OpenPass4Climate
NATURALLY ENGAGED

CREDENTIALING CLIMATE COMPETENCE IN HIGHER EDUCATION

Recognizing sustainability learning for a greener, more inclusive university system

Co-funded by the European Union

OpenPass4Climate (OP4C) is a 36-month **Erasmus+ Cooperation Partnerships in Higher Education** project running from 1 November 2022 through 31 October 2025, coordinated by Institut Polytechnique UniLaSalle (France) in partnership with UNICA (Belgium), NOVA University Lisbon (Portugal), Consorzio Scuola Comunità Impresa (Italy), University of Valladolid (Spain), and associate partners Vilnius University, Zaragoza University, and ISLE Association.

OP4C aims to make climate and sustainability engagement within higher education visible and transferable across contexts by introducing Open Badges and the OpenPass4Climate passport: a standard, verifiable tool to document eco-pedagogical activities, support climate justice education, and evaluate student and institutional impact.

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EXECUTIVE SUMMARY

This policy paper offers a **strategic framework for higher education institutions** (HEIs) to adopt the OpenPass4Climate (OP4C) Open Badges and Passport system, a digital micro-credentialing model designed to **recognize climate-related learning**, **civic engagement**, and **sustainability competences**. Developed under an Erasmus+ Cooperation Partnerships in Higher Education (KA220), OP4C addresses a critical gap in higher education: the **lack of formal recognition for student efforts outside conventional coursework**, particularly in areas aligned with climate action, sustainable development, and community-based learning.

OP4C fills this gap by offering a structured, scalable, and policy-aligned system to **make such learning visible**, **verifiable**, and **transferable** across educational and professional contexts. Through the OP4C platform, students receive Open Badges for participating in sustainability-focused academic, co-curricular, and community-based activities. These badges are verifiable, portable, and aligned with recognized EU frameworks, including GreenComp - the European sustainability competence framework. Students' badges are compiled in a digital "passport," forming a **lifelong, evidence-based record** of their sustainability journey.

This paper outlines the **rationale for badge adoption**, the pedagogical and policy alignment of OP4C, and the key barriers HEIs face in implementation, ranging from institutional resistance and badge inflation to challenges of technical infrastructure and assessment integration. Drawing from current literature, EU policy instruments, and emerging practices in sustainability credentialing, this paper offers **multi-level recommendations targeting institutional, national, and European actors** designed to address key implementation challenges and foster a culture of recognition, digital trust, and learner empowerment in support of the green transition.

Adopting OP4C can **empower HEIs to reinforce their civic mission**, demonstrate climate leadership, and equip learners to act as agents of sustainable transformation. Open Badges are more than digital tokens: they are building blocks in a new ecosystem of recognition that supports inclusive, authentic, and future-ready education.

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INTRODUCTION - **CLIMATE ACTION AND THE ROLE OF HIGHER EDUCATION**

1.1 The urgency of climate education

Climate change is not a future challenge: it is a present emergency. Europe is already experiencing the intensifying effects of a warming planet: extreme weather events, biodiversity loss, and growing socioeconomic disruption.
Public awareness and **youth activism concerning climate** change remain significant in Europe. According to the EU Youth Report 2024, young people continue to identify **climate change as a top global concern** and are increasingly involved in actions against it. A Eurobarometer survey conducted in February 2025 found that **one-third of young respondents believe the EU should prioritize environmental and climate change issues** over the next five years.

Education is a critical enabler of climate action. The European Green Deal identifies education and skills as central pillars in achieving a just transition toward a sustainable, climate-neutral society. The European Skills Agenda, with the aim of **strengthening sustainable competitiveness**, emphasizes the importance of empowering people with green and digital skills to drive the transition. However, **traditional educational structures often fall short** in equipping students with the practical competences, civic literacy, and systems thinking needed to understand and act on complex climate challenges.

Many formal curricula still lack comprehensive integration of sustainability, climate science, and interdisciplinary problem-solving. According to the EU Youth Report 2024, **young people are** increasingly **demanding** that education systems provide them with **more relevant tools to address environmental crises**.

Non-formal education, **youth-led initiatives**, and **community engagement** are stepping in to bridge these gaps by fostering critical thinking, ecological awareness, and participatory citizenship.

Despite this request, scaling up these efforts remains essential to ensure **all learners** (regardless of background) can **meaningfully contribute to the green transition**.

1.2 Higher Education as a driver of transformation

Higher education institutions hold a **unique and strategic position in accelerating the green transition**. As centers of research, innovation, and civic leadership, universities are not only producers of knowledge but also **cultivators of the next generation of active citizens**, leaders and professionals. Their missions often include a **public service mandate**, and sustainability has increasingly become a key institutional commitment across Europe.

