

# **ReSkill4NetZero**

## **Long-term Sustainability Strategy**

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**Version 1**

**Deliverable 6.1**

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# GLOSSARY

<b>Abbreviation</b>	<b>Full Term</b>
<b>EACEA</b>	European Education and Culture Executive Agency
<b>ECQA</b>	European Certification and Qualification Association
<b>EDC</b>	European Digital Credentials for Learning
<b>ENQA</b>	European Network of Qualifications Authorities
<b>EQAVET</b>	European Quality Assurance Reference Framework for VET
<b>EQF</b>	European Qualifications Framework
<b>ESCO</b>	European Skills, Competences, Qualifications and Occupations
<b>EU</b>	European Union
<b>GWO</b>	Global Wind Organisation
<b>IAHySafe</b>	International Association for Hydrogen Safety
<b>IEC</b>	International Electrotechnical Commission
<b>IMO</b>	International Maritime Organisation
<b>ISO</b>	International Organization for Standardization
<b>KPIs</b>	Key Performance Indicators
<b>Pact for Skills</b>	European Commission initiative to support skills development through large-scale partnerships
<b>RE</b>	Renewable Energy
<b>RESP</b>	Renewable Energy Skills Partnership
<b>RESkill4NetZero</b>	Renewable Energy Skills for Net Zero Project
<b>VET</b>	Vocational Education and Training
<b>WP</b>	Work Package

## Executive Summary

The RESkill4NetZero Sustainability Strategy outlines a long-term plan to ensure the project's impact continues beyond its initial funding period. Developed under Work Package 6: *Long-Term Sustainability and Scale-Up*, the strategy focuses on creating a robust European Renewable Energy Skills Alliance and maintaining and scaling high-quality training materials. In doing so, fostering a dynamic stakeholder network to mature the renewable energy skills market.

The approach is structured around three phases: Research & Alignment, Strategy & Roadmap, and Implementation. These phases collectively address key objectives: securing sustainable funding, defining governance and organizational structures, ensuring the relevance and portability of training materials, expanding Alliance membership, and leveraging synergies with EU initiatives such as the Pact for Skills and Net Zero Academies.

The strategy is grounded in comprehensive research on occupational profiles, skills gaps, and training needs, aligned with EU frameworks including EQF, ESCO, EQAVET, and Europass. Implementation will operationalize these objectives through partner recruitment, funding acquisition, training deployment, and continuous improvement, supported by measurable KPIs.

Ultimately, RESkill4NetZero aims to position the Alliance as a flexible, inclusive platform for green skills development, driving workforce readiness for renewable energy technologies and supporting Europe's transition to a competitive, climate-neutral economy.

# 1. Introduction

## 1.1. Purpose of the document

This document outlines the long-term sustainability strategy of the RESkill4NetZero project, as part of Work Package 6: Long Term Sustainability and Scale up. It ensures that the project outputs continue to create impact beyond the funded period and establishes a roadmap for how the European Renewable Energy Skills Alliance, training materials, and networks will grow, be maintained and scaled in the future.

The sustainability plan for WP6 addressed the long-term impact that RESkill4NetZero will extend well beyond the project's funding period. It does so by enabling the continuation of the elements created by the programme within an action plan under a dynamic, open, and collaborative Alliance. The core goal of the Alliance is to mobilize a critical mass of stakeholders towards practical, market-oriented and market-ready solutions to sustain a competitive Skills market that is fit-for-purpose to the growing EU-wide needs. The goal of the Alliance in itself, not to perpetuate its own presence but be a vehicle for action-driven forms of engagement between actors. This Alliance will eventually bring together companies, NGOs, training organisations, and government workforce bodies in a partnership of equals, enabling broad participation and shared ownership.

The RESkills4NetZero long-term strategy aims to build strong, sustainable foundations to address skill shortages, gaps, and mismatches in the European Renewable Energy sector. By rapidly upskilling and reskilling of students, employees, job seekers, trainers, and policymakers, the future RE Skills Alliance will equip them to succeed in renewable energy professions. This, in turn, supports a seamless energy transition, boosts EU competitiveness, and helps meet climate and energy goals.

## 1.2. Structure of the document

The report is structured in five main sections. The first section introduces the objectives and structure of Work Package 6, setting the stage for the long-term sustainability strategy. The second section focuses on research and alignment, presenting the strategy's objectives and the evidence base that informs its direction. The third section lays out the strategy and roadmap, detailing the vision, funding, organisational structure, training materials, alliance growth, collaboration with other initiatives, and dissemination plans. The fourth section covers implementation, outlining key activities, timelines, and performance indicators to ensure effective execution and monitoring. The final section provides next steps and conclusions, consolidating the strategy's impact and future actions.

# 2. Introduction to WP6 and Long-term development plan

## 2.1. Work Package 6 Objectives and Structure

The objective of *Work Package 6: Long Term Sustainability and Scale up* – structured around three main tasks - is to create a viable model for the continuation and roll-out of activities after the project is finished, ensuring our industry-education links endure, facilitating and exploiting EU funding opportunities to support implementation; and enabling the conditions for a competitive, industry-trusted Skills market.

### **Task 6.1 – Design and implement a long-term sustainability strategy**

- Develop a strategy to ensure the ongoing funding, dissemination, and rollout of outputs after the project has finished.
- Create a long-term action plan for continuous rollout of activities, including expansion of the European Renewable Energy Skills Alliance, continuous improvement of the Skills Strategy, updating and scaling of VET Curriculum and Training Programmes, and ongoing rollout of the Communications Strategy to promote renewable energy as sector to work in.
- Identify and tap into EU funding opportunities to ensure financial viability.
- Ensure synergies with the Pact for Skills, the Large-scale Skills Partnership for Onshore Renewable Energy, and Net Zero Academies.
- Ensure the continued stability and growth of the Renewable Energy Skills Alliance partnership and skills community to maintain the critical mass of engagement established during the four-year project.

### **Task 6.2 – Development of Sustainable Long-Term Alliance Partnership**

- Continue developing a sustainable partnership for the European Renewable Energy Skills Alliance that will drive Skills Strategy implementation at a strategic level and expand it with sector stakeholders over time.
- Recruit key stakeholders as Associated Partners, ensuring at least one partner per Programme Country by month 36.
- Integrate closely with Large-scale Skills Partnerships and Net Zero Academies to ensure long-term sustainability.

### **Task 6.3 – Developing a sustainable learning programme**

- Define standards and criteria for the renewable energy skills programme aligned with EU skills frameworks and accreditation agencies, creating benchmarks against which to measure the training programmes' quality.
- Ensure course modules are developed as standalone learning elements with micro-credentials, open-source content, and open data formats, allowing easy adoption and adaptation post-project.

- Ensure all programmes are aligned with European instruments, standards, and tools such as EQF, ESCO, EQAVET, EUROPASS.

## 2.2. Introduction to long-term Sustainability Strategy Plan

The design and implementation of the Sustainability Strategy has been structured into three distinct phases (Figure 1):

1. **Research & Alignment (Phase 1):** Align outputs with latest project deliverables and identify relevant projects, markets, materials, and strategies that may affect renewable energy skills in the long-term.
2. **Strategy & Roadmap (Phase 2):** Develop the Sustainability Strategy, define mission and vision post-project, governance structures, final project identity, synergies with other projects, post-project KPIs, and timelines for partner recruitment.
3. **Implementation (Phase 3):** Monitor KPIs, recruit partners, identify funding sources, implement communications, and ensure EU-wide dissemination.



*Figure 1: Design and implementation of the Sustainability Strategy*

## 3 Research & Alignment

This section focuses on the Research & Alignment phase, which establishes the foundation by ensuring all outputs are consistent with the latest project deliverables. It focuses on identifying relevant projects, markets, materials, and long-term strategies that influence renewable energy skills development. The aim is to build a clear understanding of external drivers shaping future workforce needs.

