagement in the green transition. The combination of national investment plans, just-transition measures, and green-skills initiatives strengthens workforce adaptation and lifelong learning while reinforcing both social fairness and industrial competitiveness on the path toward 2050 carbon neutrality. Despite this progress, challenges remain in ensuring SME participation, improving access to green finance, and addressing regional disparities. Strengthening green skills—particularly in construction and energy sectors—will be key to achieving Spain's 2030 and 2050 climate objectives.

E) France

France actively contributes to the European Green Deal, translating EU climate objectives into a comprehensive national framework that integrates regulation, innovation, and business engagement. The country aims to achieve carbon neutrality by 2050 through coordinated national and local policies.

The *Stratégie Nationale Bas-Carbone* (SNBC) defines France's long-term decarbonisation trajectory and carbon budgets across all sectors ([SNBC Ministères Aménagement du territoire Transition écologique](#)). Complementary measures include:

- **RE2020 regulation:** stricter energy and carbon standards for new buildings ([RE2020 overview – Ecologie.gouv.fr](#));
- **PCAET (*Plans Climat-Air-Énergie Territoriaux*):** local climate plans mandatory for municipalities over 20,000 inhabitants ([territoires-climat.ademe.fr](#));
- **Label Bas-Carbone:** voluntary certification scheme supporting carbon reduction and sequestration projects ([label-bas-carbone.ecologie.gouv.fr](#)).

These measures are supported by the *Loi relative à la transition énergétique pour la croissance verte* (2015) ([ecologie.gouv.fr-tepcv](#)) and the *Code de l'environnement* ([legifrance.gouv.fr](#)), ensuring coherence with the EU Climate Law (2021/1119).

Major French companies in energy ([EDF Academy](#); [TotalEnergies Sustainability Training](#)) construction ([Saint-Gobain Sustainable Development](#)), transport ([Renault Training & Sustainability](#); [SNCF Environnement](#)), Agro-food industries ([Danone Learning Planet](#), [InVivo CSR Report](#)) and technology ([Capgemini Environmental Policy](#); [OVHcloud Sustainability](#)) sectors contribute to the national climate agenda through investment in renewable energy, sustainable materials, and low-carbon innovation. Many firms have established corporate academies or training programmes to strengthen green skills, illustrating how lifelong learning supports the ecological transition. Public-private partnerships, notably through *ADEME*, *Bpifrance*, and the *Banque des Territoires*, further facilitate corporate climate action.

Persistent challenges include heterogeneous carbon accounting practices, limited access to funding for SMEs, and the need for consistent ESG governance under the new Corporate Sustainability Reporting Directive ([CSRD official site – EU](#)).

France's approach exemplifies the integration of regulatory ambition, industrial innovation, and workforce development within a unified sustainability agenda. Continued investment in green skills, coherent ESG governance, and multi-stakeholder collaboration remain essential to strengthen the country's leadership in sustainable business transformation and lifelong learning.

3. Methodological Insights and Transferability of OpenPass4Climate in Professional Contexts

The European framework for the green transition, as set out in EU policies and funding instruments, establishes the conditions necessary to align sustainability, innovation, and lifelong learning. Analysing national initiatives in Belgium, Italy, Portugal, Spain and France illustrates how these policies are translated into concrete strategies that combine regulation, investment and workforce development. The link between environmental ambition and human-capital development emerges as a key factor of success across all partner countries.

Based on these findings, this section explores the application of the OpenPass4Climate framework in professional and working contexts. It examines how Open Badges and digital micro-credentials can recognise and validate green competencies, strengthen employability and foster a culture of lifelong learning, thereby supporting ongoing efforts toward Europe's ecological and economic transition.

This section also presents a comparative analysis of the national focus groups conducted in Belgium, France, Italy, Portugal, and Spain as part of the PR7 work package of the OpenPass4Climate project. Each focus group involved business professionals to assess the usability and credibility of the OpenPass4Climate platform and its Open Badge (OB) system. Consortium members coordinated these sessions in their respective countries, generating evidence to elaborate a European framework for the use of OpenPass4Climate in business sectors. The conclusions drawn from these discussions form the empirical basis of the methodological contribution presented here and will be further consolidated during the multiplier event hosted at UniLaSalle.

3.1. Focus Groups Guidelines

To ensure the smooth and consistent organization of focus groups across all participating countries, consortium members were provided with a set of general instructions. These guidelines were designed to support the effective facilitation of the focus group sessions and to promote coherence in both the process and the data collection. By offering a common framework, the instructions aimed to help partners structure discussions, engage participants meaningfully, and gather valuable insights that are relevant to the objectives of the OpenPass4Climate project. This shared approach ensured that, despite different national contexts, all contributions could have

been compared, analysed, and integrated into a unified understanding of the business sector's role in implementing OpenPass4Climate platform in schools.

General instructions:

- *Recruit the appropriate participants for the focus group, based on the criteria that we previously defined: attitude and aptitude, and practical and theoretical knowledge towards climate.*
- *Prepare a script with the questions below translated into Italian/French/Portuguese/Spanish (use <https://www.deepl.com/translator> if you wish).*
- *Choose a comfortable and accessible location to conduct the focus group, as well as the equipment needed to record and take notes/perhaps use Miro? Please note that you will need to provide a transcript, so you may use <https://otranscribe.com/> (or other free transcription tools) to save time.*
- *Moderate the session with skill and neutrality, encouraging participation and respect among the attendees. You should introduce yourself and the topic, explain the rules and objectives of the focus group (indicated above), ask questions and probe for more details if needed, and thank and debrief the participants at the end.*

Participants were asked a series of questions, including both general questions about the platform and questions specific to business representatives:

Overview of the platform, 4 general questions

1. *How intuitive and user-friendly do you find the platform's navigation and interface?*
2. *Are the instructions for uploading and documenting an eco-pedagogical activity clear and easy to follow?*
3. *How effective do you think the badge system would be in motivating your students/employees to participate in green activities?*
4. *Are the criteria for earning bronze, silver, or golden badges transparent and understandable?*

Specific questions for business stakeholders: Implementation of OpenPass4Climate in companies