To live up to this role, **HEIs must extend their influence beyond conventional teaching and research**. This means recognizing and supporting student learning that occurs through **interdisciplinary collaboration**, social innovation, and civic engagement, often outside the boundaries of formal curricula.

Climate-related competences are developed not only in environmental science lectures but also in student-led projects, campus sustainability initiatives, and local partnerships.

However, traditional academic systems are poorly equipped to **capture and validate this kind of learning**. Most assessment frameworks prioritize discipline-specific knowledge and standardized outputs, leaving experiential and collaborative learning under-recognized.

Without formal acknowledgment, students may lack the motivation, visibility, or institutional support to continue these efforts, or to communicate their relevance to future employers or academic programs.

By **rethinking recognition**, HEIs can fulfill their civic and sustainability missions more effectively. Making non-formal and co-curricular learning visible (and creditable) through digital badges and structured frameworks ensures that **climate action becomes a legitimate and valued part of the university experience**.

1.3 Introducing OpenPass4Climate and Digital Badging

OpenPass4Climate (OP4C) was designed to address precisely this challenge. As an Erasmus+ Key Action 2 initiative, OP4C **equips universities with a digital infrastructure to issue Open Badges** (discussed in detail in next section) and compile them into personal passports that document student engagement in climate-related learning and action. The system recognizes activities across curricular, co-curricular, and community-based domains, where sustainability competences are often developed most authentically.

OP4C badges are **built on open standards** and **aligned with EU frameworks**, ensuring they are both meaningful and portable. Each badge includes **metadata** that identifies the issuer, the learning outcomes achieved, and the criteria for evidence. This supports both **transparency** and **trust**, allowing students to share their achievements across borders and sectors.

The badges are:

- Digital and verifiable, issued through a **central institutional platform** (such as the OP4C badge portal);
- Aligned with **european key competence frameworks**;
- Designed for **interoperability**, supporting integration into learning management systems, digital transcripts, and Europass portfolios.

As the EU advances its agenda on **micro-credentials** and **lifelong learning**, OP4C helps position **HEIs at the forefront of innovation**. It enables universities to recognize what traditional systems often overlook: the ability of students to take initiative, think systemically, and act for sustainability in real-world contexts. In doing so, OP4C transforms climate engagement into a visible, validated, and empowering part of higher education.