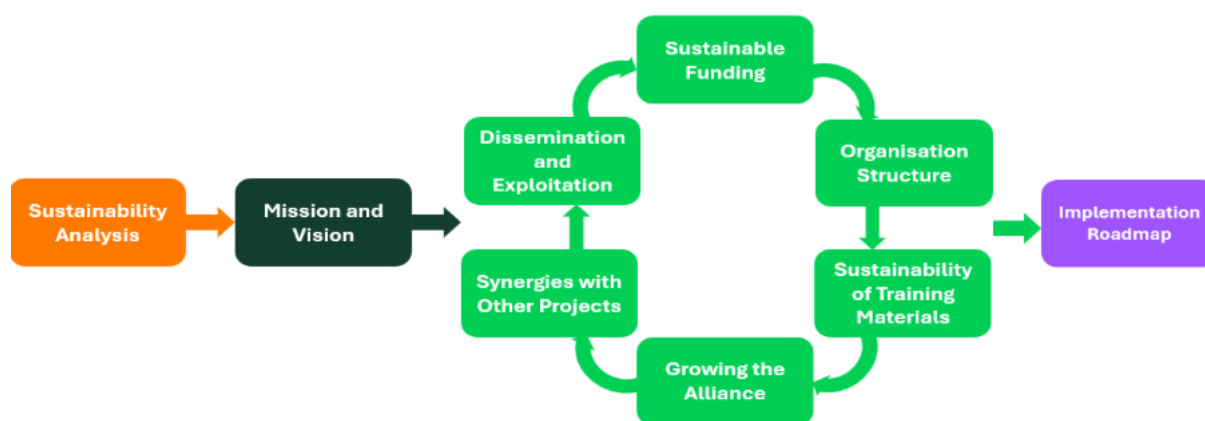
### 3.1 Sustainability Strategy Objectives

The sustainability strategy is divided into six key parts (Figure 2) the main objectives are:

- **Sustainable Funding:** Ensure sufficient resources for long-term rollout of deliverables and activities.
- **Organisational Structure:** Maintain a governance body that coordinates actions,

resources, tasks, and the continuous growth of the European Renewable Energy Skills Alliance.

- **Sustainability of Training Materials:** Provide high-value content, updated with rapidly changing technology and aligned with industry needs.
- **Growing the Alliance:** Build momentum to achieve the ‘critical mass’ necessary for a self-sustained entity.
- **Synergies with Other Projects:** Share documentation, materials, knowledge, and dissemination activities to facilitate long-term survival and minimise additional resource needs.
- **Dissemination and Exploitation:** Spread results to stakeholders, attract new funding sources, grow the partnership, and maximise project impact.



*Figure 2: Sustainability Strategy structure*

## 3.2 Research Outputs

This section provides the evidence base that informs the RESkill4NetZero sustainability strategy. It consolidates findings from project deliverables, maps synergies with other EU-funded initiatives, reviews market-recognised certifications and identifies training standards that shape renewable energy workforce development.

### 3.2.1 Inputs from Project Deliverables

Work Package 2 of the RESkill4NetZero project is dedicated to the identification and analysis of occupational profiles, skills needs, and training gaps in the renewable energy sector. Its first phase built upon a preliminary set of job profiles gathered during project preparation. Rather than redefining the field, WP2 focused on validating and expanding these profiles through data from job boards, sectoral studies, surveys (2023 and 2025), and stakeholder interviews. The

goal was to create a comprehensive, evidence-based picture of current and emerging skills needs across Europe.

The methodology followed two main stages:

- **Data collection and processing** using tailored methods for each source (job advertisements, reports, interviews, training programmes).
- **Synthesis and integration**, cross-validating findings to ensure accuracy and relevance.

Each skill identified was matched to one or more entries in ESCO, ensuring alignment with EU frameworks and enabling future training programmes to be anchored in recognised standards.

The main findings of the first deliverable (D2.1) include:

- **Job roles in demand:** The sector is growing in complexity, with high demand for technical professionals such as Renewable Energy Technicians, Gas Technicians, and Energy Engineers. New hybrid profiles are also emerging, including Software Developers, Mechatronics Engineers, and SCADA Programmers, reflecting the integration of digital technologies. Interviews highlighted urgent demand in wind, solar, heat pumps, and biogas, particularly for installers, operators, and energy efficiency specialists. Managerial and compliance-related roles (Project Managers, Site Managers, Compliance Officers) are also increasingly important. Recruitment is hindered by low awareness among young people and mismatches between education and labour market needs.
- **Skills in demand:** The analysis points to three converging skill areas:
  - **Technical skills:** installation, maintenance, systems design, and optimisation remain core.
  - **Digital skills:** data analysis, programming, and system integration are increasingly essential, even for traditionally manual roles.
  - **Transversal skills:** critical thinking, project management, adaptability, and communication are indispensable. A key gap exists at the intersection of technical and digital domains, with employers calling for digitally literate engineers and technicians.
- **Training and education:** Current training provision lags to industry requirements. Many programmes remain narrowly focused on traditional technologies and lack coverage of cross-sectoral and digital skills. Interviews highlighted the need for lifelong learning pathways, modular formats, micro-credentials, and stronger industry-education collaboration. The undervaluation of vocational routes and poor recognition of qualifications across EU member states remain barriers.
- **Future skills needs:** Looking ahead, demand will be shaped by technological innovation (AI, hydrogen, additive manufacturing), regulatory tightening (compliance and

monitoring), and economic transitions (supply chain localisation, resource efficiency). Emerging profiles such as Energy Transition Strategists, Circular Economy Specialists, and Cross-Carrier Energy Planners will complement traditional engineering roles.

- **Training supply analysis:** A review of 89 renewable energy courses across Europe revealed wide disparities. While sectors such as Renewable Energy Storage and Wind Energy scored highly in course quality, others like Heat Pumps, Bioenergy, and Geothermal showed significant gaps. Nationally, Denmark and Spain stood out with fewer but high-quality courses, whereas larger hubs like Germany offered more courses but with variable alignment. Many courses lacked digital, interdisciplinary, and applied components, highlighting the need to improve content quality rather than simply increase the number of courses.

The results of WP2 provide the essential evidence base for the project. They confirm that the renewable energy sector's workforce needs are evolving rapidly, combining technical, digital, and transversal skills. Without modernised training systems, Europe risks a labour bottleneck that could slow the energy transition.

The main elements from the second deliverable (D2.2) include the following.

The Renewable Energy Skills Strategy underscores that Europe's pathway to climate neutrality by 2050 is fundamentally a workforce challenge as much as a technological one. Delivering the ambitions of the European Green Deal, the REPowerEU Plan, and the Net-Zero Industry Act requires a skilled and adaptable workforce capable of supporting large-scale renewable energy deployment. Without sufficient numbers of qualified technicians, engineers, and specialists, progress will slow, costs will increase, and Europe's competitiveness in global clean energy markets will be at risk.

The strategy provides a comprehensive roadmap for aligning Europe's education and training systems with the fast-evolving needs of the renewable energy industry. It builds on detailed analysis of occupational profiles, emerging skill demands, and systemic challenges across renewable energy subsectors, combined with extensive consultation with stakeholders from across Europe.

The findings highlight acute shortages of skilled technicians and engineers in key areas such as solar PV, wind energy, heat pumps, and battery storage. There is strong demand for cross-disciplinary engineers who can integrate digital, regulatory, and technical knowledge, alongside growing needs for new competences in digitalisation, cybersecurity, artificial intelligence, and circular economy principles. Education and training systems remain fragmented, with limited recognition of qualifications across borders, and many providers face constraints such as outdated equipment and a lack of qualified trainers. Furthermore, careers in technical and vocational fields suffer from low attractiveness, gender imbalance, and limited youth engagement, while regional variations in skill needs reflect the geographical distribution of renewable energy strengths across Europe.

In response, the strategy proposes a unified European approach to renewable energy skills

development. It calls for stronger coordination through the Renewable Energy Skills Alliance, supported by the creation of recognised and portable qualifications, including an EU-wide Renewable Energy Skills Quality Mark and digital skills passports. Education and training systems should be modernised through modular learning, micro-credentials, and closer collaboration between industry and education providers. Digital and transversal skills such as AI, cybersecurity, project management, and systems thinking should be integrated across all programmes, while awareness campaigns and targeted initiatives are needed to attract young people, women, and underrepresented groups into renewable energy careers. The strategy also stresses the importance of supporting just transition measures and regional needs by providing retraining opportunities for workers in fossil fuel sectors, establishing regional training hubs, and improving mobility across borders. Finally, it calls for sustainable funding mechanisms and stronger policy alignment.

Overall, the Renewable Energy Skills Strategy makes clear that by investing in education, recognition, and career pathways, Europe can build a future-ready workforce, accelerate the deployment of renewables, strengthen industrial competitiveness, and ensure that the clean energy transition delivers inclusive benefits across all regions. EU renewable energy targets<sup>1</sup>

The European Union has set a binding renewable energy (RE) target for 2030 of at least 42.5 per cent of final energy consumption, with a political ambition to reach 45 per cent under more favourable deployment conditions. This target forms part of the EU's broader Fit for 55 package and Green Deal objectives, aiming to significantly reduce greenhouse gas emissions and enhance energy security.