5. *In your opinion, how valuable are open badges in recognizing and validating students' environmental awareness and sustainability competencies?*

6. *Have you ever used or encountered open badges in your professional environment? If so, how were they perceived*
7. *Do you believe that open badges can enhance a student's employability? Why or why not?*
8. *How do you think employers view micro-credentials like open badges compared to traditional qualifications and certifications?*
9. *What improvements or additional features would make open badges more valuable as a recruitment tool in your organization?*
10. *How could open badges in sustainability competencies be integrated into your organization's recruitment and development processes?*

By following these common guidelines, all partner institutions ensured that the focus groups were conducted under comparable conditions, producing consistent, high-quality feedback. The resulting data provide a robust basis for analysing professionals' perceptions of the OpenPass4Climate platform and its potential application in business and working environments. The next sub-section presents the focus groups sample and their findings, highlighting shared insights and country-specific perspectives that inform the methodological contribution developed under PR7.

3.2. Comparative Analysis of Focus Group Findings

The national focus groups conducted in Belgium, France, Italy, Portugal, and Spain brought together a total of twenty-five participants representing diverse professional backgrounds, including business managers, HR and training specialists, sustainability officers, and representatives from SMEs and large enterprises. Each session was organised locally by the partner institution, following the common methodological guideline described above.

- **Belgium (UNICA)**
 - Number: 4 participants
 - Profile: Professionals from climate consultants, university network working groups, and mobility associations, all strongly connected to employability programs, sustainability education, and green skills certification initiatives.
- **France (UniLaSalle)**
 - Number: 5 participants

- Profile: Managers and CSR professionals, including CEO, R&D leads, and project coordinators from companies in agri-food, renewable energy, and consulting sectors.
- **Italy (CSCI Novara)**
 - Number: 6 participants
 - Profile: Private sector stakeholders from various companies, involved in business management, innovation, and human resources.
- **Portugal (UNL)**
 - Number: 5 participants
 - Profile: Mixed academic and professional backgrounds; 60% women, ages ranged from 26 to 77. No detailed job titles were provided but all had theoretical/practical knowledge in sustainability.
- **Spain (UVa)**
 - Number: 5 participants
 - Profile: Representatives of climate research foundations, agricultural and forestry engineering associations, and agri-food innovation centers. All were involved in lifelong learning.

The discussions provided valuable qualitative insights into the perceived usability, credibility, and professional relevance of the OpenPass4Climate platform and its Open Badge system. Participants generally viewed the tool as an innovative means of linking environmental engagement with professional recognition and employability. While all groups agreed on the potential of digital micro-credentials to validate sustainability competencies, they also pointed to several challenges, such as the need for employer awareness, clearer validation criteria, and integration with existing corporate training systems.

The following analysis summarises the shared trends and country-specific perspectives emerging from these sessions, focusing on four key dimensions: perceived usability of the platform, credibility and added value of Open Badges, conditions for adoption in companies, and implications for workforce development and lifelong learning.

A) Perception of Open Badges in the Business Sector

The overall perception of Open Badges (OBs) varied across countries, reflecting both enthusiasm for their potential and concerns regarding their credibility and recognition.

In Belgium, OBs were considered valuable for certifying non-formal sustainability competencies, but participants insisted on the need for external endorsement by trusted institutions. Without recognized frameworks, badges risked being perceived as bureaucratic formalities. Example: “Badges could be meaningful if linked to employability opportunities or European Skills Passports.”

In France, we observe positive perception, especially for internal use, but broader recognition was lacking. OBs are seen as potentially valuable indicators of engagement.

Example: “It allows students or employees to stand out, provided the badge system is reliable and recognized.”

In Italy, OBs were conceptually welcomed but still unfamiliar. Their utility was acknowledged in relation to visibility and recognition by employers: “Useful, but only if employers understand and accept their meaning.”

In Portugal, the conversation was driven by concerns about credibility and validation. Participants emphasized that OBs need to demonstrate robust evaluation methods: “There must be a simple, although robust, way of validating the students’ activities.” This reflects a pragmatic orientation grounded in professional mobility and CV enhancement.

Spanish participants, many with academic and technical credentials, were cautious. While they recognized OBs’ ability to certify transversal skills, they remained sceptical about their parity with formal degrees: “They can be useful for assessing non-pedagogical skills linked to professional performance.”

Overall, participants demonstrated interest in the Open Badge concept but with significant variations depending on their professional experience and exposure to credentialing tools.

B) Relationship Between Profile and Response Patterns

Participants' professional roles and sectoral affiliations had a visible influence on their interpretations of Open Badges (OBs). The diversity in their backgrounds – ranging from consultants, CSR managers, and business coordinators to training experts and lifelong learning professionals – framed how they assessed the credibility, applicability, and integration potential of OBs within their respective contexts.

In Belgium, where the focus group included consultants and mobility-focused professionals, the discussion revolved around employability and European policy alignment. Their insistence on external endorsement reflected their proximity to formal certification programs and institutional pathways. As one participant noted, “Badges could help young professionals demonstrate transversal skills, but only if backed by trusted institutions.”

French participants, notably CSR managers and senior professionals, showed a strong interest in OBs for internal use within structured HR systems, such as training or performance reviews. However, they consistently pointed out that the lack of broad recognition limited the badge system's utility in external recruitment. As one CSR manager explained: “Could be a great tool internally, especially in training programs, but not yet for recruitment.”

In Italy, most participants had minimal prior contact with OBs. Coming from various business environments, their comments emphasized the importance of educating employers and linking badge achievements to recognized academic frameworks. This showed a need to bridge conceptual understanding and practical applicability.

Portuguese participants formed a mixed-age group with both experienced professionals and younger learners. Their discussion centered on the importance of creating multi-tiered badge levels to distinguish basic awareness from deeper competencies. Validation systems and transparency were key themes, suggesting a desire for trust and reliability across all age groups.

The Spanish group, composed of highly specialized professionals and training leaders, approached OBs with a regulatory lens. They advocated for alignment with existing professional training standards and recommended significantly increasing the minimum hours for badge acquisition. One participant reflected this rigor, stating: “Important dissemination and widespread use among candidates. Increase in hours compared to those currently indicated.”