GREENCOMP - 4 MACROAREAS

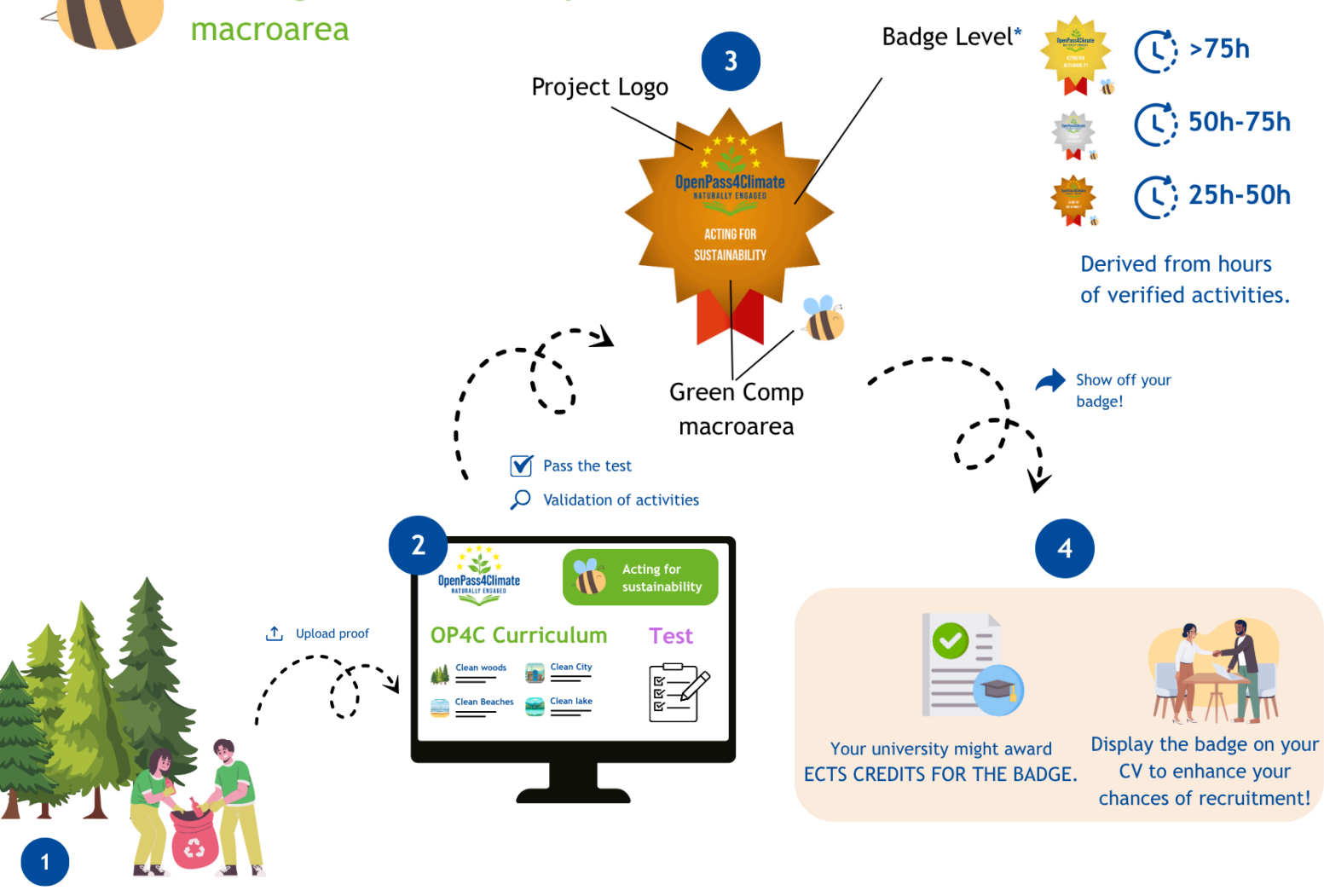
Embodying sustainability values

Envisioning sustainable futures

Embracing complexity in sustainability

Acting for sustainability

Example: Activity related to **"Acting for sustainability"** macroarea



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OPEN BADGES AND CLIMATE COMPETENCE: TOOLS FOR GREEN LEARNING

2.1 What are Open Badges and Digital Passports?

Open Badges are **digital micro-credentials** that certify an individual's achievement, skill, or engagement through a portable and verifiable format. Unlike traditional certificates, each badge contains embedded metadata that details the issuer, criteria for earning the badge, evidence provided, and date of issue. This structure, governed by the Open Badges standard (currently version 2.0), supports both **transparency and transferability across institutions and sectors**.

Digital passports expand this concept further by allowing learners to collect, curate, and display a sequence of badges representing their learning journey. Within the OP4C system, digital passports offer a **dynamic tool for recognizing student involvement in sustainability and climate action** across curricular, co-curricular, and civic domains. The passport acts as a living transcript, documenting formal coursework alongside project-based learning, community service, and advocacy activities. It **supports lifelong learning** by capturing achievements that evolve with the learner and can be shared across academic, professional, and civil society platforms.

By controlling the criteria, evidence, and assessment methods for badges, HEIs can ensure alignment with strategic priorities and EU frameworks. Institutional stewardship is essential for maintaining the credibility and quality of digital credentials in academic and professional settings.

2.2 Educational and institutional value of Open Badges

The integration of Open Badges in higher education offers significant value at pedagogical, institutional, and systemic levels. As **European universities seek to respond to the demands of innovation**, inclusion, and sustainability, Open Badges have emerged as a strategic tool to document, communicate, and recognize diverse forms of learning.

They offer flexible, verifiable credentials that can validate competences across formal, non-formal, and civic settings, contributing to inclusive learning ecosystems, curriculum enhancement, and employability.

Recent Erasmus+ projects and institutional pilots have affirmed their relevance. Platforms like Bestr (Italy), Le Forem (Belgium), and badge-based ecosystems in France demonstrate the growing maturity of digital credentialing in Europe. Institutions such as the University of Bordeaux, TU Dublin, and Tampere University of Applied Sciences (TAMK) are leading efforts to embed badges within strategic educational and skills frameworks.

The value of Open Badges can be illustrated through **five interconnected areas**:

ENHANCING STUDENT MOTIVATION AND SELF-DIRECTION

Value: **Badges support learner agency by offering visible, structured milestones that increase engagement and self-regulated learning**.

In the Open Virtual Mobility (OpenVM) Erasmus+ project, badges were used to recognize students' intercultural teamwork, digital communication, and collaborative problem-solving in online environments. Learners reported increased motivation and clarity about their skill development, particularly in transversal and digital competences relevant to sustainability education.

VALIDATING NON-FORMAL AND EXPERIENTIAL LEARNING

Value: **Badges provide formal recognition of learning that occurs outside traditional classroom structures, including civic engagement, volunteering, and soft skill development**.

The Badgeons l'Université! initiative, part of the broader Badgeons la Normandie ecosystem in France, recognizes student engagement, social participation, and transversal competences developed through university life. Students receive Open Badges via the Open Badge Factory platform, reinforcing the educational value of community involvement.