### 3.2.2 Sector-Specific Targets

- **Solar Photovoltaics (PV):** The EU Solar Energy Strategy aims for approximately 600 GW of installed PV capacity by 2030, including accelerated rooftop deployment and large-scale solar parks.
- **Wind Energy:** The EU's offshore wind capacity is projected to reach 86–89 GW by 2030, complemented by major expansion in onshore wind, supported by the Wind Power Action Plan to address permitting and supply chain barriers.
- **Batteries and Energy Storage:** To support renewable integration and grid stability, the EU anticipates deployment of around 200 GW of energy storage by 2030. The European Battery Alliance and Battery Regulation are central to developing domestic cell manufacturing and recycling capacities.
- **Heat Pumps:** In line with REPowerEU, the EU targets a doubling of heat pump installations by 2030, supported by measures to upskill installers and strengthen supply chains, contributing to the decarbonisation of buildings and heating.
- **Biogas and Biomethane:** The REPowerEU Plan aims to produce 35 billion cubic metres (bcm) of biomethane annually by 2030, replacing fossil gas in power generation, heating, and transport.

- **Geothermal Energy:** The revised Renewable Energy Directive promotes the development of geothermal energy for both heat and power, encouraging Member States to integrate geothermal potential into national energy and climate plans.

### 3.2.3 Similar Skills Projects and Associations

RESkill4NetZero builds on and interacts with a wide array of existing EU-funded initiatives, sectoral alliances, and skills platforms, ensuring that lessons learned, best practices, and established networks are leveraged for maximum impact. This is done on a regular basis within the performance of all activities across all WPs.

By aligning with these projects and organisations, RESkill4NetZero increases its visibility, avoids duplication, and creates synergies that enhance sustainability and long-term relevance. These alignments and linkages, particularly with other EU funded projects and their participating organisations, will be ultimately formalized under the deployment of the Alliance.

- **Large-Scale Partnership on Renewable Energy Skills (under the Pact for Skills):** This partnership focuses on workforce preparedness, standardisation of skills, and quality employment.
- **Net Zero Academies:** Supported by the European Commission under the Net Zero Industry Act, these academies receive seed funding to develop sector-specific educational content. There are three Net Zero Academies currently: European Battery Academy, European Solar Academy, and European Hydrogen Academy.
- **Sector-Specific Initiatives and Erasmus+ and Horizon Europe Projects:**
  - HP4All addresses the skills gap in heat pump installation across Europe, providing insights into regional workforce challenges, gender inclusion, and targeted reskilling programmes.
  - European Hydrogen Academy and Green Skills for Hydrogen Project (GreenSkillsforH2) focus on hydrogen and fuel cell technologies, providing cross-institutional collaboration, advanced curriculum development, and identification of occupational profiles, aiming to address the skills gap.
  - FLORES (Forward Looking at the Offshore Renewables) enhances offshore renewable energy (ORE) skills, forecasting sector growth, and developing lifelong learning tools.
  - AI4GreenDeal project aims to design and deliver a double master's degree and modular certifications in advanced AI and data for energy engineers.
  - HeatCraftHP project aims to identify the skill set crucial for proficient heat pump installation and troubleshooting, through mapping the essential skills, identifying skills gaps for current and potential future workforce groups and develop programs for up- and reskilling to bridge these gaps effectively.

- Every1 aims at tailored learning pathways for the digital energy transition as well as practical use cases based on knowledge and skills stakeholders.
- Skills4EII (Skills Alliance for the Green, Digital and Social Transformation of the Energy Intensive Industries) builds on the results of previous Blueprint initiatives to identify and address cross-sectoral and sector-specific skills gaps in energy intensive industries, aiming to develop a common framework and broaden alliances that support green, digital, and industrial transformation across multiple sectors.
- Renew the Energy, Save the Future! project aims to bridge the skills gap in the renewable energy and digital energy management sectors by equipping VET professionals and the SMEs with practical and future-proof competencies.
- Improving the Quality of Aligned Training Programs in Renewable Energy Department focuses on harmonising learning outcomes with GreenComp and industry standards, demonstrating strategies for evaluation, assessment, and quality assurance across multiple countries.
- BUSUnited (BUILD UP Skills Community of Practice) promotes sustainable energy skills in Europe's construction sector by fostering collaboration, innovative training, and large-scale upskilling to support the EU's climate-neutral goals.
- BUSLeague aim at developing and implementing a cross European recognition of energy skills, together with upscaling successful training methods and techniques which have already been developed in previous EU and National initiatives such as BUILD UP Skills, Construction Skills
- NS4nZEBs (New Skills for nearly Zero Energy Buildings) project aims to tackle existing mismatches between current skills and future demands in the building sector.
- TWEED aims at training the next generation of excellent researchers, equipped with a full set of technical and complementary skills, to develop high-impact careers in wind energy digitalisation.
- SKILL BILL (Skill to Boost Innovation and professional fulfillment in a sustainable economy) aims to pave the way to different forms of training and education in order to meet new skills requirements in RES field as well as induce citizens and stakeholders to get interested or involved in RES besides the initial level of education, their working position and their gender.
- MiCRET (Microcredentials for Renewable Energy Technicians) project addresses labour shortages in the renewable energy sector by developing a unified European framework for microcredentials and promotes common training standards, cross-border recognition, and stackable credentials to support technician mobility and skills validation across Europe.

- Project GaTe (Green and Transition Energy Skills) focuses on adapting vocational education and training (VET) programmes, enhancing mentorship opportunities, and creating accessible tools that foster women's participation and leadership in the green transition.
  - p4elecs supports the development of modular and flexible educational materials focusing on the topic areas production, grid, and grid users, designed for VET providers, HEIs, industry professionals, and individual learners
  - Coveseed focuses on equipping communities with the tools and knowledge needed for a clean energy future, through skills research, good practises and collaboration within stakeholders.
- **EU Skills Platforms and Multipliers:**
    - Platforms such as EPALE (Electronic Platform for Adult Learning in Europe) provide pan-European visibility and act as channels to recruit VET providers, subject matter experts, and learners.
    - The European Digital Skills and Jobs Platform strengthens dissemination of training offers by reaching employers, training providers, and learners across Member States, particularly where digital skills and digital components of green training are required.
    - The Lifelong Learning Platform connects projects with civil society organisations and adult learning networks and supports inclusion, outreach, and wider advocacy for green and digital skills.

### 3.2.4 Industry-recognised Certifications

A wide range of certification schemes, frameworks, and market-recognised alternatives exists across renewable energy and adjacent sectors. These provide an important benchmark for aligning training programmes with employer expectations, labour market needs, and international quality standards.

- **EU-wide frameworks and certification systems**
  - **European Qualifications Framework (EQF):** Ensures comparability of qualifications across EU Member States, providing a common reference for skills and knowledge levels.
  - **ESCO (European Skills, Competences, Qualifications and Occupations):** EU taxonomy that maps skills to occupations, used as a reference point in training design.
  - **EQAVET (European Quality Assurance Reference Framework for VET):** Provides a structured approach for quality assurance in vocational education and training.

- **EU Micro-credentials Framework (2022):** Establishes principles for the design, recognition, and portability of micro-credentials across Europe.
- **Micro-credentials for green and digital transitions:** The EU framework explicitly links micro-credentials to the European Green Deal and Digital Education Action Plan, positioning them as tools to support skills development for sustainability and decarbonisation.
- **European Digital Credentials for Learning (EDC):** Supports digital, verifiable certification of skills and learning outcomes.
- **ECQA (European Certification and Qualification Association):** Operates a competence-based certification scheme recognised across Europe.
- **European Network of Qualifications Authorities (ENQA):** Provides guidelines and ensure that its member agencies comply with the Standards and Guidelines for Quality Assurance in mainly higher education.
- **Europass:** Europass is a set of standardised digital tools that document and communicate learning achievements, qualifications, and skills across Europe, enhancing their visibility, portability, and comparability. It supports learners and workers in recording outcomes from formal education, micro-credentials, and industry training, integrates with frameworks such as EQF and ESCO, enables the issuing of European Digital Credentials (EDC) for Learning, and ensures qualifications are machine-readable, cross-border compatible, and easily understood by employers and providers.
- **Sector-specific certification schemes**
  - **Global Wind Organisation (GWO):** Provides internationally recognised training standards for safety and technical competence in the wind industry.
  - **Net Zero Academies certifications:** Established under the EU's Net Zero Industry Act, these academies develop and deploy micro-credentials in net-zero technologies such as solar PV, renewable hydrogen, and marine renewables. They issue European Digital Credentials for Learning integrated into Europass, supporting mobility and comparability across Member States.
  - **Solar certifications:** National and EU-aligned schemes, for example TÜV Rheinland's PV installer certifications or EUREC-led renewable energy training programmes.
  - **Heat pump installer certifications:** Based on CEN standards (e.g. EN 13313 for refrigeration competence) and promoted by EU projects such as HP4All.
- **International and cross-sectoral standards**
  - **ISO 14001 (Environmental Management Systems) and ISO 50001 (Energy**

