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SECOVE

Project number: 101056201

D2.1 Roadmap for the establishment of the SECOVE Platform



SECOVE

SUSTAINABLE ENERGY CENTRES OF VOCATIONAL EXCELLENCE

<https://secove-project.eu>

D2.1: Roadmap for the establishment of the SECOVE Platform

WP2: Set Up, Governance and Funding of the SECOVE Platform

June 2024

University of West Attica

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V7	27/03/2024	Version updated after virtual meeting about the future of SECOVE
V8	14/06/2024	Final Version, as of 14.06.2024. Updates are expected to occur after the 3rd project management meeting on 1st of July 2024
V9	26/07/2024	Updated version, after thorough discussion among the partnership.
V10	09/08/2024	Reviewed version, after peer-review by 3 consortium members.
V11	26/08/2024	Final version, after review by the Quality Assurance Committee. Ready for publication.

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Executive Summary

The present roadmap (Roadmap for the establishment of the SECOVE Platform), is a strategic document that aims to build upon the experience of the structured dialogue with stakeholders held during the establishment of the network for SECOVE Platform. The roadmap presents a strategic pathway for the establishment and sustainable operation of the platform, a collaborative initiative aimed at catalysing innovation and excellence within the vocational education and training (VET) sector. Envisioned as a nexus for Centres of Vocational Excellence (CoVEs), industry, educational institutions, innovators, public-private partnerships, policymakers, employment services and other societal actors, SECOVE seeks to optimize resource allocation, facilitate knowledge-sharing, and drive societal and sectorial advancement.

The document presents a comprehensive framework that encompasses the platform's strategic objectives, operational blueprint, and financial sustainability. Key activities outlined include structured dialogue, web portal development, network expansion, and strategic planning. Functional priorities are defined, with a particular focus on fostering mobility, partnership, and research collaborations. To guide resource allocation and financial planning, a thorough cost analysis is provided, divided into fixed and variable elements.

A detailed project timeline is presented to guide the platform's development and implementation. The roadmap concludes with the presentation of principles guiding the exploitation and sustainability strategy to ensure long-term impact. These principles will serve as the foundation for the preparation of the SECOVE Strategic Development Plan. Attached as annexes to the present roadmap, users can find the National Roadmaps for the establishment of CoVEs in the five participating countries, targeted on the field of sustainable energy.

By establishing clear operational principles, fostering strategic partnerships, and securing sustainable funding, SECOVE is expected to become a pivotal force in shaping the future of VET. This roadmap serves as a foundational document, providing essential guidance for stakeholders involved in the SECOVE initiative. Its implementation, combined with the SECOVE Strategic Development Plan, is anticipated to yield significant benefits for the VET sector, including enhanced competitiveness, increased innovation, and improved skills' development.



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1. Strategic objectives and priorities of the SECOVE platform

1.1 General Summary of the SECOVE Platform

The SECOVE Platform is designed to function as a network of cooperation among Centres of Vocational Excellence (CoVEs) targeted to the sector of sustainable energy systems and operations. Each CoVE is being set up as a local/regional Centre of Excellence, in collaboration with local companies and other institutions that work in the field of Energy, renewable energy sources, efficient use of energy and other related fields.

In its initial phase, the network includes Centres of Vocational Excellence in five European countries, namely Greece, Spain, Italy, Slovakia, and Portugal. The five national partnerships, coordinate their efforts in order to establish five national CoVEs, promoting sustainable energy, featuring institutional, technical, technological, cultural and human resources specificities and addressing the needs of each country.

The establishment of the platform includes the development of a series of critical components, such as:

- the establishment of the national CoVEs in the aforementioned countries,
- the development of innovative learning opportunities, in order to increase the relevance of VET to the modern sustainable energy systems job market, and promote innovation, creativity and entrepreneurial mindset,
- the creation of synergies and partnerships between industry and VET,
- the promotion of an inclusive and attractive approach of VET towards women,
- the mainstreaming of a culture of quality and innovation in Vocational Education and Training (VET).

1.2 Summary of the National CoVEs

The roadmaps for each National CoVE highlight the specific challenges and opportunities that partners in each country face in developing CoVEs. The roadmaps also identify a number of common challenges that need to be addressed in order to successfully establish CoVEs. These include:



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- **Lack of funding:** CoVEs require significant investment in order to develop and implement innovative VET programs.
- **Lack of qualified staff:** CoVEs need to attract and retain qualified staff who are able to develop and deliver high-quality VET programs.
- **Lack of coordination between stakeholders:** CoVEs need to work closely with a range of stakeholders, including employers, learners, and other educational institutions.

Despite these challenges, the national roadmaps demonstrate a strong commitment from the participating countries to establish CoVEs. The roadmaps provide a clear vision for the future of VET in each country, and they outline a number of concrete steps that need to be taken to make this vision a reality.

The national CoVEs are planned to be hosted by the following organisations:

Country	Organisation	Location
Greece	University of West Attica - Panepistimio Dytikis Attikis	Athens, Greece
Spain	Politeknika Ikastegia Txorierri	Bilbao, Spain
Italy	CIOFS formazione professionale	Cagliari, Italy
Slovakia	Technical University of Kosice	Kosice, Slovakia
Portugal	Polytechnic Institute of Porto	Porto, Portugal

Below, the geographic location of the five national CoVEs is presented on map:

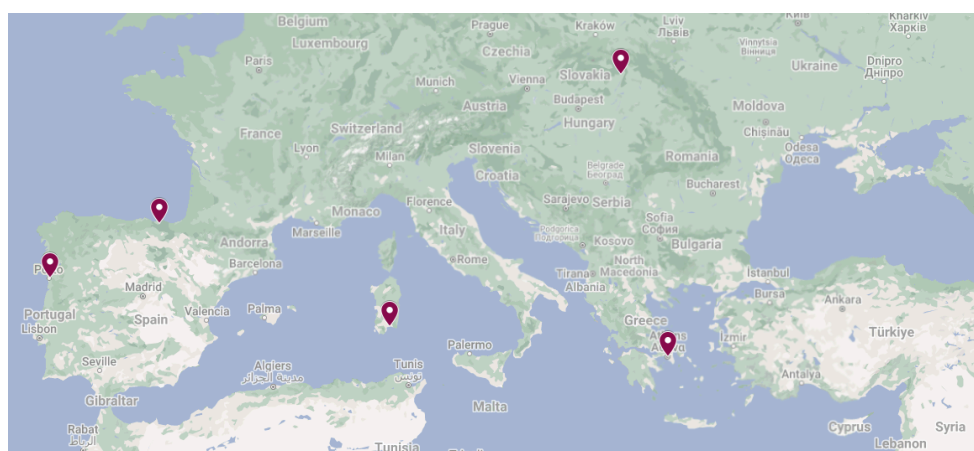


Image 1: Graphic representation of the SECOVE Network



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1.3 Objectives and Priorities of the SECOVE Platform

The main objective of SECOVE is the development of a European network of cooperation among Centres of Vocational Excellence (CoVEs) that will be set up as local/regional Centres of Excellence. The CoVEs are planned to operate as a product of collaboration among education providers, national, regional and local organisations, research institutes, local companies and other institutions that work in the field of Energy, renewable energy sources, efficient use of energy and other related fields e.g. construction and local development.

The SECOVE network is designed to generate added value for all stakeholders and every member of the quadruple helix model, thus providing benefits to government, academia, industry, and civil society. On top of that, the network generates value on a transnational European level, by integrating the efforts undertaken on regional and national levels, to an EU-wide prospect.

Specific priorities of the SECOVE platform are:

At national level:

- to promote learner-centred and inclusive CoVEs,
- to promote innovation, creativity and entrepreneurial mindset, through the cooperation between education and industry,
- to support work-based learning and transnational mobilities,
- to attract more women in technical occupations,
- to promote quality culture and support VET providers to adopt European and international quality standards.

At European level:

- to promote collaboration between CoVEs,
- to support exchange of good practices and mutual learning,
- to facilitate transnational mobility of students, trainees, educators, trainers, and staff of education and training organisations,
- to support cooperation in applied research,
- to contribute to the concepts of vocational excellence and inclusion at European level,
- to promote European policies and instruments, European Qualifications Framework, Micro-credentials.



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2. Planning of activities that will lead to the creation of the SECOVE platform

The creation of the SECOVE platform is a complicated, multi-level and multiannual effort, that requires the involvement of several organisations. Below, activities already implemented and those planned till the end of the project are described.

2.1 Structured dialogue (National workshops & Transnational Workshop)

In order to identify and discuss activities that will lead to the creation of the SECOVE platform, a structured dialogue has taken place, including mapping of stakeholders, organisation of five national workshops and a transnational workshop.

Through an initial mapping of stakeholders, networks of local stakeholders have been established in each country, consisting of VET organisations, research organisations in the field of sustainable energy, industrial representatives, business support organisations and individual companies, regional and local organisations and agencies. The local networks of stakeholders have been mobilised for the organisation of the workshops, they have been receiving the project newsletter and have supported the organisation of project activities.

Five National workshops in the five countries hosting the national CoVEs have been implemented. The stakeholders agreed that excellence in VET requires a strong focus on practical training, close links between education and the world of work, and the development of transferable skills.

The national workshops were organised in Greece, Italy, Portugal, Slovakia, and Spain and were attended by various stakeholders from the education and sustainable energy sector. Common challenges identified across these countries include:

- Lack of funding for VET programs.
- Poor coordination between educational providers and businesses.
- Mismatch between VET specializations and labour market needs.
- Low awareness and appreciation of VET and technical professions.
- Insufficient resources for improving educational infrastructure.

The solutions proposed to address these challenges include creating networks of VET providers and businesses, developing targeted training programs, updating national qualifications catalogues, and establishing Centres of Vocational Excellence. Stakeholders emphasized the importance of linking VET to local contexts and real needs, as well as raising awareness about



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opportunities in the sustainable energy sector. Financial support and improved coordination among stakeholders were evaluated as crucial for achieving excellence in VET across these countries.

Following the successful organisation of the five national workshops, a transnational workshop was convened to bring together SECOVE consortium members, representing every partner involved. The primary objective was to define the procedures and strategies necessary for establishing and sustaining the SECOVE platform as a collaborative network among National CoVEs

2.2 SECOVE Web Portal

The web portal is intended as an online tool for the SECOVE platform, and it will help stakeholders engage and maintain steady communication with each other. The portal will support over the years the cooperation among partners, both nationally and transnationally. Some of the basic features which are foreseen are communication, information, news sharing, and collaborative tools. The common domain will host all the CoVEs, while the national ones will have their own specific subdomain. The goal is thus to support the engagement of the network, bringing together organisations from national CoVEs in a European digital space for excellence discussion and networking.

2.3 Participation in CoP CoVE

SECOVE has been an active member of the Community of Practice of Coves, participating in monthly meetings of the CoP and in the Forums for Vocational Excellence.

In the Forum 2023 that took place in Amsterdam, SECOVE was represented with 10 delegates from four countries. During the Forum, SECOVE delegates had the chance to meet persons from other projects and build networks based on common interests.

SECOVE will participate in the Forum 2024 in Lyon with eight delegates, facilitating two workshops and presenting SECOVE project in the energy village.

SECOVE partners see the participation in CoP of Coves as a unique opportunity to network with other projects, build synergies and promote the concept of excellence and inclusion at European level.

2.4 Networking with other CoVEs

SECOVE project initiated a discussion and collaboration with other CoVEs, based on common interests. This includes:

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- A call for collaboration with the two CoVEs, led by Greek applicants and selected in 2021: Tour-X and FEA-VEE. Despite the fact that these projects work on different themes, (Tour-X is about tourism and FEA-VEE is for textile and clothing sector), project coordinators agreed to work together in events that will be organised in Greece, with the aim to promote vocational excellence in Greek educational community.
- SECOVE met SEED project and T-SHORE project during the Forum 2023 in Amsterdam. Both projects work on sustainable energy, SEED is about Sustainable Energy Education and T-SHORE about offshore wind energy. SECOVE developed synergies that resulted in concrete activities.
- Specifically, SECOVE and SEED projects agreed to organise their annual conferences in Spain, during the same week, without overlapping, to facilitate participants to attend both events. SECOVE conference was held in San Sebastián on 2-3rd of July and SEED conference in Valencia on 3-5th of July. SECOVE partners also participated as peer reviewers of papers submitted in SEED conference.
- SECOVE and T-SHORE project agreed to organise together a workshop in Forum 2024 in Lyon, focused on new technologies in training (VR, AR applications).
- SECOVE also initiated collaborations with the projects ECOVEM (microelectronics) and INVESTech (ICT). These collaborations were initiated by partners participating in both projects.
- Specifically, GAIA a partner in SECOVE and ECOVEM brought the two projects together, resulting in signing an MoU for future collaboration. The first activity of such a collaboration is a common presence of the two projects in Lyon Forum 2024 in the digital village.
- SECOVE and INVESTech share three partners, IDEC, TUKE and ASTRA. The two projects will co-organise a workshop in Lyon, focusing on the increase of girls enrolling in technical qualifications.

SECOVE will intensify synergies with other CoVEs projects in the future, organising specific events and discussions between projects, common activities and common projects.

2.5 Online workshops with stakeholders

To maintain ongoing engagement with key stakeholders, a series of online workshops are going to be organised over the next two years. The workshops will serve multiple purposes:

- To provide regular updates on the progress of SECOVE initiatives.
- To gather continuous feedback from stakeholders.
- To address emerging challenges and opportunities.
- To facilitate knowledge exchange and best practices.

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Each workshop will be themed around specific aspects of the SECOVE platform. The online workshops will be scheduled at regular intervals (approximately 2 per year) and will promote cooperation and exchange of ideas. The outcomes of these workshops will be documented and used to inform ongoing improvements to the SECOVE platform of collaboration.

2.6 Strategic development plan

At the end of the SECOVE project duration, a strategic development plan will be developed. This Strategic Development Plan will aim to create a sustainable approach for the CoVEs in the sustainable energy sector, focusing on both national and transnational levels. The plan will be developed through a comprehensive process involving desk research on national and European funding sources, continuous monitoring of trends in VET, sustainable energy, gender inclusion, and technology, and recording of future aims for individual CoVEs.

The development process will begin with the creation of individual national strategic plans for each national CoVE, followed by a transnational strategic plan for the SECOVE platform. The plan will outline how local CoVEs and the transnational SECOVE platform will secure their governance and financing post-project, creating a lasting impact on VET excellence in sustainable energy.

3. Definition of functional needs and priorities

3.1 Cooperation for mobility projects

The SECOVE platform will support cooperation among national CoVEs for the realisation of transnational mobilities projects which will involve VET students, company trainers and VET staff. More specifically:

- International mobilities will be organised, based on internationalisation strategies and transnational agreements for mobilities and work placements, framed by partners in the national CoVEs.
- Mobilities for students will be organised in the framework of Innovation hubs (established through the SECOVE project). These mobilities will be funded by implementing new relevant innovation projects and applying for funding through national, international or European programmes.
- Mobilities for VET staff and company trainers will be organised in the framework of capacity building events, during the SECOVE project duration. Mobilities for company trainers will focus on training them on how to cultivate entrepreneurial skills to



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students during work placements. Mobilities for VET staff will focus on building a quality culture in VET organisations.

3.2 Cooperation for partnership projects

To ensure sustainability of the SECOVE platform, partners will be engaged in European projects which promote priorities and address challenges identified by the SECOVE platform. Currently, there have been two initiatives that stemmed through the SECOVE platform:

- Erasmus+ Project GENDERATE: which aims to support the efforts of achieving gender equality in TVET, a gender equality that not only aims to empower females to join technical and vocational education but also to support the efforts of organisations for gender main streaming. Participants in the project are members of the Spanish, Italian, and Green CoVE.
- Policy Experimentation Proposal STARGIRLS: which aims to support talent & ambition in Renewable Energy Sector for girls, through mentoring and role models. Members of the consortium of the project are partners from the Greek, Italian, Spanish, and Portuguese national CoVEs.

3.3 Cooperation for applied research projects (through innovation hubs)

The six innovation hubs are expected to be launched during the fifth semester of the project. The innovation hubs will facilitate collaboration and applied research at national and European level. The SECOVE portal is a crucial tool for facilitating cooperation between innovation hubs, providing space and tools for organisation of competition for applied research projects, mobility of students and researchers, exchange of information, knowledge sharing, mutual learning and common applied research projects.

3.4 Organisation of conferences

Another means of transnational cooperation and exchange of best practices is the organisation of transnational conferences. During the SECOVE project duration, three transnational conferences will be organised in San Sebastián, Cagliari, and Piraeus:

- Transnational conference "Excellence in Vocational Education", San Sebastián (already organised in July 2024).
- Transnational conference "Inclusion and attractiveness of VET", Cagliari, 2025.
- Transnational conference "Building a sustainable future and the role of VET", Piraeus 2026.



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All members of the national CoVEs will attend these events. They will be thematic, focusing on specific topics addressed by some activities of SECOVE. This is intended to provide enough space to discuss with stakeholders the results achieved in all the areas touched by the project.

Moreover, in each occasion, relevant stakeholders, experts and policy-makers will be invited to join the discussion by providing further insights, opinions, and feedback.

4. Measuring of costs associated with the SECOVE platform

4.1 Cost Categories

The costs related to SECOVE Platform can be divided in two separate categories, allowing a flexible, sustainable and feasible operation:

- **Fixed Costs:** Costs that will remain constant regardless of the level of platform operational level. These costs mainly concern the operation and maintenance of the online SECOVE portal, but don't directly correlate with specific outputs.
- **Variable Costs:** Costs related to the organisation of cooperation activities.

With respect to the emerging need of financial viability, budgeting has concentrated on the minimization of fixed costs, in expense of higher variable costs, given the existence of funding opportunities. This approach is considered more suitable for businesses and organisations under establishment, trying to achieve both growth at early stages, and survive in periods of unstable income.

This approach is expected to provide the SECOVE Platform with several benefits, such as:

- break-even point identification and tracking,
- funding opportunities assessment,
- cash-flow management,
- identification of cost-saving opportunities,
- platform expansion effects on budget,
- budgeting and forecasting improvement.

These benefits will equip the involved partners and stakeholders with a robust decision-making background, ensuring that opportunities and threats will be financially assessed, while the risk of overspending will be mitigated.



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4.2 SECOVE Portal Costs

The SECOVE online portal is connected with various fixed costs, that are needed in order to be maintained and functional, even after the end of the SECOVE project and funding duration. These costs are going to be bared by the developer of the online portal, while members of the SECOVE platform are committed to regularly update and use the online portal.

4.2.1 Fixed Costs

Cost Category	Details
Domain Name	Essential for the existence and the accessibility of the portal. Foreseen as an annual fee, with level of pricing depending on type of top-level domain (TLD), domain registrar, the length of subscription and the potential selection of a premium domain.
Web Hosting	Cost for the storage, and online availability of the portal's files and databases, foreseen as a monthly or annual fee.
SSL Certificate	Foreseen as an annual fee, the SSL Certificate (Secure Sockets Layer) will provide the portal with a security protocol for the proper encryption and authentication of transmitted data, building trust to its visitors and users.
LMS	The Learning Management System (LMS) will be used to plan, implement and assess the effectiveness of learning processes, providing improved efficiency, enhanced collaboration, access to data, cost-effectiveness, and flexibility.
Administrator costs	Staff costs for technical staff necessary to maintain the portal, install updates, manage new content and users, fix possible bugs.

4.2.2 Variable Costs

Variable costs include the costs for the organisation of activities between members of the SECOVE platform.

Cost Category	Details
Costs for the organisation of mobilities	These include costs for the submission of proposals and costs for organisation of mobilities. VET providers of SECOVE platform will bear the costs for the submission of funding proposals for Erasmus+ mobility projects. The costs of mobilities will be funded by Erasmus+ grants.

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Costs for partnership projects.	These include costs for the submission of proposals and costs for implementation of projects. Members of SECOVE platform will bear the costs for the submission of funding proposals for new projects. The costs of projects will be funded by grants.
Costs for cooperation between innovation hubs	The costs for the organisation of competitions for applied research projects can be covered by European, national grants and industry grants. The costs for the mobility of researchers, students, and staff will be covered by Erasmus+ mobility grants.
Costs for the organisation of conferences	The costs for the organisation of conferences can be covered by European and national grants, industry grants and conference fees. The SECOVE partners will include concrete actions for the organisation of future conferences in the sustainability plan.

4.3 Cost Coverage

During the project implementation period, costs foreseen for the establishment of the SECOVE Platform are partially covered by the Erasmus+ funding, at a percentage of 80%. The other 20% is covered by own funding of the 22 participating partners of the SECOVE Project, according to the Project's Grant Agreement.

For the coverage of costs that will occur after the SECOVE project end partners involved in Task 2.6 "Development of strategic development plans - funding of SECOVE platform" will perform a series of steps, in order to develop a comprehensive strategic plans for each CoVE and the SECOVE Platform. These steps will include funding research (identification of potential funding sources at national and European level), future trends analysis (monitoring of future trends in VET education, sustainable energy, women's inclusion, and technology) and strategic planning for each participating country.

These plans will focus on ensuring the long-term viability of CoVEs while identifying potential funding sources at both national and European levels. By incorporating future trends in VET education, innovation, and sustainable energy, the strategic plans will guide the modernization of CoVEs and the platform. The ultimate goal is to establish a sustainable, collaborative framework for CoVEs that prioritizes VET excellence and fosters cooperation across national borders. As a result, a more detailed and accurate financial plan will be presented in the Strategic Development Plan for SECOVE Platform (D2.3) that will be delivered on month 42 of the Project implementation period (M42 - December 2025).



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5. Timeline

5.1 Timeline of activities for the establishment of the SECOVE Platform

Pillar	Activity	S1	S2	S3	S4	S5	S6	S7	S8
Set Up, Governance & Sustainability	Preparatory activities – national workshops – structured dialogue	x							
	SECOVE transnational workshop	x							
	Set up National CoVEs	x	x	x	x				
	Set up SECOVE portal			x	x	x			
	Developing strategic plan for SECOVE – securing funding						x	x	
	Transnational conference “Building a Sustainable Future and the role of VET” - Piraeus								x
VET Relevance	Recommendations for alignment of VET courses to RIS3		x	x					
	Capacity building of teachers in sustainable energy and efficient use of energy - Porto				x				
	Transnational conference “Excellence in Vocational Education” – Bilbao				x				
	Developing learning material for teachers and students, facilitating cross border recognition			x	x	x	x		
	Students’ mobility			x	x	x	x		
	Capacity building of VET staff “Establishing VET graduates tracking system” - Piraeus					x			
Building Synergies	Building synergies between VET, industry, and other stakeholders, business education partnerships, mobility partnerships					x	x	x	x
	Building synergies with other projects			x	x	x	x	x	x
	Developing internationalization strategies					x	x		
	Capacity building of company trainers to cultivate entrepreneurial skills of students – Piraeus						x		
Inclusion	SECOVE observatory on inclusion and attractiveness			x	x	x	x		
	Summer academies					x			
	Recommendations on inclusion and attractiveness of VET					x	x		
	Transnational conference “Inclusion and Attractiveness of VET” – Rome						x		
Quality & Innovation	Capacity building of teachers “Quality culture in VET” - Piraeus					x			
	Establishing innovation hubs		x	x	x	x	x	x	x
	Platform of cooperation between innovation hubs					x	x	x	x
	Policy recommendations on innovation							x	x

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5.2 Roadmap for the establishment of the SECOVE Platform

<u>Roadmap</u>	
Period	Planned activities/events
Year 1 (Jul 22 - Jun 23)	<u>Work mainly performed on:</u> • Preparation activities. • Set up of national CoVEs. • Start working on relevance. • Inclusion (studies). • Synergies with other projects. <u>Main transnational events:</u> 🌐 Transnational event, SECOVE transnational workshop – Piraeus, December 2022. <u>Main outputs:</u> 📄 Trends on technological changes and their impact on qualifications.
Year 2 (Jul 23 - Jun 24)	<u>Work mainly performed on:</u> • Relevance (studies, recommendations, new courses, capacity building events). • Set up of Observatory of Inclusiveness (initial phase). • Innovation Hubs (studies and preparatory actions). • Building synergies at national and European level. <u>Main transnational events:</u> 🌐 Participation in Forum for Vocational Excellence, Amsterdam, September 2023. 🌐 Capacity building of teachers in sustainable energy and efficient use of energy – Porto, May 2024. 🌐 Transnational conference “Excellence in Vocational Education” – San Sebastián, June 2024. <u>Main outputs:</u> 📄 Roadmap for the establishment of the SECOVE Platform. 📄 Recommendations for alignment of VET courses to Smart Specialisation Strategies (RIS3).



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Year 3 (Jul 24 - Jun 25)	<u>Work mainly performed on:</u> ● Relevance (new courses, students' mobility). ● Inclusion (awareness raising campaign, summer academies, recommendation to policymakers). ● Set up of Observatory of Inclusiveness (final). <u>Activities, focused on:</u> ● Education – industry synergies. ● Innovation Hubs (cooperation platform). ● Applied Research. <u>Main transnational events:</u> 🌐 Participation in Forum for Vocational Excellence, Lyon, September 2024. 🌐 Capacity building of VET staff, "Establishing VET graduates tracking system" – Athens, September 2024. 🌐 Capacity building of teachers, "Quality culture in VET" – Piraeus, December 2024. 🌐 Capacity building of company trainers to cultivate entrepreneurial skills of students – Piraeus, December 2024. 🌐 Transnational conference "Inclusion and Attractiveness of VET" – Cagliari, June 2025. <u>Main outputs:</u> 💻 SECOVE Web-Portal. 💡 Challenge-based modules for entrepreneurial mindset and skills. 💡 VET graduates tracking systems. 💡 Common units on sustainable energy using VR. 📄 Internationalisation Strategies. 📁 SECOVE Observatory on inclusiveness/attractiveness of VET practices. 💡 Awareness raising campaign. 📄 SECOVE Guidelines and recommendations for inclusive and attractive VET and education.
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Year 4 (Jul 25 - Jun 26)	<u>Work mainly performed on:</u> • Education – industry synergies. • Innovation Hubs (success stories & policy recommendations). • Applied research projects and competition. <u>Activities, focused on:</u> • Sustainability Plans Development. <u>Main transnational events:</u> • Transnational conference “Building a Sustainable Future and the role of VET” – Piraeus, June 2026. • Participation in Forum for Vocational Excellence, TBD. <u>Main outputs:</u> • Strategic Development Plan. • Business - Education partnerships for work-based learning. • Quality management systems and documentation. • Innovation hubs and operational manual. • Competition for applied research projects. • Success stories and policy recommendations.
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6. Exploitation and sustainability of the SECOVE platform

Exploitation of the SECOVE platform involves leveraging its resources, networks, and accumulated knowledge to create value for stakeholders across the VET and sustainable energy sectors. This includes disseminating best practices, sharing innovative teaching methodologies, and facilitating collaborations between educational institutions and industry partners. The platform will serve as a hub for continuous learning and professional development, offering resources and services to VET providers, trainers, and students.

To enhance exploitation, SECOVE will actively engage with policymakers and industry leaders to ensure that the platform's activities remain aligned with current and future skills needs in the sustainable energy sector.

Additionally, the platform will seek to expand its user base by targeting new EU countries and other CoVEs. To further enhance sustainability, SECOVE will seek to establish strategic partnerships with other relevant initiatives, projects, and organizations in the fields of VET and sustainable energy. These partnerships will not only provide opportunities for knowledge exchange and resource sharing, but also potentially open up new funding avenues and expand the platform's outreach and impact.

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6.1: Principles focused on exploitation and sustainability of the SECOVE Platform

The SECOVE Project has been designed and structured having in view the sustainability of the SECOVE platform and the long term sustained impact on its target groups. In order to achieve this, the partners are continuously putting efforts, with respect to the following principles:

- The continuous assurance of excellence from the actions of each contributing partner, and its application on the SECOVE Project and Platform activities, including: the development of sustained partnerships, through structured dialogue, protocols of cooperation, early and high-quality activities plan, and constant involvement of all members of the SECOVE partnership.
- Development and improvement of mature or existing outputs and activities, that will be inherited by the SECOVE Platform, in order to create added value, aligned with participating organizations' long-term plans of growth, with the Regional Strategic Plans of the participating countries.
- All partners strive from an early stage to achieve the sustainability of SECOVE Platform, accompanied by smooth long-term operability and collaboration protocols of the participating CoVEs, as well as the active participation of partners, the engagement of local stakeholders and the comprehensive governance of the CoVEs
- SECOVE Platform will continue to take into consideration the future challenges of VET system. Under this aspect, the VET Relevance Department includes operations for the establishment of a constant modernising mechanism for the CoVEs, according to contemporary trends in innovation and sustainable energy.
- Elements that will further support the sustainability of the Platform are the elaboration of technical solutions (like the digital platform of SECOVE) that is developed in order to ensure good cooperation at the transnational level and the realisation of the SECOVE Network objectives, along with the VET industry councils and synergies with other platforms (Build-up skills platforms, COVE projects, Clusters etc).

6.2 Financial sustainability of the Platform

Financial sustainability will be achieved through the early identification of financial resources, which will constitute an integral part of the strategic plans mentioned above. It will include expected national and European funding sources, as well as the actions' timetable that partners will have to implement in order to secure these funds.



D2.1 Roadmap for the establishment of the SECOVE Platform

Funding sources already identified are:

- EU funding programmes (Erasmus 2021-2027 – Horizon etc.) for mobility, cooperation, and research projects.
- Regional and national funding programmes in line with regional Smart Specialisation Strategies.
- Income from the industry through applied research activities (e.g. in the innovation hubs).
- Sponsorship from companies that are active in the Sustainable Energy sector.
- Participation fees for the organisation of conferences.
- Establishment of SECOVE platform member fees will be analysed as an option for the future, when SECOVE platform acquired a legal personality.

A detailed and accurate financial plan will be presented in the Strategic Development Plan for SECOVE Platform (D2.3) that will be delivered on month 42 (M42 - December 2025). This Strategic Development Plan will be based on research on funding vehicles and the future means of funding for the Innovation Hubs and the Platform itself. Moreover, the plan will foresee national and European sources of funding, and a plan for long-term public-private partnerships that will secure financial security and liquidity.

7. Annexes

In the following pages, the roadmaps for the establishment of the five national COVEs are being presented, in the form of annexes. More specifically, the annexes are arranged in the following order:

- Annex A: Roadmap for the establishment of the Greek National COVE
- Annex B: Roadmap for the establishment of the Spanish National COVE
- Annex C: Roadmap for the establishment of the Italian National COVE
- Annex D: Roadmap for the establishment of the Slovak National COVE
- Annex E: Roadmap for the establishment of the Portuguese National COVE



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ANNEX A:

Roadmap for the establishment of a Centre of Vocational Excellence in Greece

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SECOVE

SUSTAINABLE ENERGY CENTRES OF VOCATIONAL EXCELLENCE

<https://secove-project.eu>

Roadmap for the establishment of CoVE in Greece

WP2: Set Up, Governance and Funding of SECoVE Platform

September 2023

UNIWA

Authors: Kleanthis Kaldellis/ Georgios Priniotakis/ Natassa Kazantzidou / Nefeli Dimopoulou

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Strategic Partnerships (with other COVEs, projects, clusters etc)

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1. Context

Legal framework for establishment of COVE

The European Commission's initiative on CoVEs has been integrated into national policy through the law 4763/2020 on the establishment and operation of Centres of Vocational Excellence, which was published in the Official Government Gazette on 21/12/2020.

This law sets out the legal framework for the establishment and operation of model EPALs and Experimental and Thematic IEKs that is the equivalent of CoVes in Greece. According to the law, the new structures are defined as "high-quality, innovative, and sustainable training centres that provide advanced vocational training, skills development, and knowledge transfer to learners, workers, and trainers in a specific sector or field." The law also sets out the criteria for the selection of CoVEs, including the quality of their training programs, their capacity to provide innovative training solutions, and their ability to engage with local and regional stakeholders.

Besides the establishment of the new types of VET structures, the new law-initiated partnerships between vocational education and training providers, industry, and other stakeholders, such as social partners, local authorities, and research institutions. The introduction of SSPAE – Regional Councils for the connection with industry and labour market permits for the first time the communication between VET providers and outside stakeholders.

In addition to the legal framework, a number of funding instruments support the establishment of CoVEs in Greece. These include the National Strategic Reference Framework for Vocational Education and Training (2014-2020) and the Resilience and Recovery Plan Greece 2.0



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Scope of the national COVE

The geographical scope of the Greek CoVE is the region of Attica and more specifically the regional units of Athens, Piraeus and West Attica.

The thematic focus of CoVE is sustainable (or green) energy, covering diverse occupational fields in the areas of energy production, distribution and consumption. Indicatively, the occupations that will be addressed by CoVE are: electrical and mechanical engineers and technicians, heating and cooling technicians, energy technicians, construction technicians, renewable energy technicians, automotive technicians. As the sector of energy in Greece is under rapid development with the introduction of renewable energy sources and the hydrogen energy the thematic scope of CoVE maybe expanded, to address new technological developments and needs of the industry and job market.

Alignment of COVE with RIS3 strategy

The CoVE is an essential component of the national VET system and is designed to provide advanced vocational training, skills development, and knowledge transfer in specific sectors or fields. By aligning the CoVE with the RIS3 strategy, Greece can leverage its regional strengths and opportunities to promote economic growth, competitiveness, and innovation.

The CoVE can help to bridge the gap between the needs of the regional labour market and the skills of the workforce by providing training and skills development that are aligned with the region's specific areas of specialization. The CoVE can also help to promote innovation and entrepreneurship by supporting the development of new products, services, and business models that are aligned with the region's strengths and opportunities.

The alignment of the CoVE with the RIS3 strategy can also facilitate collaboration between regional stakeholders, including educational institutions, research centres, businesses, and local authorities. Such collaborations can help to create a synergistic effect that fosters innovation, skills development, and economic growth.



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The Smart Specialisation strategy for Attica covering the period up to 2020 previews three interrelated fields of specialisation: creative economy, blue economy and sustainable needs economy, all framed in a long-term plan for investments directed towards the achievement of innovation, building on the region strengths. The prolonged financial crisis and the Covid-19 pandemic caused a serious economic decline and a brain drain, nevertheless, the last years, the country is recovering with the support of the Resilience and Recovery Plan - Greece 2.0.

For the period 2021 – 2027, the General Secretariat for Research and Development has developed the national strategy for smart specialisation, based on eight innovation platforms that relate to the priority sectors of the strategy: agrifood, digital technologies, biosciences / health / medicines, tourism / culture and creative industry, sustainable energy, environment and circular economy, material / construction and industry, transport and logistics.

The Greek CoVE addresses the following sectors identified in the RIS3 of Attica (up to 2020) and National RIS3 (2021-2027):

- **Energy**
 - Energy efficiency and energy savings (in buildings, in industry, RES installations etc)
 - Renewable sources for energy production, heating, cooling, off shore installations
 - Energy storage
 - Hydrogen energy technologies
 - Smart grids
 - Reducing impact of fossil fuels
 - Energy communities
 - Energy in transportation
 - Energy in agriculture
- **Materials / construction and industry**
 - Reduction of CO₂ footprint with RES



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- Materials and processes for production, transportation and storage of energy
- Construction materials for energy efficient buildings
- **Transport and logistics**
 - Green transports, sustainability in transports
 - Energy efficiency in transports including ports
 - Electromobility and hybrid mobility systems for cars, ships, airplanes and other transportation means.
 - Information systems and big data analysis in transports
 - Technologies for energy efficiency
 - Blockchain technologies for the improvement of energy consumption

The alignment of the Greek Centre of Vocational Excellence with the Research and Innovation Strategies for Smart Specialisation is a strategic decision that can promote economic growth, competitiveness, and innovation by leveraging the region's strengths and opportunities. The CoVE can help to bridge the gap between the needs of the regional labour market and the skills of the workforce, and can also promote innovation and entrepreneurship by supporting the development of new products, services, and business models that are aligned with the region's strengths and opportunities.

2 Preparatory actions

Mapping of stakeholders

The SECOVE project covers a wide geographical surface, with different regional needs and opportunities across Europe. In each of these areas, the national consortium has been designed in order for the network to involve stakeholders coming from different backgrounds and at different policy levels.

In Greece, partners mapped national stakeholders in order to establish networks for the creation of the national COVE and for the platform for cooperation between them. In particular, partners mapped the stakeholders at local, regional and national level, relevant



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organisations and companies, across the whole spectrum of stakeholders involved in VET e, training organisations, schools, policy makers, researchers and so forth.

The objectives were:

- *To create a list of stakeholders at local, regional, national and European level*
- *To establish networks of stakeholders*
- *To organise outreach activities and contact relevant stakeholders, to engage them in future project activities*

For the mapping of stakeholders, partners created a list of national stakeholders and contacted them and informed them about the SECOVE project and invited them to join the local partnerships.

Types of stakeholders that were identified included:

- *VET schools (secondary and post-secondary)*
- *VET centres*
- *Higher Education Institutions*
- *VET associations*
- *Social partners*
- *Policy makers*
- *Education community*
- *National organisations*
- *Other*

The following stakeholders were identified:

A/A	Name of organisation	Type of stakeholder
1	1o E.K. Ag.Dimitriou	VET school (secondary)
2	1o EPAL Amarousiou	VET school (secondary)
3	1o EPAL Drapetsonas	VET school (secondary)
4	1st EPAL of Koruydallos	VET school (secondary)
5	1o Esperino EPAL Aigaleo	VET school (post secondary)



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6	1ο ΕΠΑΛ Αγίας Παρασκευής	VET schools
7	2ο Esperino EPAL Ag. Dimitriou	VET school (secondary)
8	3ο Ε.Κ. ΠΕΙΡΑΙΑ (Drapetsona)	VET school (secondary)
9	8ο Ε.Κ. Αθinas (Tavrou)	VET school (secondary)
10	Agricultural University of Athens	Higher Education Institutions
11	Aktor S.A.	Other
12	Aluminium Association of Greece (A.A.G.)	Other
13	Anabiosis Coop Koin.S.Ep.	Social partners
14	Anaptyxiakos Syndesmos Dytikis Athinas	National organisations
15	Anoikto Laiko Panepistimio	Education community
16	ASPAITE	Higher Education Institutions
17	Association of Greek Contracting Companies (SATE)	Other
18	Association of Solar Energy Industries (EVIE)	Social partners
19	Cedefop	Other
20	Colour Youth LGBTQ+ Community	Social partners
21	Dianeosis	Social partners
22	Dimokritos	National organisations
23	DYPA (Public Employment Service)	Other
24	DYPA EPAS	VET centres
25	EBEA	Social partners
26	EIEAD	National organisations
27	Electra Energy	Social partners
28	EOPPEP	National organisations
29	EPAL Peramatos	VET school (secondary)
30	Erg.An. Koin.N.S.Ep.	Social partners
31	ESAMEA	National organisations
32	ESTIA	Other
33	Ερευνητικό Εργαστήριο Ενεργειακών Εφαρμογών και Συστημάτων Εξοικονόμησης Ενέργειας	Higher Education Institutions



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34	<i>Federation of Industries of Greece (SBE)</i>	<i>Social partners</i>
35	<i>Greek Federation of Refrigerating Engineers & Technicians</i>	<i>Other</i>
36	<i>Greek Ministry of Energy and Environment</i>	<i>Policy makers</i>
37	<i>Greek Women's Engineering Association</i>	<i>Social partners</i>
38	<i>GSEE</i>	<i>Social partners</i>
39	<i>GSEVEE</i>	<i>Social partners</i>
40	<i>Hellenic Association of Expanded Polystyrene (HEPSA)</i>	<i>Other</i>
41	<i>Hellenic Association of Insulating Material Companies (HAIC)</i>	<i>Other</i>
42	<i>Hellenic Association of Photovoltaic Companies (HELAPCO)</i>	<i>Other</i>
43	<i>Hellenic Association of Vocational Training Centres (ELSEKEK)</i>	<i>VET centres</i>
44	<i>Hellenic Confederation of Professionals, Craftsmen and Merchants (GSEVEE)</i>	<i>Social partners</i>
45	<i>Hellenic Federation of Craftsmen & Plumbers (OBYE)</i>	
46	<i>Hellenic Federation of Solar Industries (EBHE) Association of Greek Contracting Companies (SATE)</i>	<i>Other</i>
47	<i>Hellenic Union of Heating and Energy Companies (HUHEC)</i>	<i>Other</i>
48	<i>Helleniq Energy</i>	<i>Other</i>
49	<i>Hotel Brain Academy</i>	<i>VET schools</i>
50	<i>I.I.E.K. DEI Energy Institute</i>	<i>VET centres</i>
51	<i>IKY</i>	<i>National organisations</i>
52	<i>IME GSEVEE</i>	<i>Social partners</i>
53	<i>IME GSEVEE</i>	<i>Social partners</i>
54	<i>Institute of education and vocational training of TCG members (IEKEM TEE)</i>	<i>VET centres</i>
55	<i>KEK Dynamiki Ekpaideutiki</i>	<i>VET centres</i>



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56	<i>KETHI</i>	<i>Social partners</i>
57	<i>Labour Institute of GSEE (INE GSEE)</i>	<i>VET centres</i>
58	<i>Ministry of Education and Religious Affairs, Γενική Γραμματεία Επαγγελματικής Εκπαίδευσης και Δια βίου Μάθησης Γενική Γραμματεία Επαγγελματικής Εκπαίδευσης, Κατάρτισης, Δια Βίου Μάθησης και Νεολαίας</i>	<i>Policy makers</i>
59	<i>Municipality of Ilion</i>	<i>National organisations</i>
60	<i>National Institute of Labour and Human Resources (NILHR –EIEAD)</i>	<i>Other</i>
61	<i>National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP)</i>	<i>National organisations</i>
62	<i>OBES</i>	<i>Social partners</i>
63	<i>PANEDDIEK</i>	<i>Education community</i>
64	<i>Panhellenic Association of Engineers Contractors of Public Works (PEDMEDE)</i>	<i>Other</i>
65	<i>Panhellenic Federation of Craftsmen in Aluminium and Metal Constructions (POVAS)</i>	<i>Other</i>
66	<i>Panhellenic Federation of Electrical Contractors Association (POSEH)</i>	<i>Other</i>
67	<i>Panhellenic Federation of Glass Tradesmen & Manufacturers (POEVY)</i>	<i>Other</i>
68	<i>Panhellenic Federation of Metal Workers</i>	<i>Other</i>
69	<i>Panhellenic Union of Public Works Constructors Associations (PESEDE)</i>	<i>Other</i>
70	<i>Piraeus Chamber of Commerce and Industry</i>	<i>Social partners</i>
71	<i>Poiotita Plus Koin.S.Ep.</i>	<i>Social partners</i>
72	<i>PPC Innovation Hub</i>	<i>Other</i>
73	<i>SAE EPE</i>	<i>Social partners</i>
74	<i>SEV</i>	<i>Social partners</i>
75	<i>SEV – Hellenic Federation of Enterprises</i>	<i>Social partners</i>



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76	<i>SSPAE Ditikou Tomea Attikis, Peiraia kai Nison</i>	<i>Policy makers</i>
77	<i>Technical Chamber of Greece</i>	<i>Social partners</i>
78	<i>Technical Chamber of Greece (TCG)</i>	<i>Other</i>
79	<i>The General Confederation of Greek Workers (GSEE)</i>	<i>Social partners</i>
80	<i>Union of Hellenic Chambers of Commerce and Industry (UHC)</i>	<i>Other</i>
81	<i>Women Do Business AMKE</i>	<i>Education community</i>
82	<i>BEA</i>	<i>Social partners</i>
83	<i>Ελληνογερμανικό Εμπορικό και Βιομηχανικό Επιμελητήριο</i>	<i>Social partners</i>
84	<i>IEK ΔΕΛΤΑ</i>	<i>VET schools</i>
85	<i>Πανεπιστήμιο Δυτικής Αττικής Τμήμα Πολιτικών Μηχανικών</i>	<i>Higher Education Institutions</i>
86	<i>TEPNA</i>	<i>Other</i>

The above stakeholders were invited in a structured dialogue about excellence in Sustainable Energy, through the organisation of the 1st National Workshop, organised in the premises of UNIWA in Athens.