DRIVING INSTITUTIONAL INNOVATION AND INTERDISCIPLINARY PRACTICE

Value: **Badges foster innovation in curriculum design and promote collaboration across faculties and disciplines**.

The EduSTA project, coordinated by Tampere University of Applied Sciences (TAMK), develops badge constellations to assess and certify teachers' sustainability competences. These include learning design, ecological literacy, and reflexive praxis. While targeting educators, the approach showcases how badge systems can catalyze interdisciplinary innovation and institutional capacity building.

BRIDGING COMPETENCES AND EMPLOYABILITY

Value: **Badges provide verifiable evidence of job-relevant competences, making learners more visible to employers, especially in the context of green and digital transitions**.

The Engineers4Europe (E4E) Erasmus+project led by partners including KU Leuven, TU Dublin, and UPorto, offers micro-credentials and badges based on the GreenComp framework. These recognize learners' understanding of sustainability, corporate responsibility, and ESG strategies, aligning engineering education with labor market demands and EU green goals.

SUPPORTING LIFELONG LEARNING AND STACKABLE CREDENTIALING

Value: **When aligned with EU policy frameworks, badges enable modular, portable pathways for lifelong learning and reskilling**.

Although the Council Recommendation on Micro-Credentials (2022) and the European Commission's Micro-Credentials Framework do not endorse Open Badges by name, they emphasize metadata transparency, portability, and interoperability: all of which badge platforms can support.

2.3 Aligning Open Badges with EU Green, Digital, and Skills Frameworks

To ensure both credibility and relevance, Open Badges issued through the OpenPass4Climate (OP4C) system are explicitly aligned with major EU competence and credentialing frameworks.

These frameworks define the competences, standards, and digital infrastructures needed to support lifelong learning, workforce readiness, and the green and digital transitions. Although none of these frameworks mandate the use of Open Badges specifically, their structure provides a **strong foundation for mapping and validating badge content and evidence**.

🔗GreenComp – The European Sustainability Competence Framework

Purpose: GreenComp identifies 12 sustainability competences grouped into four clusters: embodying sustainability values, embracing complexity, envisioning sustainable futures, and acting for sustainability. It supports systems thinking, intergenerational responsibility, and agency.

Relevance to badges: Open Badges in OP4C can be explicitly mapped to GreenComp descriptors such as collaborative problem-solving, futures literacy, and sustainable decision-making. This enables learners to demonstrate concrete climate-related competencies in alignment with EU sustainability goals.

🔗DigComp 2.2 – Digital Competence Framework for Citizens

Purpose: DigComp 2.2 outlines 21 competences across 5 domains: information and data literacy; communication and collaboration; digital content creation; safety; problem-solving. It includes specific climate-relevant skills, such as evaluating data credibility and protecting the environment in digital contexts.

Relevance to badges: HEIs can issue badges for competences such as digital collaboration or climate data literacy, mapped directly to DigComp indicators. For example, the EduSTA project uses DigComp to design badges recognizing educators' digital and sustainability-related skills.

🔗EntreComp – The European Entrepreneurship Competence Framework

Purpose: EntreComp defines 15 competences for entrepreneurship, organized into three areas: ideas and opportunities; resources, and action. It promotes initiative-taking, creativity, and sustainable value creation.

Relevance to badges: Institutions can design badges for climate innovation, eco-social entrepreneurship, or student-led sustainability projects by aligning with EntreComp competences such as ethical thinking, mobilizing others, and planning and managing.

🔗Europass Digital Credentials Infrastructure (EDCI)

Purpose: EDCI offers a secure, interoperable platform for issuing, storing, and sharing digital credentials across Europe. It complies with the European Learning Model (ELM) and eIDAS standards for legal authenticity.

Relevance to badges: While Europass does not reference climate-specific badges, it provides the technical infrastructure (e.g., tamper-evident seals, machine-readable metadata) that Open Badges can adopt to ensure portability and cross-border recognition. When mapped to frameworks like GreenComp or DigComp, OP4C badges can be stored in Europass wallets and linked to learners' broader digital portfolios.

🔗European Skills Agenda (2020)

Purpose: The Skills agenda supports reskilling and upskilling for the green and digital transitions, aiming for a more sustainable and inclusive recovery. Action 10 promotes micro-credentials as tools for flexibility and inclusion in lifelong learning.

Relevance to badges: While Open Badges are not explicitly mentioned, the agenda encourages the development of digital micro-credentials that could include badges. Their use aligns with the Agenda's emphasis on sustainable competitiveness and green recovery.

🔗Council Recommendation on Micro-Credentials (2022)

Purpose: This Recommendation provides a formal EU-wide definition of micro-credentials and establishes standards for quality assurance, transparency, portability, and interoperability.