**Management Systems):** Often embedded into energy-related training for compliance and sustainability.

- **IEC and CEN standards:** Provide sector-specific technical standards relevant to renewable energy technologies (e.g. IEC 61215 for PV, IEC 62933 for energy storage).
- **IRENA/UNESCO frameworks:** Offer global guidance on renewable energy occupational profiles and training standards.
- **Industry-led certifications**
  - **Siemens, Schneider Electric, ABB:** Provide proprietary training and certification in digital energy management, automation, and renewable energy systems.
  - **Microsoft, Cisco, AWS:** Digital and cloud certifications increasingly relevant for smart grid, IoT, and data-driven renewable energy solutions.
- **National certifications:** National certifications are rooted in country-specific qualification systems (e.g. German Meister, UK NVQs) and are highly responsive to national labour market regulations. EU-level frameworks such as the EQF and Micro-credentials Framework promote comparability and portability, helping professionals work across borders. However, harmonisation is still incomplete, particularly in fast-developing sectors like green energy. Aligning national schemes with EU frameworks remains an ongoing effort.

### 3.2.5 Training Standards

A range of European and international standards provide guidance for the design, quality assurance, and recognition of training programmes. These frameworks establish common principles for modularity, transparency, and transferability of qualifications across borders and sectors.

- **European Qualifications Framework (EQF):** Provides a common European reference for comparing national qualifications systems. It is outcomes-based and underpins the recognition and portability of skills and learning across countries.
- **ESCO (European Skills, Competences, Qualifications and Occupations):** The multilingual classification of skills and occupations maintained by the European Commission. It facilitates consistency between training content, labour market needs, and job profiles.
- **EQAVET (European Quality Assurance in Vocational Education and Training):** Establishes a quality cycle (planning, implementation, evaluation, and review) for ensuring continuous improvement of VET systems and programmes.
- **EU Micro-credentials Framework (2022):** Defines principles for short, modular

learning units that can be accumulated or stacked into larger qualifications. It provides criteria for transparency, portability, and recognition across Member States.

- **Europass:** A set of tools and templates to document and communicate learning achievements, qualifications, and skills in a transparent and standardised manner across Europe.
- **CEDEFOP Guidelines:** Provide methodological support for designing competence-based curricula, skills anticipation, and validation of non-formal and informal learning.

**CEN and ISO Standards:** Several standards exist that directly affect training materials and curricula:

- **ISO 21001:2018 (Educational organisations management systems):** Specifies requirements for organisations that provide educational products and services.
- **ISO/IEC 40180:2017 (Quality for e-learning, education and training):** Guidelines for evaluating online and blended learning provision.
- **CEN/TS 17463 and related technical specifications:** Address sustainability and energy efficiency competences relevant for training.

Sector-specific frameworks include:

- **Global Wind Organisation (GWO) standards** for safety and technical training in wind energy.
- **International Maritime Organisation (IMO) STCW standards** for offshore and maritime training.
- **Hydrogen safety training frameworks** under the International Association for Hydrogen Safety (IAHySafe).
- **ISO 50001** (Energy management systems) and **ISO 14001** (Environmental management systems), which often underpin sector-specific training schemes.

These standards converge on the principle that training should be modular, learning outcomes-based, and flexible enough to respond to sectoral and regional contexts. For example:

- The EU Micro-credentials Framework supports modular building blocks that can be stacked into larger qualifications.
- EQF and ESCO ensure that modules are referenced consistently across occupations and qualifications.
- Sectoral standards (such as GWO) demonstrate how modularity can be applied to safety and technical competences, enabling portability across training providers and national systems.

### 3.3 Gaps and challenges in the European certification arena

Despite the progress made in harmonizing qualifications through frameworks like EQF and ESCO, significant fragmentation persists across Member States and industry-led schemes. Mutual recognition of certifications remains limited, particularly for emerging roles in hydrogen, digital energy management, and circular economy. The slow uptake of micro-credentials in formal hiring processes and the absence of integrated soft skills within technical certifications further exacerbate these gaps. Addressing these challenges requires stronger alignment between public and private certification systems, accelerated adoption of EU-wide standards, and mechanisms to ensure portability and comparability of qualifications across borders.

The key findings show:

- Fragmentation between industry and public-sector certifications.
- Limited mutual recognition across Member States.
- Lack of certification for emerging roles (e.g. hydrogen technicians, circular economy consultants).
- Weak uptake of micro-credentials in formal hiring.
- Need for integration of soft/transversal green skills (communication, systems thinking, digital) into technical certifications.

The landscape of industry-recognised certifications is diverse, spanning EU-level frameworks, sector-specific standards, international norms, national schemes, and vendor-driven certifications. This diversity provides both opportunities and challenges: while it enables flexibility and localisation, it also risks fragmentation. A key research finding is that harmonisation with EU frameworks (EQF, ESCO, EQAVET, Micro-credentials) is essential to ensure portability and comparability across Member States.

## 4 Strategy and Roadmap

### 4.1 Vision and Mission

#### **Our vision:**

RESkills4NetZero's strategy is centred on establishing a robust and resilient foundation of Renewable Energy skills across Europe, empowering professionals in the sector while ensuring fairness and equal opportunities for all in an emerging EU-wide competitive skills market.

#### **Our mission:**

The overall project mission is to create a clearly defined Skills Strategy for recognized high demand roles across the renewables sector, develop and test a VET training programme of modular and flexible training courses to enable workers to acquire these skills, and provide an EU recognised certification that confirms the required skills and competences have been acquired at a satisfactory level. The European Renewable Energy Skills Alliance will serve as a

vehicle for replicability of this mission and, more importantly, the driver of the critical mass to transform and professionalise a ‘green collar’ workforce in Europe. The Alliance will be a collaborative ecosystem aiming to create synergies, avoid duplication, and leverage strengths across different initiatives and industries.

Key objectives include:

- Fostering strategic collaboration between education and industry, with an early focus on EU-initiatives, on RE skills development under shared principles of competitiveness and transparency and under alignment with policy and market needs.
- Fostering a flexible approach to offer innovative educational and training tools, consistently updated to keep pace with the rapidly evolving Renewable Energy sector.
- Creating a critical mass of engaged actors who will co-develop interoperable standards, promote mutual recognition of certifications, and accelerate the adoption of micro-credentials across Member States, ensuring portability and comparability of skills in the renewable energy sector.

The Alliance mission is deeply related to its approach to external engagement. Its communication and dissemination approach will be designed as a shared responsibility model, ensuring that every participating actor has a sense of ownership and active involvement. Rather than relying solely on traditional outreach or social media, the strategy will embed collaborative formats—such as co-created content, joint campaigns, and interactive knowledge-sharing spaces—that reflect the Alliance’s inclusive ethos. This approach is beyond a multiplier of visibility – which suits other spaces like the Large Scale Partnership-; it is about creating a durable interaction framework that persists beyond the project’s lifetime. By establishing these mechanisms as the new standard for stakeholder engagement in the renewable energy skills market, the Alliance will foster transparency, trust, and continuous dialogue, positioning communication as a cornerstone of its long-term sustainability.

In essence, the vision and mission of RESkill4NetZero go beyond building a skills strategy—they aim to redefine how stakeholders collaborate, share knowledge, and co-own the future of renewable energy skills development. By leveraging existing formalized mechanisms such as the Large-Scale Partnership under the Pact for Skills, ensuring continuity and alignment with broader EU objectives, the Alliance’s innovative communication model and commitment to inclusivity will create a dynamic ecosystem that endures well beyond the initial funding period. This integrated approach ensures that the Alliance becomes not just a project outcome, but a lasting platform for cooperation, standard-setting, and collective action across Europe’s renewable energy sector.

## 4.2 Sustainable Funding

The sustainability of the European Renewable Energy Skills Alliance is about creating a structure, and potentially a brand, that reinforces the growth of a competitive skills market and

positions the Alliance as a natural engagement mechanism across EU and national initiatives. The Alliance will evolve into a natural engagement mechanism across EU and national initiatives, creating a community whose value proposition attracts partners, funding, and collaboration opportunities. Funding is therefore conceived as a strategic enabler, ensuring that the Alliance evolves beyond the RESkill4NetZero project to become a recognized reference point for collaboration, and direct action for content development, training, and certification in renewable energy skills.