National workshop

On the 14th of November 2022, the University of West Attica (UNIWA) hosted a national workshop on the “Creation of a Centre of Vocational Excellence in the field of sustainable energy in Attica, Greece” in its premises with the collaboration of the Greek partners of the SECOVE Project, namely IDEC, IIEK DELTA, DIEK AIGALEO, CHAMBER OF SMALL AND MEDIUM SIZED INDUSTRIES OF PIRAEUS and CENTRE FOR RENEWABLE ENERGY SOURCES AND SAVING FOUNDATION (CRES).

All the Greek aforementioned partners invited local and regional stakeholders in the field of Vocational Education and Training to participate in the workshop in order to discuss and exchange opinions on the excellence in Vocational Education. Overall, apart from members



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of Greek partners, 24 people participated in the workshop, representing the following stakeholders:

- 1st Vocational High School of Korydallos
- Municipality of Ilion
- Public Institute of Vocational Training of Akademia Platonos
- 1st Vocational High School of Amarousion
- 1st Vocational High School of Drapetsona
- 2nd Vocational High School of St. Demetrios
- 1st Evening Vocational High School of Aegaleo
- Nafs Hellas S.A.
- 3rd School Laboratory Centre of Piraeus
- Greek Association of Societies & Entrepreneurship
- ASDA - Association for Development of West Athens
- 4th Laboratory Centre of Piraeus
- 2nd Laboratory Centre of Aegaleo

The objectives of the workshop were:

- To gather stakeholders at local/regional level and engage them in a structure dialogue
- To identify local needs and expectations and develop a local vision for excellence
- To prepare the input for the transnational workshop

During the workshop, UNIWA and IDEC presented the SECOVE project and its objectives. After the initial presentations, the participants were divided in small groups and brainstormed on the following topics:

- What does excellence mean in Vocational Education and Training?
- Which are the challenges and needs of different stakeholders?
- How SECOVE will address the vision for excellence?



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After the brainstorming session, each group appointed a person to present their ideas with the rest of participants and exchange opinions on the matter.

The findings of the brainstorming sessions are presented in the table below.

Topic	Findings
What does excellence mean in Vocational Education and Training?	• Training the VET students on the development of their soft skills with emphasis on entrepreneurship • Modernization of the training programs through the use of new technologies in vocational education such as: AR/VR technology, simulation software, MOOC/VOOC • Quality Assurance in the educational and training material – Targeted evaluation / Reform of the curricula • Strong cooperation among all the levels of education as well as all educational organizations (HEI and VET) • Continuous and enduring cooperation with all relevant stakeholders (public authorities, companies etc.) • Continuous training of the students and trainers in VET institutions / lifelong learning • Creation of Hubs that will benefit companies as well as VET institutions • Internships/Traineeships in companies (at least 12 months of training/working) • Investing in research • Smart specialization • Summer schools through Erasmus • Inclusion of people belonging in “vulnerable groups” in VET • Enhancement of VET attractiveness through marketing and dissemination • Innovation • Exchange of good practices with other countries • Strong connection with the reality of the labour market and its needs • Updated infrastructure in VET organizations • Funding
Which are the challenges and needs of different stakeholders?	• Constant denial of the local stakeholders to be involved in Vocational Education and Training • Bureaucracy • Lack of funding by the state



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	• <i>Absence of a cooperation culture between the educational providers and the businesses</i> • <i>Lack of specializations that match the labour market needs</i> • <i>Difficulty in the cooperation with companies regarding internships/traineeships of students</i> • <i>Lack of soft skills in students</i> • <i>Lack of proper information on vocational training / Need for information sessions from professional associations to vocational training bodies</i> • <i>Lack of incentives (financial or other incentives) to companies</i> • <i>Lack of in-company training for the trainees/interns</i> • <i>Lack of active participation from students / Need for sensitization of the students regarding the technical professions</i> • <i>Lack of knowledge for new technologies</i> • <i>No autonomy for schools – all decisions are taken by the Ministry of Education (centralized)</i> • <i>Need for cooperation in European Projects</i> • <i>Need for constant/lifelong training of VET educators as well as employers in companies</i> • <i>Need for strong connection of VET providers with research</i> • <i>Need for cooperation between different specializations in VET</i> • <i>Need for the creation of a platform containing detailed information on the VET sectors as well as linking vocational training and companies</i> • <i>Need for updated infrastructures in VET providers</i> • <i>Need for accreditation</i>
<i>How SECOVE will address the vision for excellence</i>	• <i>Creation of summer school for VET providers</i> • <i>Enhancement of mobilities (students and educators) in countries abroad</i> • <i>Creation of a platform containing all companies and VET organisations as members (that is checked and updated constantly) / facilitation of networking among the members</i> • <i>Creation of a “train the trainers” program through Erasmus</i> • <i>Cooperation with companies for trainings and provision of incentives to companies for participation</i> • <i>Creation of a tracking system for VET alumni</i> • <i>Connection of everyday energy needs with new educational materials and tools</i> • <i>Innovation</i> • <i>Exchange of good practices</i>



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	• <i>Creation of a centre for lifelong/continuous training of educators (to be trained by accredited trainers)</i> • <i>VOOC platform</i> • <i>Mapping of regional labour needs</i> • <i>Creation of strategies for internationalization</i> • <i>Exchange of knowledge on technical skills</i> • <i>Microprojects (VET organizations students and companies)</i> • <i>Internships</i> • <i>Connection with Career centres for Vocational Development (DIEK Aigaleo)</i>
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3 Description of Centre of Vocational Excellence in Greece

Introduction

The Centre of Vocation Excellence in Greece will be formed by a network of partners, in order to develop a local skills ecosystem on the field of Sustainable Energy. The Greek CoVE will aim to provide high quality vocational skills to young people and adults and contribute to regional development, innovation, smart specialisation strategy of the regional of Attica and social inclusion.

The Greek CoVE will establish a bottom-up approach to vocational excellence, involving a wide range of local stakeholders, enabling thus a rapid adaptation of skills provision to evolving economic and social needs.

The Greek CoVE will bring together a wide range of local partners, such as providers of vocational education and training, universities, employers, research centres, development agencies, and employment services (among others), that share a common interest in:

- Sustainable energy
- Innovative approaches to tackle economic and societal challenges
- Innovative approaches to increase the outreach, quality and effectiveness of vocational education

The CoVE is expected to go beyond simply providing quality vocational qualifications, but it will:



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- a) Be integrated in existing frameworks of regional development, innovation and smart specialisation - this allows synergies to be identified between policies and amongst stakeholders.
- b) Build strong and enduring relationships between stakeholders, in which interactions are reciprocal and mutually beneficial.
- c) Intergrade activities that build on the expertise and activities of each partner to provide both young learners and adults with skills and opportunities for professional and personal development.

In terms of Governance and Funding, the Greek CoVE intends to:

- Ensure effective governance at all levels involving relevant stakeholders, particularly companies, chambers, professional and sector associations, national and regional authorities and social partners
- Integrate into economic and innovation strategies and systems at local, regional, national, and European levels to proactively co-shape innovation and growth
- Develop sustainable financial models that combine public and private funding, as well as income generating activities.
- Make full use of national and EU financial instruments and funds.

Activities and services of the national COVE

Activities which have been envisaged in the SECOVE project proposal and will be offered by the Greek CoVE during the SECOVE project duration are:

- Organisation of networking events and workshops aiming to engage and attract relevant stakeholders and building
- Organisation of national study on new technological trends, changes and relative impact on qualifications for the future labour market, with the aim to bridge the gap between the offer of VET schools and the actual needs of the job market.
- Production of a set of recommendations for aligning VET courses according to the Smart Specialisation Strategies of the region of Attica.



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- Elaboration of modules for the development of entrepreneurial mindset and skills, using a challenge-based learning methodology, organisation of teacher trainings and pilot testing of modules.
- Adaptation of course “Establishing VET graduates tracking system” to the needs of Greek education provider’s partners and delivery of the course.
- Establishment of tracking mechanisms to be integrated into quality assurance systems of Greek VET providers.
- Organisation of workshop on sustainable energy and efficient use of energy, for building capacity of VET teachers.
- Development and delivery of a sustainable energy modular course using Virtual Reality for levels 3-5 of EQF.
- Organisation of local networking events for bringing together VET providers and companies, interested in engaging in WBL.
- Establishment of local and regional partnerships for work-based learning, underpinned by agreements and Memoranda.
- Development of internationalisation strategies for VET providers and establishment of transnational cooperation agreements for mobilities and work placements.
- Creation of synergies and organisation of local workshops with regional VET industry councils (SSPAE) of Attica.
- Organisation of trainings for company trainers, on how to cultivate entrepreneurial skills to students, during work placements.
- Organisation of research on inclusiveness and attractiveness of VET in Greece.
- Development of an observatory on inclusiveness/attractiveness of VET practices, which will also include learning and teaching resources for teachers, trainers, counsellors and VET organisations.
- Organisation of workshops for students, teachers and institutions and policy makers, in order to raise awareness on the topic of inclusiveness and attractiveness of VET for women and girls.
- Organisation of summer VET academies for girls in lower and upper secondary education, which will include orientation to technical VET study programmes, combined with STEM hands on activities.



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- Issuing of recommendations for policy makers, on the attractiveness of VET education, on the inclusion of VET education and on the recruitment of more women into technical professions.
- Establishment/enhancement of quality assurance mechanisms for VET providers.
- Organisation of training on “Quality assurance in VET”, for staff of VET providers.
- Setting up of innovation hub (solar energy lab), for promoting innovation in VET education.
- Attraction of companies and SMEs to engage them in applied research, through the innovation hub.
- Organisation of international competitions for students in the area of applied research programmes and realisation of VET students mobilities.
- Creation of policy recommendations, through gathering of success stories, for creation of new innovation hubs on solar energy and IoT labs in another VET sector.
- Organisation of a transnational conference “Building a sustainable future and the role of VET”

The above activities and services will be organised and offered by the Greek CoVE during the 4 years of implementation of the SECOVE project, which will act as a pilot in order to define which activities will be carried out by the CoVE after the project has ended.

It is expected that after the project ends, the activities and services that will be offered by the Greek CoVE will be:

- Organisation of workshops and networking events aiming to engage and attract new stakeholders to be part and contribute to the Greek CoVE.
- Development of new and organisation of capacity building trainings and workshops for VET teachers and company trainers, on topics relevant to sustainable energy, efficient use of energy and development of entrepreneurial skills of students, quality assurance etc
- Running VET graduates tracking system and quality assurance mechanisms.
- Recommendations for curricula reforms of initial VET study programmes
- Development and delivery of new courses on sustainable energy for continuous VET.
- Continuation of the observatory on inclusiveness/attractiveness of VET practices.



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- Operation of the innovation hubs
- Organisation of applied research programmes together with companies, through the innovation hub.
- Organisation of international mobilities of VET students.

Stakeholders involved

The Greek CoVE will be composed of:

SECOVE project partners from Greece:

- University of West Attica represents VET at level 6,7 and 8 of the EQF and continuous VET, thus it will be involved mainly in activities concerning capacity building of VET teachers, capacity building of VET staff in developing tracking systems and organisation of applied research programmes. Moreover, UNIWA will be involved in the continuation of the observatory on inclusiveness/attractiveness of VET practices and operation of the innovation hub.
- DIEK Aigaleo and IIEK Delta represent VET at level 5 of the EQF and initial VET. They will be involved in activities which are addressed to students and VET teachers, as well as activities for international mobilities and placements.
- CRES is the thematic expert in sustainable energy and the competent authority in Greece. Their involvement will be in identification of technological trends and innovations in the sustainable energy sector and the development of new courses on sustainable energy.
- BEP represents the link to the world of work. Its main role will be in involving companies and company trainers in work-based learning.
- IDEC as a training centre, will be involved in the organization of capacity building for VET teachers/trainers and organization of networking events.

External stakeholders involved and their roles will be:

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- 1 Educational institutions: educational institutions such as universities, vocational schools, and training centres will play a critical role in the establishment and operation of the CoVE. They will be responsible for developing the curriculum and program design, delivering the training programs, and providing the necessary facilities and resources to support the CoVE's activities.
- 2 Industry associations: Industry associations will be important partners in the establishment of the CoVE, as they represent the interests of employers and businesses in the relevant sectors. They will provide guidance and support to the CoVE on industry trends and best practices, help to identify the skills and knowledge gaps in the workforce, and provide opportunities for work-based learning and apprenticeships.
- 3 Employers: Employers will be important partners in the CoVE, as they are the primary beneficiaries of the training programs. They will play a role in identifying the skills and knowledge gaps in the workforce, providing opportunities for work-based learning and apprenticeships, and providing feedback on the effectiveness of the training programs.
- 4 Government agencies: Government agencies will play a key role in the establishment and operation of the CoVE, as they provide funding, policy guidance, and regulatory oversight. They will be responsible for ensuring that the CoVE is established in compliance with all relevant laws and regulations, providing funding to support the CoVE's activities, and monitoring the CoVE's performance.
- 5 Students: Students will be the primary beneficiaries of the CoVE's training programs. They will be responsible for attending the training programs, completing the coursework and assignments, and applying the knowledge and skills gained from the programs in their jobs.

4 Strategic planning for the development of national COVE

Strategic objectives and priorities of the national COVE

The overall objective of the Greek CoVE is to promote vocational excellence in the region of Attica and in the field of sustainable energy. Specific objectives are:



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- To promote high – quality and learner – centred vocational education and training, at different levels, including secondary, post-secondary initial, tertiary vocational education as well as continuing professional development.
- *To ensure diversity and inclusion in vocational education and training, specifically in technical study programmes, including the gender perspective.*
- To promote innovation and creativity in vocational education and training, including the establishment of innovation hubs.
- To promote synergies between education, industry and labour market.
- To promote entrepreneurial education and develop entrepreneurial mindset.
- To support work – based learning at national and transnational level, including the use of European instruments, training of teachers and transnational mobilities.
- *To promote quality assurance in vocational education and training, including measures for tracking graduates and establishing feedback loops.*
- *To ensure transnational cooperation and synergies with other CoVEs, including the establishment of common activities.*
- *To ensure the sustainability and continuation of CoVE, through national, European and private funding.*

The priority sectors of the Greek CoVE, in relation with the sectors identified as strategic for Attica and Greece are renewable energy sources, energy efficiency in buildings and the use of green energy in transports.

Activities for the establishment of national COVE

The establishment of the national CoVE in Greece involves a range of activities, during the period of the project and beyond. The preparatory activities have already been implemented and are described in chapter 3 (mapping of stakeholders and national workshops). The activities of the preparatory phase supported the conceptualisation of CoVE and the better understanding of the different perspectives of the stakeholders at regional level.

In addition to the preparatory actions, other activities have been designed.:



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Needs assessment: The first step in establishing the national CoVE was to conduct a study in order to determine the needs of the regional industry and the skills and knowledge gaps that exist in the regional workforce. To this end, there are two specific actions:

Study on trends on technological changes and their impact on qualifications. The Greek study focused on the sector of renewable energy sources systems. The study described the state of the art and the recent technological developments in the different renewable energy sources with reference to the affected professions and qualifications. Moreover, it described the current qualifications at the level of vocational and training and concluded in a recommendation for new qualifications and skills that are needed in the labour market. Recommendations for alignment of VET courses to Smart Specialisation Strategies (RIS3). Following the study on trends, the VET providers will issue recommendations on the necessary changes on existing qualifications, as well as on the introduction of new qualifications that are needed in the labour market.

Define the scope of the CoVE: Based on the submitted proposal, the preparatory actions and the needs assessment, the scope of the CoVE has been defined and described in section 2.2.

Legal and governance arrangements: The six Greek partners of SECOVE project will establish an MoU, governing their involvement in CoVE, roles and responsibilities, operational rules, future funding and other issues for the sustainability of the Greek CoVE. The partners will explore the possibility to establish a spin-off of UNIVA that will undertake to continue part of the CoVE activities, especially the offer of continuing professional education.

Infrastructure and resources: The Greek partners will identify and secure the infrastructure and resources required for the CoVE. This would include physical facilities, such as classrooms and laboratories, as well as equipment and other resources necessary for delivering training programs. The partners will make arrangements for the use of the infrastructure, in the framework of CoVE activities.

Curriculum and program design: Recommendations for the alignment of the VET courses to smart specialisation strategy and regional needs of the labour market will be issued. The



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recommendations for initial VET (secondary or post-secondary level) will be sent to the competent authority, i.e. the Ministry of Education, Religious Affairs and Sports, Institute for Educational Policy (IEP) and the National Organisation for the certification of qualifications and vocational guidance (EOPPEP), to be taken into account in the VET curricula reforms. Regarding recommendations for tertiary VET, UNIWA as a higher education institution has the autonomy to reform its curriculum. The development of new continuing professional education courses will be based on the needs assessment and in alignment with the RIS3 strategy. This would involve engaging with subject matter experts to develop a curriculum that is up-to-date and relevant to the needs of the regional workforce. Regarding the accreditation of the new continuing professional courses, there are different paths that will be explored: Accreditation by EOPPEP, accreditation by a private entity certified with ISO 17024 for the certification of persons and finally certification by the KEDIVIM of UNIWA.

Partnership and collaboration: The CoVE will establish partnerships and collaborations with employers, industry associations, educational institutions, and other relevant stakeholders. This would involve engaging with these stakeholders to understand their needs and identify opportunities for collaboration, including opportunities for work-based learning, apprenticeships, and common research projects.

Communication and promotion: The CoVE would be communicated and promoted to potential students, employers, and other stakeholders. This would involve developing a marketing and communication plan to raise awareness of the CoVE and its programs, and to attract students and other stakeholders to participate.

Funding: Part of the strategic planning is to estimate the budget required for the CoVEs activities and to identify potential sources of funding through national, European or private funds.

Monitoring and evaluation: The CoVE will be monitored and evaluated to ensure that it is meeting its objectives and contributing to the regional economy. This would involve collecting data on new trends in industry and labour market needs, impact of local partnerships, tracking graduates and measuring employment rates, and other relevant



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metrics, measuring impact of innovation hubs, measuring inclusiveness and attractiveness of VET through the observatory. The collected information will be used to make improvements to the CoVE and its services.

Overall, the establishment of the national CoVE in Greece requires a comprehensive and collaborative approach that involves multiple stakeholders. The activities outlined above need to be carefully planned and executed to ensure that the CoVE is established in a way that meets the needs of the regional workforce and contributes to regional growth and development.

Responsibilities and roles of involved partners

UNIWA will lead the establishment of the Greek CoVE and coordinate the partners involved. The allocation of responsibilities of the activities is presented in the following table.

Activity	Partner responsible and role
<i>Mapping of stakeholders</i>	<i>UNIWA: Main responsibility, coordination of partners IEK DELTA, DIEK Aigaleo, BEP, CRES, IDEC: Contribution in the development of the list of stakeholders</i>
<i>National workshops</i>	<i>UNIWA, IDEC: Main responsibility in organisation of the workshop IEK DELTA, DIEK Aigaleo, BEP, CRES: Participation</i>
<i>Study on trends on technological changes and their impact on qualifications.</i>	<i>CRES: Development of the study</i>
<i>Recommendations for alignment of VET courses to Smart Specialisation Strategies (RIS3)</i>	<i>UNIWA, IEK DELTA, DIEK Aigaleo: Responsibility for developing recommendations for their study programmes.</i>
<i>Define the scope of the CoVE</i>	<i>UNIWA: Main responsibility IEK DELTA, DIEK Aigaleo, BEP, CRES, IDEC: Participation and contributions</i>



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<i>Legal governance arrangements</i>	<i>and</i>	<i>UNIWA: Main responsibility IEK DELTA, DIEK Aigaleo, BEP, CRES, IDEC: Participation and contributions</i>
<i>Infrastructure resources</i>	<i>and</i>	<i>UNIWA: Main responsibility establishment of innovation hub IEK DELTA: Establishment of innovation hub DIEK Aigaleo, BEP, CRES, IDEC: Participation and contributions</i>
<i>Curriculum program design</i>	<i>and</i>	<i>UNIWA: Main responsibility and development of curricula for higher education and continuing education, accreditation of courses IEK DELTA, DIEK Aigaleo: development of courses for secondary and post-secondary education IDEC: Development of courses for entrepreneurial skills CRES: Scientific support in the field of RES</i>
<i>Partnership collaboration</i>	<i>and</i>	<i>UNIWA: Main responsibility coordinating the partners and securing partnership and collaborations. IEK DELTA, DIEK Aigaleo, BEP, CRES, IDEC: Support in identification and communication with stakeholders.</i>
<i>Communication and promotion</i>		<i>IDEC: Main responsibility organising the communication strategy and coordinating partners UNIWA, IEK DELTA, DIEK Aigaleo, BEP, CRES: Support in organising communication activities reaching out their own audience.</i>
<i>Funding</i>		<i>UNIWA: Main responsibility in identifying and securing future funding IEK DELTA, DIEK Aigaleo, BEP, CRES, IDEC: Participation and contributions</i>
<i>Monitoring evaluation</i>	<i>and</i>	<i>UNIWA: Main responsibility of the monitoring and evaluation plan, impact evaluation of local partnerships, evaluation of innovation hubs DIEK Aigaleo: Impact evaluation of innovation hubs CRES: Monitoring new trends in industry and labour market needs IDEC: Impact evaluation of observatory on inclusiveness / attractiveness of VET. All partners: participate in monitoring and evaluation activities and provide data, when necessary.</i>



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Timeline

Below, is presented a realistic 4-year timeline for the establishment and operation of a national CoVE in Greece. The timeline is presented in semesters.

Activity	S1	S2	S3	S4	S5	S6	S7	S8
<i>Mapping of stakeholders</i>	X							
<i>National workshops</i>		X						
<i>Study on trends on technological changes and their impact on qualifications.</i>	x	X						
<i>Recommendations for alignment of VET courses to Smart Specialisation Strategies (RIS3)</i>		x	x					
<i>Define the scope of the CoVE</i>	x	X						
<i>Legal and governance arrangements</i>		x	X			x	x	
<i>Infrastructure and resources</i>		x	X					
<i>Curriculum and program design</i>			x	x	X			
<i>Partnership and collaboration</i>	x	x	x	x	x	x	x	X
<i>Communication and promotion</i>	x	x	x	x	x	x	X	x
<i>Funding</i>		x				x	x	
<i>Monitoring and evaluation</i>	x	x	x	x	x	x	x	X

Budget

The budget for the activities during the four years of the SECOVE project has already been estimated and approved by European Commission. For the continuation of the services of the national CoVE, we can estimate the budget per activity, as presented below. An analytic budget will be estimated and presented in the Strategic development plan, towards the end of the project.

Activity	Estimated budget
<i>Organisation of workshops and networking events</i>	<i>For national events: 100 euro per participant. It covers organisational costs, materials to be distributed, room, catering and audiovisual equipment.</i>



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	<i>For transnational events: 200 euro per participant. It covers organisational costs, materials to be distributed, room, catering, audiovisual equipment and interpretation costs (excluding travel and accommodation costs).</i>
<i>Development of new and organisation of capacity building trainings and workshops for VET teachers and company trainers, on topics relevant to sustainable energy, efficient use of energy and development of entrepreneurial skills of students, quality assurance etc</i>	<i>For the development of new training courses, the estimated budget depends on the duration of the course and ranges from 50-100 euro per hour of training. E.g. for a 16 hours Training of trainers, the cost for the design of the course and the development of learning materials ranges from 800-1600 euro depending on the subject. The cost for the organisation of courses is 100 per day, per participant including the fee of the trainer, room and equipment, organisational and promotion costs and catering.</i>
<i>Running VET graduates tracking system and quality assurance mechanisms.</i>	<i>The cost for running the VET graduates tracking survey is approximately 6000 euro annually, including cost for the organisation of the survey, promotion and elaboration of the results.</i>
<i>Recommendations for curricula reforms of initial VET study programmes</i>	<i>The cost for issuing recommendations on curricula reform for a typical 2-year IEK study programme is estimated at 10000, involving needs analysis and programme design.</i>
<i>Development and delivery of new courses on sustainable energy for continuous VET.</i>	<i>The cost for the development of new courses for professionals is estimated at 100 euro per hour. The cost of the delivery of courses is estimated at 100 euro per day per participant, including the fee of the trainer, room and equipment, organisational and promotion costs and catering. The cost for the accreditation of the newly developed courses will be estimated at a later stage.</i>
<i>Continuation of the observatory on inclusiveness/attractiveness of VET practices.</i>	<i>The cost of the operation of the observatory is estimated at 8000 euro annually, including monitoring of inclusion indicators and running an annual survey.</i>
<i>Operation of the innovation hubs</i>	<i>The cost for the operation of the innovation hubs will be estimated later, when the innovation hubs will be set up.</i>
<i>Organisation of applied research programmes together with companies, through the innovation hub.</i>	<i>The cost for the organisation of applied research programmes will be estimated later, when the innovation hubs will be set up.</i>



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<i>Organisation of international mobilities of VET students.</i>	<i>The cost for the organisation of international mobilities (back office) for VET institutions is estimated at 4000 per mobility proposal, including the reimbursement of involved staff.</i>
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Quality Assurance

The quality assurance system of the Greek CoVE will be a continuation of the quality assurance of SECOVE project, keeping quality criteria and indicators and continuing the quality assurance processes. Part of the quality assurance system is the monitoring and evaluation processes, described in section 5.2.

The following quality assurance measures will be put in place and continue after the four years of project implementation:

- Involvement and engagement of stakeholders, through the organisation of events and workshops. Close collaboration between different types of organisations in the organisation of the CoVE activities. This will include for example, involvement of industrial partners in the development of training courses and applied research projects, cooperation of VET providers for the inclusion observatory etc. The cooperation of different type of organisations will bring value to the CoVE activities, as the interests of all parties will be represented.
- Peer review process for new products and services, i.e. development of new capacity building programmes and training courses.
- Organisation of pilots for testing newly developed programmes and courses, in order to test them in small scale before their official launch.
- Monitoring and evaluation activities including measuring impact of project activities, tracking graduates, inclusion observatory.



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5 Exploitation and sustainability

Creating impact

The creation of impact of national CoVE starts within SECOVE project and will be measured through impact evaluation activities. The project activities have already been designed, having in mind the long-lasting impact. The main principles of the project design that ensure the impact are: involvement of stakeholders and alignment of project activities with regional strategy, legal framework and interests of the various stakeholders.

Activities creating impact during the project are:

- Diverse communication activities that aim to raise awareness in VET community and industry.
- Various events that aim to involve and engage stakeholders and bring them on board.
- Various capacity building activities for VET providers and companies that provide work-based learning
- Establishing VET graduates tracking systems
- Establishing synergies at various levels, between VET and industry, at national and transnational level, with other projects etc.
- Development of internationalisation strategies of VET providers and initiating cooperation for students' mobility schemes.
- Establishing of the SECOVE observatory on inclusive and attractive VET practices
- Establishing summer academies to increase attractiveness of VET for female students
- Establishing strong quality assurance mechanisms at institute level
- Establishing innovation hubs and organising applied research projects
- The impact of the project will be measured through the following activities:
 - Impact evaluation of observatory in inclusiveness / attractiveness of VET
 - Impact evaluation of innovation hubs
 - Impact evaluation of SECOVE local partnerships
 - Impact evaluation of European SECOVE platform.



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Expanding the COVE

The SECOVE project is characterised by a robust approach to sustainability of SECOVE platform, regional CoVEs and other project results and outputs. One of the main priorities of the Greek CoVE will be to ensure that it remains and continues activities beyond the SECOVE lifetime, and that it expands to include new stakeholders and services.

The structured dialogue with the organisation of national workshops, in the beginning of the project as well as the adoption of national strategic documents, will ensure a constant and financially viable development of the national CoVE in Greece. Furthermore, the results of the project will build upon the sustainability of the network created over the four years of work, and the educational material produced will be adopted and made freely available by the participating organisations.

The main outcomes of which will ensure the sustainability and expansion of the Greek CoVE are:

- New learning programmes and content that will be developed in WP3 and will continue to be offered to VET students by the partners that are VET providers in Greece. These include common units on sustainable energy using Virtual Reality technology for EQF levels 3-5 for transnational mobility (ECVET), and challenge-based modules for entrepreneurial mindset and skills.
- Networks and partnerships that will be established for the scope of the project and will formally participate in the SECOVE platform. Specifically, the digital SECOVE platform, which will also host the Greek CoVE, will ensure further exploitation and sustainability.
- Structures that will be set up during the project and will continue their operation, such as the Observatory on inclusiveness/attractiveness of VET practices and the Innovation hub.
- VET providers of the Greek CoVE will be supported to adapt a quality culture, quality assurance mechanisms and a VET graduate tracking system.
- The project will produce policy recommendations in each country and in Greece, for the alignment of VET courses to Smart Specialisation Strategies, for making VET



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inclusive and attractive and for promoting innovation in VET. These recommendations will have impact at policy level at national and regional level, through reaching out stakeholders and mainstreaming project results, at regional and national level.

- The specific activities organised during and after the SECOVE project duration, which will ensure the Greek CoVE expansion are: Involvement and engagement of new stakeholders in the Greek CoVE, through the organisation of workshops and networking events. By constantly expanding the members of the CoVE, it ensures that the CoVE will remain relevant and aligned with national economic priorities and smart specialisation strategies.
- Expanding the services offered by the Greek CoVE, by organising capacity building events for VET teachers and company trainers. By expanding activities of the Greek Cove, it ensures that the Greek CoVE remains relevant to the needs of VET in Greece and the needs of skills in the sustainable energy sector.
- The development and delivery of new courses on sustainable energy for CVET and the recommendations for curricula reforms for IVET, will expand the offer of the Greek CoVE in the long term and ensure its establishment in the Greek VET system.
- The continuous operation of the innovation hubs and the observatory on inclusiveness of VET, will ensure that VET remains relevant in Greece and that new students and organisations are willing to be involved in the Greek CoVE.
- Involvement and collaboration of companies with VET organisations for the organisation of research programmes, will expand the innovation potential of the Greek CoVE and ensure its sustainability and attractiveness in the future.
- Lastly, the involvement and organisation of mobility projects for students, will ensure that the Greek CoVE expands its offer to students and attracts new individuals to the VET organisations involved in the CoVE.

Future Funding

To secure funding for the continuation of the national CoVE, we need to develop a comprehensive funding strategy that includes financial projections, necessary resources, and revenue generation strategies.



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Potential sources of funding after the end of SECOVE project are:

Activity	Funding source
<i>Organisation of workshops and networking events</i>	<i>National funds (ESPA or Greece 2.0) Erasmus+ programme Partners own funds</i>
<i>Development of new and organisation of capacity building trainings and workshops for VET teachers and company trainers, on topics relevant to sustainable energy, efficient use of energy and development of entrepreneurial skills of students, quality assurance etc</i>	<i>National funds (ESPA or Greece 2.0) Erasmus+ programme Self-funded by course participants</i>
<i>Running VET graduates tracking system and quality assurance mechanisms.</i>	<i>Partners own funds</i>
<i>Recommendations for curricula reforms of initial VET study programmes</i>	<i>National funds (ESPA or Greece 2.0) Erasmus+ programme Partners own funds</i>
<i>Development and delivery of new courses on sustainable energy for continuous VET.</i>	<i>National funds (ESPA or Greece 2.0) Erasmus+ programme Partners own funds Self-funded by course participants</i>
<i>Continuation of the observatory on inclusiveness/attractiveness of VET practices.</i>	<i>Erasmus+ Partners own funds</i>
<i>Operation of the innovation hubs</i>	<i>National funds (ESPA or Greece 2.0) Erasmus+ programme Partners own funds</i>
<i>Organisation of applied research programmes together with companies, through the innovation hub.</i>	<i>National funds (ESPA or Greece 2.0) Erasmus+ programme Partners own funds Private funding from industry</i>
<i>Organisation of international mobilities of VET students.</i>	<i>Partners own funds Erasmus+ programme</i>



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Strategic Partnerships (with other COVEs, projects, clusters etc)

In order to identify synergies with other similar projects, a detailed mapping will be carried (target groups, training materials, qualification/certification schemes, etc.) of projects that have been carried out in the framework of other European programmes, including Build-Up Skills, Sector Skills Alliances, Knowledge Alliances etc. Build-up Skills initiative and Horizon 2020 (Call “Construction Skills”) funded projects developing multi-country qualification and training schemes.

During the SECOVE project duration, national CoVEs will build on previous Build Up Skill projects established networks and partnerships that unite major stakeholders of the construction sector, with a focus on green skills.

The results of the calls published for supporting the establishment and development of Centres of Vocational Excellence (CoVEs) will be examined as well, emphasising in the subjects of clean energy and sustainable development. Furthermore, an extensive mapping will be carried out in the various R&D+I intensive Clusters and Science Parks, developed all over the EU for fulfilling the RIS3 objectives, in the thematic field of Energy.

Strategic partnerships will help the National COVE in Greece to expand its network and capabilities, share knowledge and expertise, and collaborate on joint initiatives. Some potential partnerships will include:

- Participation in the Community of Practice (CoP) for Vocational Excellence, that involves the participation in monthly online meetings, participation in the annual Forum for Vocational Excellence and in other EU level events organised by CoP, European Commission or EU Agencies.
- Strategic collaborations with other similar projects e.g. Build Up Skills Greece, CoVEs in Greece (Tour-X and FEA-VET), or CoVEs with similar theme/activities, Alliances for innovation projects (e.g. Solar CV, EnterMode), with the aim to collaborate in common events, strategy discussions and policy advocacy.
- Joining the European Alliances for Apprenticeships, which includes submitting a pledge listing commitments and activities.



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- Joining the ENE European Network of Excellence, an international network of Centres of Vocational Excellence (CoVEs) in the EU neighbourhood.
- Signing the European Pact for Skills, an initiative by the European Commission aimed at mobilizing stakeholders to invest in skills and create a more inclusive and sustainable labour market. The Pact emphasises the need for cooperation between different actors, including education and training providers, employers, social partners, public authorities, and civil society organisations, to ensure the relevance and quality of skills development and training.
- Partnership with research projects: The National COVE will collaborate with research projects that are relevant to its field of expertise, in order to share knowledge and expertise, and contribute to the development of innovative solutions.
- Partnership with industry clusters: The National COVE will partner with industry clusters in Greece to identify common challenges and opportunities and collaborate on joint initiatives to address these issues.

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ANNEX B:

Roadmap for the establishment of a Centre of Vocational Excellence in Spain

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*Work Package 2: Roadmap for the
establishment of SECOVE platform*

“Roadmap for the establishment of Centre of Vocational Excellence in Spain”

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1. Context

Securing inclusive, equitable, top-quality training is an enormous nationwide challenge to secure sustainable integrating growth. VET plays a key role in promoting employability, social inclusion and economic development. The Vocational Education and Training models need to possess the ability to adapt to a society immersed in an accelerated context of technological disruption, which poses new challenges and calls for a reinforcement not only of digital competences, but also critical and constructive thinking, creativity and humanist education. Vocational Education and Training also has a substantial impact on other areas of the economy because it affects both people's employability and the competitiveness of businesses.

The Spanish Basque Country has its own vocational education system. The Basque Government has the power, within the broader framework established by the Spanish Government, to adapt and modify their VET provision in response to demands and changes in the job market. Their latest Plan, the 6th Basque VET Plan¹, was approved in November 2022. This plan defines the future of vocational training in the Basque country and continues working on making the Basque VET respond to the challenges facing Basque society. The lines of action are:

1. Technological Transformation and Digitalization: This includes the transformation to digital and the development of technological and applied intelligence.
2. Strategic Innovation and Disruptive Transformation: This involves disruptive innovation and applied innovation in strategic environments.
3. Biotechnology, Regeneration, and well-being: This includes biosciences and sustainability, and the creation of sustainable VET centers.
4. Intelligent VET 5.0 Centers: This involves the creation of a new model of VET center.
5. Internationalization of the Basque VET System: This involves the internationalization of the Basque Vocational Training system.
6. Management of Intelligence in VET 5.0 Centers: This includes the management of applied intelligence, the management of complexity, and the management of change.
7. Human Development: This involves high-performance training, the human dimension in VET, high-quality training, and inclusive training.

It is a priority for the Basque VET scheme to continue to support, among others, the European initiative of VET excellence platforms and centres. The Research and Applied Innovation Centre, Tknika, headed up the European platform EXAM 4.0 for Advanced Manufacturing and Industry 4.0, in the first pilot initiative launched by the European

¹ See more at <https://tknika.eus/en/cont/vi-basque-vocational-and-training-plan/>

Commission's Directorate-General for Employment between 2019 and 2021. Over the next four years, i.e., up to the year 2026, TKNika will head up a new platform, LCAMP, focusing on Advanced Manufacturing and Industry 5.0.

In late 2019 and early 2020, the coordinators of the first five platforms set up a collaborative network through a Community of Practice. This community, which started out with 5 members, now has 25, and will have approximately 112 members by the year 2027. Tknika, together with the Netherlands' Katapult organization, was an active participant in the coordination of the platforms. The European Commission has turned this Community of Practice into one of the mainstays of the initiative for European excellence platforms.