Relevance to badges: Although Open Badges are not directly named, they qualify as micro-credentials when they include standard elements defined in Annex I of the Recommendation, such as clear learning outcomes, assessment methods, and metadata. OP4C's badge system can be designed to comply with these standards, ensuring recognition across the European Higher Education Area.

3

CHALLENGES AND BARRIERS TO IMPLEMENTATION

Despite the growing interest in Open Badges and their demonstrated value in recognizing diverse forms of learning, **many HEIs encounter a range of implementation challenges**.

These challenges can be categorized into **four major areas**:

INSTITUTIONAL RESISTANCE AND AWARENESS GAPS

TECHNICAL AND ADMINISTRATIVE CONSTRAINTS

CONCERNS ABOUT CREDIBILITY AND VALUE

INTEGRATION OF BADGES INTO EXISTING CURRICULAR AND ASSESSMENT SYSTEMS

3.1 Institutional resistance and awareness gaps

Institutional resistance remains one of the most frequently cited barriers to the adoption of Open Badges in higher education. Many faculty members and administrators remain **unfamiliar with the pedagogical benefits of badges**, viewing them as peripheral to formal academic learning or as superficial incentives.

This perception is reinforced by the **absence of clear policy frameworks or leadership mandates** within universities that would **legitimize badge systems as part of broader teaching and learning strategy**. Without top-down support and integration into institutional quality assurance systems, badge initiatives often remain experimental and fail to scale beyond isolated pilot projects.

3.2 Technical and administrative constraints

Technical and administrative challenges also pose significant obstacles. While platforms such as Moodle and Canvas offer plugins to issue badges, many institutions have not activated or customized these tools.

Concerns about **data security**, **GDPR compliance**, interoperability with existing student records systems, and **long-term maintenance** responsibilities often delay or prevent implementation. Furthermore, institutions with decentralized governance may struggle to coordinate efforts across faculties and departments, leading to inconsistent standards and a lack of institutional coherence.

3.3 Ensuring credibility and avoiding badge inflation

Another critical issue is **badge credibility** and the **risk of badge inflation**. Without rigorous criteria and meaningful assessment, badges may be awarded for low-effort tasks, undermining their perceived value among students, educators, and external stakeholders. This phenomenon, often referred to as badge inflation, has been identified as a **key reason for learner disengagement in several studies**. Badges that lack alignment with formal learning outcomes or real-world competencies are unlikely to be recognized or respected by employers, civic partners, or academic peers. For badges to be credible, they must be **issued under clearly defined standards**, with transparent criteria and evidence requirements.

Student perceptions are also shaped by the **level of institutional commitment** and **external recognition** associated with badges: students were more motivated to pursue badges when they were associated with institutional awards, learning pathways, or employment advantages. Conversely, when badges were perceived as informal tokens or **disconnected from academic progression**, engagement dropped significantly. For the OP4C system to succeed, students must see a **clear benefit**, whether in terms of employability, academic credit, or personal growth.

3.4 Integration with existing curricula and assessment methods

Integrating badges into existing curricula and assessment practices presents **structural and pedagogical challenges**. Many academic programs are still based on **traditional credit-hour models**, with fixed syllabi and summative assessment frameworks that do not easily accommodate micro-credentials. Embedding badges requires a shift toward competence-based education and the adoption of formative, activity-based assessments.

GreenComp, for example, promotes competences such as **collaboration**, **systems thinking**, and **futures literacy**, skills that are often demonstrated through projects, community engagement, or experiential learning. However, **such learning is rarely assessed formally**, and faculty may lack the time, training, or institutional support to develop aligned badge criteria and rubrics.

Moreover, **equity concerns must be considered**. If access to badge opportunities is not equally distributed (due to differences in course offerings, departmental engagement, or student resources) badge systems risk reinforcing existing disparities. Institutions must therefore adopt **inclusive design principles**, ensuring that **all students can access and benefit from sustainability learning pathways** and associated recognition mechanisms.

In summary, while Open Badges offer substantial promise for enhancing sustainability learning, their successful implementation depends on **addressing a constellation of institutional**, **technical**, **cultural**, and **pedagogical barriers**. OP4C can serve as a scalable model, but only if supported by strong governance, digital infrastructure, staff development, and student-centered design.


PROTECT
OUR
PLANET
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CLIMATE
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4

POLICY RECCOMENDATIONS

To maximize the transformative potential of Open Badges for climate competences, this section outlines concrete, multi-level policy recommendations. These target higher education institutions (HEIs), national authorities, and European-level bodies.

Each recommendation is grounded in current practice and aligned with EU frameworks to support climate education, digital innovation, and inclusive recognition of learning.

4.1 Local level

HEIs are the frontline implementers of Open Badge systems. To ensure effective deployment, they should:

1. **Establish institutional badge strategies** linked to sustainability goals, learning outcomes, and digital innovation strategies.
   Badges should be co-designed with students, faculty, and employers to ensure relevance and credibility.