### **Funding Strategy**

The Alliance will adopt a multi-layered funding approach to explore a direct continuation of the RESkill4NetZero partnership in a trailblazing position, while also enabling the decentralised growth of the Alliance model by partners outside the existing grant consortia. This combines:

- **EU and National Funding Streams:** continuous monitoring and engagement with programs such as Erasmus+, Horizon Europe, Digital Europe, LIFE, ESF+, and national VET funding schemes. The aim is to enable and connect with new initiatives that would start their work as members of the Alliance.
- **Cross-Initiative Integration:** Position the Alliance as a partner and model of interaction of choice for future EU-funded projects, leveraging synergies with the Large-Scale Partnership under the Pact for Skills and Net Zero Academies.
- **Strategic Co-Financing:** Encourage joint proposals and cost-sharing models with industry and education partners to support long-term activities. This integrated strategy ensures that funding is not episodic but embedded into the Alliance's operational DNA, enabling continuity and scalability. Moreover, it will provide the necessary validation that the championed approach is financially sustainable and desired from a public and private sector/commercial sphere.

### **Commercial Incentives**

To complement public funding, the Alliance will strongly promote all its participants towards the implementation of revenue-generating activities that reinforce the Alliance and the members value proposition. The low-hanging fruit being:

- **Premium In-Company Training:** Tailored programs for enterprises seeking advanced renewable energy skills.
- **Train-the-Trainer Packages:** Specialized modules for VET providers and educational institutions to enhance capacity.
- **Certification Services:** Offering EU-recognized micro-credentials and quality marks as part of structured learning pathways. These incentives create tangible benefits for partners while generating resources to maintain and expand the Alliance's activities.

## 4.3 Sustainable Organisation Structure

A sustainable organisational structure is essential for the long-term coordination, growth, and governance of the European Renewable Energy Skills Alliance. The aim is to establish a mechanism that remains lean and flexible while enabling members to collaborate effectively and call on the Alliance for support, solutions, and pathways for cooperation.

### 4.3.1 Organisational Formats

The European Renewable Energy Skills Alliance must balance two core needs as it evolves. That of an informal facilitator of collaboration and a potential requirement of formal legal continuity. Formal Legal Continuity might become necessary, and desirable, to secure public or private funding and maintain credibility and ease of access with EU and national stakeholders. At the same time, flexibility will likely remain central to preserve the Alliance's role as a facilitator of collaboration, enabling informal dialogues and practical cooperation without imposing rigid governance.

Formalization should only occur if and when the need becomes clear—such as significant growth in membership or operational complexity. The Alliance should avoid cannibalizing or overlapping with existing large-scale mechanisms like the Large-Scale Partnership under the Pact for Skills or other sectoral associations. Instead, it should complement these initiatives by offering a unique engagement model focused on trust-based collaboration and practical action.

One option is to establish the Alliance as a registered association under EU or national law. This would provide legal personality for funding agreements and representation, ensuring credibility and eligibility for future grants. Governance would remain minimal, with a Steering Committee and thematic working groups to maintain agility. While this format offers strong continuity and recognition, it introduces administrative complexity and could slow decision-making if not carefully managed.

Another alternative is to create a nonprofit foundation dedicated to training dissemination, technical support, and knowledge transfer. This model aligns strongly with the Alliance's educational mission and opens access to philanthropic funding streams. However, foundations tend to be less flexible for commercial activities and may require more formal governance structures, which could limit the Alliance's ability to adapt quickly to emerging opportunities.

A third option is to operate as a commercial entity offering premium training, certification services, and consultancy. Revenue generated would support content development and operational costs, reducing reliance on grants. This approach provides financial independence and scalability but risks shifting the Alliance's focus away from inclusivity and collaborative ethos, potentially alienating smaller stakeholders.

Rather than committing to one format immediately, the Alliance could adopt a **hybrid approach over time**. It would begin as a decentralized facilitative mechanism, prioritizing informal dialogues under Chatham House rules and collaborative engagement. Legal formalization would

only be introduced when operational needs demand it—such as for funding eligibility or contractual obligations. This phased approach could also integrate commercial incentives (e.g., premium training, certification services) alongside public funding, ensuring sustainability without sacrificing flexibility. By combining stability with agility, the hybrid model positions the Alliance as a trusted engagement mechanism that grows organically while maintaining its collaborative ethos.

### 4.3.2 Membership and Participation

The Alliance’s membership strategy is designed to grow progressively, starting with the inclusion of EU-funded projects and their respective consortia members. This initial approach ensures that the Alliance acts as a true network from the outset, leveraging existing collaborations and creating immediate synergies across multiple initiatives. By anchoring its foundation in these established partnerships, the Alliance can rapidly build credibility and foster trust among stakeholders.

As collaboration deepens and topics of interest diversify within the overarching domain of Renewable Energy Skills—which all members will share—the Alliance will expand to include industry associations, vocational training providers, public authorities, and other strategic actors. This evolution will enable the Alliance to remain relevant and adaptive, creating a dynamic ecosystem where members contribute their unique perspectives while working toward a common purpose.

In later stages, the expansion will aim at engaging national and regional stakeholders to test the Alliance model in a truly decentralized fashion. This will include piloting engagement formats in local languages and adapting processes to regional contexts, ensuring inclusivity and practical applicability across Europe. By doing so, the Alliance will strengthen its position as a flexible, scalable mechanism for collaboration that reflects the diversity of the renewable energy skills landscape as a replicable model on all 33 programme countries.

### 4.3.3 Governance and Management

The Alliance’s governance model is designed to remain lean and decentralized, prioritizing trust-based collaboration and practical, action-oriented solutions. Its role is not to impose rigid structures but to create conditions for cooperation that enhance members’ own projects and business models. Operational oversight will focus on fostering informal dialogues under Chatham House rules, ensuring candid exchanges that build confidence and lead to tangible outcomes that foster competition in a skills market while in alignment with policy objectives:

- **Minimal Core Structure:** The Alliance will act as a facilitator rather than a governing authority, maintaining flexibility while providing shared resources and pathways for cooperation.
- **Catalyst for Stronger Structures:** While the Alliance itself will maintain flexibility, it will push to enable the creation or improvement of other initiatives—projects, partnerships, or business models—that adopt more formal governance structures for their specific

objectives.

- **Operational Oversight through Trust Mechanisms:** Oversight will center on convening dialogues that promote transparency, trust, and solution-oriented collaboration, supported by shared workspaces and published summaries of agreed actions without compromising confidentiality

### Partner Engagement

Partner engagement is central to the Alliance’s sustainability model, ensuring that members view the Alliance not as a temporary project but as a trusted platform for cooperation and mutual benefit. Engagement will be built on principles of inclusivity, transparency, and shared ownership, reinforced by informal dialogues under Chatham House rules that foster trust and practical collaboration.

- **Value Proposition Beyond Funding:** The Alliance offers networking and practical collaboration opportunities framed within a clear vision of a competitive skills market across the EU. Partners gain access to a dynamic ecosystem where they can co-create solutions, share expertise, and leverage collective intelligence to strengthen their own projects and business models.
- **Collaborative Support Mechanisms:** The Alliance acts as a facilitator, providing pathways for cooperation rather than imposing rigid structures. Members can call on the Alliance to convene dialogues, initiate joint actions, and create synergies that amplify impact across sectors and countries.
- **Continuous Engagement:** Informal dialogues under Chatham House rules will remain the cornerstone of trust-building, but the format will evolve into a recognizable “Alliance Dialogue” brand for events, workshops, and webinars. This branded approach will reinforce the Alliance’s identity and create a signature engagement model that persists beyond the project lifecycle.

#### 4.3.4 Activities and Outputs

The Alliance’s activities will serve as practical mechanisms to maintain engagement, foster collaboration, and reinforce its identity as a trusted platform for renewable energy skills development. These outputs are designed to be lightweight yet impactful, ensuring continuity without imposing rigid structures.

A central feature will be quarterly “Alliance Dialogues”. These will be structured face-to-face sessions held under Chatham House rules with pre-established topics that encourage candid exchanges and practical, action-oriented solutions. These dialogues are designed to build trust, enable effective networking, and generate concrete outcomes. The first Alliance Dialogue took place in Month 12 of the project on the topic of Curriculum Development. It involved 9 other EU projects with a direct reach to over 80 organisations. At least four more are planned before Month 24. To strengthen inclusivity and ownership, we are setting the target that one of these

dialogues will be organised and led by a non-RESkill4NetZero, ideally within the context of another EU or national project, creating synergies and reinforcing the Alliance’s collaborative ethos.