Overall, the closer participants were to structured HR systems, public certification programs, or

institutional education, the more they demanded robust validation frameworks, formal alignment, and evidence of credibility. Conversely, those less familiar with OBs highlighted the importance of awareness-raising and usability over standardization. This illustrates that future strategies for Open Badge adoption must be both context-sensitive and stakeholder-specific.

The diversity of perspectives gathered from different professions and national contexts reveals the influence of role, sector and experience on expectations. The next section organises these results by question and overarching theme, consolidating the comparative findings.

C) Summary of Findings by Question and by Theme

This section provides a structured synthesis of the focus-group results by question and theme. Its purpose is to synthesize participant feedback on ten key questions, grouped into five thematic categories for comparative analysis.

The analysis is based on five national reports produced by the respective project partners: Universidad de Valladolid (Spain), Universidade Nova de Lisboa (Portugal), CSCI Novara (Italy), UniLaSalle (France) and UNICA (Belgium). Each focus group brought together between 4 and 6 participants from business-related sectors or academic institutions involved in sustainable practices. Qualitative data were analysed by question in the first stage and thematically in the second, based on participants' answers to ten guided questions. Themes were derived on the basis of the questions asked. Significant textual quotations were extracted to support the conclusions.

First stage: Analysis by Question

- **Question 1. Platform Usability**

All countries reported that the platform is generally user-friendly and intuitive. Belgium confirmed the ease of initial registration but noted deeper navigation challenges due to confusing the GreenComp area logos-based categorizations, suggesting clearer explanations at entry points. Portugal and France identified minor ergonomic issues, such as icon clarity and visual alignment. Italy stressed the need for better tutorial visibility to assist first-time users. Spain rated the interface highest (4.2/5), calling it “very accessible.” Overall, the interface was deemed as effective, but targeted refinements, especially in navigational aids and category presentation, could further enhance usability across different user profiles.

- **Question 2. Instructions for Activity Documentation**

Across all focus groups, participants agreed that the upload and documentation process was clear and functional. France noted the limitation of one document per activity should be more visible. Italy and Spain found it intuitive. Belgium participants, although they had not completed an upload themselves, pointed out that users might become confused without concrete examples and suggested providing templates or sample activities to better guide documentation. The instruction clarity was regarded as a strength. Minor enhancements, such as clearer visibility of constraints and additional illustrative examples, could further improve transparency.

- **Question 3. Motivational Value of Badges**

Participants agreed that the badge system is potentially motivating, especially for students. Belgium participants highlighted that badges would only serve as effective motivators if they were directly linked to employability opportunities, internships, or recognized certifications; otherwise, they risk being perceived as administrative tasks.

Portugal and France emphasized motivation depends on external recognition. Italy suggested linking badges to academic credits (CFU). Spain gave a moderate rating (3.8/5). All stakeholders agreed that the Open Badges are motivational if they are credible and formally recognized.

- **Question 4. Clarity of Badge Criteria**

Most groups considered the bronze-silver-gold structure understandable. Spain and Portugal recommended increasing hour thresholds and distinguishing competence levels. France had mixed awareness of the tiers. Belgium participants acknowledged that the hour-based structure was clear but expressed scepticism about applying a medal-like ranking system to sustainability engagement, suggesting a more narrative and progressive model of recognition.

The structure was considered clear, but standards must align with professional expectations.

- **Question 5. Value of Open Badges for Recognizing Competences**

Participants saw potential value in OBs, especially for showcasing non-academic competencies. Portugal and France noted CV enhancement. Spain emphasized context-specific value. Italy linked it to digital literacy. Belgium participants highlighted the value of OBs for certifying micro-skills in sustainability and volunteering, provided they are endorsed by recognized institutions. OBs were generally regarded as useful tools if well contextualized within industry needs.

- **Question 6. Current Professional Use of Open Badges**

Open Badge use is limited but emerging. France and Italy noted presence on professional networks like LinkedIn. Spain and Portugal reported minimal direct experience. Belgium participants indicated micro-credentials were known in mobility programs, but Open Badges specifically were not widely used or trusted professionally.

The awareness is growing, but OBs are not yet standard practice.

- **Question 7. Employability Impact**

All groups agreed on the potential of OBs to enhance employability if recognized by employers, linked to real competencies, and integrated into hiring processes. Belgium participants stressed that OBs could support employability but only if integrated into national qualification frameworks or major European initiatives.

Stakeholders agreed on OBs potential for supporting employability if accepted and transparent.

- **Question 8. Employer Perception**

Employers were more confident in traditional qualifications. All groups saw OBs as supplements, not substitutes. Adoption depends on company culture and recruiter familiarity. Belgium participants noted that employers are currently cautious, with few fully understanding or trusting OBs outside traditional academic settings. Stakeholders generally considered that OBs need stronger backing to match traditional degrees.

- **Question 9. Recommendations for Improvement**

All Focus Groups countries suggested the following key recommendations: external validation, links to internships, creation of learning pathways, and better badge communication. Belgium participants additionally recommended creating centralized European platforms supported by recognized institutions and linking badges to existing mobility frameworks like Erasmus Skills Passports.

- **Question 10. Integration into Recruitment & Development**

Integration was regarded as feasible but would require recruiter awareness, connection to CSR/training goals, and institutional support. Belgium participants suggested integrating OBs into internship evaluations and volunteer engagement systems to provide structured recognition of

sustainability competencies. There was general agreement on the potential of OBs to be integrated into training and future hiring processes.

Second stage: Analysis by Theme

The general and specific questions were regrouped into 5 themes: theme 1 on Platform usability and accessibility (Q1 and Q2), theme 2 on User motivation and incentives (Q3), theme 3 on System clarity and transparency (Q4), theme 4 on Perceived value of OBs (Q5 to Q8), and theme 5 on Recruitment and organizational integration (Q9 and Q10).