2. **Provide professional development and support for teaching staff.** Transitioning to badge-based recognition requires pedagogical shifts. Institutions should offer training on learning outcomes design, formative assessment, and the integration of competence-based approaches into teaching.

3. **Create cross-functional implementation teams** including representatives from IT, educational development, sustainability offices, and student services, to ensure alignment between strategy, infrastructure, and user experience.

4. **Ensure alignment with EU key frameworks**
   Badge metadata should reference these frameworks to enhance transferability and trust.

5. **Support the recognition of civic and non-formal learning**, including volunteering, activism, and interdisciplinary projects.
   Badge systems should be flexible enough to validate learning beyond the classroom.

6. **Enable digital portability** by integrating badges into student portfolios, Europass Digital Credentials, and other institutional or national eID systems.

4.2 National level

National education authorities play a vital role in scaling and sustaining badge ecosystems. They should:

1. **Incorporate badge-based micro-credentials** into national qualification frameworks (NQFs) and digital learning strategies, especially within teacher training and upskilling initiatives.

2. **Fund experimentation and institutional pilots** that focus on green and digital skills, particularly those that support underserved learners and regional sustainability transitions.

3. **Provide national guidelines and quality assurance models** for digital credentials, including rubrics for badge quality, criteria for assessment, and indicators of learning outcomes.

4. **Promote employer engagement** by incentivizing collaboration between higher education institutions and labor market actors to ensure badge relevance and recognition.

5. **Support platforms and repositories** that allow for secure issuance, verification, and aggregation of badges and micro-credentials at scale.

4.3 European level

The EU has a critical role in fostering coherence, scalability, and interoperability across member states. EU institutions should:

1. **Integrate badge-based credentials into the European Education Area (EEA)** by expanding the Europass Digital Credentials Infrastructure (EDCI) to support badge metadata aligned with frameworks like GreenComp and DigComp.

2. **Update the European Learning Model (ELM)** to include more explicit support for Open Badge specifications and badge-based competence recognition.

3. **Provide funding under Erasmus+ and Digital Europe** for projects that test and evaluate the effectiveness of Open Badges in advancing green, digital, and civic competences.

4. **Promote alignment with the Council Recommendation on Micro-Credentials (2022)** by supporting guidance on how Open Badges can meet the defined standards for quality, transparency, and interoperability.

5. **Foster transnational partnerships** to share best practices and enable cross-border recognition of badges, especially for learners engaged in sustainability projects, internships, or mobility programs.

5

IMPLEMENTATION STRATEGY AND NEXT STEPS

5.1 A practical roadmap for HEIs

A staged implementation allows institutions to manage complexity and build internal capacity progressively. The following roadmap provides a three-phase model:

SHORT-TERM (0–12 MONTHS)	• Establish an internal micro-credentialing task force (*pedagogy, IT, student affairs, sustainability units*); • Conduct a needs analysis and badge opportunity mapping (*co-curricular, civic, and sustainability programs*); • Choose and configure the OP4C badge platform (*or any other that aligns with HEIs needs*); • Launch pilot badge initiatives (*e.g., Green Week participation, SDG student ambassadors*); • Begin staff training workshops on badge design and criteria-setting.
MEDIUM-TERM (12–24 MONTHS)	• Develop and publish an institutional Open Badges policy, aligned with quality assurance mechanisms; • Expand badge pathways into formal curricula (*e.g., sustainability modules, service-learning courses*); • Integrate badges into student transcripts or Europass profiles; • Build external recognition networks with local NGOs, municipalities, and employers.
LONG-TERM (24+ MONTHS)	• Scale to a whole-institution badge ecosystem; • Establish cross-institutional badge equivalency agreements (*national/Erasmus+ networks*); • Contribute to European micro-credential policy forums and research; • Integrate badge data into strategic reporting tools (*e.g., university SDG dashboards*).

5.2 Stakeholder Engagement Framework

The **successful implementation** of Open Badges for climate education and green competence development **requires more than technology adoption**: it demands a **coordinated, whole-institution approach supported by a broader ecosystem of actors**. HEIs must act as central enablers, anchoring badge credibility while facilitating collaboration across academic, administrative, civic, and professional domains.