In addition to these dialogues, the Alliance will leverage major sectoral events organized by its members or partners to provide high-visibility spaces for sharing best practices and highlighting the Alliance’s work. The first example of this approach took place at the Installers’ Summit in Brussels (Month 12), which brought together 25 associations from 17 countries and over 50 CEOs from the European electrical and mechanical installation sectors. These events will serve as strategic platforms for showcasing innovations, promoting training resources, and reinforcing the Alliance’s role in shaping the renewable energy skills market.

To complement these efforts, the Alliance will coordinate web resources across its members rather than creating a single repository – while using the RESkill4NetZero webpage as a pivotal point of reference. Each member—or group of members involved in EU or national projects—will host and link their own project pages to others in the network. This interconnected format will emphasize the collaborations and solutions facilitated by the Alliance, creating a distributed model of ownership and visibility. By testing this approach, the Alliance aims to establish a scalable and decentralized communication framework that reflects its collaborative nature.

Finally, overall publication of content for dissemination purposes will be aligned with the activities of the Large-Scale Partnership and existing publications, ensuring consistency with broader EU-level strategies and maximizing visibility through established channels. These activities will not only sustain engagement but also create a recognizable “Alliance Dialogue” brand for events and collaborative formats, positioning the Alliance as a facilitator of trust-based cooperation.

#### 4.4 Sustainability of training materials

Ensuring the long-term relevance of training materials will be central to RESkill4NetZero’s impact. The Sustainability Strategy will establish measures to maintain high-quality, up-to-date, and industry-aligned content that can be used in many countries and institutions.

Training materials will be developed following a modular, learning-outcomes based approach, aligned with EU standards and instruments such as EQF, ESCO, EUROPASS, and the EU quality assurance framework for VET (building on EQAVET). This alignment will guarantee recognition and portability of skills and qualifications across Europe. Industry-recognised certifications will be embedded within the learning pathways, providing learners with tangible credentials that are directly applicable in the workplace.

Open-source content and digital formats to a certain extent, will ensure that training materials can be easily adapted by VET providers, higher education institutions, and renewable energy companies. Each module will have associated micro-credentials, aligned with EU-recognised frameworks and stackable into full certification programmes, while comprehensive pathways can lead to certification packages. All training programmes will be backed by EDC, ensuring

recognition and portability of skills across the EU. This flexible approach allows institutions to adopt standalone modules or full training programmes based on their needs. Training metadata will be published in open formats to facilitate integration with EU skills platforms and national databases, supporting transparency and interoperability.

Content updates will be continuously informed by sector intelligence gathered through WP2, which will be active until Month 48. After project completion, the Steering Committee will take over formal oversight, conducting annual reviews. That way, the Alliance will ensure that materials reflect emerging technologies, safety requirements, digitalisation, and evolving renewable energy sector demands. Feedback from learners, companies, and trainers will be incorporated, supported by quality audits and alignment checks with recognised European accreditation agencies.

The Sustainability Strategy will also define benchmarks and best-practice models, drawing on desk research on alternative training offerings and on the recommended European Renewable Energy Skills Strategy (D2.2). Learning pathways will combine modular building blocks into structured programmes, enabling progression from individual modules and micro-credentials to full diplomas or certification packages. By providing modular, adaptable, and certified learning materials, RESkill4NetZero will ensure that the renewable energy skills ecosystem remains agile, responsive, and fully aligned with industry needs.

## 4.5 Growing the Alliance

Long-term sustainability hinges on transforming the European Renewable Energy Skills Alliance into a dynamic, pan-European network that remains relevant and self-sustaining – or replicable as a model and brand - beyond the project lifecycle. Growth is therefore not merely a numerical objective but a strategic enabler for impact, credibility, and financial viability. Building on the strong initial network of partners from 8 countries, the Alliance aims to secure at least one member per project country by month 36, ensuring pan-European coverage.

Expanding the Alliance is essential to validate the needs of the renewable energy sector and create the conditions for deploying commercial solutions that accelerate the maturity of a European renewable energy skills market. Achieving critical mass is about tipping the point toward a functioning, competitive skills ecosystem that supports industry demand and fosters innovation. A broad membership base ensures that the Alliance reflects real market needs and provides a platform for practical collaboration between education providers, industry actors, and public authorities. This diversity strengthens resilience and adaptability, enabling the Alliance to respond to technological evolution and regional variations while maintaining a common purpose. Furthermore, growth unlocks funding synergies, as a larger network increases opportunities for joint proposals, co-financing, and integration with EU and national initiatives, reinforcing financial sustainability.

The approach to growth will follow clear principles. Expansion will be progressive, starting with existing EU-funded projects and their consortia, then scaling to industry associations, training providers, and national stakeholders. Membership will be positioned as a strategic advantage,

offering access to EU-recognized training, opportunities for co-development, and visibility within a European skills network. The Alliance will maintain an inclusive and collaborative ethos, complementing existing mechanisms such as the Pact for Skills rather than duplicating them. This ensures that growth strengthens synergies and avoids fragmentation across initiatives.

To operationalize these principles, the Alliance will establish a flexible yet credible membership framework, using instruments such as letters of intent or partnership agreements to formalize engagement. Engagement will be reinforced through branded formats like “Alliance Dialogues” and thematic working groups, which foster collaboration and shared ownership among members. Visibility will be amplified by leveraging major EU initiatives such as Net Zero Academies and the umbrella of the Large-Scale Partnership, as well as sectoral events that attract new members and showcase the Alliance’s members impact. Finally, commercial incentives will be integrated into the growth strategy, including premium training, certification services, and train-the-trainer packages. These activities will reinforce the Alliance’s value proposition and contribute to maturing a skills market.

By establishing a strong partner network and collaboration mechanisms, RESkill4NetZero ensures that the European Renewable Energy Skills Alliance remains active, relevant, and financially and operationally self-sustaining well beyond the project lifecycle.

The Alliance is intended to evolve as a living, adaptive community that grows naturally, driven by the interests and contributions of its members. This organic growth model ensures that it remains relevant, self-sustaining, and reflective of the real needs of the renewable energy ecosystem.

## 4.6 Similar Skills Projects and Associations

Many of the initiatives mentioned under Section ‘Research Outputs’, highlight the need for modular and flexible curricula that can be tailored to national, regional, and sector-specific contexts. Linking training with industry-recognised certifications strengthens the portability and labour market value of acquired skills. Collaboration with established alliances enables access to wider partner networks, easing recruitment efforts and enhancing adoption. Alignment with cross-sectoral projects, showcases effective approaches for integrating green, digital, and safety skills across renewable energy domains, a principle at the core of RESkill4NetZero.

By actively engaging with these projects, RESkill4NetZero leverages a rich ecosystem of knowledge, methodologies, and networks, positioning itself as the first-ever horizontal Sector Skills Alliance for all renewable energy technologies in Europe. The structured integration of these initiatives ensures synergies, cross-fertilisation, and long-term sustainability while providing a proven model for scaling, dissemination, and impact.

1. **Large-Scale Partnership on Renewable Energy Skills:** RESkill4NetZero aligns its skills strategy with the Pact, contributing to pan-European objectives for upskilling and

reskilling workers in renewable energy technologies. Membership ensures that RESkill4NetZero integrates with existing sector-level efforts and can coordinate strategic objectives such as certification, curriculum adoption, and long-term sustainability planning.

2. **Net Zero Academies:** EIT InnoEnergy’s replication of its European Battery Academy model for solar PV and other technologies complements RESkill4NetZero, enabling shared methodologies for curriculum development, industry certification, and innovative delivery formats. Collaborating with these academies allows for cross-technology transfer of expertise, training methodologies, and certification models.
3. **Sector-Specific Initiatives:** RESkill4NetZero draws on these approaches to define critical job profiles and the required knowledge for emerging renewable energy roles. For example, the methods used under FLORES for updating occupational profiles and facilitating access to tailored training are directly relevant to RESkill4NetZero’s modular VET programme approach.
4. **Erasmus+ and Horizon Europe Projects:** RESkill4NetZero draws a lot from ongoing similar Erasmus+ and Horizon Europe projects. For example, one key learning is the importance of designing cross-sectoral approaches that integrate green, digital, and industrial skills to ensure relevance across multiple contexts (Skills4EII). Another is the value of practical, hands-on training and toolkits that equip both VET professionals and SMEs with directly applicable renewable energy competences (Renew the Energy, Save the Future!). Harmonising curricula and learning outcomes with recognised European frameworks and industry standards strengthens quality assurance and ensures portability of skills across countries (Improving Quality of Aligned Training Programs in Renewable Energy). Tailored upskilling pathways and workplace learning approaches help address sector-specific needs in areas such as construction, heating, and building performance (BUSLeague, HeatCraftHP, NS4nZEBs).
5. **EU Skills Platforms and Multipliers:** Leveraging these platforms ensures the wide dissemination of RESkill4NetZero materials and creates a foundation for sustainable volunteer-based communities of practice.