- **Theme 1: Platform Usability and Accessibility**

Participants from all five countries reported a generally positive experience regarding the usability of the OpenPass4Climate platform. Belgium confirmed the ease of the initial registration process but highlighted confusion during deeper navigation, particularly due to unclear GreenComp logos representing course categories.

In Portugal, while the platform was described as intuitive, ease of use was seen as dependent on users' digital competence.

Italy echoed these findings but emphasized that tutorials should be more visible: "The tutorial is helpful, but not easy to find for first-time users."

France provided similar feedback, with praise for the platform's clarity, although some participants highlighted ergonomic issues such as misaligned icons or unclear symbols.

In Spain, feedback was overwhelmingly positive, with four participants rating it "Easy" and one "Very easy". A Spanish participant noted: "The platform is accessible even for professionals who are not very tech-savvy, which is essential in our sector." These differences underline the importance of user guidance and support tools to ensure accessibility across user profiles.

- **Theme 2: User Motivation and Incentives**

All countries acknowledged the motivational potential of Open Badges, though the perceived effectiveness varied by context. Belgium participants agreed that motivation would depend strongly on linking badges to tangible external outcomes like internships, university credits, or employability opportunities; otherwise, badges risk being perceived as administrative tasks without value.

The French group noted a split: badges were seen as effective for students, especially when integrated into school objectives, but less so for employees unless connected to tangible

outcomes like CSR goals or bonuses.

In Spain, participants gave the system an average motivation rating of 3.8/5. Their responses suggested that while badges were engaging, they lacked the weight of formal incentives. One participant explained: “Without formal links to training or professional advancement, motivation may be short-lived.”

In Portugal, motivation was closely tied to employability: “Badges will motivate students if they are recognized by companies,” remarked one participant. This view was echoed in Italy, where several stakeholders emphasized that badges would only be compelling if linked to academic credits (CFU), stating: “Badges need academic value to be considered seriously.”

- **Theme 3: System Clarity and Transparency**

Transparency of the badge awarding system was generally confirmed by participants, but many suggested enhancements. Belgium participants recognized the hour-based system but expressed scepticism toward a medal-style ranking (bronze, silver, gold), suggesting that sustainability engagement might be better recognized through progressive narratives rather than hierarchical awards. Portuguese participants proposed tiered validation aligned with educational levels: Bachelor (awareness), Master (specific skills), and Life-long learning (experiential validation). Italians appreciated the structured badge levels but noted that companies may not grasp what each badge entails unless explicitly explained. In France, some participants were unaware of the badge tiers, while others appreciated their role in visualizing progression, suggesting the need for more consistent communication.

Spanish professionals found the system easy to understand but called for increased hour requirements: “A 75-hour gold badge is not sufficient for professional-level validation,” one stated.

- **Theme 4: Perceived Value of Open Badges**

Across all countries, Open Badges were seen as potentially valuable for recognizing sustainability competencies, though the perceived legitimacy and utility differed. Belgian participants valued OBs for certifying transversal and sustainability-related skills, emphasizing that their real value would emerge only if backed by recognized institutions or linked to European frameworks like Erasmus Skills Passports.

Portuguese participants valued OBs highly for enriching early-career CVs and fostering soft skills such as leadership and communication. One noted: “If well validated, badges give us a full view of a student’s engagement.” Italy echoed this perspective, although the use of badges in companies remains limited. One Italian participant explained: “We see potential, but without

employer adoption, it's theoretical.”

French professionals emphasized internal value, especially for CSR alignment, but warned that if badges gained too much external traction, they might facilitate employee mobility: “We support badges internally, but we must also consider retention risks.”

In Spain, badges were recognized as useful for informal and internal recognition, particularly in non-formal training environments.

- **Theme 5: Recruitment and Organizational Integration**

Integration of Open Badges into recruitment and organizational development was widely discussed, with converging views on the conditions needed for successful adoption. Belgium participants supported integration efforts but insisted on the necessity of establishing centralized national or European badge repositories, endorsed by recognized bodies, to enhance credibility and make badges verifiable and impactful in recruitment processes.

Portuguese respondents proposed an innovative model of employer-curated training paths and internship programs linked directly to badge achievements. “Employers could define what matters, and students could follow these tracks,” one said.

In Italy, participants favoured adding interactivity and connecting badge awards with practical applications, such as job offers or training certifications. French participants were generally in favour of integration, but only if the badge system becomes widely accepted. One CSR manager noted: “If the value of a badge is well understood, it can become a credible component of our internal training and external recruitment systems.” In Spain, participants called for rigorous quality control and alignment with professional training norms.

In addition to individual and national differences, the focus groups discussions also revealed the deeper cultural and institutional factors that influence attitudes towards sustainability credentials and professional development.

D) Cross-Cultural Insights and Their Impact on Feedback

The feedback collected from the five focus groups also reveals significant cultural dimensions that influenced how participants interpreted and responded to the Open Badges (OB) system. While all shared a baseline interest in sustainability and digital innovation, differences in professional culture, education systems, and national work environments shaped their perceptions.

Belgian participants, mainly from consultancy and mobility sectors connected to European

employability programs, emphasized the importance of linking badges to recognizable European frameworks such as the Erasmus Skills Passport. Their feedback revealed a culture favouring external validation through trusted institutional channels and cautious about adopting badge systems without strong accreditation or national/international endorsement. This suggests a pragmatic yet highly structured approach to new credentialing tools, balancing innovation with procedural legitimacy.

French professionals, particularly CSR managers and executives, framed badges as tools for internal development and value signalling. Their responses often included conditions: recognition, visibility, and integration into existing HR processes, before OBs could be impactful. This reflects a culture where professional recognition and institutional legitimacy are vital. The fact that some feared OBs might facilitate employee mobility also suggests a focus on retention and internal alignment.

The Italian group, formed by company stakeholders, displayed a practical, outcome-oriented approach, frequently linking badge value to employability. Their suggestions were highly pragmatic, focusing on improving interactivity and linking badges to real career opportunities. This may reflect a more innovation-driven business culture where new tools are evaluated based on their direct application to career development and operational needs.