The Basque VET system intends to continue to support this Community of Practice, collaborating with the European Commission's Directorate-General for Employment to help this project attain the level of excellence and effectiveness planned for VET all over Europe. In order to move this initiative forward and generally promote and foster VET excellence, the Basque Government intends to organize an annual VET excellence conference in Euskadi. The idea is to make this an annual event to discuss and share the main initiatives relating to excellence in VET, analyzing and reflecting on the main challenges of the future that must be faced by vocational education and training, and attended by the world's major institutions, centers, organizations and agents.

Legal framework for establishment of COVE

The Center of Vocational Excellence is a concept defined by the European Commission, and as such, it is regulated by several regulations at the different levels: regional, national and European.

The legal basis for establishing a CoVE from 2021 to 2027 include²:

- Identify the area of specialization: The CoVE should focus on a specific area of specialization that meets the needs of the labor market and the region.
- Proposal development: The proposal should include the objectives, activities, and resources needed to establish the CoVE, as well as the expected outcomes and impact. The applicant can be any participating organization established in a Programme Country.
- Strong partnerships: partners can be any public or private organization active in field of VET, or world of work and established in a Programme country or in any Partner

² Sepie (2021).

http://sepie.es/doc/comunicacion/jornadas/2021/22_abril/centralizadas/6_centros_de_excelencia_profesional.pdf

- Country (i.e. VET providers; companies; National/regional qualification authorities; Research institutes; Innovation agencies; Regional development authorities)
- Partnership must include at least 8 full partners from a minimum of 4 Programme countries (including at least 2 EU Member States) involving: a) at least 1 enterprise, industry or sector representative organization, and b) at least 1 vocational education and training provider (at secondary and/or tertiary level)
- EQF levels: Can be focused on any EQF level but must also include levels 3, 4 or 5
- Maximum EU grant per project: €4 million (Customized Lump Sums – MAX. EU co-financing 80%)
- Duration of projects: 4 years

In Spain, the establishment of a CoVE is regulated by the following legal frameworks:

- European Union regulations: The establishment of CoVEs is also regulated by European Union regulations, such as the European Quality Assurance Reference Framework for VET (EQAVET), which aims to improve the quality of VET across Europe.
- National Strategic Framework for VET: This framework defines the national strategy for VET and outlines the objectives and priorities for the development of VET in Spain. It also sets the guidelines for the establishment of CoVEs³.
- Organic Law on Education: This law regulates the educational system in Spain and establishes the legal framework for the development of VET programs, including the creation of CoVEs⁴.
- Regional legislation: Each autonomous region in Spain has its own legislation regarding education and VET. The establishment of CoVEs may vary depending on the region, as they have different competencies in education and training⁵.

Scope of the national COVE

The primary objective of a CoVE is to promote excellence in VET programs and contribute to the development of a highly skilled workforce. Through SECOVE, the partners will be placed at the forefront of VET education in the Basque Country, playing a crucial role in promoting excellence in VET programs and developing a highly skilled workforce in the country.

³ Ministerio de Educación y Formación Profesional (2019). <https://www.todofp.es/dam/jcr:163978c0-a214-471e-868d-82862b5a3aa3/plan-estrategico--enero-2020.pdf>

⁴ Ministerio de Educación y Formación Profesional, Gobierno de España (2023). <https://educagob.educacionyfp.gob.es/lomloe/ley.html>

⁵ Departamento de Educación, Gobierno Vasco (2023). <https://www.euskadi.eus/informacion/legislacion-de-formacion-profesional/web01-a2hlanhz/es/>

To achieve this, the regional CoVE in Spain, will offer a range of activities and services, such as:

- Development of innovative curricula: the CoVEs will develop innovative curricula and training programs that meet the evolving needs of the labor market and ensure the employability of learners. The CoVE will introduce diverse methodologies and programs to stay at the forefront of teaching and learning practices.
- Delivery of high-quality training through modern teaching methods and technologies, as well as through experienced and qualified trainers.
- Labor-market oriented: the CoVE will encompass key sectors of renewable energy sources, efficient use of energy and other industries. The objective is to strengthen and boost competitiveness and innovation in these industries through the development of professional excellence.
- Conducting research and development: the CoVE will conduct research and development activities to enhance their knowledge and understanding of the needs of the labor market and to identify emerging trends and technologies.
- Collaborating with industry and other stakeholders: Politeknika Txorierri, GAIA and Ondoan will keep their collaboration and will spread their collaboration to other companies and stakeholders to ensure that their programs are aligned with the needs of the labor market and to facilitate the placement of graduates.
- Supporting the professional development of trainers: the CoVE will support the professional development of educators to ensure that they have the necessary skills and knowledge to deliver high-quality training.
- Providing support to students: the regional CoVE will support services to learners, such as counseling and guidance, apprenticeship and internship opportunities, and work-based learning, both locally and for mobilities.
- Promote gender inclusivity and increase appeal of technical professions for women: the gender disparity in the field continues to pose a significant problem in Spain. The CoVE will pursue initiatives such as the one introduced by the Basque Government, “STEMgirls” program, providing mentorship and support to girls interested in enrolling in STEM degrees.
- Quality Education in the sustainable energy sector: it will provide high quality education with rigorous standards and comprehensive assessments. The CoVE will hire highly qualified and up-to-date instructors in their areas of expertise, ensuring that students receive relevant and excellent training.
- Digitization and greening: the CoVE will stay up to date with digital transformations and the greening of both economy and society. It will prepare students for the challenges and opportunities posed by the digital revolution and the need for

sustainability, providing the skills and competencies necessary to contribute to a smarter and more ecologically sustainable economy.

Alignment of COVE with RIS3 strategy

The RIS3 concept was developed by the European Union to promote regional innovation and economic growth by focusing on each region's unique strengths and opportunities.

In the Basque Country, the RIS3 has been implemented as part of the region's overall economic development strategy. The Basque Country's RIS3 strategy is based on the region's strengths in advanced manufacturing, energy, and biosciences, as well as its commitment to sustainability and social innovation.

The strategy includes a range of initiatives aimed at fostering innovation and collaboration among companies, research institutions, and public authorities. For example, the Basque Country has established a network of technology centers that provide research and development services to companies in key sectors, such as automotive, aeronautics, and energy. The region has also developed a number of public-private partnerships to support innovation and technology transfer.

The choice of Energy as a priority is based on the strengths of a business cluster that has different links of the chain in generation, transport, distribution and its auxiliary industry. In the region, the sector also counts already with technological capabilities in materials, nanotechnology, manufacturing technologies and ICTs. Large companies in the energy sector within the Basque Country hold a strong international leadership.

We would also like to point out that the Basque Government has its own Basque Digital Innovation Hub⁶ through which a group of public-private organizations in the Basque Country collaborate to promote technological solutions to support the achievement of a sustainable energy and digital transformation.

2. Preparatory actions

Mapping of stakeholders

Regional partners met several times to discuss the methodology to be followed, to develop a list of stakeholders. The following was agreed:

- Politeknika Txorierri was in charge of getting in touch with other VET schools and companies they often collaborate with.

⁶ See more about the Basque Digital Innovation Hub at <https://bdih.spri.eus/es/>

- GAIA reached out to companies within their network.
- Ondoan also reached out to companies within their network and the Mondragon University.

Politeknika Txorierri, GAIA and Ondoan got in touch with their networks both by phone and email. Later, the three partners created a Google Drive in which they added the different stakeholders that showed interest in the national CoVE. They will be involved in the national CoVE depending on the type of stakeholder, in the following ways:

- National Public bodies and policy stakeholders: will be consulted to share information and guidance on current and upcoming policies and initiatives related to the training offer and accreditation mechanisms in the field of sustainable energies.
- Local, regional authorities and municipalities: will be a priority group in the Basque CoVE, namely in the identification of training needs of their staff and in awareness actions to equip municipalities to dialogue with the industry and training providers.
- VET providers and educational institutions at various EQF levels: will be involved in needs assessment, discussion on skills gaps, labor market needs, integration of trainees in the labor market and collaboration with industry. These providers will also be invited to further develop their training offer, provide training opportunities and strengthen the inclusiveness across their training programs.
- Development of innovative talent among teachers, boosting their role as “innovation agents”: teachers and trainers currently working in the field of sustainable energy or with potential to work/provide training in this field will be invited to attend training for trainers in the field of sustainable energies. Other professionals such as career counsellors will also be called to increase their intervention in promoting technical training and career paths and inclusivity of minorities in the field.
- Industry (companies, clusters, associations), social partners/sectoral organizations. These stakeholders will be key to provide input on the skills needs of the labor market and closely collaborate with VET providers. Besides, they will be consulted in relevant matters, they will be invited to participate in relevant events, as well as disseminate and promote the CoVE’s activities and results.
- Trainees: development of innovative talent among students involved in needs assessment, training actions, awareness-raising actions and other CoVE activities.

These types of stakeholders involve different target groups:

- National Public bodies and policy stakeholders responsible for developing and implementing policies, strategies, and initiatives related to VET in the field of

Sustainable Energy, as well as providing policy guidance and funding support. Examples: IVAC Basque Knowledge Institute of VET⁷, Basque Government's VET Vice-counsellor's office.

- Local/regional authorities, and municipalities that have the potential to promote change towards cleaner and more ecological energies, besides often having intervention in the VET provision at local level and close connection with the business sector. Example: Txorierri area town halls' association.
- VET providers and educational institutions at various EQF levels: technical schools, higher education institutions and other training providers. These include: VET schools, VET centers, VET associations, etc. Example: HETEL (H/VET centers' association) and Tknika (Basque VET Applied Research Center).
- Innovation agents: Politeknika Txorierri, HETEL and other networking teachers and trainers currently working in the field of sustainable energy or with potential to work/provide training in this field.
- Industry: companies, clusters, associations. Example: Iberdrola, SARENET, etc.
- Social partners/sectoral organizations: e.g., professional organizations. Example: BBK Kuna, Unesco Etxea, etc.

National workshop

Twenty participants attended the first national workshop that took place on February 2nd, 2023. The Spanish partners hosted stakeholders in the Iberdrola, Global Smart Grids Innovation Hub-GSGIH⁸ venue in Bilbao. Participants started arriving around 9:00 and left the venue after 15:00.

The main aims of the workshop were as follows:

- To gather stakeholders at regional level and engage them in a structure dialogue
- To identify local and regional needs and expectations and develop a local vision for excellence
- To start building the CoVE network of stakeholders
- To prepare the input for the transnational workshop

The session began with the introduction of the SECOVE project and a presentation on CoVEs in general, the workshop was later divided into two working tables, organized to work in parallel in two specific workshops which in turn will have a series of questions for each workshop. Each of the workshops had a duration of 20 minutes, so participants addressed

⁷ For its acronym in Spanish.

⁸ See more at <https://www.iberdrola.com/innovation/global-smart-grids-innovation-hub>

between 3 - 4 questions per workshop in both working tables. The workshops developed as follows:

- **Workshop 1:** What does excellence in VET linked to sustainable energy mean and how can SECOVE contribute to it?
- **Workshop 2:** The needs of companies in terms of qualified personnel in sustainable energy and how VET centers can respond to them.

We gathered the following findings from **Workshop 1:**

Q1. How can we establish collaborative networks and partnerships between VET centers and companies? How can we create synergies between VET centers and companies?

- There are already internships for VET students in companies, but sometimes the coordination can be improved.
- The relationship can be improved through the Ethazi challenges (a problem-solving based learning methodology), designed and developed in collaboration with the company.
- More consideration should be given to the internal training in the company given to the trainee, it may be interesting to advance some of this training in the school.
- The size of the companies matters; there are small companies that do not have the resources to take care of the students as they should. It is necessary to facilitate the reception work by creating a guide for the company and the instructors (how to welcome the student, how to communicate with the school tutor, how to evaluate the internship...).
- It would also be good to generate basic content for use in the work environment: pills, support materials with educational content (manuals, tutorials...).
- It is sometimes easier to communicate with small companies, since they have direct access to the positions responsible for the decisions that affect the interns.
- Companies should be made aware of the calls for projects in which they could collaborate with VET centers (MEF, Erasmus+...).
- Companies do not know how to get to know these opportunities for collaboration with educational centers, it should be explained to them how to find out about them (which centers may be interested, types of calls ...) so that they can take the initiative to launch a project.
- The lack of students in STEM careers is the basis of the problem due to the lack of critical mass in many sectors, especially in the case of women.
- Further contact between the student and the VET center could be sought in order

to follow up on the training and organization of courses on specific topics.

- Communication channels could be improved (clusters or other intermediate bodies such as HETEL).
- Bring VET centers closer to start-ups through the existing network of incubators/accelerators.

Q2. What are the current labor market and business needs for sustainable energy in cybersecurity, AI and IOT? How can we create skills ecosystems?

- There is a state law that tries to introduce digital transformation in educational curricula (40 hours) but it seems to us that it is insufficient. More specialization should be sought.
- We should work on these topics (cybersecurity, AI, IOT...) in the Ethazi challenges.
- Fundae and Hobetuz, promoting courses for unemployed people, can give clues of which are the most demanded courses and competences, to then introduce them in the cycles adapting the level to the students and the type of challenge.
- Specialization programs can be an answer, but dual training does not always fit all companies (there are cases in which they prefer to train the students themselves), specialization courses can be an answer but it is somewhat slow.
- There are still doubts in companies about the business model related to these technologies (AI, IOT, cybersecurity...), so they are not clear about the level of investment they should make in personnel and equipment and how to implement them in their companies.
- We need to start introducing innovative tools in the classroom (VR/AR, AI...) that drive digitalization in schools.
- We need to create a collaborative network and a roadmap at Basque Country level to see how to reach companies. Dual is not always the best option for companies (especially large ones).

Q3. How can we help women to access vocational training and attract talent?

- Women may have a self-perception that does not facilitate access to these technical cycles (will I be able to? will I like it? Etc.).
- They may lack role models (women working in industrial sectors) and knowledge of these professional profiles.
- They may be interested in other topics: social, environmental...

- They may see these sectors as problematic when it comes to balancing work and family life.
- There is still a social component when choosing their professional careers.
- Related to the above, it is necessary to give prestige to STEM and VET and its opportunities to students and families so that it is a prioritized choice.
- We must reach students and their families before high school. Work with ESO guidance counselors or even from primary school by introducing subjects linked to programming language and computational thinking.

The following findings from **Workshop 2:**

Q1. How can we identify and involve local stakeholders?

- Organizing more events such as this workshop, which gives the opportunity to meet, involve and contact both vocational training centers and companies.
- On the part of the administrations, establishing and defining strategic lines linked to solving needs on the part of companies in terms of qualified personnel, in general, and seeking these solutions with the support of vocational training centers. In relation to the needs, the following are indicated:
 - Knowledge in data center management and data analysis. How to perform secure data exchanges and connect to the cloud.
 - Need for profiles with technical support, mainly to address industrial projects.
 - Knowledge in connectivity issues
 - Knowledge in cybersecurity issues; it is observed that digital skills are being worked on, but in the field of cybersecurity very little and even robotics linked to cybersecurity.
 - Knowledge in infrastructure issues, modernization of infrastructures. Helping customers of ICT companies to have more digitized infrastructures.
 - In companies, except for technology companies, there is a lack of R&D&I departments. It would be good for companies to start having this type of department.
 - It is also commented that there are many obsolete CVs, in the case of training centers that teach programming, they may have the same program from 10 years ago.
 - Sometimes the times and deadlines for training centers to respond to the needs of companies can be 5-6 years.

Q2. What are the current labor market needs for sustainable energy in cybersecurity, AI and IoT?

- The first thing to know is what companies need and to know them well.
- Also, in order to address the current needs of the labor market, in general terms, linked to enabling technologies, courses of specialization in cybersecurity, AI and IoT could be organized and taught. Also, adapting them to the different profiles that companies may have and trying to make the courses theoretical-practical.
- Also, it is of interest to provide data for others to develop applications that companies would use to be more competitive.

Q3. How can we create competence ecosystems?

- The framework of Erasmus projects allows the creation of competence ecosystems where knowledge can be shared and shared content can be developed to work on digital competences in specific thematic areas (energy, smart cities, industry, etc.). In addition, it also allows to create the necessary frameworks of trust to develop stable strategic alliances over time.
- Seek channels to bring companies closer to vocational training centers, for example, such as initiatives like Iberdrola's, which has its own campus to work on digital skills. It would be good to make it known to other companies and seek partnerships to facilitate learning by other companies.
- Supporting non-regulated training.
- Vocational training centers should offer companies to train their employees.
- Create a digital culture around companies.
- Offer quality information so that companies know how to train, what for, etc.

Q4. How can we bring women into VET and attract talent?

- Raising awareness of women leaders in the STEM field over the years.
- Bringing girls closer to technical schools so that they learn what STEM is and how it works.
- Show what companies are doing in this regard, as in the case of Iberdrola, which is trying to teach STEM to the youngest, using the concept of "Ultra-youth".
- Analyze and know what are the interests of girls in terms of their future careers.
- Raise awareness in society and accept and respect the technical vocations of women (if they want to be astronauts, engineers, etc.). For example, there are companies that do not have locker rooms for girls.
- Avoid a social stagnation in relation to women studying STEM careers.

- Hold talks to make girls aware of the type of jobs that are addressed in STEM careers.
- Promote equality plans in companies.
- Public administrations should also take the lead on this issue and promote aid programs that value the participation of women in R&D&I projects.
- Giving visibility to initiatives such as Inspira STEAM (<https://inspirasteam.net/>) which promotes teaching both boys and girls about women leaders in the STEAM field in schools, or the Women in Science blog, which promotes women leaders who have worked or are working in the STEM field (<https://mujeresconciencia.com/>).

3. Description of Centre of Vocational Excellence in Spain

Introduction

To become a leading Centre of Vocational Excellence, globally recognized for our commitment to innovation, quality, and sustainability. Our vision includes fostering a skilled and adaptable workforce that meets the evolving needs of the Basque Country industries and contributes to the socio-economic growth of the region. With the emergence of new technologies and tools, opportunities grow exponentially. In the energy sector, new and old professions lack specialized qualifications and upskilling/reskilling training to respond to current needs. In the Spanish Basque region, we have decided to focus our efforts in the areas of AI, IoT and cybersecurity within the Sustainable Energy sector.

It is increasingly important to generate synergic dynamics between technical VET centers, universities, public administration entities and industry. This approach is in line with the strategic vision set by the public administration in the 6th Basque Vocational Education and Training Plan. In addition to the SECOVE project, in the Basque Country, there is another project which aims to create a center of excellence in the field of professional and technical training, specifically in the sector of advanced manufacturing and industry 5.0. (LCAMP).

These projects have in common the goal of implementing centers of excellence in the field of technical vocational training, and they can complement each other. Each CoVE aims to improve the quality of education and professional training in its area of specialization, developing new pedagogical practices, promoting innovation and increasing the employability of young people through high-quality professional training.

The objective is to develop a network of vocational education and training centers across the Basque Country that will provide high-quality training programs in key sectors of the economy, as it is the industrial fabric of the region. The centers will offer specialized training in areas such as digital skills in industry 5.0, entrepreneurship, innovation, and sustainability, among others. Policymakers have a key role in supporting and implementing emerging technologies around sustainable energy, creating incentives for companies and

individuals to adopt renewable energy technologies, as well as promoting policies that make the transition to a greener economy easier.

Moreover, the Sustainable Energy private sector has seen a significant increase in the use of technology and digitalization in recent years, with Cybersecurity, Artificial Intelligence, and IT becoming increasingly important for the sector development. The growing need for energy efficiency and the reduction of carbon emissions require skilled professionals with expertise in these areas. The future of the energy industry will heavily rely on digitalization, and a well-prepared workforce with up-to-date skills is crucial for the success of the sector. As a result, it is crucial to prepare the workforce for the future market demands by modernizing and implementing effective vocational education and training programs.

Hence, the aim is to create an inclusive, collaborative learning environment that supports lifelong learning for both trainers and trainees, builds local and global partnerships, and cultivates a culture of excellence and continuous improvement. These measures will aid our region to stay at the forefront of sustainable and responsible practices in vocational education.

SECOVE's main objectives in the Basque region are:

- Foster talent, the incorporation of women in the most masculinized sectors, where fewer women work.
- Focus on a specific orientation towards industrial and scientific VET and also training in strategic sectors (SE), encouraging and emphasizing occupations in the industrial sector or other emerging sectors.
- Encourage inclusive Vocational Education and Training in line with sustainable development goals.
- Foster innovation and excellence in VET in Spain; as well as updating technical VET curricula.
- Encourage partnerships and cooperation between VET centers, universities, companies and other stakeholders.
- Help SMEs innovate and transform their operations by providing them with help in small R&I projects thanks to the VET centers equipment and professional expertise.
- Build up a SECoVE network across the region.
- Become a regional reference and advisor institution for both companies and VET schools
- Set up of a summer academy (as stated in the application but sustainable throughout the years)
- Promote internationalization and the mobility of students, teachers, and trainers.

SECOVE is a long-term project that is expected to have a significant impact on the quality of VET in the Basque Country and contribute to the economic development of the region. To

sum up, the vision for the regional CoVE aims to contribute to the regional aspirations towards excellence in education, inclusivity, growing collaboration between industry and VET, continuous learning, cultural respect, and sustainability. It sets a strong future-oriented direction for the CoVE's growth and strategy.

Define the type and legal status (if applicable) of the national CoVE as well as governance arrangements.

Initially, the structure of the Basque CoVE will be that of a Specific Committee, and it is not foreseen to create a new legal entity. During the lifetime of the project and in the final stages, the option of registering it as a non-profit entity will be assessed.

The Basque CoVE will have a series of roles defined for the management of the committee that will help the effective communication and management of the group. The defined roles will be the following:

- Coordination Committee
- Chair (committee member)
- Secretariat
- Participants

The responsibilities of each role are as follows:

- Coordination Committee: where there will be between 4-8 members who will meet regularly to set the strategic lines and initiatives and the activities to be carried out from the CoVE. They will meet periodically (to be defined) for the follow-up and execution of all actions. The steering committee will also be responsible for adding and/or changing committee members, chair and secretariat.
- Chair (committee member): will be in charge of moderating the COVE meetings and executing the lines defined by the coordination committee. Rotating role.
- Secretariat (committee member): will be in charge of organizing temporary meetings and taking minutes of the actions and activities carried out within the CoVE and the coordination committee. Rotating role.
- Participants: will be those entities that are not members of the coordination committee but are involved in the CoVE.

During the first steps, the partners of the SECOVE project will be the ones assuming the coordination committee role for the implementation of the actions. The first lines of work and the rules of operation of the CoVE will be defined.

Activities and services of the national COVE

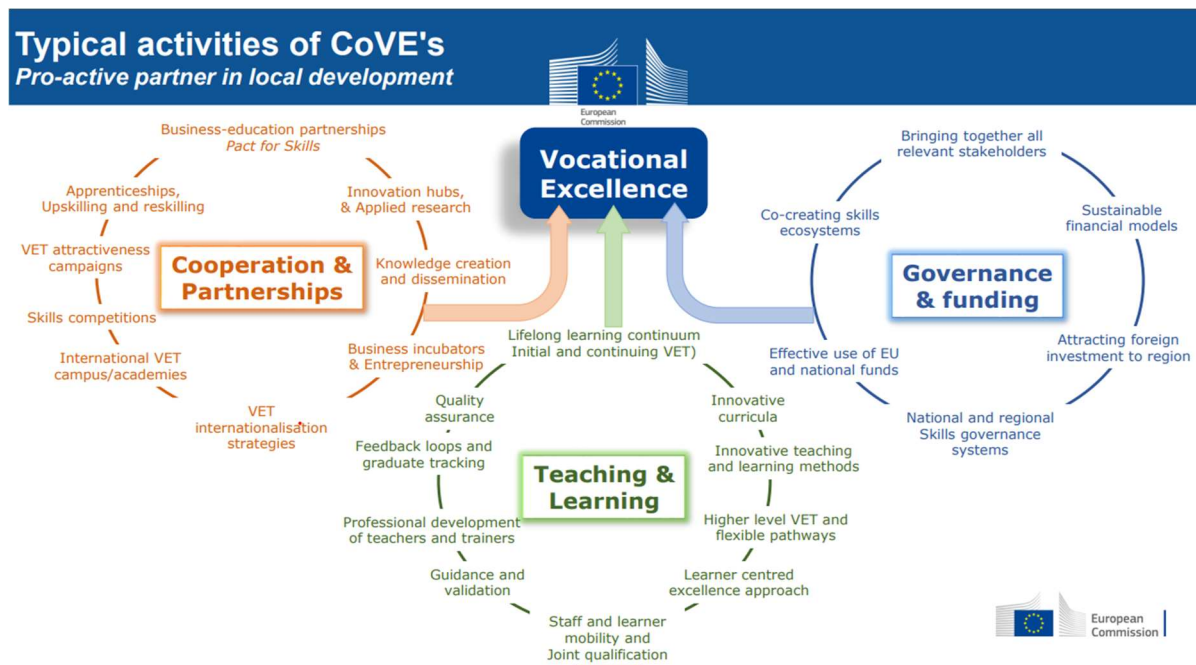


Figure 1. CoVE's activities⁹

The Centre of Vocational Excellence in the Basque Country will offer a range of activities and services aimed at promoting excellence in vocational education and training in the region during the SECOVE project. Some of these activities and services include:

Developing and implementing training programs. The Basque CoVE intends to work with other VET centers across the Basque region to develop and implement high-quality training programs in the field of sustainable energy, specifically in cybersecurity, AI and IoT. These programs aim to support innovation and the development of new technologies to meet the needs of both trainees and industry needs. We foresee the following steps in this process:

- Program development:
 - Analyze the state of the art of VET education and the labor market in relation to cybersecurity, AI and IoT.
 - Identify qualification needs (knowledge and skills) in relation to labor market requirements in the field.
 - Planning and sketching the solution to be implemented.
- Implementation of programs:

⁹ Sepie (2021).

http://sepie.es/doc/comunicacion/jornadas/2021/22_abril/centralizadas/6_centros_de_excelencia_profesional.pdf

- Development of a regional strategy to implement the contents according to the area and available VET centers.
- Work for the official accreditation of the study plan for VET.
- Provide training in specialized VET degrees and in a dual format.

Providing training for teachers and trainers. The Basque CoVE will also provide training and support for educators to ensure that they have the skills and knowledge necessary to deliver up-to-date, high-quality training programs. This includes training on the use of new technologies, pedagogical methods, and industry-specific skills:

- Upskilling/reskilling professionals

Offering mobility and exchange programs. The Basque CoVE will promote even further internationalization and mobility practices by offering European exchange programs for students, teachers, and trainers. These programs provide opportunities to learn about different cultures (company and social), languages and educational systems:

- Creation of a list of European partner VET Centers and their field of expertise;
- Creation of a database of EU companies and their fields and possible offers of placements;
- Involvement in specific programs and projects for both teachers/trainers and trainees;
- Setting up agreements for traineeships, internships and work-based programs with companies within the SECOVE network.

Promoting research and innovation. During the SECOVE project, the Basque CoVE will push research and innovation in VET by fostering collaboration with industry and other stakeholders and supporting the development of new teaching and learning methods, technologies, and curricula. This helps to ensure that VET in the Basque Country stays at the forefront in the latest industry trends and best practices:

- Ongoing research on emerging teaching and industrial technologies;
- Establish close connections with relevant stakeholders in the sector to obtain information about the latest trends and anticipate future needs of the labor market;
- Organization of workshops, seminars and conferences regarding cybersecurity, AI and IoT to share the latest knowledge.
- Encourage experimentation and pilot projects of new teaching and learning methods and technologies in VET centers. This allows testing and refining new approaches in a controlled environment before they are implemented more widely.
- Foster collaboration with SMEs by offering them the expertise and equipment of the VET centers in R&I projects they cannot face by themselves.

Providing guidance and counseling services. The Basque CoVE will offer guidance and counseling services to not only to help learners make informed decisions about their education and career paths but more prominently as a new attribute, this includes services to SMEs and other industry stakeholders in the cybersecurity, AI and IoT fields.

- Career counseling and job placement services for students.
- Consulting services for SMEs and other stakeholders in the field, for instance by offering them the guidance and counselling services of the VET centers in projects they cannot face by themselves.
- Establishment of a meeting place for cooperation between partners and a binding network of partners to support the development of CoVE and its activities and within the international CoVE platform.

This list of activities and services provided by the Basque CoVE are designed to promote excellence in VET in the Basque Country and to ensure that learners and teachers have the skills and knowledge necessary to succeed and meet the changing needs of the labor market in the sector of Sustainable Energy and, more specifically, in the fields of cybersecurity, artificial intelligence and internet of things. We aim to become a national reference and to maintain and continue working on the aforementioned activities to ensure the sustainability of SECOVE after the end of the project.

Stakeholders involved

The stakeholders involved are the following ones:



The main roles and responsibilities of the stakeholders are the following ones:

EDUCATIONAL SECTOR AGENTS

ROLE: Leaders of the National CoVE.

RESPONSIBILITIES:

- Promote cooperation among stakeholders to identify needs and to seek shared solutions to the identified challenges.
- Promote improvements in recruitment processes to attract more students and increase the percentage of female students
- Promote the transformation/adaptation of educational processes and contents to meet the needs of the labor market.
- Promote agreements for work-based learning, traineeships and internship opportunities for training schemes both regionally and abroad.
- Promote reskilling and upskilling opportunities for educators and workers.

PUBLIC ADMINISTRATION

ROLE: Coordination, regulation, and funding

RESPONSIBILITIES:

- Facilitate coordination and collaboration among the different educational agents.
- Identify and implement regulatory measures.
- Establish and promote new financing programs and schemes.

INTERMEDIATION AGENTS

ROLE: Intermediation among Educational Sector, Public Administration, and Industry

RESPONSIBILITIES:

- Establish communication networks among stakeholders.
- Promote innovative approaches to the problems.
- Represent industry with a global/sectorial point of view of its needs and expectations.

INDUSTRY REPRESENTATION

ROLE: Offer their experience, needs and expectations on this issue

RESPONSIBILITIES:

- Communicate their experience as a basis for continuous improvement.
- Identify and transmit needs and expectations of their companies.
- Provide quality work-based learning, internship and traineeship opportunities.
- Contribute to the transformation/adaptation and improvement of processes related to the integration of graduates in the labor market.

4. Strategic planning for the development of the national COVE

Develop a strategic plan to align the national CoVE with RIS3 to promote regional growth and development. The strategic plan should align with the government's policies and initiatives related to vocational education and training.

Strategic objectives and priorities of the national COVE

Strategic Plan for Aligning the National CoVE with RIS3 to Promote Regional Growth and Development in the Basque Country

Objective: To align the activities and services of the Centre of Vocational Excellence (CoVE) with the Regional Innovation Strategies for Smart Specialization (RIS3) in the Basque Country to foster regional growth and development through vocational education and training (VET) in Spain.

- Stakeholder Analysis and Engagement: a. Conduct a comprehensive stakeholder analysis specific to the Basque Country to identify key stakeholders involved in RIS3 implementation, including regional authorities, industry clusters, research institutions, and other relevant actors. b. Engage with stakeholders in the Basque region to understand their goals, priorities, and strategies related to regional development and innovation, and identify areas of synergy with SECoVE's activities.
- Alignment of Training Programs: a. Analyze the RIS3 priorities specific to the Basque region and identify key sectors and emerging industries where VET can contribute significantly to regional growth. b. Collaborate with VET centers, industry partners, and relevant stakeholders in the Basque region to develop training programs aligned with the identified sectors and RIS3 priorities. c. Ensure that the training programs incorporate the latest industry trends, best practices, and emerging technologies specific to the Basque Country region to address the skill gaps and requirements of the regional labor market.
- Integration of Research and Innovation: a. foster collaboration between CoVE and research institutions in the Basque Country to promote research and innovation in VET. b. Establish partnerships with technology developers, startups, and innovation hubs in the Basque Country to stay updated on emerging technologies and foster the integration of innovative teaching and learning methods in VET. c. Encourage pilot projects and experimentation of new teaching and learning methods in VET centers in the Basque region, with a focus on incorporating emerging technologies identified through RIS3.
- Internationalization and Mobility: a. Develop international exchange programs for students, teachers, and trainers in the Basque Country that align with the regional specialization areas identified in RIS3. b. foster collaboration with partner VET centers abroad, specifically those in regions with complementary RIS3 priorities, to facilitate knowledge sharing and cross-cultural experiences. c. Emphasize the importance of foreign language skills and intercultural competence in the training programs in the Basque Country to prepare learners for global opportunities and market demands.

- Guidance and Counseling Services: a. Enhance the guidance and counseling services provided by SECOVE in the Basque region to support learners in aligning their educational and career paths with the RIS3 priorities specific to the region. b. Incorporate career counseling, job placement services, and support for entrepreneurship and self-employment in the Basque Country to promote the development of skills and knowledge relevant to regional development and innovation.
- Policy Alignment and Advocacy: a. Collaborate with government agencies, including the Vice ministry of VET in the Basque region, the Ministry of Labor, and the Ministry of Economy, to align SECOVE's activities in the Basque Country with regional and national policies and initiatives related to VET and regional development. b. Advocate for the inclusion of VET in the regional development strategies and policy frameworks specific to the Basque region, emphasizing its role in supporting RIS3 objectives and fostering regional competitiveness.
- Monitoring, Evaluation, and Continuous Improvement: a. Establish monitoring and evaluation mechanisms to assess the impact of SECOVE's activities in the Basque Country on regional growth and development. b. Regularly collect and analyze data on learner outcomes, industry partnerships, innovation projects, and regional economic indicators in the Basque region to measure the effectiveness and relevance of the SECOVE's initiatives. c. Utilize the evaluation findings to identify areas for improvement.
- Funding and Resource Mobilization: a. search for funding for the SECOVE activities and projects, such as EU funds, national funding or private investment
- Inclusion and Social Equity: a. Ensure that the strategic plan promotes inclusivity and social equity in VET by addressing the needs of underrepresented groups, including individuals from disadvantaged backgrounds, people with disabilities, and marginalized communities. b. Collaborate with social organizations, NGOs, and community stakeholders to develop targeted outreach and support programs that facilitate access to VET opportunities for diverse populations. c. Implement measures to address barriers to participation, such as providing financial assistance, flexible learning options, and tailored support services to promote equal opportunities and ensure that no one is left behind. d. Incorporate principles of diversity, equity, and inclusion into the design and delivery of training programs, guidance services, and mobility initiatives to create an inclusive learning environment for all learners.
- Cross-Sectoral Collaboration: a. foster collaboration and knowledge exchange between SECOVE, regional authorities, industry clusters, research institutions, and other stakeholders involved in RIS3 implementation. b. Encourage cross-sectoral partnerships and initiatives that bring together different industries, sectors, and

disciplines to promote interdisciplinary learning, innovation, and regional synergies. c. Facilitate networking events, workshops, and forums that enable stakeholders to share best practices, experiences, and innovative ideas to drive regional growth and development.

- Communication and Awareness: a. Develop a comprehensive communication strategy to raise awareness about the strategic alignment between SECOVE and RIS3, highlighting the benefits of VET in promoting regional growth and innovation. b. Engage with the public, stakeholders, and the media through various channels, such as social media, websites, and public events, to communicate the impact of SECOVE's activities on regional development and the opportunities available to learners. c. Showcase success stories and case studies that demonstrate how SECOVE's initiatives have contributed to the advancement of regional priorities, economic growth, and social inclusion. d. Promote transparency by regularly sharing progress reports, evaluation findings, and updates on collaborative efforts with stakeholders to ensure accountability and maintain trust.
- Continuous Learning and Improvement: a. Foster a culture of continuous learning and improvement within SECOVE by encouraging feedback, reflection, and collaboration among stakeholders. b. Regularly assess the effectiveness of the strategic plan's implementation, identifying strengths, weaknesses, and areas for improvement. c. Adapt the strategic plan and its activities based on evolving regional priorities, emerging technologies, and feedback from stakeholders, ensuring its ongoing relevance and alignment with RIS3 objectives.

By aligning the national SECOVE with RIS3 and incorporating principles of inclusion and social equity, the strategic plan aims to harness the potential of vocational education and training to drive regional growth, innovation, and ensure that opportunities are accessible to all individuals, contributing to a more inclusive and prosperous society.

Activities for the establishment of national COVE

The establishment of the Centre of Vocational Excellence in the Basque Country involves a series of activities aimed at creating a robust strategic planning, framework and infrastructure. Some necessary activities for the establishment of the CoVE include:

- Observatory platform: Understand the landscape of vocational education in the region. Identify gaps in the current system and analyze potential demand for new programs or for updating existing ones.
- Building Collaborations and Partnerships: Collaborate with stakeholders, including government, industry leaders, existing educational institutions, and community

leaders. These relationships will help in curriculum development, student placements and internships, and potential funding.

- **Funding and Resources:** Identify potential sources of funding. This could include government funding, EU funding, industry partnerships, grants from foundations or international bodies, provision of tailored made courses for the upskilling of workers, tuition fees.
- **Curriculum Development:** Develop a curriculum that is relevant to the industries we're targeting, and that provides students with both theoretical knowledge and practical skills. Involve industry partners in this process to ensure that the curriculum is aligned with current and future industry needs.
- **Professional development:** Recruit motivating teachers and practitioners in the field of vocational training and make sure they receive all the adequate professional training possibilities.
- **Accreditation:** Work towards achieving accreditation from relevant bodies. This helps to ensure that our program is recognized both nationally and internationally, and that students receive qualifications that are respected in the job market.
- **Dissemination and Marketing:** engagement of youth, female and minorities to technical VET studies is one of SECOVE's priorities. This involves marketing our programs to potential students and working with local schools, employment agencies, and community groups to reach those who could benefit from our programs.
- **Establish Industry Partnerships:** Build ties with local and international industries for internships, apprenticeships, and job placements for our students. This is crucial for ensuring that students receive practical training and have good job prospects after graduation.
- **Continuous Evaluation and Improvement:** Once the SECOVE is operational, regular evaluation and improvement is essential. This could involve gathering feedback from students, staff, and industry partners, monitoring employment outcomes for graduates, and staying up-to-date with changes in industry needs and educational best practices.

The ultimate goal is to provide high-quality vocational training that meets the needs of students and industry, and contributes to the economic development of the Basque Country. Through these activities, SECOVE will be established as a comprehensive and effective platform for promoting excellence in VET, supporting regional growth and development, fostering innovation, and ensuring the relevance and quality of vocational education and training in the Spanish Basque country.

Timeline

Year 1:

1. Agreement on the collaboration procedure of the Basque partnership.
2. Analysis on what to address within the sustainable energy sector in the Spanish Basque CoVE.
3. Identification and engagement of local and regional stakeholders. Establishment of business education partnerships.

Year 2:

1. Defining the alignment of the regional COVE in relation to the national RIS3 and to the research about inclusive and attractive VET.
2. Development of observatory for needs of industry
3. Cooperation agreements at local and regional lever for apprenticeships, internships and work-based learning.
4. Cooperation agreements at international level for apprenticeships, internships and work-based learning.

Year 3:

1. Development of training courses for IVET and CVET to meet the needs of industry
2. Research and setting up of collaboration strategies with other CoVEs, SSA projects, Alliances for Innovation projects, clusters, etc. we can build synergies with.
3. Development of the SECOVE platform: capacity building for teachers, attraction of students into technical professions, collaboration with other VET centres, universities and companies both at regional/national and European level.

Year 4:

1. Develop a sustainability plan to ensure the long-term viability and growth of the CoVE, including strategies for securing funding, expanding partnerships, and maintaining the quality and relevance of the training programs.

Basque Region CoVE Road-Map

ACTIONS BY YEAR

1

- Agreement on the collaboration procedure of the Basque partnership.
- Analysis on what to address within the sustainable energy sector in the Spanish CoVE.
- Identification and engagement of local and regional stakeholders. Establishment of business education partnerships.