## 4.7 Long-Term Dissemination

The long-term dissemination strategy is a cornerstone of sustainability, ensuring that the outputs of RESkill4NetZero—such as the Skills Strategy, VET curriculum, certifications, and training programmes—continue to deliver impact well beyond the project lifecycle. Dissemination is the mechanism through which the Alliance maintains visibility, fosters adoption, and drives engagement across Europe. It is the operational bridge that connects the strategic pillars mentioned across Section 4 to real-world impact. By embedding dissemination into the sustainability roadmap, the project looks to ensure that its achievements remain accessible, relevant, and influential in shaping renewable energy skills development.

This strategy focuses on creating multiple pathways for stakeholders to discover, adopt, and promote RESkill4NetZero resources. It leverages the Alliance’s collaborative ethos to build a self-sustaining community motivated by professional and institutional incentives rather than temporary funding considerations. Dissemination activities will align with the Alliance’s growth principles, reinforcing its role as a trusted platform for cooperation and knowledge exchange.

Key actions include integrating outputs into national and EU-level skills strategies, promoting uptake among industry actors, and using established networks such as the Pact for Skills and EU Skills Platforms to amplify reach. Visibility will be strengthened through branded formats like “Alliance Dialogues,” sectoral events, and coordinated web resources, ensuring that dissemination is continuous, decentralized, and inclusive.

The initial target is to disseminate the project's outputs across the 8 countries served by the Alliance and expand into all 33 programme countries by the end of the project's duration, aiming at minimum 20 organisations from different countries join the project as Alliance partners the end.

The following activities operationalize the dissemination strategy and ensure alignment with the sustainability objectives described in Sections 4.1–4.6. These activities ensure that governance structures are visible, training materials reach their intended audiences, funding opportunities are amplified, and Alliance growth is supported through strategic communication. Together, they form the backbone of the long-term engagement model.

- **Alliance Engagement:** Expand the European Renewable Energy Skills Alliance as a recognized platform for collaboration, ensuring its visibility and credibility across Europe.
- **Policy and Institutional Adoption:** Collaborate with EU and national education and employment agencies to integrate VET programmes into national skills strategies, embedding RESkill4NetZero outputs into systemic frameworks.
- **Industry Uptake:** Promote adoption among renewable energy companies, linking training to practical workforce needs and revenue-generating opportunities such as premium in-company training.
- **Leveraging Networks:** Utilize EU Skills Platforms (e.g., EPALE, Digital Skills and Jobs Platform) and the Pact for Skills network to reach VET providers, trainers, and learners across Member States.
- **Synergy with Other Projects:** Align with Erasmus+ and Horizon Europe initiatives to share resources, co-promote programmes, and minimize duplication, reinforcing the Alliance’s collaborative ethos.
- **Identity and Visibility:** Develop a clear visual identity and branding guidelines to strengthen recognition and trust, positioning the Alliance as a reference point for renewable energy skills.

- **Communication Channels:** Maintain a strong presence through the RESkill4NetZero channels, while leveraging the Alliance brand across other members, and the Erasmus+ Project Results platform, ensuring continuous outreach.
- **Best Practices showcase and High-Profile Events:** leverage events from the consortium members and the alliance member to showcase best practices; targeting EU institutions, national ministries, and industry stakeholders to reinforce credibility.
- **Continuous Engagement:** Partners commit to promoting the repository, event and reports through their own channels, supported by potential quarterly newsletters to share updates and opportunities across the alliance.
- **Iterative Improvement:** Conduct periodic reviews and updates of the Skills Strategy and training programmes to reflect emerging sector needs, technological evolution, and labour market intelligence.
- **Monitoring and Continuous Improvement:** Track KPIs such as partner engagement, repository usage, and micro-credentials issued, ensuring dissemination remains impactful and aligned with strategic goals.
- **Annual Review:** The Steering Committee will review progress against KPIs each year and update the sustainability plan as needed. Aim is to ensure dissemination remains aligned with strategic objectives.

These activities are designed to achieve a set of impact objectives that define the long-term value of dissemination as a driver of sustainability.

- Establish Europe-wide recognition of RESkill4NetZero curriculum, quality assurance, and training – and its growth within the Alliance - as the benchmark for renewable energy skills.
- Drive sustained demand for VET modules and micro-credentials among individuals, enterprises, and educational institutions.
- Ensure long-term policy influence by integrating training outcomes into EU and national strategies for renewable energy workforce development.
- Maintain post-project communications through structured, ongoing dissemination activities, including partner-led outreach and high-profile events.

## 5 Implementation

The Implementation phase operationalizes the Sustainability Strategy developed through M1-M12 and lay down in Section 4. It translates strategic objectives into concrete actions for M13 to M48 of the project. It ensures that the Alliance and associated outputs remain active, relevant, and impactful beyond the project lifecycle. This phase is structured around three core components: Key Activities, Proposed Timeframe, and Key Performance Indicators (KPIs).

## 5.1 Key Activities

The following activities will drive the execution of the sustainability plan:

- **Partner Recruitment and Engagement**
  - Implement a stepwise recruitment approach:
    - Develop and formalise guidelines that introduce the Alliance concept and value proposition.
    - Identify partner needs and align with Alliance objectives.
    - Formalise participation through letters of intent (LoIs), online pledges, or MoUs.
  - Launch an Ambassador Program to promote the Alliance locally and recruit new members.
- **Funding Acquisition and Sustainability**
  - Channel the Alliance network to prepare joint proposals to funding calls – to implement solutions born from Alliance interaction - and implement commercial incentives such as premium training packages, train-the-trainer programs, and certification services.
  - Encourage partners to contribute to open-source training materials and VET modules, ensuring continuous quality improvement and relevance.
  - Integrate commercial incentives for companies and VET providers, including revenue-generating in-house training and paid train-the-trainer programmes.
- **Training Material Deployment and Maintenance**
  - Launch modular VET programs and associated micro-credentials aligned with EU frameworks (EQF, ESCO, EQAVET, Europass).
  - Ensure continuous updates informed by sector intelligence, technological developments, and stakeholder feedback.
- **Governance and Organisational Management**
  - Define and rollout the format and structure of the Alliance and thematic Working Groups to oversee implementation and quality assurance.
  - Define roles, responsibilities, and operational procedures for governance and partner engagement.
  - Maintain a Quality Assurance Team to monitor compliance with micro-credential standards., including offshoot market oriented solutions.
- **Dissemination and Exploitation**
  - Roll out branded formats such as “Alliance Dialogues” and leverage EU Skills Platforms for visibility.
  - Maintain an open-access repository of training materials and organize annual webinars and high-profile events. Maintain an open-access repository of training materials, updated annually.

- Organise annual webinars and public reports.
- Promote the Alliance and outputs based on a communications plan.

## 5.2 Proposed Timeframe

Implementation will follow a phased approach aligned with project milestones:

- **Months 12–18:**
  - Governance structure finalized.
  - First wave of partner recruitment and onboarding.
  - Initial training modules launched.
- **Months 18–30:**
  - Expansion of Alliance membership across Programme Countries.
  - Deployment of dissemination activities and branded engagement formats.
  - Submission of joint funding proposals.
- **Months 30–48:**
  - Full-scale implementation of training programs and micro-credentials.
  - KPI monitoring and iterative improvements.
  - Consolidation of sustainability mechanisms and commercial incentives.

## 5.3 Key Performance Indicators (KPIs)

To ensure measurable progress and continuous improvement, the implementation phase will be guided by a set of Key Performance Indicators that reflect the strategic objectives outlined in the sustainability plan. These indicators serve as benchmarks for monitoring the effectiveness of activities related to Alliance growth, training deployment, dissemination impact, and funding success. Importantly, the KPIs represent a combination of those required under the grant agreement and additional internal indicators designed to test and guide the growth and long-term sustainability potential of the Alliance. This dual approach ensures compliance with contractual obligations while providing a forward-looking mechanism to evaluate scalability and resilience beyond the project lifecycle.