Portuguese participants, with a broad age range and varied professional backgrounds, showed a clear concern for process credibility and validation, possibly reflecting a more bureaucratic or cautious professional environment. Their emphasis on balancing simplicity with trustworthiness, and on clear distinctions between awareness and technical skills, aligns with a culture attentive to transparency and social fairness. The reference to EU regulations (e.g., digital passport for textiles) also indicates a strong awareness of policy context.

The Spanish group, composed of research-oriented institutions and professional associations in the agricultural and forestry sectors, placed strong emphasis on formalization and credibility. This reflects a professional culture where accreditation, hours of training, and alignment with lifelong learning standards are highly valued. Their detailed suggestions about increasing thresholds for badge levels signal a culture that values rigor and structure.

These comparative findings reveal three significant cross-cultural patterns that influence perceptions of Open Badges in the five partner countries.

Firstly, there is a tension between formalisation and flexibility. Spanish, French and Belgian participants emphasised formality, structure and accreditation, whereas Italian and Portuguese participants prioritised pragmatic solutions and adaptability to workplace realities.

Secondly, all groups agreed that Open Badges must be externally recognised to have value but placed different emphases on this. For Italian and Portuguese participants, OBs were linked to employability and career progression, whereas Belgian, French and Spanish participants focused on institutional alignment and formal endorsement.

Thirdly, the relationship between HR systems and education also varied. Italian and French professionals discussed the integration of Open Badges (OBs) into corporate training and HR processes in concrete terms, while Portuguese participants focused on validation methods and pedagogical transparency. Belgian participants strongly emphasised European-level portability and international comparability as conditions for adoption.

Taken together, these cross-cultural insights reveal that successfully adopting Open Badges requires balancing formal recognition with flexibility to ensure that validation systems remain credible and adaptable to local professional contexts. This shared understanding provides a strong foundation for developing strategies to integrate the OpenPass4Climate framework into business and working sectors, as discussed in the following section.

In conclusion, the findings presented in Section 2 demonstrate that the OpenPass4Climate platform and its Open Badge system are perceived as relevant tools for recognising sustainability-related competencies and supporting employability and lifelong learning across European professional contexts. The focus groups confirmed both the potential and the challenges of transferring this approach to business and working sectors: employers and professionals value credibility, transparency, and alignment with existing HR and training practices, while also expecting flexibility and practical usefulness. These insights provide a methodological foundation for positioning OpenPass4Climate as a bridge between education, workforce development, and corporate sustainability strategies. The next section builds on this foundation to explore its concrete application within business environments.

3. Application of OpenPass4Climate in Business and Working Sectors

This section examines how the OpenPass4Climate framework can be applied and operationalised within business and working environments. It translates the findings from national focus groups into practical recommendations for engaging companies, training providers, and professional organisations in the recognition of sustainability-related competencies. The section explores potential models for implementing Open Badges in human-resources development, corporate training, and sector-specific initiatives, showing how OpenPass4Climate can act as a connector between sustainability learning, workforce development, and Europe's green transition.

3.1. Translating Methodological Insights into Practice

As discussed in Section 2, the practical application of the OpenPass4Climate framework in professional contexts hinges on its ability to align learning outcomes with genuine business requirements. Focus group results showed that employers and professionals recognise the potential of open badges to demonstrate sustainability competencies effectively and credibly, provided implementation remains straightforward, transparent and compatible with existing organisational structures. Therefore, translating these insights into practice requires targeted approaches to integrate the platform into corporate learning, recruitment and partnership ecosystems.

- **Integration into Corporate Learning and Sustainability Strategies**

Several participants, particularly those from France and Italy, viewed OpenPass4Climate as a valuable framework for organising sustainability-related training and CSR initiatives. Within companies, badges could certify employees' participation in environmental projects or innovation programmes, thereby linking professional learning to corporate sustainability goals. In this way, Open Badges can formalise informal learning and support the recognition of internal expertise, thereby encouraging continuous engagement in green practices.

- **Employability and the External Visibility of Green Competencies**

Across all countries, Open Badges were considered additional credentials that increase the visibility of transferable and sustainability skills. Integrating the OpenPass4Climate badge system into recruitment and HR processes, such as professional networks or internal talent databases, would allow employers to identify candidates with a proven commitment to environmental issues. For employees and graduates, badges would provide verifiable, portable evidence of their

commitment to sustainability, thereby strengthening their mobility across sectors.

- **Cross-Sector Partnerships for Co-Validation**

Participants emphasised the importance of collaboration between higher education institutions, training providers and the private sector in order to ensure the mutual credibility of Open Badges. For example, universities and companies could co-design badge criteria, with employers defining relevant competencies and educators providing the pedagogical framework. Such partnerships would reinforce trust in the recognition process, ensuring alignment between academic learning, labour-market expectations and European policy frameworks.

- **Adaptability and Interoperability**

In order to encourage widespread adoption, the OpenPass4Climate system must remain flexible and compatible with existing digital learning environments. Integration with corporate learning management systems (LMS) and EU tools such as Europass and ESCO would ensure coherence with broader qualification frameworks. Allowing partners to customise badge design elements such as content, visual identity and language to suit sectoral needs would facilitate uptake, particularly among SMEs and international organisations.

3.2. Enabling Conditions for Implementation

The comparative analysis of the five national focus groups conducted within the OpenPass4Climate (OP4C) project highlights several enabling conditions for the successful deployment of Open Badges in business and working sectors. These conditions can be understood as methodological requirements for credible, transferable, and scalable implementation.

- **Co-Construction with Sector-Specific Stakeholders**

Successful deployment of Open Badges depends on the early involvement of employers, HR professionals, and industry associations in defining badge criteria, use cases, and validation thresholds. Badge design should reflect concrete operational and sustainability objectives in each sector (for example energy, transport, agri-food, mobility, or consulting), rather than being defined solely by academic or pedagogical actors. This co-construction process increases perceived relevance and trust.

- **Clarity and Transparency in Badge Structures**

Participants consistently underlined that badge frameworks must be easy to understand and clearly communicated. Hour-based tiered models (e.g. bronze / silver / gold) are generally intelligible, but they must align with professional expectations in terms of workload and responsibility. Some participants proposed complementary or alternative models based on narrative progression or demonstrable competencies, particularly for recognising sustainability leadership, initiative-taking, or transversal skills.