Defining the alignment of the regional COVE in relation to the national RIS3 and to the research about inclusive and attractive VET

Development of observatory for needs of industry

Cooperation agreements at local and regional lever for apprenticeships, internships and work-based learning

Cooperation agreements at international level for apprenticeships, internships and work-based learning

2

3

- Development of training courses for IVET and CVET to meet the needs of industry
- Research and setting up of collaboration strategies with other CoVEs, SSA projects, Alliances for Innovation projects, clusters, etc. we can build synergies with.
- Contribution to the SECOVE portal
- Modernization and internationalization of the CoVE
- Implementation of actions to attract youth (specially women) to technical professions

Develop a sustainability plan to ensure the long-term viability and growth of the CoVE, including strategies for securing funding, expanding partnerships, and maintaining the quality and relevance of the training programs

4

Budget

The budget for the regional Basque CoVE will be based on the activities developed. Some of these activities will also be a source of funding. There will be a minimum-estimated cost of €120.000 based on the following actions:

- Communication and marketing activities
- Development of new curricula
- Providing summer courses and organizing other events to engage youth into technical VET
- Development and growth of the observatory and needs assessment research aligned with the regional smart specialization strategies
- Engagement events with industry and other stakeholders
- Delivery of training programs for the reskilling and upskilling of workers and the unemployed
- Delivery of IVET programs
- Arrangements and supervision of internships, work-based learning and traineeships both locally/regionally and abroad

Quality Assurance

The quality assurance and management of the CoVE's effectiveness, outputs and outcomes will be assured through internal Quality Management activities and measures. The SECOVE Quality Assurance and Evaluation Plan will be followed from the beginning. The aim is to ensure quality of project implementation and outputs. The Plan includes quality criteria, processes and procedures, monitoring processes, as well as improvement processes, covering both effectiveness and efficiency.

Partner organizations will fill in a report with the feedback of the participating teachers and students with quantitative and quality feedback. Based on feedback, actions will be taken to improve the quality of all outputs agreed by the partnership for the global improvement of results. The combination of both the internal and supervisory evaluation ensures that project results address the challenges identified.

All partners have also appointed a supporting person with experience in Quality control to support the partnership. At the end of each activity, all partners will review decisions and commit to concrete tasks (an action list) to be completed in the coming months. Twice a year each partner will submit a report reflecting on their activities, milestones, achievements and resources used as well as considering areas of difficulty and steps for improvements. Delivery and achievement of milestones will be checked constantly against the overall project work plan and objectives.

5. *Exploitation and sustainability*

Creating impact

The partnership will carry out different activities in order to analyse the impact of SECOVE on the quality and relevance of vocational education and training, innovation and regional development. The SECOVE stakeholders will be involved in the process and will be asked to provide feedback, comments and suggestions on the CoVE outcomes. This may entail conducting surveys, setting up focus groups, and hosting conferences with business associates and local authorities in order to gather data on students' performance, job satisfaction, industry feedback, research outputs, and economic effect.

To share the impact of SECoVE on the modernization and improvement of vocational education and training, innovation and regional development, effective communication of the SECoVE results to stakeholders and the general public is crucial. The procedures that will be used to share the CoVE results are listed below:

1. Creation of a communication strategy outlining the goals, key messages, target audience, channels, and timetables for disseminating the SECoVE findings. The stakeholders and general public who will be interested in the SECoVE outcomes will be identified in the strategy.
2. The use of multiple communication channels to interact with our stakeholders and the public in general, i.e.: press releases, social media, webinars, focus groups, workshops, conferences, and other events.
3. Emphasizing the SECoVE effects on regional growth, innovation, and the standard and applicability of vocational education and training.
4. Evaluation of the effectiveness of the communication strategy and its impact.

Expanding the COVE

SECOVE is the result of a thorough analysis of the current situation in participating regions concerning existing practices, optimal ones as well, policies, networks of cooperation between HEI and VET, the world of education and the business world, legislation, employment and culture of inclusion. It is designed, therefore, to provide each region with materials, services and structures that are both innovative for the local/regional context and are able to meet the policies and stated needs. To ensure the future development and expansion of CoVE, the following plan can be implemented:

- Identifying areas where CoVE can expand its operations is of utmost importance. This can be done by researching the market demand for various vocational training courses and identifying the industries that are growing and have a shortage of skilled workers.

- Keep on collaborating with industry partners to ensure that our courses are aligned with industry needs.
- Developing new courses or updating existing ones to meet the demands of the market.
- As the partners in the CoVE expand their operations, they may need to expand their facilities to accommodate more students and provide better resources for learning. This can involve building new classrooms, labs, and workshops, as well as investing in technology and equipment to enhance the learning experience.
- Developing online learning materials to reach a wider audience. This can involve developing online courses, webinars, and other resources that can be accessed from anywhere anytime.
- Partnering with other institutions and VET schools to share resources and expertise. This can involve working with other CoVEs in different regions or countries, as well as universities.
- Disseminating the CoVE through marketing campaigns, attending industry events, and working with local media to promote the VET center.

Future Funding

- Continued participation in innovative EU-funded projects
- Explore different funding sources: charge companies for our educational services and for specific R&I consultant services provided to them, specially to SMEs who may not have the equipment or the expertise to analyse different technical developments.
- Organize networking events between stakeholders and work on the development of new projects that address energy and digital transformation. Charge for participation in such events.
- Organize Hackathons
- Bootcamp for industry professionals
- Development of materials and content that can be sold or access to the SECOVE platform for training courses

Strategic Partnerships (with other COVEs, projects, clusters etc.)

Strategic Partnerships for the Basque CoVE:

1. Collaboration with other CoVEs:

- Identify and establish partnerships with other Centers of Vocational Excellence in the Spanish Basque Country and across Europe.
- Share best practices, exchange knowledge, and collaborate on joint initiatives to enhance the quality and relevance of vocational education and training.

- Explore opportunities for cross-training programs, where learners from different CoVEs can benefit from specialized training offered by partner institutions.
- Foster a network of CoVEs to facilitate the exchange of experiences and innovative approaches in vocational education.

2. Engagement with Research and Innovation Projects:

- Identify relevant research and innovation projects in the field of vocational education and training, particularly those aligned with SECoVE objectives and priorities.
- Seek opportunities to collaborate with research institutions, universities, and industry partners involved in these projects.
- Participate in research consortia, joint initiatives, and pilot programs to contribute to the development and testing of innovative approaches, technologies, and curricula in vocational education.
- Leverage the outcomes and findings of these projects to enhance the quality and relevance of the SECoVE training programs.

3. Cooperation with Industry Clusters and Associations:

- Establish partnerships with industry clusters and associations that are relevant to the key sectors addressed by SECoVE.
- Collaborate on the design and delivery of training programs that align with the specific needs and requirements of the industries represented by these clusters.



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D2.1 Roadmap for the establishment of the SECOVE Platform

ANNEX C:

Roadmap for the establishment of a Centre of Vocational Excellence in Italy

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Work Package 2: Roadmap for the establishment of SECOVE platform

“Roadmap for the establishment of Centre of Vocational Excellence in Italy”

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1. Context

At the European level the SECOVE project promotes the development of a European cooperation platform of Centres of Professional Excellence (CoVEs) in the field of sustainable energy (SECOVE platform). Each CoVE will be constituted as a local/regional Centre of Excellence, in cooperation with local companies and other institutions operating in the field of energy, renewable energy sources, efficient use of energy and other related sectors, such as construction and local development.

The SECOVE partnership is organised in 5 national partnerships. Each of these regional partnerships is developing a centre of excellence in VET for the promotion of sustainable energy. Each of these partnerships is tailored to the institutional, technical, technological, cultural and human resource characteristics for the creation of the CoVE.

EU CoVEs are focused on a specific area of vocational education and are able to provide excellent educational and vocational training services, to serve as a model and to network and cooperate with other CoVEs to ensure a better link between vocational education and training and the needs of the labour market.

Preliminary Analysis of the Italian and Sardinian socio-economic Context

At national level, In Italy the demand for renovations of buildings in terms of energy efficiency has grown in recent years. Looking only at the residential sector, a 2021 sample analysis showed that 50 percent of the properties relate to units within buildings constructed before 1975, thus predating Law 373/1976, the first binding legislation on building construction characteristics in terms of energy demand savings. Of these, about 30% are the share commonly identified as "pre-1967." Nevertheless, only 3 percent of the total sample was affected by significant renovations.

There to be noted, however, that the measure taken by the government to boost the economy after the covid, the '110% Superbonus' tax facilities, has greatly increased the demand for efficient systems, performance envelopes and renewable energy production.

The demand for photovoltaic systems for the energy efficiency of residential buildings, for example, has grown considerably, mainly on the wave of that '110% Superbonus'. This is a tax relief governed by Article 119 of Decree-Law No. 34/2020 (Relaunch Decree), post-pandemic, which consisted of a 110% deduction of the expenses incurred from 1 July 2020 for the implementation of specific interventions aimed at energy efficiency and static consolidation or reduction of seismic risk of buildings. The subsidised interventions also include the installation of photovoltaic systems and infrastructure for recharging electric vehicles in buildings. The 2022 Budget Law extended the facilitation, providing for different deadlines depending on who incurs the eligible expenses (Source: <https://www.governo.it/it/superbonus>).

Although the rules have recently changed - as of 17 February 2023, there is no longer the possibility of assigning the credit or having the rebate on the invoice - the Superbonus, which as of 2023 has decreased from 110% to 90% for everyone, still remains in force.

Therefore, the Italian economy related to renewable energy and the construction sector is experiencing a special contingency. In fact, the combination of the Superbonus with the war in Ukraine has led to an increase in the cost of transporting and procuring goods between 10 and 30 percent.

Added to this is the incredible increase in the cost of gas-related energy: "Recently, in the last months of 2021, there has been a surge in natural gas in Europe, which is now by far the most expensive commodity (+723%). The surge in gas prices was quickly passed on to the price of electricity in Italy, driving up energy costs for industrial companies as well: 37 billion expected in 2022, up from 8 billion in 2019" (Source: <https://www.confindustria.it/home/centro-studi/temi-di-ricerca/congiuntura-e-previsioni/tutti/dettaglio/rincari-di-commodity-gas-e-energia-elettrica-rischiano-di-bloccare-le-imprese>).

Energy Communities

In this context, energy communities have been introduced as of March 2020. In Italy the experimentation started with the conversion into law of the Decreto Milleproroghe, a first milestone on the road towards the transposition of the European RED II Directive of 2018. This, as is well known, states that by 2030, at European level, renewable energies must account for at least 32% of gross final energy consumption (Source: <https://temi.camera.it/leg18/post/i-principali-contenuti-della-direttiva-red-ii.html>).

20 renewable energy communities are active or being activated in Italy, and 7 more are planned. Distributed throughout the territory, they concretize the benefits of sharing renewable energy and pave the way for a new management model. In South Tyrol, for example, in Prato allo Stelvio, the E- Werk Prad cooperative has 1350 members and operates 17 renewable energy plants. In the municipalities of Dobbiaco and San Candido, on the other hand, the FTI Cooperative covers the energy needs of 1,300 consumers with a 1,500-kW biomass power plant. In Valtellina, the historic Società elettrica di Morbegno (Sem), supplies 13,000 users thanks to 8 hydroelectric plants with an installed capacity of 11 MW. In Apulia, the Cooperativa di Melpignano was born in 2011 from the collaboration between Legacoop and the municipal administration. Articulated in 33 photovoltaic systems placed on the roofs of public and private buildings in the town, it produces renewable energy by reselling the surplus. This is just to mention a few examples.

According to this contest, during 2022 in Italy, 137,000 photovoltaic systems, i.e., 66% of those connected during the year, for 1,117 MW of power, benefited from the Superbonus. Photovoltaic power 2022 in the first nine months of the year grew by 7.1 per cent compared to 2021 and the number of installations by about 12 per cent (Source:

https://www.gse.it/documenti_site/Documenti%20GSE/Rapporti%20statistici/GSE%20-%20Nota%20trimestrale%20FTV%20-%20terzo%20trimestre%202022.pdf).

Specialised Italian companies are often unable to meet the demand from private individuals in a timely manner. In the coming years, the topic of energy efficiency in buildings will be even more pressing, given the recently approved European Directive on so-called 'green houses'.

The approved text essentially envisages energy class E by 2030 and energy class D by 2033 for residential buildings. The aim of the directive is to prioritize 15% of the most energy-hungry buildings, which will thus be placed in the lowest energy class, G. In Italy, this is about 1.8 million residential buildings (out of a total of 12 million, according to ISTAT).

The text also gives indications on non-residential buildings, solar installations, and new constructions. As early as January 2026, the obligation to construct the so-called Zeb (zero emission buildings) for new buildings occupied, managed or owned by public bodies will come into effect.

In other cases, the deadline is 2028. From the transposition of the directive, solar installations will become mandatory in all new public buildings and new non-residential buildings. Then, by 31 December 2026, the obligation will apply to all existing public buildings and non-residential buildings. And so on, until 31 December 2032 when the obligation will come into force for all buildings subject to the directive.

Non-residential and publicly owned buildings will have to achieve class E from 2027 and class D from 2030 (source: <https://www.ilsole24ore.com/art/il-parlamento-ue-approva-direttiva-case-green-immobili-classe-d-entro-2033-AEJeX43C>).

At regional level, in particular in Sardinia, in the first 9 months of 2022, 3514 new photovoltaic systems were installed in Sardinia out of 123,000 throughout Italy. Cagliari is the sixth city in Italy for the number of photovoltaic systems (1630 in total of which 135 installed in the first 9 months of 2022), behind more populous and / or rich cities such as Milan and Rome, Bari, Palermo and Bologna (Source: https://www.gse.it/documenti_site/Documenti%20GSE/Rapporti%20statistici/GSE%20-%20Nota%20trimestrale%20FTV%20-%20terzo%20trimestre%202022.pdf).

The island has only 1,600,000 inhabitants out of 60 million inhabitants of Italy, it is not one of the richest regions of Italy so this effort to adapt and improve the energy efficiency of buildings takes on considerable weight and value.

Preliminary analysis of professional profiles in the construction sector in the Region of Sardinia

There are currently twelve profiles in the Construction Sector of the RRPQ (Regional Directory of Qualification Profiles) of Sardinia's VET system.

Two of them are specifically related to the energy and sustainability sector: "Energy efficiency technician of existing buildings and systems" and "Technician in Biocompatible Building Systems".

Since the chosen field of the national CoVE is the energy efficiency of buildings, it is strategic to include all the qualification profiles present that, in different fields, contribute to the common goal of greater efficiency and sustainability of buildings. In fact, in these cases, although references to energy and sustainability are not made explicit in the standards in terms of knowledge, skills and abilities, the training paths could include specific contents within the curriculum such as green building and energy saving of buildings (see also analysis of the RAS working group).

In the RRPQ of Sardinia, these twelve profiles make up 55 ADAs (activity areas) of which at least 6 are already perfectly in theme with the focus of the national CoVE.

The RRPQ represents the regional reference standard for all Sardinian labour market operators, i.e., the "dictionary" through which competences and qualification profiles can be made explicit for different purposes.

The repertory defines, in fact, the professional reference standards of the Sardinian territory against which the planning of the regional training offer takes place; it also represents a valid support for businesses, in the formulation of job offers and in the clarification of training and professional requirements, and for citizens, in the self-guidance phase and in the compilation of their CVs.

They are as follows and refer to the two abovementioned profiles, to which a third profile could be added, that of "Technician expert in the design and management of structural interventions", which has an interesting managerial and executive coordination focus.

Activities areas (ADA)

The level of technological upgrading is a key element in measuring the construction industry's adequacy for the green challenge. This requires training at every level and the simultaneous spread of an energy culture in the country.

On the one hand, the 10 types of construction technology impacting the industry in 2022 are: AI; BIM and HBIM modelling; Lidar; Connected Hardhats; Smart Infrastructure; VR and AR; 3D Printing; Exoskeletons; Humanoid Labourers; Robot Swarms.

On the other hand, energy and building technologies are a leading element of the country's exports.

To support this evolution the activities areas could be:

A9999246 Representation of building system energy situation. Recognise the technological and environmental components of the existing building envelope and plant system, understand the technical documentation and supply contracts, adopt the appropriate techniques and instruments for measuring the building plant system and produce a report of the analysis carried out

9999247 Energy performance improvement measures. Examining the energy situation of the building-plant system, examining the client's requirements, drawing up possible intervention scenarios on the building envelope and/or plant

9999248 Configuring technical solutions for improving energy performance. Analysing the interventions to be carried out, verifying the resources and primary energy sources available, identifying the main technologies/systems on the renewable energy market, elaborating hypotheses and technological solutions of the most suitable energy systems to be implemented.

9999249 Formulation of energy performance improvement plan. Identify and examine the different financing sources and incentive systems in force, formulate the plan of works.

9999425 Identifying the building's energy requirements and environmental impact. Acquire and analyse all information relating to the building intervention in order to identify the building's energy requirements and environmental impact

9999426 Drawing up a sustainable, energy-efficient building project. Carrying out the technical-economic feasibility study in order to elaborate the design of the executive work.

In addition, there are also to be considered and analysed the Courses delivered through the "Green & Blue economy" program in the six-year period 2014-2020.

At present there are also the courses provided by the ITS in Macomer (NU) 'Fondazione ITS Efficienza Energetica Sardegna'; each course has a maximum of 20 students. ITS is part of VET system.

The calls for tenders for training 2022/2024 concern 5 figures.

1. SUSTAINABILITY MANAGER 4.0. Higher technician of energy systems in the circular economy - environment 4.0.
2. IMP-ENERGY 4.0 Higher technician for energy supply and plant construction - address energy storage and maintenance of large plants 4.0
3. HIDROGEN Energy Plant Manager 4.0. Higher technician for energy supply and plant construction 4.0 (Energy Plant Manager 4.0) address production and distribution of energy from hydrogen in collaboration with CarboSulcis
4. WORK IN GREEN BUILDING Higher technician for energy saving in sustainable building 4.0
5. DOMOTICS 4.0 Higher technician for energy efficiency: management, maintenance and control of plants and distribution networks - Domotics 4.0

These courses can be accessed with an upper secondary school diploma or a vocational training diploma plus one year of a supplementary annual leFP course and passing an entrance test. At the end of the course a Higher Technical Diploma is awarded with EQF level V competences for two-year courses and level VI for three-year courses. In short, Sardinia already has its own vocational education and training (VET) system oriented towards energy efficiency and also more generally to sustainable energy which obviously can and must be improved and implemented.

Legal framework for establishment of COVE

it is envisaged or an informal network or something formalized like a cluster, because in Italy there is currently not a specific legislation on CoVEs. However, in this section it is analysed what is the legal framework on the excellence in training issue.

In Italy there are two main types of Centers of Excellence formally established and regulated by law.

1. Istituti Tecnici superiori – ITS (Ref. [Cosa sono - Miur](#)).

In the framework of high technical education, the Higher Technical Institute are schools of excellence with high technological specialization. ITS born in 2010, as post-secondary level training institutes non-university, classified as "technologically advanced schools", which promote a highly advanced education able to equip students with technical skills for the job market. They are the expression of a strategy based on the link between education, training and employment policies with industrial policies. Concerning the organizational model, they are established according to the form of the *Participatory Foundation*, according to the public-private management model of non-profit activities. The minimum standard requires the presence of at least: an upper secondary education technical or professional institution; a local authority (municipality, province, metropolitan city, mountain community); a training agency accredited by the Region for higher education; a company in the productive sector to which the Higher Technical

Institute refers; a university department or other body belonging to the scientific and technological research system. Upon establishment of the foundation, all the founders contribute financial, logistic, instrumental and human resources. The ITS, as required by the law (Decreto interministeriale 93 del 7 Febbraio 2013), are classified as "public law bodies" with a statutory, didactic, research, organisational, administrative and financial autonomy.

Technological areas and courses are six: Energy efficiency; Sustainable Mobility; New technologies of life; New technologies; Made in Italy Innovative technologies for cultural assets and activities – Tourism; Information and communication technologies. The roles are declined by the ITS at a territorial level according to the skills and technological applications required by the specific contexts. The courses are built through shared and participatory planning with businesses and other players in the system. Access to the courses, following a selection, is open to young people and adults with a secondary school diploma and those with a four-year vocational education and training diploma who have attended an annual IFTS course. The courses are planned and realized in connection with companies: at least 30% of the duration of the courses is carried out in the company, immediately establishing a very strong link with the productive world through internships also abroad; at least 50% of the teaching staff comes from the world of work. At the end of the course, the Diploma of Higher Technician is obtained with the certification of the corresponding skills. The skills resulting from the four-semester ITS courses are linked to level V of the European Qualifications Framework for lifelong learning (EQF). The skills resulting from the six-semester ITS courses are referable to level VI of the European Qualifications Framework for lifelong learning (EQF). To facilitate circulation at national and European level, the qualification is accompanied by the EUROPASS diploma supplement.

2. Centri di Competenza ad alta specializzazione (Ref. [Centri di competenza ad alta specializzazione \(mimit.gov.it\)](https://mimit.gov.it))

Another form of excellence in training has been provided through the foundation of Highly specialized competence Centres, public-private partnerships whose task is to carry out guidance and training activities for companies, as well as support in the implementation of innovation, industrial research and experimental development projects. The centres, selected in 2018 through a tender, are the following: 1 [CIM 4.0](#) Competence Industry Manufacturing 4.0; 2 [Made](#) - Competence Centre Industria 4.0; 3 [BI-REX](#) - Big data Innovation-Research Excellence; 4 [ARTES 4.0](#) – Industry 4.0 Competence Centre on Advanced Robotics and enabling digital TEchnologies & Systems 4.0; 5 [SMACT Competence Centre](#); 6 [MediTech](#) Competence Centre I 4.0; 7 [START 4.0](#) Sicurezza e ottimizzazione delle Infrastrutture Strategiche Industria 4.0; 8 [CYBER 4.0](#) – Cybersecurity Competence Centre.

Concerning the financial resources, the ministerial decree of 16 February 2023, refines the activities of the eight centres, until the end of 2025, with an allocation of 113.4 million euros from the resources allocated available for investment by the PNRR. Furthermore, the decree also establishes the control room which will have the task of

monitoring the implementation of the activity and promoting coordination between the various subjects involved. Cohering the main activities and results, the Competence Centres had carried out over 2,000 demonstrations of 4.0 technologies, mainly to SMEs (73% of the total), putting into circulation a virtuous mechanism for promoting new technologies, including through the organization of over 420 workshops/events. Approximately 511 free training events were provided which saw the participation of 29,000 people from almost 12,000 companies; and 370 paid training courses attended by almost 22,000 people from 1,800 companies, for a total value of almost 1.8 million euros. Lastly, a significant portion of the activities carried out by the Competence Centres concerned the provision of approximately 330 consultancy services, mainly intended for SMEs, for a total value of over 10 million euro. With reference to the tenders for innovation projects, 19 were activated, through which 211 projects were selected to be financed, corresponding to a total of almost 24 million euros in subsidies.

As mentioned before, in Italy there is not a specific legislation for CoVE. For this reason, the partnership is currently evaluating different types of options.

The final decision will depend on a number of factors: establish a new legal entity or provide a more flexible network through a collaboration agreement; to deal with commercial activities or establish a no profit framework; to provide a strict and determinate number of partners or provide a simple procedure to include new partners into the CoVE.

By analysing those different factors, **partners could choose different options:**

1.CoVE formally constituted.

In this case the Public private partnerships (PPP) could provide different kind of Governance:

Foundation: non-profit legal entity with a board of directors. In this case is a no profit entity easy to set up that can generate its own funds. It can be found on a clear agreement with specific partners, so his structure is less flexible to new partners.

Cooperative: legal entity with a membership structure, with possibility to make a profit, so it could be more attractive for business partners. Setting up a cooperative requires a high level of commitment from the partners. The establishment procedure is more complex than foundation, but could be easier to join the CoVE as new partners also with short-term contracts.

2. Network of collaboration;

In this case the governance could be realized through a Collaboration agreement between the partners or cooperation agreement (Memorandum of Understanding). This is a lighter form of cooperation with low threshold for entering into collaborations with partners, that could focus on the content. However, this framework but do not provide

a legal basis for holding partners to agreements made, for that reason it's very important to share a common strategy to focus on common goals, ensure accountability of managers or steering group. TCR, as the coordinator, ensure management and monitoring procedures.

3. VET providers acting as COVE at regional, sub-regional or sectoral level.

In many countries, individual VET providers operate as CoVE. In these cases, value assets added such as innovation poles, business incubators or R&D projects, fit into the ordinary activities of vocational education and training providers. Typically, this type of CoVE has a portfolio of ongoing and ongoing project-based activities (usually co-funded by the EU) to support innovation and mobility transnational staff and students. They often specialize in specific fields and have developed structures adequate to support them. These CoVEs can be regional or sub-regional, or national (Ref. [KE0119739ITN.it .pdf \(bollettinoadapt.it\)](https://ke0119739.itn.it/bollettinoadapt.it))

Scope of the national COVE

The theme of the national CoVE is energy efficiency, particularly in the plant and building sector, and the gender equality axis is transversal. This places as a priority intervention in the field of training, the training of professional figures (both secondary and post-secondary school students) oriented towards the ability to introduce and control the design and construction process using digital tools, thus also controlling the energy performance associated with the construction of buildings. The aim is also to train professional figures, following the results of the national workshops, of adults who are already employed in construction companies or design firms but who do not have the skills to control the design and energy aspects using digital tools.

The Italian CoVE will be based in Sardinia, but with a national scope, with connections to several other Italian regions thanks to an active national partnership and a potential network of stakeholders in several Italian regions.

The main objective of the CoVE is to promote excellence in vocational education and training programmes and to contribute to the development of a highly qualified workforce.

The purpose of the Centre of Vocational Excellence (CoVE) is to provide high-quality vocational education and training (VET) programmes in the field of sustainable energy. CoVE focuses on advanced skills training and responds to the needs of the country's labour market.

The CoVE will develop an innovative curriculum and training programme that responds to the changing needs of the labour market and ensures the employability of learners.

CoVE will conduct research and development activities to improve knowledge and understanding of labour market needs and to identify emerging trends and technologies.

CoVE will work with SMEs, industry and other stakeholders to ensure that its programmes are aligned with job market needs and to facilitate the placement of vocational graduates, graduated etc.

CoVE will support the professional development of trainers to ensure that they have the necessary skills and knowledge to deliver high quality training. COVE will support as well student services such as counselling and guidance.

CoVE will be also a focal point for sustainable energy and diversity, equity and inclusion issues, providing support, advice and guidance to stakeholders.

Alignment of COVE with RIS3 strategy

The Smart Specialisation Strategy (S3) plays a key role in the next programming period in order to create development and employment through research and innovation on the basis of the resources and skills present in Sardinia.

S3 is the enabling condition for approval of the ERDF OP 21-27 (ANNEX IV Thematic enabling conditions applicable to ERDF, ESF+ and the Cohesion Fund - Article 11 1). It represents the framework within which policies for a more competitive and smarter Europe are designed and implemented.

Strategic objective: A more competitive and smarter Europe by promoting smart and innovative economic transformation

Specific Objectives

- 1) To develop and strengthen research and innovation capacity and the introduction of advanced technologies
- 2) Enabling citizens, businesses, research organisations and public authorities to capture the advantages of digitisation
- 3) Strengthening sustainable growth and competitiveness of SMEs and job creation in SMEs, including from manufacturing investments
- 4) Developing skills for smart specialisation, industrial transition and entrepreneurship
- 5) Boosting digital connectivity

The outcomes of the evaluation on the results of the S3 implementation in the ROP 14-20 programming period confirmed as smart both the vision of a Sardinia 'island of knowledge' and the choices made in the Specialisation Areas.

They are actually linked to a series of localisation advantages that the Region has, the policies and tools used to support R&I (research and innovation) implemented in particular with Axis 1 of the ROP 14-20, are valid and the policies for the next programming period 21-27 will be built on this solid basis.

The implementation of S3 projects is still in the process of being completed. In order to reap the benefits of S3 implementation, the resulting projects must be brought to fruition by gathering the fruits of the projects developed so as to safeguard the public and private investments made in the 14-20 programming cycle by updating it with respect to the strategic context of the Green Deal, Shaping Europe's digital future, Recovery Plan for Europe and Next Generation EU, Just Transition Fund and the changes in the economic and social framework.

The UN 2030 Agenda for Sustainable Development, launched in 2015 by the UN General Assembly, endorsed by 193 UN member states and supported by other institutions such as the European Union (EU), constitutes the main strategic reference for policies aimed at significant 2030 targets.

The EU strategy, the European Green Deal, is also based on the UN 2030 Agenda and constitutes the natural framework within which the objectives of the Structural Funds for the 2021-27 programme cycle are defined.

At the Italian level, in 2017 the CIPE (*Interministerial Committee for Economic Planning*) approved the National Strategy for Sustainable Development (SNSvS), under the direction of the Ministry for the Environment and the Protection of Land and Sea (MATTEM, now the Ministry for Ecological Transition, MITE); furthermore, MATTEM offered support to the Regions and Metropolitan Cities for the implementation of the national strategy and the fine-tuning and pursuit of those defined locally.

The Region of Sardinia seized this opportunity by putting the 2030 Agenda at the basis of a sustainable development bringing widespread wellbeing, and in October 2021 (D.G.R. no. 39/56 of 08 October 2021) approved its own Regional Strategy for Sustainable Development (SRSvS), as the outcome of a pathway started in 2018 (D.G.R. no. 64/23 of 28 December 2018), with the involvement of regional and local institutions and civil society. The SRSvS of Sardinia, sets sustainable development objectives within the framework of its economic, social and environmental programming.

The process of constructing the Strategy has led to the Smart Specialisation Strategy being considered crucial for the approach to be taken to the declination of the Prosperity and Planet pillars in the SRSvS and to strengthen the competitiveness of our production

system. Explicit references to S3 or its vision are found throughout the SRSvS and especially in the objectives of Sardinia + Smart, Sardinia + Green and Sardinia + Social. In particular, the strategic objectives strongly connected with S3 are those of the "Smarter Sardinia" priority theme, aimed at: strengthening the competitiveness of enterprises by facilitating sustainable organisational and product innovation processes; supporting research and development; and fostering the connection between enterprises, research centres, universities and higher education institutions. The Region has therefore adopted the European perspectives for the transformation of S3 into S4: Smart Specialisation Strategy for Sustainability.

The Autonomous Region of Sardinia, following a process of comparison, capitalisation and knowledge sharing with the territory, has identified the following as Areas of Specialisation (AdS) during the 2014-20 programming period: ICT, Smart Networks for intelligent energy management, Agroindustry, Aerospace, Biomedicine, Tourism, Culture and Environment.

Smart grids: to encourage the implementation of innovative systems and components for the exploitation and integration of energy - produced from renewable and non-renewable sources - in active/intelligent energy distribution networks in order to increase the overall efficiency of the electricity system and reduce CO2 emissions through research, development and the implementation of forecasting and management models for intermittent flows produced from renewable sources, to ensure balance, stability and quality of service in the electricity system.

In the area of SMART NETWORKS, proposals from regional SMEs were mainly aimed at researching, developing and implementing models for forecasting and managing intermittent flows produced by renewable sources, to ensure balance, stability and quality of service in the energy system.

Within the framework of the Sardinia ESF ROP, Axis 3 Education and Training - Specific Objective 10.6 Qualification of the supply of technical and vocational education and training - Action 10.6.1 (Qualifying interventions of the initial and higher technical vocational education and training chain), funding of approximately EUR 1.7 million is earmarked to support Istituti Tecnici Superiori (ITS). ITS are schools of excellence with a high technological specialisation that enable students to obtain a higher technical diploma. They constitute the non-university tertiary vocational training segment that responds to companies' demand for new and high technical and technological skills to promote innovation processes. They are set up in the form of the Participation Foundation, according to the model of public-private management of non-profit activities. Their objective is to support interventions in the business sectors, with particular reference to the innovation and technology transfer needs of small and medium-sized enterprises.

In the case of the Sardinia Region, the ITSs financed are five, referring to four different technological areas: energy efficiency, sustainable mobility, new technologies for the made in Italy - agrifood system and innovative technologies for cultural goods and activities - tourism.

The main objectives that are pursued through ITS are:

- *to ensure greater stability and quality in higher technical training supply*
- *to ensure differentiated training paths adapted to the evolution of the job market;*
- *to enable young people, in particular, to obtain more qualified and specialised skills in accordance with the competitiveness of the job market;*
- *strengthen the social capital and the specific features of the Sardinian territory, also through the dissemination of technical and scientific culture.*

It is also planned, consistently with the Guidelines for the planning of Technical Higher Education interventions for the three-year period 2017/202027, to link the ITS training offer with the strategic supply chains referred to in the S3, as well as with the production vocation and further development potential of the targeted territories.

The S3 results in the period 14-20 revealed a substantial capacity of the Sardinian R&I system to respond to inputs. External evaluations have confirmed that the selected areas represent niches within which the ecosystem is able to produce high added-value projects.

The comparison on the areas of intelligent specialisation, carried out by Siris Academic (May 2021), of Sardinia with regard to Italy, showed that the S3 areas for the 2014-2020 period were appropriately chosen.

In scientific publications, Sardinia is specialised, in relative terms with respect to the national perimeter, in Agroindustry, Tourism, Culture and Environment and (very slightly) Biomedicine.

Sardinia is more specialised than the Italian perimeter in the areas of Agroindustry, Tourism, Culture and Environment, and Biomedicine, and less specialised in Aerospace, ICT, and Smart Grids.

Smart networks for efficient energy management

The strengths that have led to smart networks for energy management being identified as an area of specialisation for the region are:

- the widespread presence of know-how in the sector and of research facilities: CRS4, CNR institutes, university departments, Sotacarbo with its Research Centre, Sardegna Ricerche, with particular reference to the Renewable Energy Platform and its three laboratories: Biofuels and Biomass, Electricity, Concentrating Solar Power and Hydrogen from RES;

- the development of a network, grouped around the Renewable Energy Cluster project promoted by Sardegna Ricerche, of innovative enterprises operating in the ICT and energy services sectors;
- the presence of sector expertise and research activities participating in projects funded under Horizon 2020 and by MIUR (Strategic Research Projects);
- the transversal nature of the topic and the synergies with other identified specialisations, in particular with ICT, tourism and cultural heritage, agrifood, aerospace;
- the wide-ranging market spin-offs resulting from applications linked to the protection and enhancement of the natural heritage from a tourism perspective as well as to the conversion of industrial poles (Porto Torres);
- consistency with EU, national and regional strategic agendas (Regional Energy Plan);
- the fact that Sardinia has a geographical, environmental and climatic configuration that makes it an ideal laboratory for the development of intelligent energy systems and districts and for the experimentation of innovative energy models.

The objectives set with the specialisation were:

- the strengthening of the regional innovation system in the energy field;
- the increase of collaboration between companies and research facilities and their strengthening;
- increasing the innovation activities of companies in the energy field.

The main initiatives promoted by the Region under the 2014-2020 ERDF ROP, with regard to the specialisation area under review, concern

- the Intelligent Networks complex project of the Renewable Energy Platform of Sardegna Ricerche
- the R&D programme for enterprises
- the Macchiareddu microgrid
- the Benetutti Smart Grid study
- the animation and training activities
- the Sardegna Ricerche over-the-counter projects
- Cluster projects
- innovative procurement
- the Efficiency and Microgrids programme, on ROP Axis 4
- the Smart Networks in Sardinian Municipalities programme (Action 4.3.1 of ROP)

Smart networks for efficient energy management R&D programme

The programme co-financed five R&D projects, involving a total of seven companies, the Universities of Cagliari and Sassari, and CRS4, for a total public contribution of EUR 695,000 and private co-financing of EUR 313,000 (31% of the total amount).

The projects are:

- *GRID 2.0-BTCC: concerns the development of an active/intelligent energy distribution network model with a "grid defection" perspective to carry out low-voltage direct current electricity distribution*
- *SARDINE: aims to develop new products and services in the area of smart grid planning for energy production and storage, through a Web-based decision support application (WBDSA) that increases the effectiveness of the analysis of new smart grids in the design phase or in the retrofitting of existing solutions*
- *POSEIDON: aims to define strategies for the optimal management of microgrids in port areas, through the coordination of RES production systems, electric vehicles with charging stations and vessels equipped with innovative hybrid storage systems*
- *SMART_UZER: aims at overcoming the limits of acceptance and adoption of energy efficiency measures and user response to the market (Demand Response) through the development of a user decision support tool (Decision Support), with an innovative Cloud-based ICT system*
- *SEC: aims to implement a pilot smart electricity micro-grid developing an experimental local electricity 'exchange' based on blockchain technology*

The Benetutti Smart Grid study

With the aim of verifying the possibility of extending the activities carried out at Sardegna Ricerche's Macchiareddu site to a larger scale, the Renewable Energy Platform developed, in collaboration with the University of Cagliari, the Municipality and the Benetutti Energy Company, the preliminary study for a Smart Grid in the municipality of Benetutti.

The document focuses on the energy analysis of the territory, analysing the demand in terms of electrical, thermal and mobility-associated consumption, local electrical and thermal energy production, energy infrastructures and the energy potential of the territory.

The technical and economic evaluation of feasibility for the implementation of the municipal smart grid focused on

- *the sizing of the anaerobic digestion plant*
- *the sizing of the cogeneration system*
- *the biogas distribution system*
- *the sizing of the battery park*
- *the management and control system*

As also underlined by the above-mentioned SIRIS study, international trends "such as the circular bio-economy, the European Green Deal or the Agenda 2030 sustainable development goals" must be taken into account when addressing research and innovation topics within the AdS.

For the Smart Grids AdS, the point of reference can only be the European Climate-Energy Framework 2030, articulated in the Climate Package and the Clean Energy Package, and a pillar for achieving the European Union's vision to achieve climate neutrality by 2050. Specifically, the three 2030 targets, which for Italy are:

- Renewable energy: 30% (Share of energy from RES in gross final energy consumption)
- Energy efficiency: - 43% (Reduction in primary energy consumption compared to the PRIMES scenario 2007)
- Greenhouse gas emissions: - 33% (GHG reduction vs 2005 for all non-ETS sectors)

The PNIEC (National Integrated Energy and Climate Plan) is the national planning tool in relation to the above objectives. It defines the product and process technologies, systems and organisational and management models essential for the energy transition. From a strategic point of view, there are three recent European reference documents:

- the Energy System Integration Strategy (COM (2020) 299)
- the Hydrogen Strategy for a climate neutral Europe (COM (2020) 301)
- the Strategy for Sustainable and Intelligent Mobility (COM (2020) 789)

AdS development trajectories: Smart Grids for efficient energy management

The theme of smart grids, or Smart Grids, is one that allows the different components of the energy value chain to be brought together: production, storage, distribution and use. This is because it focuses on how to manage in a coordinated and synergetic manner the development of renewable energy sources with energy demand under conditions of security, continuity and quality of supply. The new energy paradigm is increasingly characterised not only by the planning and distribution of generation and storage, but also by the integration of the various forms of demand (mobility and heat) and the sharing of the energy produced and stored; in this context, the efficient, safe and economically sustainable integration and management of resources assume a central role.

The direction along which the Smart Grid theme is evolving is that of the integration of energy systems: interest in integrated energy networks has intensified in recent years, as they have been recognised as a sustainable alternative to conventional supply systems and as a viable option for the sustainable development of future energy supply. An integrated energy system can be defined as a system in which different energy carriers (electricity, heat, water, hydrogen, etc.) are coordinated in order to achieve an optimal solution for each individual carrier and for the overall energy system through the exploitation of locally available energy resources.

As far as the development trajectories of the specialisation area are concerned, it is useful to distinguish between research and innovation activities, which are, moreover, closely linked.

On the research front, the focus will be on enabling technologies for the realisation of an integrated energy system, with reference to the various elements of the value chain. On the innovation side, and thus on the application of enabling technologies to the smart grid and integrated energy system paradigm, the direction is that of further developing the path started with the microgrids implemented in the public sphere as part of the 2014-2020 programming. The role of the public administration as a driver of innovation remains central. An important role in the new paradigm is also played by the issue of energy awareness of users.

The main lines of development include:

- *Energy communities*
- *Virtual Power Plants*
- *The management of electrification of consumption*
- *Digital Energy*
- *Energy Awareness*

As Reported in previous S3 RAS 14- 20, in the framework of the specialization of Smart Grid, the integration with the theme of green building is very evident, linked to the themes of efficiency and more particularly general sustainable building. In the smart-grid logic, the house can be thought of as a peripheral (in the IT sense of the term) connected to the main electricity grid, or to a micro-grid. The term “Home Management System (HMS)” refers to the complex of sensors/actuators and control software capable of managing all the functions connected to the home-peripheral, both those directly involved in energy saving (e.g., light dimmer, closing/opening windows, heating), and functions related to safety (e.g., smoke sensors, anti-intrusion sensors, etc.).