Alliance growth will be assessed through metrics that capture both the expansion and retention of members. This includes tracking the number of active partners engaged in the European Renewable Energy Skills Alliance and evaluating the rate at which these partners remain committed over time. Formalization of participation through Letters of Intent or online pledges will provide additional evidence of engagement and commitment to the Alliance's objectives.

Training deployment will be monitored by examining the volume and quality of new modules introduced and deployed, as well as the issuance of micro-credentials aligned with European standards. The frequency of updates to training materials and the level of adoption by educational institutions and industry actors will indicate the success of efforts to maintain relevance and responsiveness to sectoral needs. At the moment, repository downloads will serve as a proxy for the reach and accessibility of these resources while other measurable forms are explored.

Dissemination impact will be evaluated through all the established traditional means as well as look at participation and desire to organise events and dialogues within the framework of the Alliance. These measures will help determine the effectiveness of communication strategies and the extent to which the Alliance fosters visibility, trust, and collaboration across Europe.

Finally, there will be an effort – within the limits of requesting this type of information to non consortium members – to track funding success by recording the number of proposals submitted and approved under EU and national funding schemes, including those that mention the Alliance as a mechanism of participation in their proposal. Likewise, we will aim to track revenue generated through commercial activities such as premium training packages and certification services. These indicators will confirm whether the Alliance is conducive to maturing the renewable energy skills market and creating value for its members beyond the initial project funding period.

Monitoring of these KPIs will be carried out by dedicated teams, including the Steering Committee, Quality Assurance Team, and Communications Team, at defined intervals—quarterly, biannual, and annual—depending on the nature of the indicator. This structured approach ensures that progress remains transparent, corrective actions can be taken promptly, and the implementation phase delivers on its promise of long-term impact and sustainability.

**Table 1: Proposed KPIs**

Proposed KPIs to be reviewed and agreed upon	Responsible Team	Frequency	Source/Reference
Number of active Alliance partners	Steering Committee	Quarterly	Section: Growing the Alliance
New training modules submitted	Quality Assurance Team	Biannual	Section: Sustainable Organisation Structure
Micro-credentials issued	Quality Assurance Team	Annual	Section: Sustainability of Training Materials
Repository downloads	Communications Team	Quarterly	Section: Long-Term Dissemination

Annual report downloads	Communications Team	Annual	Section: Long-Term Dissemination
Stakeholder feedback score	All Teams / Steering Committee	Annual	Section: Long-Term Dissemination
Partner retention rate	Steering Committee	Annual	Section: Growing the Alliance
Letter of Intent (LoI) or Online Pledge signed with new Alliance partners	All Teams / Steering Committee	Case by case	Section: Growing the Alliance

## 5.4 Risk and Mitigation

The sustainability of the RESkill4NetZero strategy depends on addressing key risks that could undermine its objectives. These risks stem from critical assumptions about Alliance growth, funding continuity, industry adoption of micro-credentials, and operational readiness for implementation. While the strategy provides a strong framework, elements to be defined as project progresses such as gaps in governance clarity, KPI operationalization, and partner recruitment processes require proactive measures.

This section summarizes the main risks and outlines mitigation strategies mentioned through this deliverable to ensure resilience and adaptability. The approach focuses on strengthening governance, diversifying funding, accelerating industry engagement, and embedding monitoring mechanisms. By making assumptions explicit and defining clear actions, the Alliance can safeguard its long-term viability and maintain alignment with EU policy objectives.

**Table 2: Risk, Underlying Assumptions, and Mitigation Strategy**

Risk	Underlying Assumption	Mitigation Strategy
Over-reliance on Alliance growth for sustainability	Critical mass of partners will ensure self-sustainability	<ul style="list-style-type: none"> <li>Develop a phased engagement plan with measurable milestones for membership growth and retention.</li> <li>Introduce formal participation instruments (Letters of Intent, MoUs) early to secure commitment.</li> <li>Establish an exit and contingency plan for partner disengagement, including targeted recruitment campaigns and diversification of membership sources.</li> </ul>
Uncertain continuity of EU funding streams	Future calls remain aligned with Alliance objectives	<ul style="list-style-type: none"> <li>Channel through a Thematic WG in the Alliance a pipeline of joint proposals leveraging Alliance synergies and diversify funding sources (e.g., LIFE, ESF+, Horizon Europe, national VET schemes).</li> <li>Channel through a Thematic WG commercial incentives (premium training,</li> </ul>

		certification services) with clear pricing models to reduce dependency on grants and in synergy with open source materials.
Slow industry uptake of micro-credentials	Employers will adopt credentials rapidly	<ul style="list-style-type: none"> <li>Engage industry associations early to co-design credential frameworks and validate relevance.</li> <li>Launch awareness campaigns targeting HR and compliance departments to promote recognition.</li> <li>Pilot credentialing with flagship companies and showcase success stories to accelerate adoption.</li> </ul>
Limited adoption of open-source training materials	VET providers will integrate content without major costs	<ul style="list-style-type: none"> <li>Provide technical guidelines and support for integration, including metadata standards and interoperability checks.</li> <li>Offer optional customization services through Alliance members to reduce barriers.</li> <li>Establish a feedback loop to identify adaptation challenges and update resources accordingly.</li> </ul>
Governance model ambiguity	Informal governance will suffice until formalization	<ul style="list-style-type: none"> <li>Define decision criteria and a timeline for selecting governance format (association, foundation, hybrid).</li> <li>Prepare draft statutes and operational procedures for rapid formalization if triggered by funding or membership needs.</li> <li>Maintain flexibility by piloting thematic working groups under informal rules while readiness for legal continuity is assessed.</li> </ul>
Weak operationalization of KPIs	KPI tracking will occur naturally within consortium and collaboration by Alliance members.	<ul style="list-style-type: none"> <li>Develop a Monitoring Framework during implementation of the Alliance by and for Alliance members and beyond the RESkill4NetZero project, specifying tools, responsible teams, and reporting intervals.</li> <li>Use digital dashboards for real-time KPI tracking (e.g., partner engagement, training adoption, dissemination reach).</li> <li>Conduct quarterly reviews and corrective actions led by the Steering Committee.</li> </ul>
Underdeveloped funding and partner recruitment processes	Processes will emerge organically during implementation	<ul style="list-style-type: none"> <li>Create step-by-step checklists for funding acquisition and partner onboarding during the first implementation phase – regardless of first success during M12 with first dialogue and event.</li> <li>Assign dedicated roles within the Steering Committee for proposal coordination and stakeholder engagement.</li> </ul>

		<ul style="list-style-type: none"> <li>Establish an Ambassador Program to localize recruitment efforts and strengthen national and regional presence.</li> </ul>
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## 6 Conclusions

The RESkill4NetZero Sustainability Strategy provides a comprehensive and forward-looking framework to ensure that the project’s impact extends well beyond its initial funding period. By combining robust governance, sustainable funding mechanisms, and a collaborative organisational structure, the strategy positions the European Renewable Energy Skills Alliance as a cornerstone for advancing green skills development across Europe. This Alliance is designed not only as a continuation of project outputs but as a dynamic, inclusive platform that fosters innovation, knowledge sharing, and practical collaboration among diverse stakeholders.

Central to this approach is the integration of high-quality, modular training materials aligned with EU standards and instruments such as EQF, ESCO, and Europass. These resources, complemented by micro-credentials and open-source formats, will enable portability and recognition of skills across Member States, addressing fragmentation and supporting workforce mobility. The emphasis on adaptability ensures that training remains relevant to emerging technologies and evolving market needs, reinforcing Europe’s capacity to meet its climate and energy objectives.

The strategy also prioritises the growth and resilience of the Alliance through progressive membership expansion, synergies with complementary initiatives, and branded engagement formats like “Alliance Dialogues.” These mechanisms will create a trusted environment for cooperation, enabling partners to co-develop solutions, share expertise, and leverage collective intelligence. By embedding dissemination and exploitation activities into the sustainability roadmap, the project guarantees continuous visibility and uptake of its outputs, strengthening policy influence and industry adoption.

Ultimately, RESkill4NetZero is more than a project—it is a catalyst for systemic change in renewable energy skills development. Its sustainability plan ensures that Europe builds a future-ready workforce capable of driving the energy transition, enhancing competitiveness, and delivering inclusive benefits across regions. By balancing flexibility with shared purpose, the European Renewable Energy Skills Alliance will remain relevant and impactful, serving as a replicable model for collaboration and capacity building in the green economy. This enduring framework underscores the project’s commitment to long-term relevance, resilience, and contribution to Europe’s net-zero ambitions.