- **Integration into HR and Talent Development Systems**

Open Badges are most impactful when embedded in existing internal processes for staff development such as onboarding, internal mobility, training pathways, CSR engagement, and performance review. In this perspective, open badges become part of structured career development, not an isolated add-on, and should be recognized as part of structured career pathways, linked to evaluation metrics and performance incentives. Several focus groups suggested that open badges could document participation in sustainability projects, completion of targeted upskilling activities, or contribution to innovation initiatives linked to decarbonisation goals.

- **Alignment with European and National Frameworks**

Focus group participants in multiple countries said that long-term legitimacy would depend on a connection to recognised frameworks, such as Erasmus+ skill portfolios, national qualifications registers, sector-specific certification schemes or European classification systems (e.g. ESCO). They also said that the establishment of trusted open badge repositories or shared validation platforms — ideally backed by public institutions, accreditation bodies or employer consortia — was essential for credibility and comparability across borders.

- **Employer Awareness and Training**

Familiarity with open badges among employers remains limited. HR teams and recruiters often require assistance to interpret the meaning of a badge, verify its authenticity, and align it with hiring or appraisal criteria. Targeted awareness-raising and training modules for employers are therefore necessary, including guidance on how open badges (OBs) can inform recruitment, performance assessment, internal reporting and sustainability reporting obligations (e.g. under the Corporate Sustainability Reporting Directive (CSRD)).

- **Evidence-Based Documentation and Exemplars**

Companies and professional stakeholders emphasised that open badges must be based on verifiable evidence. Clear documentation of how a badge was earned, such as through the completion of an eco-pedagogical activity, a sustainability project or a reduction initiative, is essential in order to inspire confidence in employers. Using practical templates, professional case studies and exemplary badge portfolios was identified as a way to make the evaluation process more reliable and transparent. Mechanisms for independent or internal verification were also seen as desirable for reinforcing quality assurance.

- **Strategic Communication and Use in Employer Branding**

Open Badges were also viewed as a potential asset for external communication. Companies that adopt an open badge system can demonstrate their commitment to sustainability, lifelong learning and workforce development. This can reinforce employer attractiveness by demonstrating a commitment to sustainability, innovative, and future-ready employers, as well as differentiate organisations that actively invest in environmental responsibility and green skills. Visible and credible use of badges can also encourage employee engagement by signalling that sustainability-related efforts are recognised and valued.

3.3. Recommendations for Future Deployment

Implementing OpenPass4Climate in business and professional environments will require coordinated action between educational institutions, employers and policy stakeholders. Based on the findings and enabling conditions identified in previous sections of this report, three complementary priorities can guide the future deployment of the framework across Europe.

A) Strengthen multi-stakeholder cooperation and pilot projects.

Future initiatives should prioritise co-design processes that involve universities, vocational training centres, employer organisations and public authorities. Pilot actions in selected sectors, such as agri-food, energy or the circular economy, would provide concrete evidence of feasibility and enable partners to test badge interoperability with corporate learning systems and national qualification frameworks.

B) Enhance standardisation and interoperability.

For OpenPass4Climate to reach critical mass, its open badges system, validation processes and digital platforms must be aligned with European frameworks such as Europass, ESCO and the Digital Credentials for Europe initiative. Adopting common metadata standards and transparent quality-assurance procedures will ensure that badges remain credible and can be easily interpreted by employers across borders.

C) Develop targeted communication and employer engagement strategies.

It is essential to raise awareness among HR professionals, managers and sectoral networks to embed badges within everyday professional practices. Communication should emphasise the dual value of Open Badges in validating green competencies and as a strategic tool for employer branding, motivating employees and ensuring compliance with sustainability reporting obligations. Dedicated guidance materials, online training and dissemination events could support this effort.

These recommendations position OpenPass4Climate as a potential European framework for linking sustainability learning, workforce development, and corporate transformation. A shared culture of lifelong learning can contribute to Europe's ongoing efforts toward a just and inclusive green transition.

4. Conclusion

The methodological work undertaken within PR7 demonstrates that the OpenPass4Climate framework has the potential to bridge the gap between education, business, and sustainability. Through analysing national policy contexts and engaging directly with professionals via focus groups in Belgium, France, Italy, Portugal and Spain, the project has pinpointed the opportunities and structural conditions required to integrate open badges and digital micro-credentials into Europe's professional learning ecosystems.

Across all five national contexts, open badges were viewed positively in principle, particularly as tools to recognise sustainability-related competencies, support employability, and promote lifelong learning. However, their perceived value and practical utility varied according to stakeholder profile, sector and organisational culture. Those working in CSR, HR and training tended to view open badges as useful internal instruments for staff development, capacity building and formalising sustainability engagement. On the contrary, their immediate use as stand-alone recruitment credentials was more limited. This suggests that OpenPass4Climate's most promising entry point lies in lifelong learning and internal HR development rather than direct substitution for traditional qualifications.

The focus groups also highlighted several credibility criteria: transparent validation, clear workload or competence standards, alignment with existing qualification systems and explicit employer recognition. Participants repeatedly emphasised that open badges must be co-constructed with employers, linked to meaningful activities and integrated into familiar structures — such as CSR reporting, performance reviews, training pathways and internal mobility frameworks. Institutional trust, interoperability with recognised European tools and traceable evidence of achievement were identified as decisive factors for acceptance.

The analysis further revealed important cross-cultural dimensions. Expectations regarding formal accreditation, familiarity with digital tools and levels of institutional trust vary between countries and sectors. Some ecosystems prioritise formal endorsement and alignment with national or European frameworks, while others emphasise flexibility, usability, and impact on employability. Understanding these cultural and organisational nuances is essential for designing a badge system that can be adopted across Europe on a large scale while remaining adaptable to local professional realities.

When considered as a whole, these findings demonstrate that Open Badges have the capacity to render sustainability learning both visible and transferable, if they are transparently validated, co-developed with employers, and linked to recognised European frameworks such as Europass and ESCO. The methodological framework developed under PR7 thus provides a basis for ongoing collaboration between educational institutions, training providers, and businesses in promoting the green transition through lifelong learning.