The Instruments (2021-2027)

With the instruments through which the development trajectories outlined above are to be pursued, it is planned to continue the strategy of using public administrations as drivers for the innovation of the entire ecosystem, and of supporting research and development in businesses. In continuity with what has been achieved under the 2014-2020 ERDF ROP, the main instruments will be:

- *Demonstration projects in public administrations*
- *Cluster projects*
- *Research and demonstration activities of public research organisations*
- *Research and development programmes in collaboration between enterprises and research organisations*
- *Information and dissemination activities*
- *Training activities, hopefully in synergy with the European Social Fund.*

Ongoing projects and relations of Autonomous Region of Sardinia

The Region has joined some of the European Smart specialisation platforms such as Agri-Food or Energy, while implementing the relationship with the initiatives organised by JRC and European Institute of Innovation and Technology, EIT on innovation.

The Region intends to broaden its participation in national clusters in this regard actively participating in the construction of the "Vademecum for International Collaboration" within the PON Governance project coordinated by AGCOE.

There are currently H2020 projects involving Sardinian companies and universities in connection with the S3 AdS.

In December 2021, the Region took part in the meeting organised by AGCOE interregional collaboration pathway on the Artificial Intelligence and Human-Machine Interface & Vanguard Initiative Pilot on Artificial Intelligence promoted by the Emilia-Romagna Region in which some 39 European regions currently participate.

The objectives of the pilot initiative, to which the Region intends to contribute by facilitating the participation of research centres, universities and companies active in the S3 sphere, are:

- *-Create distributed and shared infrastructures for the demonstration of new technologies*
- *-Facilitate access to infrastructure (new or existing) by companies, especially SMEs*
- *-Reduce the uncertainty, costs and risks involved in the use of new technologies*
- *-Stimulate upscaling and replication of innovative behaviour by companies*

VET initiatives linked to S3 Specialization Areas of POR FSE 2014 - 2020 Programme

The 2014 - 2020 POR FSE Programme of Autonomous Region of Sardinia envisaged specific public calls linked to the Intelligent Development Strategy of Sardinia (S3). The implementation of the S3, like the Operational Programs co-financed by the ESI Funds (European Structural and Investment Funds) 2014-2020, provided the investment of resources to promote research and innovation, to integrate strategic sectors, to create new job opportunities and value chains.

In the following analysis, two public calls will be illustrated which have envisaged the implementation of integrated training and business creation actions, including interventions for the creation of innovative skills and qualification profiles linked to the areas of the Smart Specialization Strategy 2014-2020:

1. *ICT*
2. *Tourism and cultural and environmental heritage*
3. *Grids for intelligent energy management*
4. *Agrifoods*
5. *Biomedicine*

6. Aerospace
7. Bioeconomy

Public Call Green & Blue Economy: "Integrated activities for empowerment, professional training, certification of skills, support at work, promotion of new entrepreneurship, transnational mobility in the areas of the Green & Blue Economy" of the Autonomous Region of Sardinia Department of labour, vocational training, cooperation and social security, in the context of the POR Sardinia FSE 2014-2020.

The initiative is part of a system of complementary and synergistic actions that envisage co-financing from both the ESF and the ERDF, to foster the integration between:

- Training actions, to strengthen the professional skills of pupils and encourage their job placement.*
- Local development actions aimed at business creation and consolidating existing ones, in the emerging sectors of the "Green&Blue Economy".*

The aim is to promote integrated activities to the creation of new jobs in strategic economic sectors that show potential for growth and development in the region, linked to S3 Strategy. Project implementation has been realized in network with the economic and social stakeholders of the territory (i.e., businesses, employers' and social associations, local action groups), together with VET agencies.

The beneficiaries of the actions are young people, NEET, unemployed people in particular women for whom the notice allocates a specific share (from 45% to 50%), depending on priorities.

The projects have foreseen an in-depth needs analysis of the territories in the areas of specialization indicated above, in order to identify new VET profiles and skills, enriching and updating the Repertoire of Qualification Profiles of the Autonomous Region of Sardinia.

The Call funded 79 projects with a total amount of about 18M €.

In the framework of the different lines of the Call, the Specialization area "Grids for intelligent energy management" interested a maximum of 25% of the projects and a minimum of 6% of the projects, depending on the priorities. The area relates to sustainability, renewable energies, energy efficiency of buildings and systems.

In the context of the Green & Blue Economy initiative linked to S3 strategy of the POR FSE 2024-2020, another remarkable call is "Integrated measures between participatory local development and employment in the areas of Green & Blue economy - Project lines 2 and 3". The Call aim to promote social cohesion and competitiveness in specific regional areas, through the realization of training courses and business creation activities in the green & blue economy. The Call is highly complementary to EAFRD and EMFF Programme interventions. The call has been structured in 2 different actions:

- *Line 2: project proposals aimed at promoting self-employment and entrepreneurship in the areas of the Green & Blue Economy. Beneficiaries: unemployed and people involved in income support programs.*
- *Line 3: project proposals for the creation of training courses aimed at certifying skills and information/awareness-raising activities in the areas of the Green & Blue Economy. Beneficiaries: long-term unemployed; low-education workers.*

Under the call 63 project have been funded with a total amount of about 10M €.

2. Preparatory actions

Mapping of stakeholders

Partners met online to discuss the methodology to be followed to develop a list of stakeholders. The following was agreed:

CIOFS - FP involved Sardinian secondary schools, associations and organizations working in the field of sustainable energy, large companies in the sector, research and post-secondary training centres, trade associations, professional associations.

In mapping the stakeholders, it has been mainly used the knowledge network of the CIOFS-FP, a vocational training organization that has been operating for many years in Italy and in particular in the region of Sardinia and knows its reality in depth.

RAS involved different kind of stakeholders which can be categorized in three main cluster:

- Schools and VET provider, among them the University of Cagliari and Sassari, the ITS connected with the sustainability and energy, agencies accredited from RAS system.
- Policy maker, among them the REGIONAL Department of Industry and regional department of environment, Sardegna Ricerche, the Sardinian institution for research and technological development.
- Companies, among them National and regional association and enterprises in the field of energy and sustainability.

Each actor included in stakeholders map has been analysed through influence-interest matrix in order to better identify the possible specific contribution and the specific tasks of the project in which they that may be involved.

Università degli Studi di Roma La Sapienza, on the one hand, has turned to the world of professions and construction companies, and on the other hand to the sphere of government and local authorities in charge of higher education. The most of these stakeholders are partners with whom the university has regular relationships of sharing

research or training pathways so it was a matter of extending the SECOVE initiative to an established partnership network

The first group of stakeholders includes:

- builders' associations, such as ACER – Associazione Costruttori Edili di Roma e Provincia;
- professional associations such as Ordine degli Ingegneri della Provincia di Terni; Ordine degli Ingegneri della Provincia di Roma; Ordine degli Architetti della Provincia di Roma;
- companies CapGemini and Harpaceas.
- The second group includes:
- the regional agency for environment, the ARPA – Associazione Regionale per l'Ambiente Umbria;
- the VET providers: ITS Umbria and Sabina Universitas.

The stakeholders have been approached and involved in the national CoVE with the following method:

CIOFS FP, RAS, Rielco and Università La Sapienza got in touch with their networks in person and/or by phone and email. Later, the four partners created an excel file in which they added the stakeholders that communicated interest in the national CoVE.

After the national workshop it was considered appropriate to expand the list of stakeholders with some actors that the partners consider important for the next actions. In particular, the presence of companies and national associations has been integrated to ensure a broader involvement of the stakeholders who can support internships and worksite schools and spread, in practice, a culture of energy sustainability.

The list of stakeholders is in attachment in the folder

National workshop

The workshop was part of the activities described in “Task T2.2 Structured dialogue about excellence in Sustainable Energy COVE” of the WP2: Set up, governance and funding of SECOVE Platform.

Due to the geographical dislocation of the Italian partners and the uneasy and costly connections between Sardinia and the continent, the national workshop was done online, via a digital platform.

To meet the needs of the many stakeholders involved, three workshops were held on three different dates (14, 15 and 21 November 2022). The number of stakeholders involved was more than 20 overall. In each workshop, CIOFS FP acted as facilitator.

The topics discussed has been:

- What excellence means in VET.

This paragraph provides a summary of the ideas presented by the stakeholders involved.

Theory and practice must be better reconciled. Practical preparation is sometimes inadequate; everyone involved in the process has to do more and better.

In Italy there is a mismatch problem: professions that do not find jobs and vice versa professions that do not find competent people.

The tools for better linking education, training and the world of work exist but companies are often unaware of them, also because there is a communication problem.

It is important to provide a recognizable qualification, valid everywhere and with certified and clear competences.

Excellence is mental flexibility, mental agility, openness to the new, and to the change because the energy sector is constantly changing and becoming, so training must also act on the mental approach of young people.

It is important to give visibility to the fact that VET trainees will be employed at the end of the courses. It is an incentive for learning and commitment.

- Which are the challenges and needs of different stakeholders.

This paragraph provides a summary of the ideas discussed with the stakeholders.

Often little is known about the free tools available and the public funds. Companies they are not structured to know, they have to improve the communication.

Less bureaucracy is important. Decision-makers must also be "trained" to listen.

It is important also to rely on trade and professional associations, because it is difficult to reach the individual company or professional, while the associations can act as promoters of initiatives and as a sounding board for communication.

It is necessary to have the people to employ and to create the new figures in the market quickly because they are already 'adaptable'.

It is not only a problem of preparation of young people but of the system. Institutions, local authorities, municipalities, that's where they find the gap, in their lack of ability to listen, to plan, to see. Sometimes there is little preparation. Decision-makers must also be "trained".

One of VET system critical issue is the lack of relations with companies; there are companies that support the projects, but when companies are less available for training, internship. Often young people are taken in and limited in their training activities. Information and communication between VET system and companies must be improved.

- **How SECOVE will address the vision for excellence, bearing in mind the local contexts and their real needs.**

- **Trends and opportunities for sustainable energy.**

This paragraph summarizes some aims and proposals of the stakeholders.

There is the need to make entrepreneurs understand the value of trained people who have successfully come out of the VET world. Trained people are hired but often only involved in the production cycle and not in the control room, in the decision-making processes, and this is a pity, because they could make a difference, bringing new ideas and innovations, improving the company.

It is important to look for tools, connections, protocols that will increase high school students' awareness of what the world of work is and how to orient themselves in more spendable study paths in the world of work.

Currently, high school students taking the Transversal Pathways for Skills and Orientation (PTCO) often spend only few weeks in companies. They learn little and are a cost to the company. Rules must be changed, norms must be changed, entry into the company must be continuous and fair exchange, they must be able to try working, not just observing, obviously in complete safety and awareness.

Energy sustainability does not exist if it is not linked to the territory. Energy must produce development on the territory.

It is important to direct training to create productive activities on the territory and development of the territory. True skills create development. Hungry and stagnant people do not lead to development. Energy sustainability is also a positive impact on the territory, in socio-cultural and economic terms.

SECOVE can do and facilitate the “process of doing”. Often there are no drivers to do things. Instead, there must be a common vision, for short, medium and long terms. It is important to turn a few ideas to scale and show that it works. It could be an energy community or another project etc. Some technologies are mature, even established. There is the need to move from the theoretical to the practical, to put something functional and working on the ground.

The evaluation questionnaires were online too.

Online questionnaires were administered after the workshops. The results were very encouraging.

The questionnaires had been available on Google modules, composed by three multiple-choice and closed questions to understand principally the conformity with established

objectives, in this case to establishing networks of stakeholders at local level, raise awareness of the SECOVE project and acquire information on territorial perceptions, gather suggestions and information useful to establish SECOVE platform. Furthermore, the brief questionnaire also explored the quality and characteristics of interaction/networking of the stakeholders involved.

The answers explored perceptions and impressions such as expectations regarding the event, clarity of structure and focus of the event; upgraded awareness of the issue, better comprehension of SECOVE project, new people/organizations met during the event, kept in touch with other stakeholders after the event, usefulness of these new contacts established during the workshop, demand of further information on SECOVE project and its future developments.

Participants with their answers demonstrated a very good level of interest in SECOVE project, and the willingness to establish a local network with the stakeholders.

Answering the first question stakeholders decided to participate in this event answering they wanted to learn more about the SECOVE project (nine choices), then that the topic of the workshop intrigued them (seven choices), then that they wanted to get to know other experts and stakeholders involved in (six choices) and that they were interested in sustainable energy issues and education in this field (six choices).

The second question was about the event evaluation and the rate of their experience. Stakeholders involved had to select one of these 5 grades: 1 poor; 2 sufficient; 3 good; 4 very good; 5. excellent. Scores regarded the following phrases: A. Informational materials shared provided before the workshop; B. Digital platform provided; C. Contents presented during the workshop; D. Clarity of presentation of speakers; E. Adequate time was available; F. welcoming/inclusiveness; G. Level of interaction with the other participants; I. Overall impression of the event.

All the answers scored more than 3.8; in particular F. on welcoming/inclusiveness scored an average of 4.33 and I. on the overall impression on the event had an average of 4.19

The third question was about to what extent they agree or disagree with some statements.

Stakeholders involved have to select one of these grades: 1 not at all; 2 a little; 3 enough; 4 very much; 5 extremely much. Scores regarded the following phrases: "A. My expectations regarding of the event were fulfilled; B. Structure and focus of the event were clear; C. The event improved my awareness of the issue; D. The event helped me understand better the SECOVE project and how I can use the results of the project; E. He/she met new people/organizations during this event; F. After the workshop, he/she kept in touch with other stakeholders he/she met during this event; G. These new

contacts will be useful to me in the future; H. The SECOVE project was clearly presented to me”.

All the answers get good score, more than 3.81 up to 4.06 except for F. In particular D. question -on the awareness on SECOVE project- scored 4.06, E question on getting to know new persons/organizations thanks to the workshop scored 4; G question -about networking- scored 3.81.

The last item (I) was about the possibility to continue to be informed about forthcoming developments in the SECOVE project. All the 16 respondents stated to be available to be informed on the future developments of SECOVE project.

3. Description of Centre of Vocational Excellence in Italy

Introduction

The Italian CoVE for **energy efficiency of buildings** will be a collaborative and active platform for education, training and innovation in **energy efficiency of buildings** and sustainable energy more largely. CoVE will be established in a legal form that will provide sustainability and independence.

The structure of CoVE will be based on a partnership approach, with representatives of VET schools, academia and research centres, professional associations, industry, SMEs, public administrations, policy makers and civil society.

CoVE will promote entrepreneurship and innovation in the field of sustainable energy and **energy efficiency of buildings** and be dynamic in networking and partnering with other COVEs in Europe to promote excellence and exchange best practices and promote international cooperation.

CoVE will be established in Cagliari, the main town of Sardinia, which is an Autonomous Region that is heavily investing in S3 strategies. In Sardinia is also located POLARIS a science and technology park of several hectares, with laboratories and ICT companies, in which Sardegna Ricerche, an emanation of the Autonomous Region of Sardinia, and CRS4, a centre of excellence founded by Nobel Prize Carlo Rubbia in the early 1990s, also operates.

In Sardinia the issue of energy efficiency in buildings and sustainable energy in general is a paramount issue on the agenda. On the island there are two out of the seven coal-fired power stations in Italy, some industrial poles in search of reconversion, including energy, such as those in Portovesme, Porto Torres and Ottana. There are several ITS, two of which are specifically on sustainable energy.

Its insularity, low demography and aptitude for innovation make it a potential laboratory for the development and application of sustainable energy systems.

This Italian Region will ensure adequate access to the expertise, technology and resources necessary for the successful operation of the future COVE in the field of energy efficiency of buildings.

CoVE will be aligned with the priorities of the Research and Innovation Strategy for Smart Specialization (RIS3) of Italy and the regional innovation strategies for Sardinia Region. Partnerships with vocational education and training providers, regional and national associations, local government and non-profit organizations will also be established.

Among the CoVE purposes and goals:

- Be an attractive choice for young students
- Increase the number of women involved in energy efficiency courses and related work
- Update vocational education and training programs in the sector
- Help SMEs to innovate and improve their vocational education and training system
- Updating vocational education and training programs
- Helping SMEs to innovate and transform their activities into larger and more innovative projects
- Build a virtuous and dynamic CoVE ecosystem
- Become a regional and national reference and advisory institution for both companies and VET schools.

Activities and services of the national COVE

Among the activities and services of the national CoVE there will be:

- Designing and realizing training courses from EQF 2 to EQF 8, i.e. from the training for the acquisition of compulsory education to PhD;
- Organizing mobility training courses of VET learners and students across Europe and abroad;
- Designing innovative training course with the involvement of enterprises and researcher, to help to reduce skills mismatch;
- Formalizing new job profiles and new qualification profiles and skills recognized at European level;
- Realizing applied research in the specific field of Energy, energy efficiency and sustainability;
- Creating innovative training modules, in particular by using VR technology;
- Organizing communication and awareness raising activities with SMEs and Researchers to involve new stakeholders into the CoVE;
- Organizing careers counselling activities to student, SME and workers;

- Realizing training activity to develop entrepreneurial mindset and skills of students;
- Realizing supporting activity addressed to students to redesign VET curriculum and meet labour market needs (during the training and after graduation);
- Contributing to fill the gender gap in Sustainable energy sector, especially in VET, arranging tailored training to reinforce also women's self-esteem and self-confidences, and facing indirect and unconscious discriminations, misrepresentation and misperceptions related to gender stereotypes;
- Promoting inclusivity through dedicated and positive actions to facilitate the involvement of people belonging minorities, with special needs, with different cultural background, and so on.

Stakeholders involved

The stakeholders involved in the national CoVE include representatives of VET schools, of secondary schools, academia and research centres, professional associations, builders' associations, companies, SMEs, public administrations, policy makers and civil society.

Stakeholders will be approached and involved for consultation, advice, participation in activities and workshops, feedback, as planned.

4. Strategic planning for the development of national COVE

Strategic objectives and priorities of the national COVE

It is strategic to align the activities and services of the Centre of Vocational Excellence (CoVE) with the Innovation Strategies for Smart Specialization (RIS3) of Sardinia Region, not only at regional Level but also at national level, to foster regional and national growth and development through vocational education and training (VET).

- **Ensure** stakeholder analysis and engagement: 1. organise a complete stakeholder analysis specific to Sardinia region to identify key stakeholders involved in RIS3 application, including regional authorities, industry and SMEs, research institutions and other key actors. 2. Involve stakeholders in Sardinia region in a dialogue to understand their goals, priorities, and strategies related to regional development and innovation, and identify areas of synergy with CoVE's activities.
- **Provide** alignment of training programs: 1. Analyse the RIS3 priorities specific to Sardinia region and to Italy and identify key sectors and emerging industries where VET can contribute significantly to regional and national growth. 2. Collaborate with VET centres, companies, and relevant stakeholders in Sardinia region to develop training programs aligned with the identified sectors and RIS3 priorities. 3. Ensure that the training programs incorporate the latest industry trends, best practices, and emerging

technologies specific to the Sardinia region to address the skill gaps and requirements of the regional labour market.

- **Promote** integration of research and innovation: 1. Collaborate with research institutions in the Sardinia region to promote research and innovation in VET. 2. Establish partnerships with technology developers, startup, and innovation hubs in the Sardinia region to stay updated on emerging technologies and foster the integration of innovative teaching and learning methods in VET. 3. Encourage pilot projects and experimentation of new teaching and learning methods in VET centres in the Sardinia region, with a focus on incorporating emerging technologies identified through RIS3.
- **Encourage** internationalization and mobility: 1. develop international exchange programs for students, teachers, and trainers in the Sardinia region that align with the regional specialization areas identified in RIS3. 2. Foster collaboration with partner VET centres abroad, specifically those in regions with complementary RIS3 priorities, to facilitate knowledge sharing and cross-cultural experiences. 3. Also emphasize the importance of skills - such as foreign language skills and intercultural expertise - in training programs in the Sardinia region to prepare learners for global opportunities and market challenges.
- **Provide** management and counselling services: 1. Enhance the guidance and counselling services provided by CoVE in the Sardinia region to support learners in aligning their educational and career paths with the RIS3 priorities specific to the region. 2. Incorporate career counselling, job placement services, and support for entrepreneurship and self-employment in the Sardinia region to promote the development of skills and knowledge relevant to regional development and innovation.
- **Promote** policy alignment and advocacy: 1. Collaborate with local and national government agencies, including the Ministries connected to the CoVE's scopes, to align CoVE's activities in the Sardinia region with national policies and initiatives related to VET and regional development. 2. Advocate for the inclusion of VET in the regional development strategies and policy frameworks specific to the Sardinia region, emphasizing its role in supporting RIS3 objectives and fostering regional competitiveness.
- **Supervise**, evaluate, and improve continuous Improvement: 1. Establish monitoring and evaluation mechanisms to assess the impact of CoVE's activities in the Sardinia region on regional growth and development. 2. Regularly collect and analyse data on learner outcomes, industry partnerships, innovation projects, and regional economic indicators in the Sardinia region to measure the effectiveness and relevance of CoVE's initiatives. 3. Use the evaluation findings to identify areas for improvement, refine strategies, and make.

- **Manage** and coordinate funding and resource mobilization: 1. Collaborate with **all the** relevant funding agencies to secure financial resources for the implementation of aligned activities. 2. Explore partnerships with private sector entities, regional development agencies, and European funding programs to leverage additional resources and support the scaling-up.
- **Provide** inclusion and social equity: 1. Ensure that the strategic plan promotes inclusivity and social equity in VET by addressing the needs of underrepresented groups, including individuals from disadvantaged backgrounds, women, people with disabilities, and marginalized communities. 2. Collaborate with social organizations, NGOs, and community stakeholders to develop targeted outreach and support programs that facilitate access to VET opportunities for diverse populations. 3. Implement measures to address barriers to participation, such as providing financial assistance, flexible learning options, and tailored support services to promote equal opportunities and ensure that no one is left behind. 4. Incorporate principles of diversity, equity, and inclusion into the design and delivery of training programs, guidance services, and mobility initiatives to create an inclusive learning environment for all learners.
- **Organize** Cross-Sectoral Collaboration: 1. Foster collaboration and knowledge exchange between CoVE, regional authorities, industry clusters, SMEs, research institutions, and other stakeholders involved in RIS3 implementation. 2. Encourage cross-sectoral partnerships and initiatives that bring together different industries, sectors, and disciplines to promote interdisciplinary learning, innovation, and regional synergies. 3. Facilitate networking events, workshops, and forums that enable stakeholders to share best practices, experiences, and innovative ideas to drive regional growth and development.
- **Organize and coordinate** communication and awareness: 1. Develop a comprehensive communication strategy to raise awareness about the strategic alignment between CoVE and RIS3, highlighting the benefits of VET in promoting regional growth and innovation. 2. Involve the public, stakeholders, and the media through various channels, such as social media, websites, and public events, to communicate the impact of CoVE's activities on regional development and the opportunities available to learners. 3. Display case of success and case studies that show how CoVE's initiatives have contributed to the advancement of regional priorities, economic growth, and social inclusion. 4. Promote transparency by regularly sharing progress reports, evaluation findings, and updates on collaborative efforts with stakeholders to ensure accountability and maintain trust.
- **Provide** continuous learning and improvement: 1. Foster a culture of continuous learning and improvement within CoVE by encouraging feedback, reflection, and collaboration among stakeholders. 2. Evaluate the effectiveness of the strategic plan's

implementation, identifying strengths, weaknesses, and areas for improvement. 3. Adapt the strategic plan and its activities based on evolving regional priorities, emerging technologies, and feedback from stakeholders, ensuring its constant relevance and alignment with RIS3 objectives.

By aligning the national CoVE with RIS3 and incorporating principles of diversity, inclusion and equity the strategic plan intends to harness the potential of vocational education and training to drive regional growth, innovation, and to ensure that opportunities are accessible to all individuals, contributing to a more inclusive and prosperous society.

Activities for the establishment of national COVE

The establishment of the national Centre of Vocational Excellence (CoVE) involves a series of activities aimed at creating a robust framework to support vocational education and training (VET) in Sardinia and Italy.

The activities for the establishment of the national CoVE include:

1. Assess Training needs and labour market.

Conduct an analysis of the current state at local level and national level including identifying the skills gaps and needs of learners, employers and enterprises.

Research and surveys addressed to enterprises in the sector to understand which skills are currently lacking and which might be in demand in the future.

Networking with sector associations that can provide insights into job market trends and required skills; feedback from existing training programs such as, for example, the training programs carried out by La Sapienza University in the energy field.

2. Engage Stakeholder including VET centres, teachers, trainers, SMEs, PA, professional association, research centres. This involvement ensures that the perspectives and expertise of all relevant parties are considered in the establishment and ongoing operations of CoVE.

3. Develop a Policy that guides the establishment and operation of CoVE. These policies must be aligned with the regional and national vision and initiatives related to VET, innovation, regional development, and inclusivity.

4. Develop training programs and internship/apprenticeship opportunities: Training programs will be developed in line with the identified needs of the labour market and the RIS3 priorities identified in section 2.3. Training programs have an appropriate balance between theoretical and practical training to ensure that students can apply the skills they acquire in real-life contexts.

The development of training programs will be carried out by the La Sapienza University, CIOFS FP, involving companies with expertise in the sector, primarily RI.EL.CO Impianti S.r.l. The contribution of professionals working in energy efficiency, academic researchers and representatives of partner companies will ensure the development of training programs adapted to market demands. The training programs will be conducted partly online and partly face-to-face in order to enable the highest possible student participation.

A fundamental element of any training program is direct training in a work environment. Providing students with internship or apprenticeship opportunities can be an effective way for them to gain practical experience. It can also foster the building of relationships between students and companies, facilitating employment. This activity involves the identification of companies potentially interested in internships or apprenticeships for students following the Italian CoVE training courses.

5. Train teachers and trainers: Provide training and support for teachers and trainers to enhance their skills and knowledge in delivering high-quality training programs.
6. Promote Internationalization and mobility programs, establishing exchange programs for students, teachers, and trainers to facilitate international mobility and learning experiences.
7. Support research and innovation: Promote research and innovation in VET by supporting the development of new teaching and learning methods, technologies, and curricula. This includes conducting ongoing research on emerging technologies and their developers, registering relevant information about developers, maintaining close contact with technology developers to obtain timely information, providing training, and encouraging experimentation and pilot projects of new teaching and learning methods and technologies in VET centres.

It is envisaged to promote forms of collaboration between the CoVE and research institutions, in particular with the project partner La Sapienza University, and other research organisations identified as key stakeholders.

8. Provide guidance and counselling services: provide guidance and counselling services to support learners in making informed decisions about their education and career paths. This includes offering career counselling, job placement services, and support for entrepreneurship and self-employment.
9. Promote Diversity, Equity and Inclusivity equity, developing and implementing measures to ensure diversity, inclusivity and equity in VET. This involves addressing the needs of women, underrepresented groups, removing barriers to participation, and providing tailored support services to promote equal opportunities for all learners.

Through outreach and advocacy, the CoVE can improve the involvement of young people, women and minorities in vocational-technical studies. This involves promoting programs to potential students and working with local stakeholders, such as schools, employment agencies and community groups, to reach those who could benefit from our programs.

10. Evaluate and improve: regular evaluation and improvement are essential. This involves collecting formal and informal feedback from students, trainers and stakeholders, as well as keeping abreast of changing labour market needs and educational best practices.

Through these activities, the national CoVE will be established as a comprehensive and effective platform for promoting excellence in VET, supporting regional growth and development, fostering innovation, and ensuring the relevance and quality of vocational education and training.

5.3 Responsibilities and roles of involved partners

CIOFS FP is lead partner of WP5 “Making SECOVE inclusive and encouraging women in technical professions”. Coordinates Desk and field research about inclusive and attractive VET in partners countries. Coordinates the establishing of SECOVE Observatory on inclusiveness/attractiveness of VET practices, Pilot participative workshops with students, teachers, institutions and policy makers with partner organisations and stakeholders in involved countries and the Awareness raising campaign. Collaborates in Organizing Summer VET academies for girls in secondary education. Coordinates Issuing and mainstreaming recommendations to EU, National and Regional policy makers and the Impact evaluation of Observatory on inclusiveness/attractiveness of VET. Organizes the Transnational conference "Inclusion and attractiveness of VET".

Furthermore, in cooperation with Italian and European partners, CIOFS FP contributes to the achievement of the objectives of several activities, among these: Structuring a local stakeholder network; Establish a CoVE sustainable energy roadmap; Develop a web portal for SECOVE Platform; Development of strategic development plans - funding of SECOVE platform; Recommendations for alignment of VET courses to Smart Specialisation Strategies (RIS3); Development of innovative challenge-based modules for entrepreneurial mindset and skills; Development of common units on sustainable energy using Virtual Reality technology for EQF levels 3-5 for transnational mobility (ECVET), arrangements for cross border certification and recognition; Capacity building of teachers towards a quality culture, transnational course and study visit; Creation and launching operation of Innovation Hubs; Creation of a platform of cooperation between innovation hubs; Engagement of SMEs in applied research; Impact evaluation of

innovation Hubs, Impact evaluation of SECOVE local partnerships and European SECOVE platform.

On the basis of the needs analysis CIOFS FP will structure as well training courses for emerging professional figures in the sustainable energy sector.

Additionally, CIOFS FP actively participates in the management of transversal organisation activities, impact and dissemination, management, and quality control.

Sapienza University of Rome

The research team will be involved in the full programmes' definition for new curricula in VET schools, training programmes, seminars and workshops. In particular, the team will address the following tasks:

1. definition of the main goal and specific objectives in line with local needs of the job market and regional smart specialization strategy;
2. establishment of the essential contents to be included in the syllabus of the courses composing the full programmes;
3. indication of minimum requirements and selection criteria for participants;
4. indication of skills and knowledge requirements both at academic and professional level in order to select appropriate profiles for teachers to be involved in the CoVE;
5. programmes monitoring throughout the entire SECOVE project.

RAS

RAS - Autonomous Region of Sardinia -in particular, the Directorate General for Employment VET, cooperation and social security , it is responsible for programming, monitoring, control and evaluate services, projects, and activities in the following areas: Policies For Citizens (migration, civilian service, vocational educational training and education, higher professional education, training for employment, self-employment and entrepreneurship promotion); Policies for Public Administration, Enterprises and Third Sector (functioning and development of the labour market, promotion and defence of employment, income support, employees' rights, gender equality in work and employment, welfare, upskilling and reskilling, inclusion, promotion and enhancement of cooperation, development of social economy, support to Civil Society Organisations, integration and strengthening of social and labour policies for subjects at risk of social exclusion, inclusive finance, corporate social responsibility, social innovation).

In these areas of activities, RAS DG Employment has gained experience and skills in project management thanks to its participation in various actions financed by national

and EU programmes, such as COMENIUS, COSME, Interreg MED and Maritime, ERASMUS+.

As add value to the CoVE, RAS DG Employment can ensure the involvement of expert and skilled staff. It can also count on a consolidated network base of potential stakeholders such as social players, VET agencies, civil society organisations and educational and training institutions. RAS is also capable to provide information and data related to local context.

Moreover, Autonomous Region of Sardinia will strengthen the link of the CoVE with the policy makers, and it will also provide the input on the most recent trends on certification (as it is a certification authority itself).

Ri.el.co Impianti Srl

Ri.el.co Impianti Srl is an entrepreneurial reality that has been operating in the construction, energy efficiency and production from renewable sources sector for over 40 years. In 2015 Ri.el.co Impianti Srl became one of the first ESCO (Energy Service Company) in Italy to have obtained the UNI CEI 11352 certification from an Accredited Body, certifying the requirements that companies that provide energy efficiency services must possess. As an ESCO. RI.EL.CO. Impianti Srl designs and implements energy efficiency measures and the production of energy from renewable sources, contributing to the competitive growth of its customers through energy saving and environmental sustainability.

The company also holds the following certifications:

- ISO 50001: Energy Management System, in order to ensure the integration of energy performance in the daily management of its activities, promoting the best energy management practices towards its customers
- ISO 14001: Environmental management system, which certifies the Company's concrete commitment towards problems related to the environment, both from the point of view of direct environmental impacts, and as regards indirect environmental impacts, associated with the execution of each job type.
- SA 8000: Social Accountability, to ensure an inclusive work environment. The company has adopted corporate policies that ensure equal pay and equal opportunities for professional growth for all employees, regardless of gender or age. SA8000 is tangible recognition of the organization's focus on promoting equal opportunities.
- ISO 45001: Occupational health and safety management system, allows for the implementation of policies, procedures and controls, in line with internationally recognized best practices, so that the best possible working conditions for health and safety are present in the workplace of work.

Based on the proven experience and professionalism possessed, Ri.el.co Impianti will therefore take care of the following activities:

- **Transfer of skills:** The company can leverage its knowledge of the construction design and construction sector to share best practices, new technologies in the construction sector, the effectiveness of innovative design techniques (such as BIM technology) or others topics such as workplace safety management, energy and environmental management, inclusiveness in working environments. This transmission of skills can take place through the implementation of training courses, workshops or mentoring sessions.
- **Offer Internships and Employment Opportunities:** Through partnerships with CoVE, the firm may offer internships or apprenticeship positions for students. These hands-on learning opportunities will allow students to apply the skills they learned in the classroom in a real-world workplace setting, while gaining valuable industry experience.
- **Provide input on the training curriculum:** The experience in the sector allows Ri.el.co Impianti to have a clear understanding of the most in-demand skills and knowledge. By partnering with CoVE, the company can help develop an education curriculum that adequately prepares students to meet these needs.
- **Development of research projects:** Ri.el.co Impianti Srl has participated in numerous research projects in the energy and environmental fields. Within the Secove project, it can contribute to identifying any new projects aimed at developing processes and/or products in the field of eco-sustainable construction.
- **Collaboration with other industries:** The company's presence within the Secove project will also serve as a bridge between CoVE and other industries in the sector such as construction companies, engineering and/or architecture companies, manufacturing companies operating in the energy and environmental.
- **Real Project Simulations:** The company will provide examples of real projects, current or past, that could be used to create simulation exercises. This would give students the opportunity to apply the theories learned in a practical context, similar to what they might encounter in the world of work.

5.4 Timeline

Define a realistic action plan with specific steps, goals and KPIs, and visualize it. This involves putting the strategic plan into action, setting up the CoVE, identifying and recruiting staff, and developing partnerships with industry and employers. Don't forget to prioritize tasks, add deadlines and set milestones. Make sure that each task is clearly defined and is attainable. If you come across larger and more complex tasks, break them down to smaller ones that are easier to execute and manage.

The Italian CoVE implementation process will follow three consecutive phases, ensuring a smooth transition from a promising initiative to a real application of competence development, innovation and excellence. This transition will take place through the realization of the project tasks and results, the achievement of the project objectives and KPIs, together with the other initiatives and activities of the countries participating in the SECOVE project.

First phase: Pre-Establishment Period (M15-M36 of Project)

Second phase: Early-Stage Launch of CoVE (M36 of Project - M24 Operational)

Third phase: Business as usual Period (M24 Operational - M96 Operational)

M24 of project

$$STK = \sum_{i=1}^n \frac{SI_n}{SO_n}$$

Where:

STK = Stakeholder for the National COVE

SI = Stakeholder actually involved

SO = number of target stakeholders (e.g. 20)

Kind of Stakeholder:

n=1 Administrations or public agencies

n=2 Industrial partners and/or technology producers

n=3 Training organizations

M48 of project

$$TPI_n = \frac{TP_p}{TP_o}$$

TPI = Training Program Index

n = type of operators to whom the training course is addressed (e.g site operators, installers, ...)

TP = Train Program

p = planned

o = Object (e.g. 5 or 10?)

M12 of operational

$$TT_i = \sum_{i=1}^n \frac{TI_n}{TO_n}$$

Where:

TT = Teachers and trainers for the National COVE

i = single training program

TI = Trainer actually formed and involved

TO = number of target trainer (according to the planned classes)

n = class or didactic subject planned

M12 of operational

$$STK_i = \sum_{i=1}^n \frac{SI_n}{SO_n}$$

Where:

STK = Stakeholder for each training program

SI = Stakeholder actually involved

SO = number of target stakeholders (e.g. 20)

i = single training program

M48 of operational

$$SMVI = \frac{SMV_r}{SMV_o}$$

Where:

SMVI = Social Media Visualization Index for National COVE

SMV = Social Media Visualization

r = realized

O = target (e.g. 1000/month)

M96 of operational

$$LI_i = \sum_{i=1}^n \frac{L_e}{L_o}$$

Where:

LI = Learners Index the National COVE

i = single training program

e = actually enrolled and attending

o = number of target learners

Budget

Calculate the budget needed for the activities that will be provided by the National COVE in an annual basis

The budget of the Italian CoVE will be based on the activities developed. Some of these activities could also be a source of funding, for better economic sustainability.

There will be a minimum estimated cost of € XXX (*to be evaluated*) based on some provisional actions; these could include:

- Communication and marketing activities
- Socio-economic studies, research and other instruments of analysis and of insights on the regional and national contexts
- Implementation and development of new curricula in vocational training schools.
- Offering summer courses and organising other events to involve women, disadvantaged groups and young people in technical vocational training.

- Development and growth of the Observatory and research on needs assessment in line with regional smart specialisation strategies.
- Engagement events with SMEs, start-ups, industry, and other stakeholders
- Delivery of training programs for the retraining and upskilling of workers and the unemployed
- Management and delivery of vocational education and training programs
- Organisation and/or supervision of internships, work-based learning and apprenticeships locally/regionally and abroad
- Organisation of courses, seminars and workshops based on DEI (Diversity, Equity and Inclusion) issues

The specific budget related to the planned CoVE activities, will be strictly linked to the source of funding (see in section 6.3 Future Fundings).

VET activities funded by the European Social Found Plus of the programming period 2021- 2017 related mostly to training courses from EQF2 to EQF 7, will be managed taking into account the eligible costs and the financial ceilings provided by the reference documents (pending the new version, Vademecum 1.0 FSE 14 -20).

Quality Assurance

Define how you are going to create a quality assurance system with continuously evaluation of CoVEs effectiveness, gather feedback from students, partners, and industry experts, and make necessary changes to improve activities and reach goals based on the CoVEs' objectives and priorities.

To ensure the effectiveness and continuous improvement of the Centre of Vocational Excellence (CoVE), a strong Quality Assurance system has been established. This system includes mechanisms for evaluation, feedback collection, and implementing necessary changes based on the CoVE's objectives and priorities.

The Quality Assurance and management of the CoVE's effectiveness, outputs and outcomes will be assured through internal Quality Management activities and measures. The SECOVE Quality Assurance and Evaluation Plan will be followed from the beginning. The aim is to ensure quality of project implementation and outputs. The Plan includes quality criteria, processes and procedures, monitoring processes, as well as improvement processes, covering both effectiveness and efficiency.

5. Exploitation and sustainability

Creating impact

It is important and vital to communicate the results of our CoVE and to display its impact on the quality and relevance of VET, innovation and regional development, so the key processes of an excellent communication are:

- **Develop communication strategy.** First, it is crucial to define objectives for communication, including raising awareness, informing stakeholders, promoting CoVE's activities. Identify target audiences, such as students, teachers, trainers, entrepreneurs, government agencies, local communities, and the civil society. Decide appropriate communication channels, such as websites, social media platforms, newsletters, reports, events, and press releases.
- **Prepare impact reports.** Regularly prepare reports that highlight the impact of the CoVE on vocational education and training, innovation, and regional development, including quantitative and qualitative data. Publish also key findings, achievements, challenges, and future plans.
- **Disseminate information.** Among other things it is fundamental to publish regularly newsletters or bulletins to provide regular updates on CoVE activities, partnerships, and outcomes and organize public events, conferences, workshops, and seminars to share knowledge, best practices, and research findings.
- **Engage stakeholders.** Promote active engagement and collaboration with stakeholders through regular communication and feedback mechanisms. Conduct stakeholder consultations, workshop, meeting and surveys to gather input, insights, and suggestions.
- **Display and illustrate** also with the principles of storytelling **success stories, best practices and case studies.**
- **Collaborate with media.** It is important to develop relationships with local, regional, and national media to promote media and social media coverage of the COVE achievements, events, initiatives etc.
- **Collaborate with partners.** It is crucial to collaborate with companies, educational institutions, professional associations, PA, government agencies to amplify the reach and impact of communication efforts. It is fundamental also to search for opportunities for joint marketing campaigns, knowledge-sharing events, and collaborative projects.
- **Check and evaluate communication strategies, efforts, contents.** Regularly assess the effectiveness of communication strategies and channels used to disseminate

information about the CoVE. Gather feedback from stakeholders and the public to determine the clarity, relevance, and usefulness of the communication contents (text, video, photos, tables, graphic representation etc.). It is very useful also to monitor media coverage, social media engagement, website traffic, and other metrics and insights to evaluate the reach and impact of the communication strategies and policies.