Each stakeholder in this ecosystem brings distinct capacities and responsibilities, but **everyone plays a role** in designing, validating, issuing, and scaling digital badges. Below is an overview of stakeholder roles in a successful badge ecosystem:

STAKEHOLDER	ROLE
University leadership	Set strategic direction, endorse badge policies
Teaching staff	Co-design and award badges, embed in curriculum
Sustainability offices	Align badges with SDG and GreenComp goals + other relevant EU frameworks
IT and EdTech teams	Configure platforms, ensure interoperability and security
Students	Co-create badge criteria, test usability
Employers	Validate badges for real-world relevance and recognition
National agencies	Offer quality guidelines and support framework
EU-level bodies	Ensure policy alignment and infrastructure funding

5.3 Monitoring, evaluation and quality assurance

For Open Badges to achieve **lasting legitimacy and impact within higher education**, institutions must establish **robust systems for monitoring, evaluation, and quality assurance**. These systems should not only track the scale of badge adoption but also **assess their educational value**, alignment with institutional goals, and inclusivity across learner populations.

A **data-informed approach** should combine both quantitative indicators (to monitor reach, uptake, and visibility), and qualitative insights (to capture learner experience, curriculum alignment, and perceived value by employers and stakeholders).

The following table outlines key evaluation domains and suggested indicators:

DOMAIN	SUGGESTED METRICS
UPTAKE	Percentage of enrolled students earning at least one sustainability-related badge
CURRICULUM INTEGRATION	Percentage of courses or programs embedding badge-based assessment or recognition
ENGAGEMENT	Student feedback scores; number of badges issued for co-curricular or civic activities
RECOGNITION	Number of employers, networks, or civic partners acknowledging badge value
EQUITY	Disaggregated data by gender, discipline, and socioeconomic background
SUSTAINABILITY LINK	Percentage of badges explicitly mapped to GreenComp competences or SDG targets

To ensure consistent quality, HEIs should conduct **annual reviews of their badge ecosystems**, involving representatives from teaching staff, students, sustainability offices, and external partners. These reviews should examine not only technical performance and **uptake trends** but also the **pedagogical soundness** and credibility of the badges issued.

A practical tool to support this process is a badge quality rubric, a structured evaluation tool used to **assess the design, credibility, and pedagogical value of digital badges**. It provides consistent criteria for ensuring that badges are meaningful, transparent, and aligned with recognized learning or competence frameworks.

The table below outlines key dimensions and criteria that institutions can use to evaluate badge quality. It serves as a practical quality assurance tool for HEIs aiming to embed Open Badges into climate education and other sustainability-related learning pathways:

Rubric Dimension	Criteria	Evaluation checklist
Learning outcome clarity	The badge clearly communicates a specific skill, competence, or achievement	• Is the learning outcome specific and measurable? • Is it meaningful to learners?
Alignment with frameworks	Badge maps to relevant EU or institutional competence frameworks	• Does the badge align with GreenComp, DigComp, or EQF? • Is this stated clearly?
Badge criteria definition	Requirements for earning the badge are transparent and rigorous	• Are the expectations clearly described? • Is there consistency across badges?
Evidence and documentation	Badge is supported by visible, verifiable evidence	• Does the badge include links to projects, reflections, or assessments?
Assessment method	Badge is issued based on validated or peer-reviewed achievement	• Is the assessment method credible and described? • Who reviews the evidence?

Issuer credibility	The issuing institution is reputable and transparent	• Is the issuer clearly identified? • Is there a badge governance policy in place?
Metadata quality	Badge contains complete, machine-readable metadata	• Is the badge portable and compatible with Open Badges 2.0?
Accessibility and language	Badge is accessible in clear, learner-friendly language	• Is the badge language inclusive and jargon-free?
Recognition and portability	The badge is useful beyond the institution (e.g., job market, other HEIs)	• Is there external recognition (e.g., by employers or networks)?
Sustainability link	Badge content is explicitly tied to sustainability or SDGs	• Does the badge address environmental goals or climate competencies?
Lifespan and expiry	Badge includes issue and expiry dates (if applicable)	• Is the validity period defined where necessary?
Feedback and evaluation	Learners and stakeholders can give feedback or appeal decisions	• Is there a process for revision or review of badge practices?

By adopting and regularly applying such a quality rubric, HEIs can enhance the legitimacy and educational value of their badge systems. By continuously refining badge design and deployment based on data and stakeholder input, **HEIs can build resilient, trustworthy systems of digital recognition that contribute meaningfully to green and digital transitions**.

6

CONCLUSION - **CREDENTIALING FOR CLIMATE COMPETENCE AND CIVIC ENGAGEMENT IN HIGHER EDUCATION**

In the face of accelerating climate change, **HEIs are uniquely positioned to act** not only as centers of knowledge, but **as catalysts for societal transformation**. Today's students are not passive recipients of education: they are active participants in climate discourse and agents of change within their communities. As such, institutions must **go beyond traditional pedagogical models** and invest in **meaningful systems of recognition that capture the full spectrum of learning**, leadership, and civic action emerging in the context of sustainability.