OpenPass4Climate supports the recognition of green skills in real professional contexts, helping organisations train and acknowledge their workforce's contribution to sustainability goals. In doing so, it contributes to strengthening Europe's capacity to link education, employment, and sustainability through lifelong learning.

5. References

- Acciona. (2023). Integrated Report 2023. Madrid: Acciona S.A. <https://www.acciona.com/shareholders-investors/financial-information/annual-reports/>
- ACS Group. (2023). Sustainability Report 2023. Madrid: ACS Actividades de Construcción y Servicios. <https://www.grupoacs.com/shareholders-investors/economic-financial-information/>
- ADEME. (n.d.). Plans Climat-Air-Énergie Territoriaux (PCAET). <https://territoires-climat.ademe.fr/>
- Agência Portuguesa do Ambiente. (2019). Roteiro para a Neutralidade Carbónica 2050 (RNC2050). <https://apambiente.pt/roteiro-neutralidade-carbonica-2050>
- Agência para o Clima. (2024). Agência para o Clima: um novo impulso para a sustentabilidade em Portugal. Governo de Portugal. <https://www.portugal.gov.pt/pt/gc23/governo/comunicados-de-imprensa/agencia-para-o-clima-um-novo-impulso-para-a-sustentabilidade-em-portugal>
- Agência Portuguesa do Ambiente. (2024). Roteiro Nacional para a Adaptação 2100 (RNA 2100). <https://www.apambiente.pt/tema-mudancas-climaticas/adaptacao/rna2100>
- Agência Portuguesa do Ambiente. (n.d.). Mercado Voluntário de Carbono. Home - Mercado Voluntário de Carbono

- AIReF. (2023). Report on the financial situation of public administrations. Madrid: Independent Authority for Fiscal Responsibility. <https://www.airef.es/en/>
- Belgian Federal Public Service. (n.d.). Federal Climate Policy. <https://www.climat.be/2050-en>
- BOE. (2021). Ley 7/2021, de 20 de mayo, de cambio climático y transición energética. Boletín Oficial del Estado, 121, 62009-62052. https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-8447
- CAF. (2023). Corporate Responsibility Report 2023. San Sebastián: Construcciones y Auxiliar de Ferrocarriles. <https://www.caf.net/en/sustainability/>
- Capgemini. (n.d.). Environmental Sustainability Policy. <https://www.capgemini.com/resources/environmental-sustainability-policy/>
- Cassa Depositi e Prestiti. (n.d.). CDP Green New Deal. [Addendum FCS Green New Deal.pdf](#)
- Climate-KIC Spain. (2023). Regional climate innovation ecosystems report. Valencia: Climate-KIC. <https://spain.climate-kic.org/>
- CNMV. (2023). Report on corporate governance and remuneration of listed companies. Madrid: Comisión Nacional del Mercado de Valores. <https://www.cnmv.es/portal/home.aspx>
- Danone. (n.d.). Learning Planet – Danone Climate and Nutrition Education. <https://learningplanet.danone.com/>
- Deloitte 2023 CxO Sustainability Report, <https://www.deloitte.com/content/dam/assets-zone2/it/it/docs/about/2024/cxo-sustainability-report-2023-italy-deloitte.pdf>
- Ebro Foods. (2023). Sustainability Report 2023. Madrid: Ebro Foods S.A. <https://www.ebrofoods.es/en/sustainability/>
- EDF. (n.d.). EDF Academy – Formation et transition énergétique. <https://www.edf.fr/edf-academy>
- EIB. (2025). EIB Group activity in Spain 2024. Luxembourg: European Investment Bank. <https://www.eib.org/en/press/all/2025-093-eib-group-invests-eur12-3-billion-in-spain-in->

[2024-with-record-investments-in-climate-action-energy-innovation-and-housing](#)

- European Climate, Infrastructure and Environment Executive Agency. (n.d.). LIFE Programme. https://cinea.ec.europa.eu/programmes/life_en
- European Commission. (2019). The European Green Deal. https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en
- European Commission. (2020). EU taxonomy for sustainable activities. https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en
- European Commission. (2021). Fit for 55: Delivering the EU's 2030 Climate Target on the way to climate neutrality. https://climate.ec.europa.eu/eu-action/fit-55_en
- European Commission. (2021). Spain's recovery and resilience plan. Brussels: European Commission. https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility/country-pages/spains-recovery-and-resilience-plan_en
- European Commission. (2022). Corporate Sustainability Reporting Directive (CSRD). https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/company-reporting-and-auditing/company-reporting/corporate-sustainability-reporting_en
- European Commission. (2023). Renewable Energy Directive (RED III) https://energy.ec.europa.eu/topics/renewable-energy/renewable-energy-directive-targets-and-rules_en
- Energy Efficiency Directive (EED) https://energy.ec.europa.eu/topics/energy-efficiency/targets-directive-and-rules/energy-efficiency-directive_en
- European Commission. (n.d.). Carbon Border Adjustment Mechanism (CBAM). https://taxation-customs.ec.europa.eu/carbon-border-adjustment-mechanism_en
- European Commission. (n.d.). EU Emissions Trading System (EU ETS). https://climate.ec.europa.eu/eu-action/eu-emissions-trading-system-eu-ets_en
- European Commission. (n.d.). Horizon Europe – The EU Research and Innovation