By successfully communicating results and impact of the CoVE to stakeholders and the public, the CoVE can increase its reputation, boost trust, attract further support, and promote the value of vocational education and training, for innovation and regional development.

Expanding the COVE

SECOVE is the result of an in-depth analysis of the current situation in participating regions concerning existing practices, optimal ones as well, policies, networks of cooperation between HEI (*higher education institutions*) and VET, the world of education and the business world, labour market and culture of Diversity, Equity and Inclusion.

It is designed, therefore, to provide each region with materials, services and structures that are both innovative for the local context and can meet the policies and stated needs. To ensure the future development and expansion of CoVE, the following plan can be implemented:

- Identifying areas where CoVE can expand its operations is of importance. This can be done by researching the market demand for various vocational training courses and identifying the industries that are growing and have a shortage of skilled workers.
- Developing new courses to meet the demands of the market. This can involve working with industry experts to develop courses that are relevant and updated with the latest industry practices.
- Keep on collaborating with SMEs and industry stakeholder and partners to ensure that its courses are aligned with labour market needs.
- As the partners in the CoVE expand their operations, they may need to expand their facilities to accommodate more students and provide better resources for learning. This could involve building new classrooms, labs, and workshops, as well as investing in technology and equipment to enhance the learning experience.
- Developing online learning materials to reach a wider audience. This could involve developing online courses, webinars, and other resources that can be accessed from anywhere anytime.

- Partnering with institutions and VET schools to share resources and expertise. This can involve working with other CoVEs in different regions or countries, as well as universities.
- Disseminate the CoVE through marketing campaigns, attending entrepreneurship events, and working with local media to promote it.

Future Funding

The economic-financial sustainability of the CoVE, even at the end of the project, is a central theme that will have to be addressed at the time of its establishment in order to identify the most effective strategies for the continuation of the activities over time. It is possible to identify different funding channels, which can be classified into three main types:

1. Public National and regional, indirect EU funding
2. Public from direct EU funds and Programmes
3. Private funds

1) Public National and regional, indirect EU funding:

- [The European Social Fund Plus \(ESF+\)](#)

ESF+ is the European Union (EU)'s main instrument for investing in people and supporting the implementation of the European Pillar of Social Rights. With a budget of almost EUR 99.3 billion for the period 2021-2027, the ESF+ will continue to provide an important contribution to the EU's employment, social, education and skills policies, including structural reforms in these areas. In the new programming period, the ESF+ brings together four funding instruments that were separate in the 2014-20: the European Social Fund (ESF), the Fund for European Aid to the most Deprived (FEAD) the Youth Employment Initiative and the European Programme for Employment and Social Innovation (EaSI). The ESF plus 2020-2027 comprises three policy areas: employment; education, vocational training and lifelong learning; and social inclusion and 11 specific objectives. Funding from the European Social Fund (ESF) could target specific target groups such as young people, the unemployed, women, workers and entrepreneurs, and it could finance different types of actions consistent with COVE activities, including education and training at all levels, upskilling, reskilling and lifelong learning.

- [The European Regional Development Fund \(ERDF\)](#)

*The **ERDF** provides funding to public and private bodies in all EU regions to reduce economic, social and territorial disparities. The Fund supports investments through dedicated national or regional programmes. In 2021-2027, the fund will enable*

investments to make Europe and its regions: **more competitive and smarter**, through innovation and support to small and medium-sized businesses (SMEs), as well as digitisation and digital connectivity; **greener**, low-carbon and resilient; **more connected** by enhancing mobility; **more social**, supporting effective and inclusive employment, education, skills, social inclusion and equal access to healthcare, as well as enhancing the role of culture and sustainable tourism; **closer to citizens**, supporting locally-led development and sustainable urban development across the EU.

Through the fund, it is possible to finance and co-finance structural interventions that could be used to finance the Cove infrastructure (modernise, purchase and equip new training laboratories, etc.)

- [The National Recovery and Resilience Plan \(NRRP\)](#)

The National Recovery and Resilience Plan (Piano Nazionale di Ripresa e Resilienza, NRRP) is part of the Next Generation EU (NGEU) programme, namely the € 750 billion package – of which about half is in the form of grants – that the European Union negotiated in response to the pandemic crisis. The main component of the NGEU programme is the Recovery and Resilience Facility (RRF), which has a duration of six years – from 2021 to 2026 – and a total size of € 672.5 billion – of which € 312.5 billion is in the form of grants, and the remaining € 360 billion is in the form of low-interest loans.

The Recovery and Resilience Plan presented by Italy envisages investments and a consistent reform package, with € 191.5 billion in resources being allocated through the Recovery and Resilience Facility and € 30.6 billion being funded through the Complementary Fund established by [Italian Decree-Law No. 59 of 6 May 2021](#), based on the multi-year budget variance approved by the [Italian Council of Ministers on 15 April](#). The total amount of funds envisaged amounts to € 222.1 billion. In addition, a further € 26 billion has been earmarked for the implementation of specific works and for replenishing the resources of the Development and Cohesion Fund by 2032. A total of some € 248 billion will thus be available. In addition to these resources, there are also those made available by the REACT-EU programme, which will be spent in the years 2021-2023 in accordance with EU regulations. These funds amount to a further € 13 billion.

The Plan is developed around three strategic axes shared at a European level: digitisation and innovation, ecological transition, and social inclusion. It is an intervention that aims at repairing the economic and social damage caused by the pandemic crisis, contributing to addressing the structural weaknesses of the Italian economy, and leading the country along a path of ecological and environmental transition. The NRRP will substantially contribute to reducing territorial, generational and gender gaps. The Plan has six missions: Digitisation, Innovation, Competitiveness, Culture; Green Revolution and

Ecological Transition; Infrastructure for Sustainable Mobility; Education and Research; Inclusion and Cohesion; Health.

2) Public from direct EU funds and Programmes:

- Erasmus Plus Programme

*Erasmus+ is the EU's programme to support education, training, youth and sport in Europe. It has an estimated budget of €26.2 billion. This is nearly double the funding compared to its predecessor programme (2014-2020). The 2021-2027 programme places a strong focus on social inclusion, the green and digital transitions, and promoting young people's participation in democratic life. It supports priorities and activities set out in the European Education Area, Digital Education Action Plan and the European Skills Agenda. Erasmus+ offers mobility and cooperation opportunities in: higher education; vocational education and training; school education (including early childhood education and care); adult education; youth; sport. The Programme provides 3 main key action: **Key Action 1: Learning mobility of individuals** aim to encourage the mobility of **students, staff, trainees, apprentices, youth workers and young people**; **Key Action 2: Cooperation among organisations and institutions**, is expected to result in the development, transfer and/or implementation of innovative practices at organisational, local, regional, national or European levels. **Key Action 3: Support for policy reform**, under this Key Action contribute to supporting the overall EU policy agenda, the Education and Training 2020 cooperation framework, and the Youth Strategy. Moreover, the Programme includes The Programme "Jean Monnet" opportunities for teaching, research, and policy debate on the EU and its policies, and "Sport" designed to develop and implement joint activities to promote sport and physical activity, identify and implement innovative activities in the field of sport, and manage not-for-profit events to increase participation in sport.*

- Home - Horizon Europe

Horizon Europe is the EU's key funding programme for research and innovation with a budget of €95.5 billion. It tackles climate change, helps to achieve the UN's Sustainable Development Goals and boosts the EU's competitiveness and growth.

The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports the creation and better diffusion of excellent knowledge and technologies. It creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area.

- Other EU education and training programmes

Finally, mention should be made of the main European Programmes that finance training and skills exchange measures with specific priorities foreseen in their calls and tenders, such as [Interreg](#), [ENI CBC MED](#), [Build up Skills](#).

3) Private funds:

In the European framework it is observed that the public sector is the most important provider of financing of the COVEs, while the private sector contributes with further additional financing, always of great importance. The high number of state vocational schools among CoVEs in general partly explains this distribution (Source: Mapping of Centres of Vocational Excellence (CoVe) by the ET 2020 Working Group "Vocational Education and Training").

Most private fundings come from companies donating equipment and buying, training or paying for the establishment of training centres or innovation hubs/business incubators.

Funding is generally related to co-financing of specific projects or ad hoc donations, rather than long-term structural contributions. Sectoral collaboration often leads private companies in the sector to invest in projects, either through financial contributions (for example by purchasing training) or in kind (for example by investing in skills or equipment).

Some CoVEs at European level have also ensured the possibility of attracting foreign investment, for example through the purchase of training courses and study visits of learners (for example through the continuous training of workers of foreign companies, such as the case of the agreement signed between the Slovenian COVE Nova Gorica with the car manufacturer "MAHLE" in Germany).

Strategic Partnerships (with other COVEs, projects, clusters etc.)

By establishing strategic partnerships and/or collaborations and/or cooperation with ITS, other COVEs, COPCOVEs, research centres, SMEs and industry clusters, stakeholders such as professional associations and others, the national CoVE will be able to harness collective expertise, resources and networks to enhance the quality and impact of its VET initiatives. These alliances will foster collaboration, knowledge exchange and innovation, benefiting learners, partners and regional development. Players and relationships will include:

- Partnership with some of the Sardinian ITSs (Higher Technical Institute):
- Fondazione ITS Efficienza energetica, in Macomer (NU);
- Fondazione ITS Mo.So.S. Mobilità sostenibile, in Cagliari;
- Fondazione ITS TAGGS Trasformazione agroalimentare Sostenibile, in Sassari.
- Collaboration with other SECOVE project COVEs.

- Collaboration with the COP (Community of Practice Centres of Vocational Excellence) COVE (<https://www.copcov.es.eu/>).
- Cooperation with professional associations (engineers, architects etc.) and builders' associations
- Cooperation with universities, VET providers and schools.
- Cooperation with research centres such as Sardegna Ricerche, CRS4, etc.
- Cooperation with category associations such as CNA Edilizia, Confartigianato, Confcooperative etc.
- Cooperation with SMEs, startups and industries.
- Links with associations and organisations interested in STEM, ecology, sustainable energy, diversity equity and inclusion issues.



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D2.1 Roadmap for the establishment of the SECOVE Platform

ANNEX D:

Roadmap for the establishment of a Centre of Vocational Excellence in Slovakia

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*Work Package 2: Roadmap for the
establishment of SECOVE
platform*

"Roadmap for the establishment of Center of Vocational Excellence in Slovakia

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1. Context

- **Slovakia:** Efforts are underway in Slovakia to modernize vocational education and training with the aim of increasing its quality and improving access to education. One of the main tools in this process are Vocational Education and Training Centers (VET), which have the task of providing vocational training for various sectors of the economy.
- **European approach:** On the other hand, there is a new concept of COVEs (Centres of Vocational Excellence), i.e. centers of excellence in vocational education and training, introduced in the EU in 2018. COVEs focus on a certain area of vocational education and are able to provide excellent educational and vocational services, to be a role model and to network and collaborate with other COVEs to ensure a better link between vocational education and training and the needs of the labor market.
- **Problems:** Current COVPs have several problems - insufficient funding, and modern infrastructure, insufficient cooperation with companies, lack of qualified teachers and trainers, old and outdated educational content, lack of visibility and awareness, lack of strategy, etc.
- **Industry:** The establishment of a Center of Excellence in the field of green construction (green building, hereinafter GB) in Košice would correspond to new trends, needs and challenges in the field of construction. COVEs could be a good place to develop related new professional skills and improve expertise in sustainable construction, digital technologies and environmental protection. The cooperation of the Technical University in Košice - Faculty of Civil Engineering with the Secondary Technical School of Civil Engineering and Geodesy in Košice, the Slovak Chamber of Civil Engineers and the non-profit organization ASTRA represents a suitable partnership structure that could provide the necessary expertise and support for COVE. The initiative should contribute to the development of the qualifications and skills of "green" builders and to the improvement of the quality and efficiency of the construction industry in Slovakia.

STEP 1: Identification of contacts: Contacting the Department of Education of the KSK and other entities important for the collection of information for the establishment of COVP/COVE.

Legal framework for the establishment of COVE

- **Vocational education and training centers (COVP: Centrum Odborného Vzdelávania a Prípravy):** The term COVP was introduced into vocational education by Act no. 184/2009 Coll. on vocational education and training, which Art. Even in § 11, the term " VET Center" defines the operation of the school in the field of vocational

education and training for professions. Z. no. 413/2021 Coll. supplements Act no. 61/2015 Coll. on vocational education and training and says that the transfer of knowledge and new technologies from the real practice of employers into the content of vocational education is beneficial for vocational teachers and students, who are thus preparing for the performance of their profession through constantly updated education.

- **COVP versus COVE:** The operation of a school as a COVP can be compared to the operation of a university as a center of scientific and technical information or as a center of excellence, hence COVE (the concept of COVE exists in Slovakia in wider legislation). The operation of the school as a COVE must become a strategy and trend of the school's development, supported by action plans.
- **COVP (COVE) partnership according to legislation:** cooperation with partners from the external environment: - employers' unions, professional and professional organizations; Primary schools; vocational secondary schools; universities; institutions of the department of labor; foreign partnerships; founder of the school / statutory body; business partners within the framework of business activity.
- **Agreement on the form and method of functioning:** relations may have the nature of an agreement, or cooperation agreement (**Memorandum of Understanding**), or on the basis of partnership relations arising from the school's membership in the employers' association, etc. They can also have an informal character that is not regulated in written form.

STEP 2: Agreement on the form and mode of operation of the partnership: Choice of a suitable type of COVE in the region, location, selection of key partners, form of agreement.

The focus of the national COVE

Industry: Green building (green building - GB)

- **Reasoning:** There are one million apartments and family houses and 15,000 public buildings in Slovakia, 2/3 of them in their original condition. The operation of public buildings costs 360 million euros per year. Green buildings have long-term economic benefits for their owners throughout their entire life cycle and are environmentally friendly.
- **Demand and the future of the GB industry:** wooden buildings as an example of GB are energy efficient, have a high-quality indoor environment and use water sparingly. They use the principles of the circular economy and sustainable materials and at the same time have a positive impact on the surrounding environment. Current megatrends such as climate change, population aging and urbanization are increasing the demand for green buildings.

- **GB industry players:** major construction companies and suppliers of building systems, materials and products are increasingly specializing in "green" building. It is a trend in the world that especially public buildings must meet high standards of sustainability in order to be an example and proof of the efficient use of public funds. However, different countries and regions have different conditions, which shape their specific approach to green building.
- **Trends and standards:** there are already a number of norms, standards and certification systems that address various aspects of sustainability in construction. Among the most well-known qualification certification systems in the GB industry are LEED (USA), BREEAM (Britain), HQE (France), Green Star (Australia and New Zealand), or DGNB (Germany and Austria). The EU tightens the requirements for the so-called standard zero emissions and by 2050 all buildings should meet this standard.
- **Demand for new qualifications in the GB industry:** Demand for new qualifications in green construction is growing in relation to the trend towards sustainable development and increasing awareness of environmental protection. Green buildings are becoming the norm and thus the need for professionals with qualifications in this field is increasing. The new qualifications concern not only the design and construction of green buildings, but also their operation and maintenance. An important factor is also the development of new technologies and procedures in the field of green construction.

STEP 3: Analysis of GB industry, demand and trends and specification of professions in the future in the time horizon 2030—2035.

Alignment of COVE with the RIS3 strategy

- **Current RIS3 status and priorities:** Priority industries for Slovakia are defined in RIS3, TUKE is represented in its implementation <https://www.mirri.gov.sk/sekcie/investicie/strategia-vyskumu-a-inovacii-pre-inteligentnu-specializaciu-sr/stala-komisia-rv-vti-pre-implementation-ris3/index.html>
- **Slovakia and the East Slovak region:** there is a high degree of inconsistency between the Regional innovation strategy of the Košice region (in Slovak): <https://ickk.sk/en/> and the National strategy: research and innovation strategy for smart specialization of the Slovak Republic 2021-2027
- <https://www.mirri.gov.sk/wp-content/uploads/2018/10/Research-and-innovation-strategy-for-smart-specialisation-of-the-Slovak-Republic-2021-2027.pdf>

- **The position of the GB industry in innovation strategies:** Neither the national nor the regional strategy mentions green buildings directly. The priorities of the wider sustainable energy sector are defined in the national RIS3:
 - Priority area 1-4: Increasing energy efficiency in the economy
 - Priority area 1-5: Efficient waste management
 - Priority area 1-6: Energy security of the Slovak Republic
 - Priority area 3-3: Intelligent energy systems
 - Priority area 5-4: Sustainable use of natural resources (soil, water, air, biodiversity, ecosystem)
 - Supporting strategic document: Integrated National Energy and Climate Plan of the Slovak Republic for 2021-2030
- **National and regional innovation system :** COVE will operate in an innovation system that has a national and regional level (NIS and RIS) and represents a set of different actors, institutions and measures that aim to support and increase innovation activity. Its goal is the support and development of new ideas, technologies and products that significantly contribute to increasing competitiveness and economic growth. The founders of COVE should enter into partnership with key institutions of NIS and RIS, for example MIRRI, Cassovia New Industry Cluster IC KSK, etc.

STEP 4: Defining the position of the future COVE in relation to the national RIS3 and RIS KSK and establishing contact with key NIS and RIS institutions for cooperation and identification of resources for the development of COVE. Setting arrangements for COVE alignment.

2. Preparatory activities

Stakeholder mapping

- **Current NIS and RIS and their actors:** first, on the basis of documents, and research, compiling a list of institutions active in the field of innovation support, science and research, innovative companies specifically in the construction, energy and GB industries.
- **List of stakeholders according to quadruple helix (QH):** QH target groups:
 - a. providers of vocational education and training and a center at the regional level (Košice and Prešov region)
 - b. Universities operating in eastern Slovakia
 - c. regional associations/chambers
 - d. Local government (Košice, Prešov,...)
 - e. National and regional clusters

- f. Companies
- g. non-profit organizations and think tanks
- **Relationships in the national and regional innovation system** (who does what?): innovation processes are not isolated and individual subjects in the system mutually influence their surroundings. Success in innovation requires coordination and cooperation. It is important for COVE to understand the role of key players in RIS to create effective partnerships.
- **National workshop:** the organization of a national and regional workshop is important for the successful implementation of the future COVE in accordance with the RIS3 strategy. This workshop will make it possible to collect the views and needs of stakeholders and find out what benefit COVE could have for individual regions and the whole country and vice versa.

STEP 5: Creation of a list and characterization of the regional and national innovation system to place the future COVE in the RIS also in accordance with the RIS3 strategy. Preparation and organization of the workshop.

National workshop

- **Creating an effective partnership:** partnership and collaboration are key to the successful implementation and sustainability of the future COVE. The partnership enables the sharing of resources, knowledge, experience, and expertise from different fields and enables the creation of synergistic effects that can lead to greater efficiency and success of the project. At the same time, it makes it possible to better take into account the needs and expectations of interested parties and ensure their active involvement in the project. This increases the level of support for the project and its sustainability after the end of the financing.
- **The national workshop and its objectives:** the purpose is to collect information and opinions on the topic of the future COVE - especially current problems on the labor market and the education of experts in the field of sustainable energy; encourage engagement in collaboration; identify common goals and problems; support decision-making at the stakeholder level on the best course of action. The workshop is important for building and strengthening relationships, improving understanding of needs and expectations and leading to long-term cooperation.
- **Creating commitments and strengthening accountability:** the workshop aims to create commitments and a plan for the preparation of COVE. It helps stakeholders commit to activities and plans and enables monitoring of their progress.

STEP 6: Organization of a national workshop to discuss the current situation on the labor market and the education of experts in the field of sustainable energy by the future COVE, in the context of the national and regional innovation system and the RIS3 strategy.

3. Description of the Vocational Education Center in Slovakia

Introduction

- **COVE's GB Industry Vision:** COVE for Green Buildings should be a collaborative and dynamic platform for education, training and innovation in green buildings and sustainable energy more broadly. COVE should be established by memorandum or as a legal entity (such as a non-profit organization) to ensure its sustainability and independence. COVE's Board of Directors should be responsible for strategic decision-making and overseeing the implementation of COVE's activities.
- **Partnership for COVE:** The structure of COVE should be based on a partnership approach, with representatives of academia, industry, public administration and civil society. COVE should promote entrepreneurship and innovation in the field of sustainable energy and green buildings and be active in networking and partnering with other COVEs in Europe to promote excellence and exchange best practices and promote international cooperation.
- **Choosing a place for future COVE:** The plan is to establish an institutionalized COVE at TUKE (Technical University of Košice) and collaborate within the premises of IZOLA. The TUKE Faculty of Civil Engineering has a Center for Research and Innovation in Construction, the support of the TECHNICOM University Science Park at TUKE will be used. The company IZOLA has innovations in the field of vegetative roofs and green buildings, it will provide suitable premises and technological support for the implementation of practical trainings and projects related to the field of green buildings.
- **Alignment with strategies and wider partnership:** COVE should be aligned with the priorities of the Research and Innovation Strategy for Intelligent Specialization (RIS3) of the Slovak Republic and the regional innovation strategies for the Košice and Prešov regions. Partnerships with vocational education and training providers, regional associations, local government and non-profit organizations should also be established.

STEP 7: Develop a detailed vision, activities and services of the future COVE in the GB industry, continue the discussion after the national workshop to develop a clear idea of its operation, mission and objectives.

Activities and services of the national COVE

Activities and services of COVE during the solution of the SECOVE project

- a. Analyzing the current and future **state of the labor market and vocational education** in GB, for secondary vocational and higher education.
- b. Identifying **qualification needs** (knowledge and skills) and labor market requirements in the field of green buildings and sustainable energy construction.
- c. Creation of a detailed **study plan and vocational education** and training program and preparation of their accreditation for several target groups, including employees, employers, and students.
- d. Creation of **a space for meeting** and cooperation between partners and a binding **network of partners** to support the development of COVE and its activities and within the international COVE platform.
- e. Design and implementation of **research and innovation activities** to support sustainable energy, green buildings and vegetative roofs.
- f. Ensuring and coordinating activities related to **promotion and raising awareness** of COVE and its services.
- g. **Organization** of workshops, seminars and conferences in order to share the latest knowledge and best practices in the field of green buildings and sustainable energy construction.
- h. Providing **advice and consulting services** to improve performance in the field of sustainable energy construction and green buildings in TUKE and IZOLA premises.
- i. Organization of **professional excursions and trainings** on various topics related to sustainable energy construction and green buildings.
- j. Creation of conditions for the creation of **an innovation hub** in the field of green buildings.
- k. Activities to **ensure the sustainability** of the COVE project even after the end of the SECOVE project and its transition to full operational mode.
- l. **Monitoring and evaluating the results** and success of COVE and its activities in order to contribute to their continuous improvement and development.

STEP 8: Detailed elaboration of COVE's activities and services during the duration of the project - based on SECOVE's activities and the specific situation in Košičiac and the East Slovak region.

COVE activities after the end of the SECOVE project

- a. Ensuring the sustainability and transition of COVE to full operational mode after the end of the SECOVE project, including financial stability and a long-term strategy for the development and expansion of activities and services.
- b. Ensuring **high-quality equipment** for the GB area, including professional pedagogical and lecturer support, top-quality material and technical equipment, devices and equipment, and ICT technologies.
- c. **Ensuring practical teaching** in the premises of COVE laboratories, education and training, ensuring the quality of teaching and student motivation, including the implementation of new elements from practice in educational programs, accredited retraining courses and organizing presentations of professional skills.
- d. **Developing the motivation of pupils and their recruitment**, including good cooperation with primary and secondary schools in the area of promotion of vocational education and training, organizing various forms of recruitment. Supporting the motivation of pupils and students - organizing competitions, exhibitions and extracurricular activities.
- e. Developing **partnership and institutional activities** with regional organizations and employers in the field of green buildings and sustainable energy construction, including cooperation with unions, state and professional organizations, universities and primary schools, public and private sectors.
- f. Developing cooperation with European COVEs and using **the SECOVE platform** to exchange knowledge of pupils and students in the wider sustainable energy sector.
- g. Creating **own specialist texts**, presentations and teaching guides and textbooks for pupils and students that are new and key to the teaching of green buildings and sustainable energy construction, so that pupils and students in the excellent COVE have access to the latest and most relevant information about green buildings and sustainable energy construction.
- h. Preparation of programs, various forms of education and **awarding of certificates** for successful completion of teaching and learning in COVE.
- i. Constantly **updating** and adapting the content of textbooks and presentations depending on current trends and developments in the field of green buildings and sustainable energy construction.
- j. Developing and ensuring **further education** of teachers and COVE workers.

STEP 9: Detailed elaboration of the activities and services of COVE and the innovation hub after the end of the SECOVE project and the specific situation in Košice and the East Slovak region.

Stakeholders involved

*Primary overview of the key institutions that will be involved in the national CoVE, including their roles and responsibilities: **(The list of interested parties is in the appendix).***

- *Technical University in Košice – Faculty of Civil Engineering*
- *IZOLA s.r.o.*
- *Slovak Chamber of Civil Engineers SKSI*
- *Secondary Technical School of Civil Engineering and Geodesy in Košice*
- *KSK Innovation Center*
- *City of Košice*
- *National energy cluster*
- *ESM Yzamer*
- *Slovak Innovation and Energy Agency*
- *National Recycling Agency*

Preliminary division of tasks in the partnership:

Technical University of Košice – Faculty of Construction and its Center for Research and Innovation in Construction and UVP Technicom TUKE:

- *Ensuring professional capacities for the implementation of COVE activities in the area of GB and sustainable energy construction.*
- *Support of research and innovation in GB and implementation of results in practice.*
- *Creation and implementation of new curricula, educational programs and courses for different target groups (students, employees, employers).*
- *Ensuring quality education in GB and sustainable energy construction for students of TUKE and other schools and institutions in the region.*
- *Organizing professional seminars, conferences and workshops for students, the professional public and those interested in the topic.*
- *Providing consulting services on GB in cooperation with partners in the region.*
- *Cooperation with other organizations and networks in the field of green technologies and sustainable energy construction at the regional, national and international level.*

IZOLA s ro:

- *Securing and equipping premises for practical teaching and training in the field of green roofs and green building in the cooperation with the Technical University of Košice.*
- *Development of COVE in cooperation with partner organizations and institutions, ensuring promotion and raising awareness of COVE and its services.*

- *Creating conditions for the implementation of new knowledge and skills from practice in professional education and training for employees, so that they are always in line with the latest trends in the field of green roofs and buildings.*
- *Supporting the transition of COVE to full operational mode and its sustainability after the end of the SECOVE project, in order to ensure a long-term strategy for the development and expansion of activities and services in COVE.*
- *Cooperation with other organizations and networks in the field of green technologies and sustainable energy construction at the regional, national and international level.*

Slovak Chamber of Civil Engineers SKSI:

- *Providing expert know-how and consultations for COVE on GB and sustainable energy construction.*
- *Support for the implementation of new standards and criteria for green buildings and sustainable construction.*
- *Cooperation on the creation and development of study materials and teaching programs.*
- *Ensuring access to current trends and information in the topic.*
- *Support of professional education for civil engineers and architects in the topic.*
- *Supporting cooperation with other institutions and organizations at the national and international level.*
- *Supporting and organizing events such as seminars, workshops and conferences to promote the benefits of green buildings and sustainable energy construction.*
- *Support and organization of various programs and competitions for students and schools.*

Secondary Technical School of Civil Engineering and Geodesy in Košice:

- *Participation in the creation of a detailed study plan and vocational education and training program for various target groups, including high school students and TUKE students.*
- *Ensuring high-quality training of students in the field of construction and geodesy, including the introduction of new elements of the SECOVE project into educational programs and the organization of presentations of professional skills.*
- *Participation in the organization of professional excursions and trainings on various COVE topics.*
- *Supporting the recruitment and motivation of students, including the organization of competitions, exhibitions and extracurricular activities.*

KSK Section of Education

- *Creating conditions for the creation of an innovation hub and monitoring and evaluating the results and success of COVE.*
- *Methodological support for the creation of COVE.*
- *Promoting and raising awareness of COVE and its services.*
- ***KSK Innovation Center, Slovak Innovation and Energy Agency (SIEA), National Recycling Agency (NRA) and National Energy Cluster:***
- *Support of innovations in the field of green buildings and sustainable energy construction.*
- *Ensuring financial support for projects and initiatives in the field of green buildings and sustainable energy construction.*
- *Organizing workshops, seminars and conferences to share the latest knowledge and best practices on the topic.*
- *Creating conditions for the emergence of an innovation hub as a center for innovation in the GB area.*
- *Support for the development of green technologies and their implementation in the field of green buildings and sustainable energy construction.*
- *Support of research and innovation activities in the field of green buildings and sustainable energy construction.*

ESM Yzamer, Daikin, Herz and other companies with innovation, smart technologies, digitization for connection to green buildings and smart building monitoring

- *Designing and implementing intelligent solutions for monitoring energy consumption and resources in green and other energy-saving buildings.*
- *Creating new technologies and solutions for reducing energy costs and increasing energy efficiency in green buildings and smart buildings.*
- *Providing consulting and advisory services in the field of smart buildings, green buildings and energy management.*
- *Support for the innovation hub COVE, research and development of new solutions and technologies for green buildings and smart buildings.*
- *Creating new products and services for green buildings and smart buildings.*

STEP 10: Reach an agreement on the division of roles and responsibilities in the creation of COVE, its launch and follow-up activities in the future .

4. Strategic planning for the development of national COVE

Develop a strategic plan to align the national CoVE with RIS3 to promote regional growth and development. The strategic plan should align with the government's policies and initiatives related to vocational education and training.

Strategic objectives and priorities of the national COVE

The goals and objectives of the Center of Vocational Excellence:

Alignment with RIS3:

*When establishing CoVE and based on the analysis of the sector and GB, an important step is **the alignment of CoVE activities with RIS3**. Currently, the GB sector is not directly in the and priorities. Therefore, it is necessary to influence current policies in Slovakia and the Košice region. As part of our initiative, we want to ensure that the topic of green construction is included in national and regional innovation strategies in Slovakia. Therefore, we propose the following **COVE objectives**:*

- 1. Identify **gaps** in the regional innovation strategy of the Košice Region (RIS3) and the national strategy of intelligent specialization (RIS3) and push for the creation of specific measures and support for the creation of new jobs in the field of green building.*
- 2. To **map** the existing regional and national innovation system, which includes diverse actors - research institutions, universities, businesses, associations, social organizations, and non-profit organizations.*
- 3. To identify suitable, especially innovative **entities** that could be involved in COVE activities.*
- 4. Analyze the **activities** already taking place in the GB topic and see where we can add new value. It is certainly important to focus on research and development of new technologies or on the provision of consultancy and professional training.*
- 5. To propose **projects** that could help to strengthen the innovation potential in the subject of GB and contribute to the achievement of the goals of the national and regional innovation strategy. To identify funding sources for our activities and projects, such as EU funds, public funding, or private investment.*
- 6. Develop communications with relevant **decision-making institutions** to ensure that our activities and projects are in line with the national and regional innovation strategy.*
- 7. Focus on **raising awareness** of the benefits of GB and promoting best practices in this area.*
- 8. Support cooperation between Slovak and **foreign experts in GB** and the exchange of knowledge and best practices.*

Overall, the strategic plan should align the national CoVE with RIS3 with the broader goal of supporting regional growth and development in eastern Slovakia. By establishing CoVE with a focus on GB, CoVE can meet the demands of industry and at the same time align its activities with RIS3 priorities to support regional development.

STEP 11: Create an indicative strategic plan for building the COVE during the duration of the project.

Activities for the establishment of national COVE

1. Establishment of a dedicated physical space and facility equipped with the necessary infrastructure and resources to carry out training and education activities in the field of green buildings and the construction of sustainable energy facilities.
2. Identification and recruitment of qualified personnel - instructors, trainers and experts with expertise in the field of green buildings and the construction of sustainable energy installations.
3. Securing the necessary financial resources to support the initial set-up and ongoing operation of the COVE, including funding for equipment, materials, staff salaries and maintenance costs. (d) Developing partnerships and cooperative agreements with relevant industry stakeholders, such as construction companies, energy agencies, governmental organisations and professional associations, to ensure industry involvement and support for COVE activities.
4. Develop curriculum and training programs that are aligned with industry standards and meet the needs of the future green building and sustainable energy construction labour market to ensure excellence.
5. Acquire and procure the necessary equipment, tools and technology needed for practical training and hands-on exercises and to generate innovation.
6. Establishing quality assurance mechanisms to ensure the effectiveness and continuous improvement of the vocational education and training programmes provided by COVE.

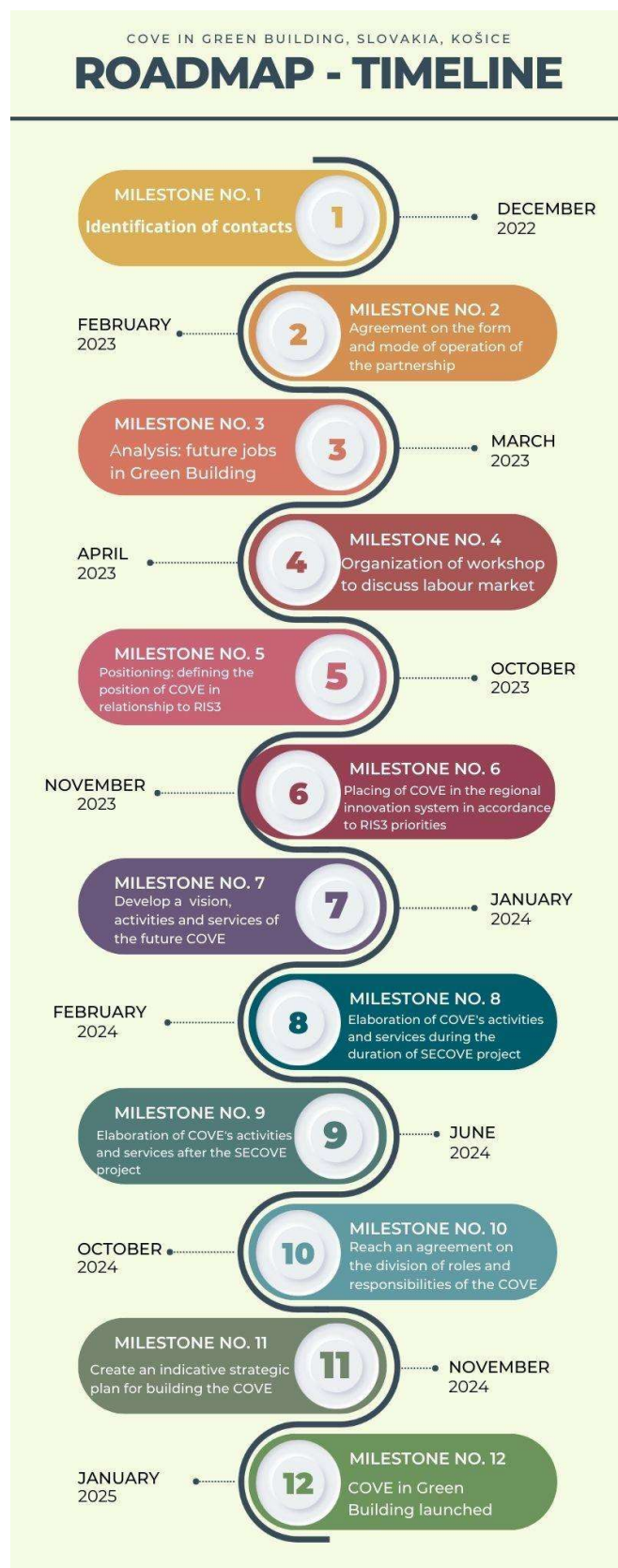
Responsibilities and roles of involved partners

Partner Institution	Roles and Responsibilities
Technical University in Košice - Faculty of Civil Engineering	• Ensuring professional capacities for COVE activities in the area of green building and sustainable energy construction. • Support research and innovation in green building and implement results in practice. • Develop and implement new curricula, educational programs, and courses for different target groups. • Organize professional seminars, conferences, and workshops. • Collaborate with organizations and networks in the field of green technologies and sustainable energy construction.

IZOLA s.r.o.	- Secure and equip premises for practical teaching and training in the field of green roofs and green building in cooperation with the Technical University in Košice. - Implement new knowledge and skills from practice into professional education and training. - Support the transition and sustainability of COVE after the SECOVE project.
Slovak Chamber of Civil Engineers SKSI	- Provide expert know-how and consultations for COVE on green building and sustainable energy construction. - Support the implementation of new standards and criteria for green buildings and sustainable construction. - Collaborate on study materials and teaching programs. - Provide access to current trends and information in the field. - Organize events and programs to promote the benefits of green buildings and sustainable energy construction. - Support programs and competitions for students and schools.
Secondary Technical School of Civil Engineering and Geodesy in Košice	- Participate in creating a study plan and vocational education program for students. - Ensure high-quality training of students in construction and geodesy. Incorporate SECOVE project elements into educational programs. - Organize professional excursions and trainings on COVE topics. - Support student recruitment and motivation, including competitions and extracurricular activities.
KSK Section of Education	- Create conditions for the innovation hub and monitor COVE's results and success. - Provide methodological support for COVE's establishment. - Promote and raise awareness of COVE and its services.
KSK Innovation Center, Slovak Innovation and Energy Agency (SIEA), National Recycling Agency (NRA), and National Energy Cluster	- Support innovations in green building and sustainable energy construction. Provide financial support for projects and initiatives in the field. - Organize competitions, hackathons, and conferences. - Support to establish an innovation hub in the green building sector. Support the development and implementation of green technologies. Foster innovation activities in green building and sustainable energy construction.

<i>ESM Yzamer and other companies with innovation, smart technologies, digitization for connection to green buildings and smart building monitoring</i>	• <i>Design and implement intelligent solutions for monitoring energy consumption and resources in green and energy-saving buildings.</i> • <i>Develop technologies and solutions for reducing energy costs and increasing efficiency in green and smart buildings.</i> • <i>Provide consulting and advisory services in smart buildings and energy management.</i> • <i>Support COVE's innovation hub and research and development activities. Create new products and services for green and smart buildings.</i>
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Timeline



Budget

The launch of COVE will benefit significantly from in-kind co-financing - contributions from partners or stakeholders in the form of goods, services, or resources rather than direct financial contributions. In return of providing funds, partners will provide their expertise, equipment, facilities and other tangible or intangible resources in support of the activities of the COVE. In-kind co-financing can be valuable in terms of reducing costs and leveraging additional resources to achieve project objectives. According to the strategic proposal, the share of in-kind funding should decrease in favour of direct funding.

Mostly the Technical university of Košice, Secondary Technical School of Civil Engineering and Geodesy and IZOLA will provide goods or services instead of cash for education and training. This type of financing can be beneficial for both parties as it reduces the amount of actual financing needed. COVE's national green building project will operate in a local context and create ecosystems of skills to foster innovation, regional development, and social inclusion. It will collaborate with COVEs in SECOVE countries to achieve excellence. The approach to excellence is bottom-up, engaging local partners and therefore the role of the COVE facilitator is key, responding to the needs of a dynamic labour market in the context of green and digital transformation.

Yearly budget plan in EUR, 2025-2028

Year	Co-financing: Salaries, rent, equipment in kind	Direct salaries, management and facilitation	Professional developmen t of staff	Partnership developmen t and mobility	Equipment and supplies	Miscella- neous expenses
2025	60000	15000	5000	8000	5000	5000
2026	50000	20000	10000	10000	10000	6000
2027	40000	25000	12000	10000	12000	7000
2028	30000	30000	12000	12000	14000	8000
Total	180000	90000	39000	40000	41000	26000

Quality Assurance

A quality assurance plan for CoVEs in Slovakia will include the following steps:

1. Define clear and relevant objectives for the CoVEs that match the needs of students, partners, and industry experts.

2. Set key performance indicators to measure the effectiveness and success of the CoVEs, such as student satisfaction, employer feedback, placement rates, and industry relevance.
3. Conduct regular evaluations to compare the performance of the CoVEs with the performance indicators and identify strengths and weaknesses.
4. Collect feedback from students, partners, and industry experts to gain insights and suggestions for improvement.
5. Develop and implement action plans to address the gaps and enhance the quality of the CoVEs based on the evaluation results and feedback.
6. Collaborate and share best practices among CoVEs to learn from each other and improve the quality of vocational education and training across the board.
7. Monitor and review the implementation and impact of the quality assurance plan and adjust as needed.