The OP4C badge and passport system responds directly to this imperative. It **offers a scalable, flexible, and evidence-based approach to credentialing climate-related competences** across both formal and non-formal learning environments. Through digital badges, HEIs can acknowledge not only course-based achievements, but also co-curricular engagement, community action, interdisciplinary collaboration, and real-world problem-solving. In doing so, **institutions strengthen their role in fostering climate literacy,** student empowerment, and inclusive learning ecosystems.

Strategic adoption of Open Badges allows HEIs to:

- Reinforce their role as **drivers of the green and digital transitions**.
- Recognize **student engagement with climate issues** in ways that are visible, portable, and motivating.
- Support competence-based learning aligned with **EU frameworks** such as GreenComp, DigComp, and the European Digital Credentials framework.
- **Advance institutional missions in sustainability**, equity, and innovation.
- Create **new pathways** for employability, **lifelong learning**, and civic impact.

However, the potential of Open Badges will only be realized if **supported by institutional commitment**, coordinated implementation, and robust policy frameworks. Pilots and local innovations are vital starting points, but system-wide adoption demands a shared vision and structural support at national and European levels. As outlined in this document, the **integration of Open Badges** into teaching, governance, and student development strategies **offers a concrete way forward**, one that aligns academic practice with the pressing realities of our time.

Climate action is no longer an optional theme within higher education: it is a defining priority. To meet this challenge, **HEIs must credential what they value**. Let us not merely teach sustainability: let us recognize it, credential it, and lead with it.

PARTNERS

The **Institut Polytechnique UniLaSalle (UniLaSalle)** is a French private higher education institution, known as a 'Grande école.' UniLaSalle is emerging as a leading knowledge hub in France, specializing in One Health, applied sustainable development, agriculture, environment, food, and health. It trains generalist engineers for high-level executive and top management positions in sectors such as agriculture, food industry, food and health, veterinary medicine, geosciences, environment, energy, and digital technologies.

The **School, Community and Company Consortium (CSCI)** is a Vocational Training Agency, authorized by the Piedmont Regional Government, which holds UNI EN ISO 9001:2015 certification. It was created as a joint venture between the educational world (Italian Schools and University), the civil service (Municipality of Novara, Municipality of Cameri Foundations, Italian and Romanian Associations, the Chamber of Commerce of Cadiz-Spain) and the world of work (Italian and Hungarian private companies) to foster the development of human and professional resources, creating and managing training and refresher programs for workers and young job-seekers, in both the public and the private sectors, to promote the “contamination” and the dialogue among young people coming from different countries (i.e. young migrants) supporting their social inclusion.

NOVA University Lisbon (NOVA) is a public higher education institution with a mission to serve society through knowledge and education on a local, regional, and global level, by developing teaching and research of excellence that create significant social and economic value. Founded in 1973, NOVA currently serves over 20,500 students, including 3,408 international students and 1,128 incoming mobility students, supported by 2,689 staff, among whom 199 are international faculty members. NOVA’s international outlook and interdisciplinary focus make it a strategic partner in advancing sustainability, digital innovation, and global academic collaboration.

Universidad de Valladolid (UVa) is one of the most important centres of Higher Education in Spain. Uva offers 29 Doctoral Programs through its UVa Doctorate School (EsDUVA). EsDUVA records 1700 PhD students each year and counts on its own funds for Training Programs of the Doctorate School (transferable skills and research-oriented skills).
UVa has 173 research groups dedicated to R+D and 4 Technology Centres. UVa is the driver of Green Infrastructure and Nature Base Solutions Research Centre where 300 researchers are working on it and they constitute UVa Agrifood and Natural Resources Knowledge Platform. UVa develops efficient technologies and collaborates in the transfer of sustainable and resources management good practices. UVa manages around 180 research projects/year financed through competitive public R+D+i calls of the European Commission, such as FP4 to FP7, H2020, LIFE, INTERREG, TEMPUS, E-CONTENT, ERASMUS, CULTURE, etc., national proposals or regional projects, and approximately 500 contracts and agreements aimed at the transfer of knowledge and technology, amounting to an average value of over fifteen million Euros per year.

UNICA – Network of Universities from the Capitals of Europe is an institutional network founded in 1990, currently comprising 56 universities from 41 capital cities across Europe. Together, these institutions represent a community of over 180,000 staff members and more than 2 million students.
UNICA's mission is to leverage the unique identity and strategic position of its member universities to foster international collaboration, academic leadership, and institutional innovation. Through dialogue, mutual understanding, and the exchange of best practices, UNICA supports the advancement of higher education and research across Europe, actively contributing to the development of the European Higher Education Area (EHEA) and the European Research Area (ERA).

OpenPass4Climate is also supported by **three associated partners**:

- **Vilnius University, Lithuania**
- **Universidad de Zaragoza, Spain**
- **Schumacher Sprouts, Netherlands**

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