programme. https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

- European Commission. (n.d.). InvestEU Programme. https://investeu.europa.eu/index_en
- European Commission. (n.d.). Just Transition Mechanism. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism_en
- European Innovation Council. (n.d.). European Innovation Council (EIC). https://eic.ec.europa.eu/index_en
- Flemish Government. (n.d.). Lucht Klimaat Energieplan – Vlaanderen. <https://www.vlaanderen.be/lucht-klimaat-en-energieplan>
- Fundación Biodiversidad. (2023). Green jobs and skills report 2023. Madrid: Ministerio para la Transición Ecológica. <https://www.fundacion-biodiversidad.es/>
- IAPMEI. (2024, January 12). Transição ESG: Reporte de Sustentabilidade das Empresas – Diretiva Europeia (CSRD). Instituto de Apoio às Pequenas e Médias Empresas e à Inovação. <https://www.iapmei.pt/NOTICIAS/Transicao-ESG-Reporte-de-Sustentabilidade-das-Em.aspx>
- Iberdrola. (2024). Strategic Plan 2023-2025. Bilbao: Iberdrola S.A. <https://www.iberdrola.com/shareholders-investors/investors/results>
- Indra. (2023). Sustainability Report 2023. Madrid: Indra Sistemas S.A. <https://www.indracompany.com/en/sustainability>
- INE. (2023). Statistics on R&D activities 2022. Madrid: Instituto Nacional de Estadística. https://www.ine.es/dynqs/INEbase/en/categoria.htm?c=Estadistica_P&cid=1254735576669
- Instituto para la Transición Justa. (2020). Just Transition Strategy. Madrid: Ministerio para la Transición Ecológica. <https://www.transicionjusta.gob.es/en/>
- InVivo. (2022). Rapport RSE – InVivo. <https://www.invivo-group.com/fr/publications>
- KPMG Spain. (2023). ESG reporting survey 2023. Madrid: KPMG Asesores S.L. <https://home.kpmg/es/es/home/tendencias/2023/01/encuesta-reporting-esg.html>

- Légifrance. (n.d.). Code de l'environnement – Article L229-25. https://www.legifrance.gouv.fr/codes/article_lc/LEGIARTI000037287045
- Mercadona. (2023). Annual Report 2023. Valencia: Mercadona S.A. <https://info.mercadona.es/en/>
- Ministère de la Transition Écologique. (2020). Stratégie Nationale Bas-Carbone (SNBC). <https://www.ecologie.gouv.fr/strategie-nationale-bas-carbone-snbc>
- Ministère de la Transition Écologique. (2022). La réglementation environnementale RE2020. <https://www.ecologie.gouv.fr/re2020-reglementation-environnementale>
- Ministère de la Transition Écologique. (2023). Label Bas-Carbone. <https://www.ecologie.gouv.fr/label-bas-carbone>
- Ministério do Ambiente e da Ação Climática. (2020). Plano Nacional Energia e Clima (PNEC) 2030. https://www.apambiente.pt/zdata/PNEC/PNEC_2030_EN.pdf
- Ministero dell'Ambiente e della Sicurezza Energetica. (2023). Strategia Nazionale per lo Sviluppo Sostenibile 2022, https://www.mase.gov.it/portale/documents/d/guest/snsvs22_aggiornata_completa-pdf
- MITECO. (2020). España Circular 2030. Madrid: Ministerio para la Transición Ecológica y el Reto Demográfico. <https://www.miteco.gob.es/es/calidad-y-evaluacion-ambiental/temas/economia-circular/estrategia/>
- MITECO. (2024). Plan Nacional Integrado de Energía y Clima 2023-2030. Madrid: Ministerio para la Transición Ecológica y el Reto Demográfico. <https://www.miteco.gob.es/es/cambio-climatico/participacion-publica/consulta-publica-eae-pniec-2023-2030.html>
- OVHcloud. (n.d.). Sustainability and Green Cloud Strategy. <https://corporate.ovhcloud.com/en/sustainability/>
- Presidenza del Consiglio dei Ministri. (2021). Piano Nazionale di Ripresa e Resilienza (PNRR). <https://italiadomani.gov.it>
- Red Eléctrica de España. (2024). The Spanish electricity system 2023. Madrid: Red Eléctrica de España. <https://www.ree.es/en/datos/publications/annual-system-report>

- Renault Group. (n.d.). Renault Training & Sustainability Programs. <https://www.renaultgroup.com/en/our-commitments/environment/>
- Renfe. (2023). Sustainability Report 2023. Madrid: Renfe Operadora. <https://www.renfe.com/es/en/renfe-group/corporate-governance-and-transparency/sustainability>
- Repsol. (2024). Strategic Plan 2024-2027. Madrid: Repsol S.A. <https://www.repsol.com/en/press-room/press-releases/2024/strategic-update-2024-2027-and-presentation-annual-results-2023/index.cshtml>
- République Française. (2015). Loi n° 2015-992 du 17 août 2015 relative à la transition énergétique pour la croissance verte. <https://www.ecologie.gouv.fr/loi-transition-energetique-croissance-verte>
- Saint-Gobain. (n.d.). Sustainable Development Strategy. <https://www.saint-gobain.com/en/commitments/sustainable-development>
- SEPE. (2023). Digital skills training report. Madrid: Servicio Público de Empleo Estatal. <https://www.sepe.es/HomeSepe/>
- SME Climate Hub. (2023). SME Climate Survey: Spain results. London: SME Climate Hub. <https://smeclimatehub.org/sme-survey-barriers-to-climate-action/>
- SNCF. (n.d.). Campus Environnement – SNCF. <https://www.sncf.com/fr/groupe/engagements/developpement-durable>
- Telefónica. (2023). Climate Action Plan 2023. Madrid: Telefónica S.A. <https://www.telefonica.com/en/communication-room/reports/climate-action-plan/>
- TotalEnergies. (n.d.). Sustainability and Training Programs. <https://totalenergies.com/sustainability>
- Union européenne. (2021). Règlement (UE) 2021/1119 établissant le cadre pour parvenir à la neutralité climatique. <https://eur-lex.europa.eu/legal-content/FR/TXT/?uri=CELEX:32021R1119>
- UN Global Compact Network Italia, Le imprese italiane verso la decarbonizzazione: una transizione giusta e inclusiva, https://globalcompactnetwork.org/files/pubblicazioni_stampa/pubblicazioni_network_itali

[a/Paper decarbonizzazione ITA web.pdf](#)

- Vlaanderen Circulair. (n.d.). Circular Flanders. <https://www.vlaanderen-circulair.be/>
- Walloon Government. (2023). Plan Air Climat Énergie – Wallonie. <https://airclimatenergie.wallonie.be/>