5. *Exploitation and sustainability*

Creating impact

In order to best communicate the results of CoVE's activities in Slovakia in the field of green buildings and green roofs, we will proceed as follows:

1. *A Communication Plan will be developed that defines the objectives, target groups, key messages, communication channels and timeline for disseminating the results of CoVE activities. The target audience will be the actors of the triple helix, the regional skill ecosystem, as well as the public who will be affected by these results.*
2. *A variety of communication channels will be used in a creative way to connect with the defined target groups and the public; we foresee newsletters, social media, press releases, conferences and events.*
3. *The impact of CoVE on the quality and relevance of vocational education and training, innovation, but also wider regional development and the RIS3 strategy will be presented. For example, by showcasing student success stories, the environmental benefits of green buildings and green roofs, reducing energy consumption, carbon emissions and water consumption. We will highlight the impact on the wellbeing of people and society.*
4. *An evidence-based briefing will be provided to support CoVE outcomes, employer feedback, research findings and environmental impact, Sustainable Development Goals compliance.*
5. *The processes of communicating the results of the CoVEs to stakeholders and the public will be described, including the impact of the CoVEs on the quality and*

relevance of vocational education and training, innovation, and regional development.

- 6. Involvement of the stakeholders in the communication process will be realised by asking for feedback and suggestions on the results of the CoVEs. This can include conducting surveys, organizing focus groups, and holding meetings with industry experts and community leaders. Platform of SECOVE will be used and also other international supportive initiatives and programmes.*
- 7. The effectiveness of the communication strategy will be regularly assessed by collecting feedback from stakeholders and the public. This can include analyzing website traffic, social media engagement, and media coverage.*

Expanding the COVE

We aim to bring a plan that holds an entrepreneurial spirit and fosters internationalization. Our strategic roadmap includes the following key initiatives:

- 1. Cultivating an entrepreneurial mindset, encourage a culture of innovation, creativity, and risk-taking within the CoVE. By fostering an entrepreneurial spirit among students and staff, we want to inspire them to spot opportunities, starting their own green building businesses or launching innovative projects.*
- 2. Fostering international partnerships, to engage in international collaboration, mobilities and exchange, to participate in initiatives like Erasmus+ and UN Sustainable Development Goals Partnerships. This will enable us to exchange best practices, learn from leaders, and collaborate on important projects.*
- 3. Building an ecosystem, to establish a strong network of CoVE alumni and industry experts, providing insights and support to current students. Additionally, industry experts will offer guidance on emerging trends and the skills needed in the dynamic field of green building and green roof.*
- 4. Encouraging interdisciplinary collaboration, across various fields, exchange of ideas and knowledge among VET institutions, students, and industry partners. This we hope will bring interdisciplinary based innovative solutions.*
- 5. Creating an innovation hub, a physical space dedicated to develop entrepreneurship and innovation within the CoVE. This innovation hub will provide resources, mentorship, and networking opportunities for active and innovative students and entrepreneurs.*
- 6. Utilising the power of digital technologies by online platforms, virtual reality simulations, and interactive learning tools, to create engaging educational experiences.*
- 7. Ensuring sustainable funding to support the long-term growth and viability of the CoVE, from government grants, industry partnerships, etc..*

Future Funding

In the intended scenario the future COVE in green building is located at the Technical University of Košice, Faculty of Civil Engineering, and green roof innovation experiments take place at the IZOLA company, along with Secondary Technical School of Civil Engineering and Geodesy in Košice.

Here are proposed sources of funding:

Government Funding: *Financial support from government entities responsible for education and vocational training can be allocated to the COVE project. This could involve funding from the Ministry of Education, as well as the Košice self-government region. These government funds can be earmarked specifically for the establishment, maintenance, and development of the COVE.*

Budget of Public Institutions: *The budget of the involved public institutions, such as the Technical University of Košice, Faculty of Civil Engineering, and the Secondary Technical School of Civil Engineering and Geodesy in Košice, can be utilized to fund the COVE. These institutions may allocate a portion of their budgets towards the infrastructure, equipment, and resources required for the COVE and the associated green roof experiments.*

European Union and National Programs: *funding opportunities provided by the European Union, such as ERASMUS+ and the European Social Fund (ESF). These programs offer financial support for educational initiatives, including COVEs, that align with EU policies and priorities.*

The Slovak Innovation and Energy Agency (SIEA) organises professional competence examinations for the Ministry of Economy of the Slovak Republic for business in the thermal energy sector and in the energy sector with a focus on electricity and gas. Support can be found in the Slovakia 2021-2027 Programme (Measure 2.1.3 Support for the development of regional and local energy sector under Priority 2P1 Energy efficiency and decarbonisation). The measure will be implemented through the establishment and operation of the so-called Regional Energy Centres (RECs) and Regional Centres for Sustainable Energy (RCUEs). The Slovak Innovation and Energy Agency (SIEA) is currently preparing the conditions for their establishment.

Industry Partnerships: *partnerships with companies in the green building sector and related industries. A possibility of financial contributions from these companies to support the development and operation of the COVE, in the form of sponsorships, collaborative funding arrangements.*

Firms Dealing with Photovoltaics, Solar Energy, and Digital Building Solutions are at the lead of the industry and hold valuable expertise and experience. They can contribute to the regional skills ecosystem a contribute to in kind funding by offering specific training

programs and apprenticeships in the photovoltaics, solar energy, and digital building solutions. Hands-on experience and mentoring is useful to help to develop a skilled workforce and bridge the gap between education and industry requirements.

Regional Development Funds and RIS3: regional development funds or programs dedicated to promoting innovation, sustainability can provide financial support for COVE initiatives.

Corporate Sponsorships: businesses interested in supporting green building initiatives or investing in the development of a skilled workforce can provide financial resources for specific COVE activities, events, or scholarships.

Internationally Funded Projects: programs that offer financial support for vocational education and training include initiatives funded by organizations like the World Bank.

References - sources:

National workshops SECOVE, Košice

Transnational meeting SECOVE, Athens

Metodika fungovania a spolupráce centra odborného vzdelávania a prípravy (Centra OVP)

Institute.<https://www.povewater.eu>

Attachment I - List of participants of the national workshop

  Spolufinancované z programu Európskej únie Erasmus+			
Zoznam účastníkov Národný seminár "Vytvorenie platformy SECOVE" Dátum: 25.11.2022 Miesto: SvF TUKE, Vysokoškolská 4, Košice			
	Meno	Email	Organizácia
1	Ing. Mária ĎURČÁKOVÁ	durcakova@stavoprojekt.sk	RZ SKSI Košice
2	Ing. Ján FUKAS		Úrad SKSI
3	Ing. Viliam HRUBOVČÁK	v.hrubovcak@gmail.com	RZ SKSI Košice
4	Ing. Ján PETRŽALA	petrzala@sksi.sk	RZ SKSI Košice
5	Ing. Tomáš NOVOTNÝ	tnovoty61@gmail.com	NEK Slovensko
6	prof. Ing. Pavel RASCHMAN, PhD.	pavel.raschman@tuke.sk	FMMR TUKE
7	Ing. Štefan PETKANIČ	petkanic@klimatoplo.sk	Klima - Teplo Designing
8	prof. Ing. Iveta ZOLOTOVÁ, PhD.	iveta.zolotova@tuke.sk	FEI TUKE
9	Ing. Marek KUŠNÍR, PhD.	marek.kusnir@gmail.com	OON Design s.r.o.
10	doc. Ing. Martin LOPUŠŇIAK, PhD.	lopusniak@aipweb.sk	AIP projekt, s.r.o.
11	doc. Ing. Danica KOŠIČANOVÁ, PhD.	danica.kosicanova@tuke.sk	dmj-s.r.o.
12	Ing. Vladimír OROVNICKÝ	orovnický.v@daikin.sk	DAIKIN, SK
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15	doc. Ing. Nataša URBANČÍKOVÁ, PhD.	natasa.urbancikova@gmail.com	ASTRA
16	prof. RNDr. Oto HUDEC, CSc.	oto.hudec@tuke.sk	E&F TUKE
17	prof. Ing. Zuzana VRANAYOVÁ, CSc.	zuzana.vranayova@tuke.sk	SvF TUKE
18	Ing. Janka SABOVÁ	sabova@ostrovského.sk	Stredná odborná škola informačných technológií
19	Ing. Marcela TIMKOVÁ	timkova@ostrovského.sk	Stredná odborná škola informačných technológií
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21	doc. Ing. Daniela KÁPOSZTÁSÓVÁ, PhD.	daniela.kaposztasova@tuke.sk	SvF TUKE
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24	Ing. Peter ŤAPÁK	Peter.Tapak@tuke.sk	E&F TUKE
25	Mgr. Nina HADIDOMOVÁ	nina.hadidomova@gmail.com	E&F TUKE
26	Ing. Michal MITRIK, PhD.	stavke@stavke.sk	Stredná priemyselná škola stavebná a geodetická, Košice, VTS
27	PhDr. Ján PITUCH	jan.pituch.edu@vucke.sk	Centrum odborného vzdelávania, Kukučínova 23, Košice
28	Mgr. Stanislav KOLPAK	spsstavpo@spstavpo.sk	Stredná priemyselná škola stavebná, Plzenská 10, Prešov
29	Ing. Peter MALUČKÝ	peter.malucky@spst.sk	Stredná priemyselná škola technická, Hviezdoslavova 6, Spišská Nová Ves
30	Mgr. art. Zsolt LUKÁCS	riaditel@supke.sk	Škola umeleckého priemyslu, Jakobyho 15, Košice

Attachment II - List of stakeholders

SFCOVE Work Package 2: Set up. governance and funding of SECOVE Platform Task T2.1 Establishing networks of stakeholders at local level (SECOVE partnerships) Country: SLOVAKIA Partner: TUKE, SK Contact Person: Zuzana Vranayová Title of contact person: Prof.			
Type of stakeholder			
A/A	Name of organisation	Website	Contact email
VET school (secondary)			
1	Secondary vocational school of information technologies	http://ostrovského.sk	skola@ostrovského.sk
2	Centrum odborného vzdelávania	soskuke.edupage.org	sos.technicka.kosice@gmail.com
3	Stredná priemyselná škola elektrotechnická, Košice	www.spseke.sk	spse@spseke.sk
4	Stredná priemyselná škola stavebná, Prešov	www.spsstavpo.edupage.org	spstavpo@spstavpo.sk
5	Škola úžitkového priemyslu, Košice	www.supke.sk	supke@supke.sk
6	Stredná priemyselná škola dopravná, Košice	www.spsdopravnake.sk	spsdke@spsdopravnake.sk
7	Stredná priemyselná škola strojnícka, Košice	www.priemyslovka.sk	sekretariat@priemyslovka.sk
8	Stredná priemyselná škola technická, SNV	www.spst.sk	skola@strojsnv.sk
VET school (post secondary)			
1	Ekonomická fakulta Univerzity Mateja Bela, BB	www.ef.umb.sk	umb@umb.sk
VET centres			
Higher Education Institutions			
1	Faculty of Mechanical Engineering	http://www.sjf.tuke.sk/	natalia.jasminska@tuke.sk
2	Faculty of Mining, Ecology, Process Control and Geotechnologies	https://www.po-kraj.sk/sk/	peter.taus@tuke.sk
3	Faculty of Electrical Engineering and Informatics TUKE	https://www.fei.tuke.sk/	iveta.zolotova@tuke.sk
4	Faculty of Manufacturing Technologies with the seat in Prešov	https://www.fvt.tuke.sk/	dusan.knezo@tuke.sk
5	Faculty of Materials, Metallurgy and Recycling	https://fmmr.tuke.sk/wps/	pavel.raschman@tuke.sk
6	Slovak university of Technology, CEF	https://www.svf.stuba.sk/	dusan.petras@stuba.sk
7	University of Žilina, Faculty of Civil Engineering	https://svf.uniza.sk/	pavol.durica@fstav.uniza.sk
VET associations			
1	Zväz slovenských vedeckotechnických spoločností	www.zsvts.sk	zsvts@zsvts.sk
Social partners			
1	National Union of Employers	https://www.ruzsr.sk/sk/	ruz@ruzsr.sk
2	Confederation of Trade Unions of the Slovak Republic	https://www.kozsr.sk/	kozsr@kozsr.sk
3	Priatel'ia zeme	https://cepa.priateliazeme.sk	cepa@priateliazeme.sk
4	SLOVAK GREEN BUILDING COUNCIL	http://www.skghc.org/	info@skghc.org
Policy makers			
1	Košice Self-governing region	https://web.vucke.sk/sk/	matej.ovciarka@vucke.sk
2	Prešov Self-governing region	https://www.po-kraj.sk/sk/	rozvoj@vucpo.sk
3	Košice City	https://www.kosice.sk/sk/	marcel.giboda@kosice.sk
Educational community			
National organisations			
1	Slovenská inovačná a energetická agentúra: SIEA	https://www.siea.sk/	officeke@siea.gov.sk
2	Národný energetický klaster	www.nek.sk	tnovotny61@gmail.com

Other			
1	Publishing house of professional magazines VOČ	https://voc.sk/	voc@voc.sk
2	Zelena strecha	https://www.zelena-strecha.sk/	info@skygardens.sk
3	HBH AGRO	https://www.hbhagro.sk/sk/	info@hbhagro.sk
4	ADONIS CONSULT	http://www.adonisconsult.sk/	info@adonisconsult.sk
5	Fatra Izolfa, a.s.	http://www.fatraizolfa.sk/	fatra@izolfa.sk
6	BMI Slovensko, s.r.o. (Icopal)	www.icopal.sk	infosk@bmigroup.com
7	Bauder	https://www.bauder.sk/sk/	martin.vraniak@bauder.sk
8	Cech Strecharov	https://www.cechstrecharov.sk/	cechstrecharov@cechstrecharov.sk
9	MI Top s.r.o.	https://www.mitop.sk/index.php	repcik@mitop.sk
10	Zelené stavby	https://zelenastavba.sk/	maros@zelenastavba.sk
11	CleanPark	https://stresnecentrum.sk/	julo.sasfai@gmail.com
12	sAm-IZOL	http://www.samizol.sk/	sumann@azet.sk
13	Mataš		info@plochestrechyke.sk
14	Wienerberger, s.r.o., Zlaté Moravce	www.wienerberger.sk	info.sk@wienerberger.com
15	Klima - Teplo designing	https://www.klimatelo.sk/	petkanic@klimatelo.sk
16	OON Design s.r.o.	https://oondesign.sk/	marek.kusnir@gmail.com
17	AIP projekt, s.r.o.	https://www.aipweb.sk/my	lopusniak@aipweb.sk
18	dmj-sro	www.dmj-sro.sk	danica.kosicanova@tuke.sk
19	Slovak Climate Initiative	https://klimatickainiciativa.sk/	chajdiakova@klimatickainiciativa.sk
20	Buildings for the Future (B4F)	https://bpb.sk/	nikodemova@bpb.sk
21	KUVOZE	www.kuvoze.sk	info@kuvoze.sk
22	Slovak Renewable Energy Agency (SK REA)	https://skrea.sk/	info@skrea.sk
23	Slovenská spoločnosť pre techniku prostredia (SSTP)	https://www.sstp.sk/	sstp@sstp.sk
24	Slovak Association of the Photovoltaic Industry and RES	https://www.sapi.sk/	info@sapi.sk
25	Greenlogy	https://www.greenlogy.com	podpora@greenlogy.com
26	RightPower	https://rightpower.sk/	backoffice@rightpower.com
27	Viessmann, s.r.o.	https://www.viessmann.sk/	viessmann@viessmann.sk
28	GREEN FOUNDATION	https://greenfoundation.eu	info@greenfoundation.eu
29	Nadácia Slovenskej sporiteľne	https://www.slsp.sk/sk/nad	nadacia@slsp.sk
30	Inštitút cirkulárnej ekonomiky, o.z.	https://www.inci.sk/	csefalvayova@inci.sk
31	Vaillant Group Slovakia, s.r.o.	https://www.vaillant.sk/o-nas/	
32	Ekofond SPP, n.o.	https://www.ekofondspp.sk/	info@ekofondspp.sk

Defining the position of COVE in relation to RIS3



Co-funded by
the European Union



SECOVE

Project number: 101056201

D2.1 Roadmap for the establishment of the SECOVE Platform

ANNEX E:

Roadmap for the establishment of a Centre of Vocational Excellence in Portugal

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Work Package 2: Roadmap for the
establishment of SECOVE
platform

Roadmap for the establishment of Centre of Vocational Excellence in Portugal



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1. Context

The creation of the Centre for Professional Excellence (CoVE) in Portugal is part of the wider European Union (EU) initiative that aims to promote excellence in vocational education and training (VET) across the EU. CoVEs are created under the Erasmus+ programme, which is the EU's program for education, training, youth and sport.

The context for the creation of CoVE in Portugal is based on the need to strengthen VET systems in the country and ensure that they are able to respond to the changing needs of the labour market. Portugal, like many other European countries, faces challenges related to the shortage and inadequacy of skills in different sectors of the economy. These challenges have been exacerbated by the ongoing digital transformation, which is changing the nature of work and demanding new skills.

The CoVE initiative in Portugal was designed to address these challenges, bringing together VET providers, companies, and other stakeholders in specific industrial sectors to develop high quality vocational training that is relevant to the needs of the labour market. The aim is to promote innovation, sustainability and quality in VET, ultimately leading to increased competitiveness and economic growth in Portugal.

The creation of CoVE in Portugal also reflects the country's commitment to promoting lifelong learning and ensuring that all citizens have access to high quality education and training. Through CoVE, Portugal aims to improve the quality and relevance of VET and promote social inclusion and mobility, providing individuals with the skills and competences they need to be successful in the labour market.

CoVEs initiatives in Portugal

The [SECOVE project](#) presents a proposal for the development of a European platform for cooperation between Centres of Professional Excellence (CoVEs) in the area of Sustainable Energy, known as the SECOVE platform. Each CoVE will be established as a local or regional Centre of Excellence through partnerships with local companies and institutions specializing in Energy, renewable energy sources, energy efficiency and related areas such as construction and local development. The SECOVE partnership consists of five national partnerships, each dedicated to establishing a VET Centre of excellence that promotes

sustainable energy. Each of the partners will consider the unique institutional, technical, technological, cultural and human resource requirements needed to successfully establish CoVE in their respective regions. The overall aim of the project is to create a platform that facilitates Professional Excellence by promoting collaboration between Higher Education Institutions (HEIs), VET Centres, industry stakeholders and public entities within a strategically significant Energy region. Through this platform, the sharing of knowledge, cooperation, and innovation in the field of sustainable energy will be encouraged, ultimately leading to the training and development of a highly qualified workforce that can contribute to the sustainable energy sector.

At the same time, the European Commission approved, in March 2023, the [H2Excellence project](#) with the aim of establishing Vocational Excellence Centres in the field of fuel cell technologies and green hydrogen. The project consortium is made up of 24 partners from 10 different countries, including IP Portalegre, the National laboratory of Energy and Geology, the Institute of Welding and Quality and the Polo Association for Competitiveness and Energy Technology as Portuguese partners. The initiative aims to fill existing gaps in the sector through a collaborative education, training, and development program. In addition, the project seeks to create local clusters in countries with potential in the industry, with planned expansion across Europe. The focus will be on different aspects of the hydrogen value chain, from production to applications, aiming to establish world-class references for training young engineers and for upskilling and reskilling initiatives.

Characterization of Portuguese population

The population in Portugal in 2020 was recorded at 10,295,909 individuals. However, this figure represents a decrease of 0.8% since 2015, primarily attributed to negative natural growth. One notable aspect of the population is its ageing trend. Eurostat's data reveals that Portugal ranks fifth in terms of the proportion of elderly individuals within the European Union. This demographic shift is expected to result in an increase in the old-age dependency ratio, projected to rise from 35 in 2021 to 62 in 2070.

Regarding the business landscape, the majority of companies in Portugal are micro and small-sized. In 2019, individual enterprises accounted for 66.5% of the share. The employed population is predominantly engaged in sectors such as manufacturing, commerce, and human health and social work activities.

In terms of the labour market, the total unemployment rate in 2020 stood at 5.8%, representing a decline of 4.1 percentage points since 2016. Among the youth population aged 15 to 24, the unemployment rate was higher, reaching 22.6% in 2020. Notably, upper or post-secondary education graduates experienced lower unemployment rates compared to those with tertiary education qualifications within this age group.

Despite the impact of the previous economic crisis, Portugal has witnessed a significant increase in the total employment rate for individuals aged 20 to 64, rising by over 10 percentage points to reach 76.1% in 2019. However, due to the pandemic, the employment rate declined slightly to 74.7% in 2020. Comparatively, the employment rates in the European Union stood at 73.1% in 2019 and 72.5% in 2020.

In terms of Vocational Education and Training (VET) graduates, the employment rate for individuals with ISCED levels 3 and 4 increased from 78.2% in 2016 to 82.2% in 2020, surpassing the rate for general education graduates in Portugal. Moreover, the employment rate of VET graduates aged 20 to 34 exhibited a higher increase of 4.0 percentage points compared to a 2.2 percentage point increase for all graduates in the same age group during the period from 2016 to 2020.

These dynamics in population, employment, and education highlight the ongoing challenges and opportunities within Portugal's labour market and emphasize the importance of targeted policies and initiatives to address unemployment, foster economic growth, and support the evolving needs of VET graduates.

Source: <https://www.cedefop.europa.eu/en/countries/portugal>

Advancements and Challenges in Education and Training in Portugal

Over the years, Portugal has made significant strides in improving education levels, although it still lags behind the EU average. The proportion of individuals with low or no qualifications has shown a positive evolution, decreasing from 73.7% in 2005 to 44.6% in 2020. However, Portugal continues to have the highest percentage of people with low qualifications among the countries of HUH. Likewise, although the percentage of individuals with medium-level qualifications has increased, it remains the lowest in the EU.

By focusing on vocational education and training (VET), there has been a decline in the number of students in upper secondary education since 2015, reaching 39% in 2019. This figure is considerably lower than the EU-27 average of 48% in the same year, emphasizing the need for adjustments in training provisions to effectively meet qualification priorities.

Traditionally, VET programs in Portugal have attracted more male students, representing 58.7% of participants. However, in specialized arts programs, females accounted for 71.4% of students in 2019/20. Among VET programs, professional programs had the highest percentage of female students, 33.2%. Furthermore, post-secondary non-upper VET exhibited an even higher male enrolment rate of 64.7% compared to upper secondary VET.

The early leavers rate from education and training has consistently declined from 23% in 2011 to 8.9% in 2020. This is the first time that it has been below the national target of 10% for 2020 and also below the EU-27 average of 9.9%. It reflects positive progress in preventing early leaving and ensuring that individuals remain engaged in education and training.

Lifelong learning initiatives, spanning adult education and training programs, modular training and recognition of prior learning, have experienced fluctuations. During the period of economic crisis from 2011 to 2013, participation in lifelong learning declined. However, since 2014 it has remained stable and close to the EU average, with a slight decrease of less than 0.8 percentage points in 2020.

In terms of adult participation in VET, there was a slight decrease compared to 2018-19, with a decrease of 1.4 percentage points. However, recognition of prior learning in upper secondary education increased by 1.4 percentage points to reach 40.8% in 2019-20. Adult education and training (EFA) programs continue to be the main option for adults, representing 41.7% of enrolments.

In recent years, Portugal has seen significant improvements in the education and training sector. The early school-leaving rate decreased from 30.9% in 2009 to 10.6% in 2019. Although the 2018 Program for International Student Assessment (PISA) highlighted an increase in the percentage of young people who are low performers in reading and science, there has been a small improvement in mathematics and a reduction in regional disparities in educational outcomes.

To facilitate smooth transitions, the reorganization of basic education has been recommended, merging the first and second cycles. However, the implementation of this measure is considered complex. The introduction of curriculum autonomy and flexibility in all schools, allowing up to 25% of the workload to adapt curricula, is expected to have a positive impact on both general education and VET.

The government has been committed to increasing the relevance of VET to meet the demands of the labour market. However, there has been a decline in the percentages of secondary school students enrolled in VET and recent VET graduates who find employment. Although the higher education completion rate has shown an upward trend, reaching 36.2% in 2019, it still falls short of the national target of 40%. Recent measures aim to promote access to higher education, including two-year short-cycle professional higher education courses and master's programs, along with greater support for students. Cooperation between higher education institutions and the business sector, covering student mobility, dual programs, shared curricula and lifelong learning, exceeds EU averages.

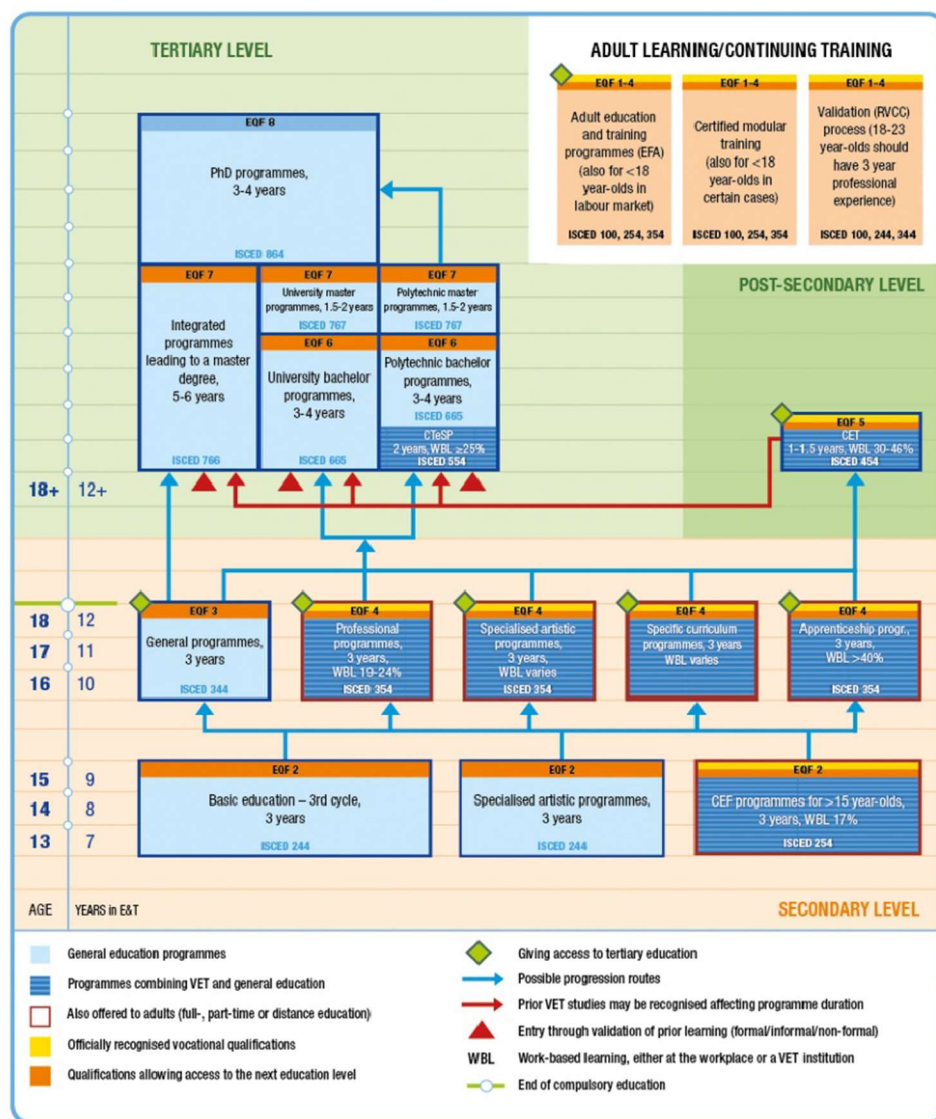
The employment rate of recent graduates in 2019 was 80.3%. However, adult participation in education and training remains slightly below the EU average, standing at 10.5% in 2019.

Source: <https://www.cedefop.europa.eu/en/countries/portugal>

The Portuguese VET system

The national qualifications' framework is a single reference for classifying all qualifications acquired through formal, non-formal and informal learning, with eight levels and descriptors defined in terms of knowledge, skills, and attitudes. The qualifications' system

(Fig. 1) is well integrated into the legislation of the education and training system and is aligned with European qualifications frameworks.



NB: ISCED-P 2011.
Source: Cedefop and ReferNet Portugal, 2022.

Figure 1 – The VET system in Portugal

The education and training system comprises the following levels:

- *Pre-school education: intended for children from 3 to 6 years old, optional.*
- *Basic education: lasts 9 years and is organized into three cycles. The first cycle covers 4 years and the second cycle covers 2 years, both considered primary education. The third cycle lasts 3 years and corresponds to lower secondary education. Compulsory schooling starts at age 6.*

- *Upper secondary education: covers general and vocational training (VET) programs from the 10th to the 12th grade. Graduates of these programs can go on to higher education or non-tertiary post-secondary education.*
- *Non-tertiary post-secondary education: corresponds to [ISCED \(International Standard Classification of Education\)](#) level 4 and offers technological specialization programs lasting 1 to 1.5 years. It includes work-based learning.*
- *Higher education: provided by universities and polytechnics. To access higher education, it is necessary to successfully complete upper secondary education or an equivalent qualification, in addition to meeting the specific requirements of each area of study. In 2020, specific access conditions for VET secondary school graduates were introduced. Higher education institutions may also have special quotas for these graduates. Universities and polytechnics offer degrees in the first cycle (bachelor), second cycle (master), integrated programs (master) and doctorate.*

In addition to these levels, there are qualification programs for adults, such as:

- *Adult education and training programmes: aimed at people wishing to complete secondary education or obtain a professional qualification.*
- *Certified modular training.*
- *Recognition of prior learning ([recognition, validation, and certification of competences, RVCC](#)), which can lead to a secondary education certificate or a vocational certificate.*

Source: <https://www.cedefop.europa.eu/en/countries/portugal>

Legal framework for establishment of COVE

The specific legal framework for creating CoVE may vary depending on national and regional contexts. Detailed and up-to-date information is available on national legislation, European Commission guidelines and funding programs related to Vocational Education and Training. In the absence of specific legislation for CoVE, the references below provide the legal and political framework within which CoVE must be sustained in Portugal, as they establish the principles, guidelines, and requirements for professional education and training, ensuring the quality, pertinence, and recognition of the qualifications intended for CoVE programs, with the main focus being on:

Basic Law of the Educational System (Law n.º 46/86): The Basic Law of the Educational System establishes the general legal framework of the education system in Portugal, including Vocational Teaching and Training (VET). It sets out the principles, objectives, and organization of the education system, including VET, and outlines the rights and responsibilities of students, educational institutions and other interested parties.

Basic Law of the Educational System (Law n.º 71/2018): The Basic Law of the Learning System deals specifically with the legal regime of apprenticeship programs in Portugal. It sets out the principles, rules, and requirements for the development and delivery of learning programmes, which form an integral part of VET.

National Qualifications Framework: The National Qualifications Framework (QNQ) is a reference that establishes the levels and descriptors of qualifications in Portugal. It provides a common language for describing and comparing qualifications across different education and training sectors, including VET. The QNQ ensures coherence, transparency, and recognition of qualifications obtained through vocational education and training.

National Qualification Strategy: The National Qualification Strategy is a policy document that defines strategic objectives, measures, and initiatives for the development of the Portuguese qualifications' system, including VET. It describes policies and actions aimed at improving the quality, relevance, and effectiveness of VET in Portugal, fostering innovation, promoting lifelong learning and aligning qualifications with labour market needs.

National Agency for Qualification and Professional Education (ANQEP): The National Agency for Qualification and Professional Education (ANQEP) is the public entity responsible for coordinating and implementing policies and initiatives related to education and professional training in Portugal. ANQEP plays a crucial role in promoting the development, monitoring and quality assurance of VET programs.

European Union Erasmus+ programme: CoVE is part of the Erasmus+ programme, which is the EU's funding program for education, training, youth and sport. The program offers financial support to initiatives that promote innovation, excellence, and internationalization in education and training.

The following table shows the current legislation regarding qualifications in Portugal:

Reference	Legislation	Description
National Qualifications System	Decree-Law no. 396/2007, of 31 December	Establishes the Legal Regime of the National Qualifications System and defines the structures that ensure its operation.
	Decree-Law no. 14/2017 of 26 January	Amendment to Decree-Law no. 396/2007, of 31 December, which regulates the National Qualifications System (SNQ) and the structures that ensure its operation.
National Qualifications Framework	Ordinance no. 782/2009, of 23 July	Regulates the National Qualifications Framework and defines the descriptors for the

		characterization of national qualification levels.
National Qualifications Catalogue	<u>Order no. 13456/2008, of 14 May</u>	Approves the initial version of the National Qualifications Catalogue.
	<u>Ordinance no. 781/2009, of 23 July</u>	Establishes the structure and organisation of the National Qualifications Catalogue (CNQ), as well as its model of evolution towards competence-based qualifications.
	<u>Ordinance no. 256/2005, of 16 March</u>	Approves the update of the National Classification of Education and Training Areas (CNAEF)
National Credit System for Vocational Education and Training	<u>Ordinance no. 47/2017 of 1 February</u>	Regulates the National Credit System for Vocational Education and Training and defines the model of the instrument of guidance and individual registration of qualifications and competences "Qualifica Passport".
Sectoral Councils for Qualification	<u>Order no. 6345/2020, of 16 June</u>	Constitution and regulation of the Sectoral Councils for Qualification.
Qualifica Centres	<u>Ordinance no. 62/2022, of 31 January</u>	Regulates the creation and the regime of organization and operation of the Specialized Centres for Adult Qualification. Regulates the creation and the regime of organization and operation of the Specialized Centres for Adult Qualification.
Recognition, Validation and Certification of Competencies	<u>Ordinance no. 132/2022 of 30 March</u>	First amendment to Ordinance no. 61/2022, of January 31, which regulates the recognition, validation and certification of competences, within the scope of the Qualifica Program.
	<u>Ordinance no. 61/2022 of 31 January</u>	Regulates the recognition, validation and certification of competencies under the Qualifica Program.

Education and Training Offerings - Framework Legislation	Decree-Law no. 55/2018, 6 July	Establishes the curriculum of primary and secondary education and the guiding principles of learning assessment.
	Statement of Rectification no. 29-A/2018	Rectifies Decree-Law no. 55/2018, of 6 July, rectifies point g) of Appendix VIII, relating to the matrix of professional courses.
	Order no. 6605-A/2021, of 6 July	Defines the curricular references of the various dimensions of curriculum development, including external evaluation.
	Ordinance no. 194/2021	Defines the models of diplomas and certificates in electronic format of the educational and training offers of primary and secondary education.
Essential Learnings	Order no. 6605-A/2021, of 6 July	Defines the curricular references of the various dimensions of curriculum development, including external evaluation.
	Order no. 7415/2020, of 24 July	Approves the Essential Learning of the disciplines of the scientific training component of the specialized artistic courses of secondary education and of the disciplines of Musical and Music Training of the areas of Music and Dance of the specialized artistic courses of basic education.
	Despacho nº 7414/2020, de 24 de julho	Approves the essential learning of the disciplines of the sociocultural and scientific training components of the professional courses.
Inclusive education	Decree-Law no. 54/2018, of 6 July	Establishes the legal regime of inclusive education.
	Law no. 116/2019, of 13 September	Changes the legal regime of inclusive education.
Specific Programs	Ordinance no. 184/2022, of 21 July	First amendment to Ordinance no. 183/2020, which creates the

		courses of Portuguese Host Language.
	<u>Ordinance no. 183/2020, of 5 August</u>	Creates the courses of Portuguese Host Language, as well as the rules to which they obey, their organization, operation and certification.
	<u>Ordinance no. 250-A/2020, of 23 October</u>	Creates the "Youth + Digital" Programme, a training programme for the acquisition of skills in the digital area. Creates the "Youth + Digital" Programme, a training programme for the acquisition of skills in the digital area.
	<u>Ordinance no. 179/2021, of 27 August</u>	Creates the "Certificate of Digital Skills" Program.
	<u>Ordinance n.272/2021, of November 29</u>	Creates the "Qualification for Internationalization" Program, within the scope of the "Internationalize 2030 Program".
	<u>Ordinance no. 21/2023, of 6 January</u>	Creates the "Green Skills & Jobs" Programme, a vocational training programme in the field of energy.
Learning Courses	<u>Ordinance no. 70/2022, of February 2</u>	Regulates learning courses.
	<u>Rectification Statement no. 10/2022, of 14 March</u>	Rectifies Ordinance no. 70/2022, of February 2, which regulates apprenticeship courses.
Adult Education and Training Courses	<u>Ordinance no. 86/2022, of 4 February</u>	Regulates adult education and training courses, known as "EFA courses".
	<u>Statement of Rectification no. 9/2022, of 14 March</u>	Rectifies Ordinance no. 86/2022, of 4 February, which regulates adult education and training courses, called "EFA courses".
	<u>Ordinance no. 230/2008, of 7 March</u>	Defines the Legal Regime of Adult Education and Training Courses and Modular Training.
	<u>Ordinance no. 283/2011, of 24 October</u>	Second Amendment of Ordinance no. 230/2008, of 7 March, which defines the legal regime of adult

Modular Formations		education and training courses (EFA courses) and modular training provided for in Decree-Law no. 396/2007, of 31 December.
	<u>Order no. 334/2012, 11 January</u>	Application of standards at the level of the organization and development of EFA Adult Education and Training courses.
	<u>Ordinance no. 66/2022, of February 1</u>	Regulates the certified modular training provided for in point f) of paragraph 1 of article 9 of Decree-Law no. 396/2007, of 31 December.
	<u>Statement of Rectification no. 11/2022, of 14 March</u>	Rectifies Ordinance no. 66/2022, of February 1, which regulates the certified modular training provided for in point f) of paragraph 1 of article 9 of Decree-Law no. 396/2007, of December 31.
Youth Education and Training Courses	<u>Joint Order no. 453/2004, of 27 July</u>	Regulates the creation of Education and Training Courses with dual school and professional certification.
	<u>Rectification no. 1673/2004, of 7 September</u>	Rectifies the order that regulates the creation of Education and Training Courses with dual school and professional certification
	<u>Office No 12568/2010 of 4 August 2010</u>	Change in the regulation of Education and Training Courses with dual school and professional certification
	<u>Order no. 9752-A/2012 of 18 July</u>	Changes the Education and Training Courses with dual school and professional certification
Technological Specialization Courses	<u>Ordinance no. 206/2022, of 19 August</u>	Defines the conditions of operation of the technological specialization courses (CET), as well as the model and conditions for the issuance of the respective certificates and diplomas
	<u>Decree-Law no. 39/2022, of 31 May</u>	Changes the regime of Technological Specialization

Professional Courses		Courses (CET) Changes the regime of Technological Specialization Courses (CET)
	<u>Decree-Law no. 88/2006, of 23 May</u>	Regulates the Technological Specialization Courses (CET).
	<u>Ordinance no. 235-A/2018, of 23 August</u>	Regulation of Professional Courses in accordance with the principles set out in Decree-Law no. 55/2018, of 6 July.
	<u>Ordinance no. 76/2020, of 18 March</u>	Revoke the ordinances for the creation of professional courses listed in the annex to this Ordinance.

Scope of the national COVE

In the current Portuguese context, VET plays a key role in promoting employability, social inclusion and economic development. Based on the challenges and objectives identified in the current context of VET in Portugal, the Portuguese regional CoVE is an initiative that aims to boost the economic development, employability and competitiveness of the northern region of Mainland Portugal, providing professionals with the necessary skills to meet the needs of labour market demands. This CoVE aims to cover innovative industrial sectors, promote people's qualifications and offer opportunities for professional growth and success. In this way, its main axes are:

Industrial Sector Covered: The CoVE encompasses key sectors of renewable energy, sustainable construction and related sectors. The objective is to strengthen and boost competitiveness and innovation in these industries through the development of professional excellence.

Covered Region: CoVE aims to cover the territory of northern mainland Portugal with a focus on the district of Porto. Its objective is to decentralize the provision of training and professional development, taking training opportunities to different areas of the region. This allows professionals from different locations to access programs of excellence and benefit from the employment and growth opportunities offered by the industrial sectors covered.

Qualifications: CoVE aims to promote the acquisition of relevant and up-to-date qualifications for the labour market. This includes technical certifications, professional degrees, specialized training and continuing education programs. The offer of qualifications ranges from the most basic to the most advanced levels, providing opportunities for improving the skills and knowledge of professionals in their areas of expertise.

Inclusion: CoVE is a welcoming and inclusive environment and promotes continuous learning at all stages of life. It implements flexible and accessible programs tailored to the individual needs of students, encouraging them to pursue knowledge and skills over time. Provides specialist support and tailored programs for vulnerable groups. It has specific initiatives to promote social inclusion and the development of skills in people who face particular challenges, offering training and professional retraining opportunities.

Innovative Training Methodologies: CoVE is at the forefront of teaching and learning practices, introducing innovative methods and diversified VET programs. It uses advanced educational technologies and up-to-date pedagogical approaches to provide a dynamic and relevant learning experience.

Quality Education in Covered Industry Sector: Provides high quality education with rigorous standards and comprehensive assessments. It hires highly qualified and up-to-date instructors in their areas of expertise, ensuring that students receive relevant and excellent training.

Digitization and greening: CoVE follows the transformations caused by the digitization and greening of the economy and society. It prepares students for the challenges and opportunities posed by the digital revolution and the need for sustainability, providing the skills and competencies necessary to contribute to a smarter and more ecologically sustainable economy.

Partnerships and Collaborations: To achieve its objectives, CoVE promotes strategic partnerships with educational institutions, companies, sectoral organizations, government agencies and other relevant actors. These partnerships aim at mutual collaboration in defining training programs, adapting qualifications to the needs of the labour market, offering internships and job opportunities, as well as sharing resources and knowledge. It works closely with companies to ensure that training programs are aligned with the present and future demands of the labour market. It offers specialized training and internship opportunities, preparing students to face challenges and excel in their professional careers. It works in partnership with Qualifica Centres and other adult training providers to attract and engage a larger number of adult learners in VET programs. Furthermore, it expands the network of collaborators to offer a wide variety of courses and learning opportunities for adults at different stages of their careers.

Portuguese regional CoVE is a reference Centre, preparing individuals to face the challenges of the labour market and contributing to the sustainable growth of the economy.

Alignment of COVE with RIS3 strategy

The alignment of the Portuguese CoVE on sustainable energy with the Research and Innovation Strategies for Smart Specialization (RIS3) strategy is reflected in its focus on

developing vocational education and training (VET) programs that meet the needs of the sustainable energy industry.

The sustainable energy industry has been identified as a key priority sector in the RIS3 strategy, which aims to support the development of a low-carbon and energy-efficient economy. The Portuguese CoVE initiative on sustainable energy focuses on developing skills and competencies in areas such as renewable energy technologies, energy efficiency, and energy management.

The CoVE on sustainable energy brings together VET providers, companies, and other stakeholders to develop high-quality VET programs that are aligned with the needs of the labour market and support innovation and competitiveness in the sustainable energy sector. Here are some examples of how the Portuguese CoVE initiative on sustainable energy is aligned with the RIS3 strategy:

- **Renewable energy technologies:** The CoVE on sustainable energy aims to develop VET programs that provide individuals with the skills and competencies needed to work in the renewable energy sector. This includes training in areas such as solar energy, wind energy, and hydro energy. The development of such skills is aligned with the RIS3 strategy, which prioritizes the development of renewable energy technologies to support the transition towards a low-carbon economy.
- **Energy efficiency:** The CoVE on sustainable energy also focuses on developing skills and competencies related to energy efficiency. This includes training in areas such as building energy efficiency, industrial energy efficiency, and transportation energy efficiency. The development of such skills is aligned with the RIS3 strategy, which prioritizes the development of energy-efficient technologies and practices to reduce greenhouse gas emissions and improve energy security.
- **Energy management:** The CoVE on sustainable energy also aims to develop skills and competencies related to energy management. This includes training in areas such as energy auditing, energy planning, and energy policy. The development of such skills is aligned with the RIS3 strategy, which prioritizes the development of sustainable energy management practices to improve energy efficiency and reduce environmental impact.

2. Preparatory actions

Mapping of stakeholders

Methodology followed for developing the list of stakeholders:

The methodology used for developing the list of stakeholders of the Portuguese CoVE included two main components:

- a) **Contacts of the SECOVE partners in Portugal:** all partners already have contacts with relevant organisations in Sustainable Energy and related fields. These contacts include

training and education providers (providing training offer at different EQF levels), as well as other relevant organisations including: companies, public organisations such as ministries and accreditation bodies, policymakers, among others.

b) Desk research: To complement the above-mentioned contacts, partners performed desk research to identify further relevant stakeholders. These include: municipalities, further training and education providers, umbrella organizations (e.g. ANESPO), professional bodies (e.g. Order of Engineers), etc.

The mapping of stakeholders is an organic process that shall develop throughout the project. Thus, the first collection of contacts for the Roadmap was performed mainly to invite participants for the National Workshop; the list was complemented with further stakeholders in the frame of the activities of WP5, that include surveys with training providers and other professionals (e.g. tutors, career counsellors), as well as with trainees. The list of stakeholders updated as of May 2023 can be found in annex to this document.

Type of stakeholders included in the national list

As explained in more detail in chapter 4, the national list includes the following types of stakeholders:

1. National Public bodies and policy stakeholders responsible for developing and implementing policies, strategies, and initiatives related to VET in the field of Sustainable Energy or related fields, as well as providing policy guidance and funding support. Examples: Portuguese Institute for Employment and Professional Training (IEFP), ANQEP (National Agency for Qualification and Professional Training), Ministry of Education, the Ministry of Labour, and the Ministry of Economy.
2. Local/regional authorities, especially municipalities: as they have the potential to promote change towards cleaner and more ecological energies, besides often having intervention in the VET provision at local level and close connection with the business sector.
3. VET providers (organizations) at various EQF levels: professional schools, higher education institutions and other training providers. These include: VET schools, VET Centres, VET associations, sectoral/professional associations providing VET, etc.
4. Teachers and trainers currently working in the field of sustainable energy or with potential to work/provide training in this field.
5. Industry: companies, clusters, associations.
6. Social partners/sectoral organizations: e.g. professional organizations.

In order to better understand the types of stakeholders included in the Portuguese list, it is important to have an idea of the Portuguese VET system, where training is provided by different types of organizations according to the EQF level, e.g. VET for EQF levels 3 and 4

is provided by Professional Schools (Escolas Profissionais), whereas the courses CTESP (Curso Técnico de Especialização Profissional) are offered by Higher Education Institutions, namely Polytechnic Institutes. Correspondingly, different ministries and accreditation bodies are relevant.

How the stakeholders have been approached and how they can be involved in the national COVE

As explained above, the stakeholders have been approached firstly through the Portuguese SECOVE partners (mostly by e-mail) to be invited for the National Workshop. In this event, possible involvement of the different stakeholders was discussed. Depending on the type of stakeholder, they can be involved in the national CoVE in the following ways:

- National Public bodies and policy stakeholders: will be consulted to share information and guidance on current and upcoming policies and initiatives related to the training offer and accreditation mechanisms in the field of sustainable energies.
- Local/regional authorities, especially municipalities: will be a priority group in the Portuguese CoVE, namely in the identification of training needs of their staff and in awareness actions to equip municipalities to dialogue with the industry and training providers.
- VET providers (organisations) at various EQF levels: will be involved in needs assessment, discussion on skills gaps, labour market needs, integration of trainees in the labour market and collaboration with industry. These providers will also be invited to further develop their training offer, provide training opportunities and strengthen the inclusiveness across their training programmes, resources, etc.
- Teachers and trainers currently working in the field of sustainable energy or with potential to work/provide training in this field: besides the involvement mentioned for the VET providers, teachers, and trainers will be invited to attend training for trainers in the field of sustainable energies. Other professionals such as career counsellors will also call to increase their intervention in promoting training and career paths in this field.
- Industry (companies, clusters, associations), social partners/sectoral organisations. These stakeholders will be key to provide input on the skills needs of the labour market and closely collaborate with VET providers. Besides, they will be consulted in relevant matters, they will be invited to participate in relevant events, as well as disseminate and promote the CoVE's activities and results.
- Trainees: involved in needs assessment, training actions, awareness-raising actions and other CoVE activities.

National workshop

The National Workshop “Creation of a Centre of Vocational Excellence in the field of sustainable energy in Porto, Portugal” was held on the 31st January 2023 on the premises of IPP in Porto. The workshop had more than 20 participants representing 17 relevant stakeholders in the fields of VET, education and sustainable energies.

The event lasted for half a day and ALL attendees participated not only by presenting themselves but also by providing their opinion and input regarding the key questions posed in the event. After the presentation of the SECOVE project and its objectives, participants were invited to reflect and debate on three main topics, whose main conclusions are presented next. At the end of the event, it was agreed that the SECOVE partners from Portugal would follow up with relevant information about the upcoming activities of the Portuguese CoVE and propose ways to continue dialogue and collaboration.

Main Findings of the national Workshop:

A. *Meaning of Excellence in VET:*

- Able to monitor trends in the sector, respond to what companies and professionals need / focused on the labour market/ relevant for the job market
- JIT (Just in time) and JIP (just in Place) Training: More “mobile” training, e.g. at the workplace, with the equipment used every day and when you need it.
- Lifelong training, especially in sectors with rapid change and strong use of technology.
- Balance between different aspects: good professional life, working conditions, training; consider the reality of the labour market, in which there are professions with an ageing workforce that is sometimes not open to training; challenges brought by constant changes in the environment, evolution in the productive sectors, etc.
- Training with innovation, quality, adaptability, attractiveness.
- Training that promotes “know-how”, includes technology, and is inclusive.
- Network/collaborative work among various entities to address each other's deficiencies.

B. *Challenges and needs of different stakeholders:*

In general/country context/VET system:

- Little appreciation of VET: regular schools often “retain” students, even knowing that professional education would be more suitable for their vocation;
- Need to conciliate different training paths (e.g., VET that later gives access to higher education and allows return to VET) and conciliate training with professional paths

- Need to review and update the national qualifications catalogue (training references)
- Promote the attractiveness of the labour market for those who attend VET, otherwise they migrate to countries like Germany to be better paid.
- Lack of structures (e.g., offices) for counselling and professional insertion in VET schools; lack of dedicate time and space for this type of activity.
- Lack of resources and funds to improve education infrastructure

Trainees:

- Lack information and awareness of the various careers associated with VET.
- Short-term training offer that allows to quickly update skills/innovations in the jobs.
- Period of “internship”, i.e., learning experience of an eminently practical nature, which would allow for a safer entry into professional life.
- Need to reinforce vocational guidance, e.g. promote direct contact between trainees and professionals (would also help to break down misconceptions about some professions)

Training providers:

- Lack of student adherence to courses related to renewable energies and sustainable energies (many closed due to lack of students)
- Improve needs assessment with the industry and measure the impact of training.
- Promote different skills: teach how to think (and not just do), stimulate critical thinking, prioritization skills and other skills that allow people to adapt to new realities.
- Promote training for trainers and facilitators specifically for the VET sector; develop the ability to motivate trainees, so that they develop their path and explore their vocation.
- Need to identify the various sectors that can benefit from training related to sustainable energies, i.e. identify topics relevant to various sectors.
- Ability for training to anticipate the challenges and skills of the future, to prepare trainees
- Need for networking, e.g., sharing equipment between companies and training Centres, complementing the training offer, listening to companies to identify needs, etc.
- Need to motivate parents and raise their awareness about VET: prevent or discourage children from attending VET. Great need to intervene with parents.

C. Possible contributions of SECOVE:

Training offer in sustainable energy

- See if more training offer is needed, or better or different

- Identify the skills associated with these themes and map the various professions/sectors in which they should be introduced
- See which are the “indirect” but necessary skills for the evolution in sustainable energies (e.g., operators to assemble wind antennas)
- Include skills related to sustainability/renewable energy in various courses in other areas

Image, appreciation of professional education and awareness of its advantages

- Greater intervention with parents/guardians
- Greater intervention/promotion/information with young people
- Reinforce vocational guidance
- Valuing professional education in the world of work (with companies)

Networking

- Collaboration among VET providers and between VET and companies/labour market.
- Contact with guidance and inclusion structures (e.g. Employment Centres)
- Greater interaction with young people to know what they want to learn and do
- Greater contact and questioning of entities with political responsibilities

3. Description of Centre of Vocational Excellence in Portugal

Introduction

With the emergence of new technologies and more resources at our disposal, it becomes increasingly important to generate synergic dynamics between universities and research Centres, industry, companies, civil society, and public administration entities, to take advantage of the significant opportunities that are yet to be explored.

In the energy sector, new and old professions lack qualifications and specialized and readjusted training to respond to current needs.

It is fundamental to stimulate training offers focused on sustainable energies based on collaborative arrangements, in a network or consortium, diversifying and complementing the existing offer in these areas in which the synergies between higher education, Public Administration, and business and industrial activity, are revealed most useful for renewing skills in the labour markets.

This approach is in line with the strategic vision for the Economic Recovery Plan of Portugal 2020-2030, the Portuguese Recovery and Resilience Plan (PRR), the National Energy and Climate Plan 2030 (PNEC2030), and the Roadmap for Carbon Neutrality 2050 (RNC2050), which refers to a significant investment in innovative green technologies such as the

production of Green Hydrogen and other renewable energies, as well as increasing the storage capacity of energy produced through renewable sources, the promotion of the bioeconomy and continuation with the commitment to sustainable mobility.

In Portugal, in addition to the SECOVE project, which aims to create Centres of excellence in the field of professional training in sustainable energy, there are other projects led by the Portuguese Institute for Employment and Vocational Training (IEFP) in development. These projects are part of the initiative launched in 2019 under the Erasmus+ program of the European Union, which aims to promote excellence in education and vocational training. All these projects have in common the goal of implementing Centres of excellence in the field of vocational training, complementing the efforts of the SECOVE project.

The aim is to develop a network of vocational education and training Centres across Portugal that will provide high-quality training programs in key sectors of the economy. These include tourism, agribusiness and agroecology, sustainable construction, energy management, sustainable mobility and information and communication technologies (ICT)). The Centres will offer specialized training in areas such as digital skills, entrepreneurship, innovation, and sustainability, among others.

Each CoVE aims to improve the quality of education and professional training in its area of specialization, developing new pedagogical practices, promoting innovation and increasing the employability of young people through high-quality professional training.

CEFP's main objectives are to:

- Foster innovation and excellence in VET in Portugal;
- Promote the development of a skilled and qualified workforce that meets the needs of the country's economy.
- Facilitate the exchange of best practices and knowledge between VET Centres in Portugal and other EU countries;
- Promote internationalization and the mobility of students, teachers, and trainers;
- Encourage partnerships and cooperation between VET Centres, companies and other stakeholders, including collaborative engagement with governance.

CEFP is a long-term project that is expected to have a significant impact on the quality of VET in Portugal and contribute to the country's economic development.

In line with national plans for energy sustainability, public administration also has an important role to play in leading this decarbonisation path, with the role of research and innovation being equally essential.

The local Administration's relationship with the sustainable energy sector needs to be constantly updated, remaining as a promotor of change towards cleaner and more ecological energies. In this way, the need arises to understand how municipalities approach

technological changes in the energy domain, understanding the current qualifications and skills and providing them with the right tools and knowledge about innovation in technology for clean and sustainable energy.

Modernization in training excellence in VETs (Vocational Education and Training) is essential to ensure that students are equipped with the skills and knowledge necessary to face the challenges of the modern world. This is particularly essential around Renewable Energy, where technology is constantly evolving.

With the growing demand for energy sources that are alternative to fossil fuels, clean and renewable, training in emerging technologies is essential to ensure that there are qualified professionals to meet this demand.

Training at VET Centres can help improve the quality of education and increase students' employability by closing the gap between required and available skills. This not only benefits the person and company receiving the training but also contributes to the country's economic development and helps to protect the environment.

Policymakers have a key role in supporting and implementing emerging technologies around sustainable energy, creating incentives for companies and individuals to adopt renewable energy technologies, as well as promoting policies that make the transition to a greener economy easier.

Furthermore, municipalities have the opportunity to lead and support the shift toward sustainability by promoting public policies that encourage the adoption of sustainable practices and renewable energy technologies.

It is important to emphasize that training should not be limited to the public, but should also be extended to municipal employees. These play a significant role in the implementation of public policies related to energy and the environment, as well as they are key stakeholders for technology testing in the territory.

Training for municipal officials in the various forms of renewable energy, including green hydrogen, is essential to ensure the country's energy sustainability. Green hydrogen is a promising technology and one of the biggest bets at the national level, where municipalities cannot be left out. Being produced from renewable energy sources, such as wind and solar energy, it does not emit greenhouse gases in the entire process. It can be stored or injected into existing natural gas pipes, which makes it an excellent alternative to fossil fuels.

Activities and services of the national COVE

Describe the activities that the COVE will implement, distinguishing between: activities during SECOVE and activities after SECOVE.

The Centre of Vocational Excellence (CoVE) in Portugal offers a range of activities and services aimed at promoting excellence in vocational education and training (VET) in the country. Some of these activities and services include:

Developing and implementing training programs. CoVE works with VET Centres across Portugal to develop and implement high-quality training programs in key sectors of the economy. These programs are designed to meet the needs of both learners and employers and are based on the latest industry trends and best practices.

- Program development:
 - Relevant content search;
 - Search for qualified trainers;
 - Planning and sketching the solution to be implemented.
- Implementation of programs:
 - Development of a national strategy to implement the contents according to the characteristics of the place and available VET Centres.

Providing training for teachers and trainers. CoVE provides training and support for teachers and trainers to ensure that they have the skills and knowledge necessary to deliver high-quality training programs. This includes training on the use of new technologies, pedagogical methods, and industry-specific skills:

- Training with specialist professionals;
- Training in Higher Education.

Offering mobility and exchange programs. CoVE promotes internationalization and mobility by offering exchange programs for students, teachers, and trainers. These programs provide opportunities to learn about different cultures, languages, and educational systems, and to gain valuable work experience abroad:

- Creation of a list of partner VET Centres and their competences;
- Creation of specific programs for students, teachers, and trainers.

Promoting research and innovation. CoVE promotes research and innovation in VET by supporting the development of new teaching and learning methods, technologies, and curricula. This helps to ensure that VET in Portugal remains relevant and up-to-date with the latest industry trends and best practices:

- Ongoing research on emerging technologies and their developers;
- Registration of relevant information about developers;
- Maintain close contact with technology developers to obtain relevant information more quickly, providing training and anticipating future needs of companies;

- Encourage experimentation and pilot projects of new teaching and learning methods, technologies in VET Centres. This allows testing and refining new approaches in a controlled environment before they are implemented more widely.

Providing guidance and counselling services. CoVE offers guidance and counselling services to help learners make informed decisions about their education and career paths. This includes career counselling, job placement services, and support for entrepreneurship and self-employment.

The activities and services provided by CoVE are designed to promote excellence in VET in Portugal and to ensure that learners have the skills and knowledge necessary to succeed in the modern workforce.

Stakeholders involved

Identify key stakeholders which are/will be involved in the national CoVE, including their roles and responsibilities.

The Centre of Vocational Excellence (CoVE) in Portugal involves a range of stakeholders who play important roles in the development and implementation of vocational education and training (VET) programs. Some key stakeholders involved in CoVE, along with their roles and responsibilities, include:

7. Portuguese Institute for Employment and Professional Training (IEFP). IEFP is the lead agency responsible for coordinating and implementing CoVE. Its role includes developing policies and strategies, providing funding, and overseeing the activities of the network of VET Centres.
8. VET Centres are the primary providers of training programs under CoVE. Their role includes developing and implementing high-quality training programs in key sectors of the economy, based on the needs of learners and employers. They also work closely with industry partners to ensure that their training programs are up-to-date with the latest industry trends and best practices.
9. Teachers and trainers are responsible for delivering training programs to learners. Their role includes designing and delivering high-quality training, using the latest teaching and learning methods and technologies.
10. Learners are the primary beneficiaries of CoVE. Their role includes actively participating in training programs, developing the skills and knowledge necessary to succeed in their chosen careers.
11. Industry partners play an important role in the development and implementation of CoVE. They work closely with VET Centres to identify the skills and knowledge required by

the industry, provide input on the design and delivery of training programs, and offer work-based learning opportunities for learners.

12. Various government agencies are involved in CoVE, including the Ministry of Education, the Ministry of Labour, and the Ministry of Economy. Their role includes providing policy guidance, funding support, and oversight of the implementation of CoVE.

13. The municipalities have an important role here, which is not only related to facilitating the interaction between the different agents but also needs to acquire knowledge and skills, which allow them to adopt, more knowledgeably and consciously, about emerging technologies in their facilities. The local Administration's relationship with the sustainable energy sector needs to be constantly updated, remaining as a promotor of change towards cleaner and more ecological energies. In this way, the need arises to understand how municipalities approach technological changes in the energy domain, understanding the current qualifications and skills and providing them with the right tools and knowledge about innovation in technology for clean and sustainable energy.

The involvement of these stakeholders is critical to the success of CoVE in promoting excellence in VET in Portugal.

Municipalities are also vital stakeholders in promoting emerging technologies in the territory, through direct acquisition, allowances, or other means of facilitation. For this to happen, municipalities need to have the right competencies and not only be dependent on private companies or external consultants.

4. Strategic planning for the development of national COVE

Strategic Plan for Aligning the National CoVE with RIS3 to Promote Regional Growth and Development in the Porto Region

Objective: To align the activities and services of the Centre of Vocational Excellence (CoVE) with the Regional Innovation Strategies for Smart Specialization (RIS3) in the Porto region to foster regional growth and development through vocational education and training (VET) in Portugal.

1. Stakeholder Analysis and Engagement: a. Conduct a comprehensive stakeholder analysis specific to the Porto region to identify key stakeholders involved in RIS3 implementation, including regional authorities, industry clusters, research institutions, and other relevant actors. b. Engage with stakeholders in the Porto region to understand their goals, priorities, and strategies related to regional development and innovation, and identify areas of synergy with CoVE's activities.

2. Alignment of Training Programs: a. Analyse the RIS3 priorities specific to the Porto region and identify key sectors and emerging industries where VET can contribute

significantly to regional growth. b. Collaborate with VET Centres, industry partners, and relevant stakeholders in the Porto region to develop training programs aligned with the identified sectors and RIS3 priorities. c. Ensure that the training programs incorporate the latest industry trends, best practices, and emerging technologies specific to the Porto region to address the skill gaps and requirements of the regional labour market.

3. Integration of Research and Innovation: a. Foster collaboration between CoVE and research institutions in the Porto region to promote research and innovation in VET. b. Establish partnerships with technology developers, startups, and innovation hubs in the Porto region to stay updated on emerging technologies and foster the integration of innovative teaching and learning methods to VET. c. Encourage pilot projects and experimentation of new teaching and learning methods to VET Centres in the Porto region, with a focus on incorporating emerging technologies identified through RIS3.

4. Internationalization and Mobility: a. Develop international exchange programs for students, teachers, and trainers in the Porto region that align with the regional specialization areas identified in RIS3. b. Foster collaboration with partner VET Centres abroad, specifically those in regions with complementary RIS3 priorities, to facilitate knowledge sharing and cross-cultural experiences. c. Emphasize the importance of foreign language skills and intercultural competence in the training programs in the Porto region to prepare learners for global opportunities and market demands.

5. Guidance and Counselling Services: a. Enhance the guidance and counselling services provided by CoVE in the Porto region to support learners in aligning their educational and career paths with the RIS3 priorities specific to the region. b. Incorporate career counselling, job placement services, and support for entrepreneurship and self-employment in the Porto region to promote the development of skills and knowledge relevant to regional development and innovation.

6. Policy Alignment and Advocacy: a. Collaborate with government agencies, including the Ministry of Education, the Ministry of Labour, and the Ministry of Economy, to align CoVE's activities in the Porto region with national policies and initiatives related to VET and regional development. b. Advocate for the inclusion of VET in the regional development strategies and policy frameworks specific to the Porto region, emphasizing its role in supporting RIS3 objectives and fostering regional competitiveness.

7. Monitoring, Evaluation, and Continuous Improvement: a. Establish monitoring and evaluation mechanisms to assess the impact of CoVE's activities in the Porto region on regional growth and development. b. Regularly collect and analyse data on learner outcomes, industry partnerships, innovation projects, and regional economic indicators in the Porto region to measure the effectiveness and relevance of CoVE's initiatives. c. Utilize the evaluation findings to identify areas for improvement, refine strategies, and make.

8. Funding and Resource Mobilization: a. Collaborate with the Portuguese Institute for Employment and Professional Training (IEFP) and other relevant funding agencies to secure financial resources for the implementation of aligned activities. b. Explore partnerships with private sector entities, regional development agencies, and European funding programs to leverage additional resources and support the scaling-up
9. Inclusion and Social Equity: a. Ensure that the strategic plan promotes inclusivity and social equity in VET by addressing the needs of underrepresented groups, including individuals from disadvantaged backgrounds, people with disabilities, and marginalized communities. b. Collaborate with social organizations, NGOs, and community stakeholders to develop targeted outreach and support programs that facilitate access to VET opportunities for diverse populations. c. Implement measures to address barriers to participation, such as providing financial assistance, flexible learning options, and tailored support services to promote equal opportunities and ensure that no one is left behind. d. Incorporate principles of diversity, equity, and inclusion into the design and delivery of training programs, guidance services, and mobility initiatives to create an inclusive learning environment for all learners.
10. Cross-Sectoral Collaboration: a. Foster collaboration and knowledge exchange between CoVE, regional authorities, industry clusters, research institutions, and other stakeholders involved in RIS3 implementation. b. Encourage cross-sectoral partnerships and initiatives that bring together different industries, sectors, and disciplines to promote interdisciplinary learning, innovation, and regional synergies. c. Facilitate networking events, workshops, and forums that enable stakeholders to share best practices, experiences, and innovative ideas to drive regional growth and development.
11. Communication and Awareness: a. Develop a comprehensive communication strategy to raise awareness about the strategic alignment between CoVE and RIS3, highlighting the benefits of VET in promoting regional growth and innovation. b. Engage with the public, stakeholders, and the media through various channels, such as social media, websites, and public events, to communicate the impact of CoVE's activities on regional development and the opportunities available to learners. c. Showcase success stories and case studies that demonstrate how CoVE's initiatives have contributed to the advancement of regional priorities, economic growth, and social inclusion. d. Promote transparency by regularly sharing progress reports, evaluation findings, and updates on collaborative efforts with stakeholders to ensure accountability and maintain trust.
12. Continuous Learning and Improvement: a. Foster a culture of continuous learning and improvement within CoVE by encouraging feedback, reflection, and collaboration among stakeholders. b. Regularly assess the effectiveness of the strategic plan's implementation, identifying strengths, weaknesses, and areas for improvement. c. Adapt the strategic plan and its activities based on evolving regional priorities, emerging

technologies, and feedback from stakeholders, ensuring its ongoing relevance and alignment with RIS3 objectives.

By aligning the national CoVE with RIS3 and incorporating principles of inclusion and social equity, the strategic plan aims to harness the potential of vocational education and training to drive regional growth, innovation, and ensure that opportunities are accessible to all individuals, contributing to a more inclusive and prosperous society.

Strategic objectives and priorities of the national COVE

The strategic objectives and priorities of the national Centre of Vocational Excellence (CoVE) in Portugal are as follows:

1. Enhance the quality of vocational education and training (VET): The primary objective of CoVE is to promote excellence in VET by developing and implementing high-quality training programs. These programs should meet the needs of learners and employers, be based on the latest industry trends and best practices, and ensure that learners acquire the skills and knowledge required for the modern workforce.
2. Foster innovation and research in VET: CoVE aims to promote research and innovation in VET by supporting the development of new teaching and learning methods, technologies, and curricula. This includes conducting ongoing research on emerging technologies, collaborating with technology developers, and encouraging experimentation and pilot projects in VET Centres to test and refine innovative approaches.
3. Facilitate internationalization and mobility: CoVE seeks to promote internationalization and mobility opportunities for students, teachers, and trainers. This involves creating exchange programs that allow participants to learn about different cultures, languages, and educational systems while gaining valuable work experience abroad. By fostering international collaboration, CoVE aims to enhance the global competencies of learners and promote the transfer of knowledge and best practices.
4. Support the professional development of teachers and trainers: CoVE prioritizes the continuous professional development of teachers and trainers to ensure that they possess the necessary skills and knowledge to deliver high-quality training programs. This includes providing training on the use of new technologies, pedagogical methods, and industry-specific skills. By investing in the development of educators, CoVE aims to improve the overall quality of VET delivery.
5. Promote guidance and counselling services: CoVE emphasizes the provision of guidance and counselling services to help learners make informed decisions about their education and career paths. This includes offering career counselling, job placement services, and support for entrepreneurship and self-employment. By providing

comprehensive guidance, CoVE aims to enhance learners' career prospects and facilitate their transition into the workforce.

6. Ensure inclusivity and social equity: CoVE is committed to promoting inclusivity and social equity in VET. This involves addressing the needs of underrepresented groups, such as individuals from disadvantaged backgrounds, people with disabilities, and marginalized communities. CoVE aims to create equal opportunities for all learners by removing barriers to participation and providing tailored support services.

By pursuing these strategic objectives, the national CoVE aims to advance vocational education and training in Portugal, improve the relevance and quality of VET programs, foster innovation and research, and contribute to regional development and the overall competitiveness of the country.

Activities for the establishment of national COVE

The establishment of the national Centre of Vocational Excellence (CoVE) involves a series of activities aimed at creating a robust framework and infrastructure to support vocational education and training (VET) in Portugal. The activities for the establishment of the national CoVE include:

1. Needs assessment: Conduct a comprehensive analysis of the current state of VET in Portugal, including identifying the skills gaps and needs of learners and employers. This assessment will help determine the priority sectors and areas where CoVE should focus its efforts.
2. Stakeholder engagement: Engage with key stakeholders, including VET Centres, teachers, trainers, learners, industry partners, government agencies, and municipalities. This involvement ensures that the perspectives and expertise of all relevant parties are considered in the establishment and ongoing operations of CoVE.
3. Policy development: Develop policies and strategies that guide the establishment and operation of CoVE. These policies should align with the government's vision and initiatives related to VET, innovation, regional development, and inclusivity.
4. Infrastructure development: Establish the necessary infrastructure to support the activities and services of CoVE. This includes setting up a central coordinating body, such as the Portuguese Institute for Employment and Professional Training (IEFP), to oversee the operations of CoVE. Additionally, develop a network of VET Centres across Portugal that will serve as the primary providers of training programs under CoVE.
5. Program development and implementation: Collaborate with VET Centres to develop and implement high-quality training programs in key sectors of the economy. This involves conducting relevant content searches, identifying qualified trainers, and planning

and sketching the solutions to be implemented. Develop a national strategy to ensure the effective implementation of these training programs, considering the characteristics of each region and the available VET Centres.

6. Training for teachers and trainers: Provide training and support for teachers and trainers to enhance their skills and knowledge in delivering high-quality training programs. This includes organizing training sessions with specialist professionals and providing opportunities for further training in higher education institutions.

7. Internationalization and mobility programs: Establish exchange programs for students, teachers, and trainers to facilitate international mobility and learning experiences. Create a list of partner VET Centres and their competences to foster collaboration and create specific programs that enable participants to learn about different cultures, languages, and educational systems while gaining valuable work experience abroad.

8. Research and innovation support: Promote research and innovation in VET by supporting the development of new teaching and learning methods, technologies, and curricula. This includes conducting ongoing research on emerging technologies and their developers, registering relevant information about developers, maintaining close contact with technology developers to obtain timely information, providing training, and encouraging experimentation and pilot projects of new teaching and learning methods and technologies in VET Centres.

9. Guidance and counselling services: Provide guidance and counselling services to support learners in making informed decisions about their education and career paths. This includes offering career counselling, job placement services, and support for entrepreneurship and self-employment.

10. Inclusivity and social equity measures: Develop and implement measures to ensure inclusivity and social equity in VET. This involves addressing the needs of underrepresented groups, removing barriers to participation, and providing tailored support services to promote equal opportunities for all learners.

Through these activities, the national CoVE will be established as a comprehensive and effective platform for promoting excellence in VET, supporting regional growth and development, fostering innovation, and ensuring the relevance and quality of vocational education and training in Portugal.

Timeline

Define a realistic action plan with specific steps, goals and KPIs, and visualize it. This involves putting the strategic plan into action, setting up the CoVE, identifying and recruiting staff,

and developing partnerships with industry and employers. Don't forget to prioritise tasks, add deadlines and set milestones. Make sure that each task is clearly defined and is attainable. If you come across larger and more complex tasks, break them down to smaller ones that are easier to execute and manage.

Action Plan for Establishing the National Centre of Vocational Excellence (CoVE)

Timeline: 24 months

Goal: To establish a robust and effective national CoVE that promotes excellence in vocational education and training in Portugal, supports regional growth and development, and fosters innovation and inclusivity.

Key Partners Involved:

1. Portuguese Institute for Employment and Professional Training (IEFP)
2. VET Centres
3. Teachers and trainers
4. Learners
5. Industry partners
6. Government agencies (Ministry of Education, Ministry of Labour, Ministry of Economy)
7. Municipalities

Action Steps, Goals, KPIs, and Timeline:

Month 1:

1. Conduct needs assessment
 - Goal: Identify skills gaps and training needs in priority sectors.
 - KPI: Completion of the needs assessment report.
 - Deadline: Month 1
2. Stakeholder engagement
 - Goal: Engage with key stakeholders to gather input and build partnerships.
 - KPI: Completion of stakeholder engagement sessions and documented feedback.
 - Deadline: Month 1

Month 2-4: 3. Policy development

- Goal: Develop policies and strategies for CoVE operations.
 - KPI: Finalized CoVE policies and strategies.
 - Deadline: Month 4
4. Infrastructure development

- Goal: Establish the central coordinating body (IEFP) and network of VET Centres.
- KPI: Completion of the organizational structure and network framework.
- Deadline: Month 4

Month 5-12: 5. Program development and implementation

- Goal: Collaborate with VET Centres to develop and implement high-quality training programs.

- KPI: Implementation of at least 10 training programs aligned with industry needs.
- Deadline: Month 12

6. Training for teachers and trainers

- Goal: Provide training to enhance skills and knowledge of educators.
- KPI: Completion of training sessions for at least 50 teachers and trainers.
- Deadline: Month 12

7. Internationalization and mobility programs

- Goal: Establish exchange programs for students, teachers, and trainers.
- KPI: Implementation of two exchange programs.
- Deadline: Month 12

Month 13-18: 8. Research and innovation support

- Goal: Promote research and innovation in VET.
- KPI: Completion of two research projects and implementation of innovative teaching methods in two VET Centres.

- Deadline: Month 18

9. Guidance and counselling services

- Goal: Provide comprehensive guidance and counselling services to learners.
- KPI: Completion of career counselling and job placement services for 200 learners.
- Deadline: Month 18

Month 19-24: 10. Inclusivity and social equity measures - Goal: Develop and implement measures to ensure inclusivity in VET. - KPI: Implementation of tailored support services for underrepresented groups. - Deadline: Month 24

11. Partnerships with industry and employers

- Goal: Establish strong partnerships to facilitate work-based learning opportunities.
- KPI: Development of partnerships with at least five industry partners.
- Deadline: Month 24

Action Plan:

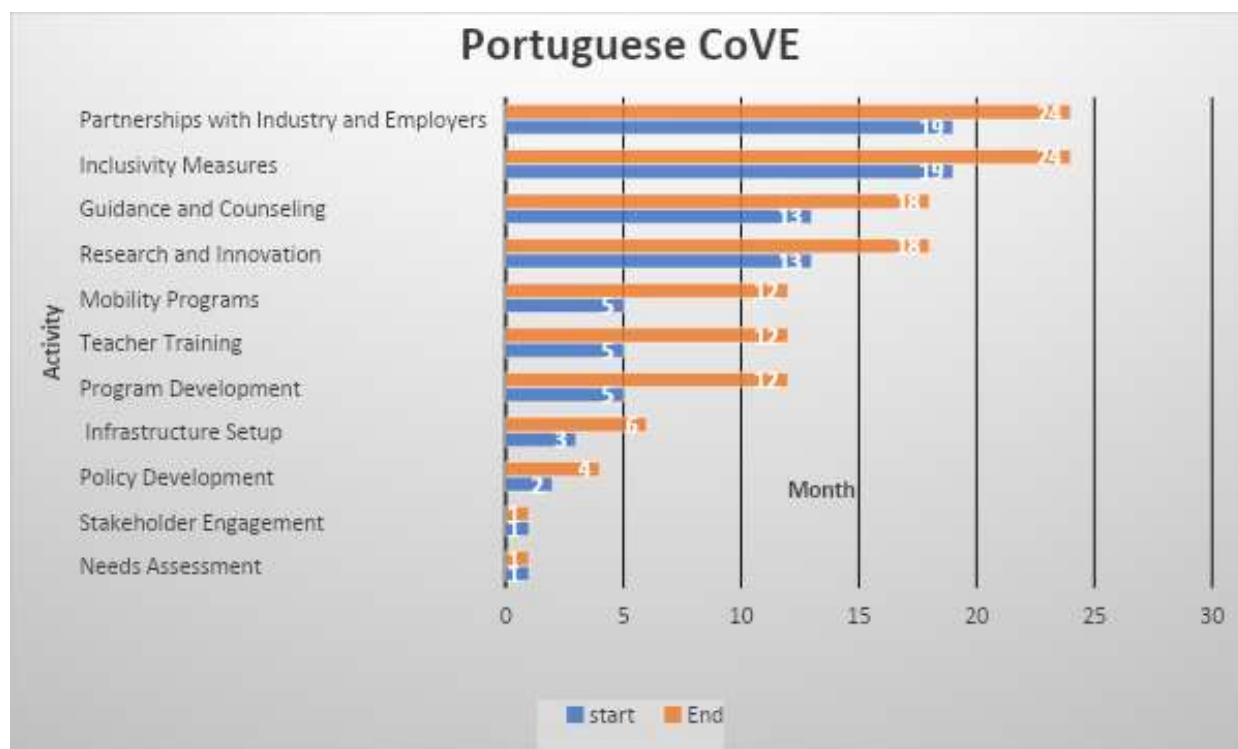
Month 1: Needs assessment and stakeholder engagement

Month 2-4: Policy development and infrastructure setup

Month 5-12: Program development, teacher training, and mobility programs

Month 13-18: Research and innovation support, guidance and counselling services

Month 19-24: Inclusivity measures, partnerships with industry and employers



Budget

Activities

This is the list of activities that the National SECOVE will provide:

1. Training Programs:
 - Design and deliver vocational training programs aligned with industry needs
 - Develop and update training curricula
 - Provide practical hands-on training in specialized vocational areas
 - Offer professional development programs for vocational trainers and instructors
2. Curriculum Development:
 - Conduct research on industry trends and emerging skills requirements

- Design and update vocational curricula to meet industry standards
- Integrate innovative teaching methods and technologies into curricula
- Ensure alignment with national and regional qualification frameworks
- 3. Research and Innovation Initiatives:
 - Conduct research projects to identify industry needs and skill gaps
 - Foster innovation in vocational education and training
 - Explore new methodologies and technologies for vocational training
 - Collaborate with research institutions and industry partners on innovation initiatives
- 4. Industry Partnerships:
 - Establish partnerships with local and regional industries and employers
 - Develop apprenticeship and internship programs in collaboration with industry
 - Facilitate industry visits and guest lectures by industry experts
 - Create opportunities for work-based learning and on-the-job training
- 5. Student Support Services:
 - Provide guidance and counselling services to students
 - Assist students in career planning and decision-making
 - Offer mentoring programs for students' personal and professional development
 - Provide support services for students with special needs or disadvantaged backgrounds
- 6. Infrastructure Development:
 - Upgrade and maintain vocational training facilities
 - Acquire and maintain specialized equipment and tools
 - Enhance technological infrastructure for effective training delivery
 - Create conducive learning environments for students
- 7. Quality Assurance and Evaluation:
 - Establish quality assurance mechanisms for training programs
 - Monitor and evaluate the effectiveness of vocational training activities
 - Gather feedback from students, employers, and industry experts
 - Continuously improve training programs based on evaluation results
- 8. Outreach and Promotion:
 - Promote the value and benefits of vocational education and training
 - Organize awareness campaigns and promotional events
 - Engage with schools, parents, and communities to highlight vocational opportunities

- Collaborate with media and online platforms to raise awareness about vocational training
- 9. Internationalization and Mobility:
 - Develop international exchange programs for students and trainers
 - Foster collaboration with vocational institutions abroad
 - Facilitate mobility programs to enhance intercultural competence and global perspectives
 - Participate in international vocational education networks and initiatives
- 10. Partnerships with Educational Institutions:
 - Collaborate with other vocational training Centres and institutions
 - Share best practices and resources with peer organizations
 - Foster joint projects and initiatives for mutual benefit
 - Establish pathways for credit transfer and articulation between institutions
- 11. Entrepreneurship and Business Development:
 - Provide support for entrepreneurship education and start-up incubation
 - Foster entrepreneurial skills and mindset among students
 - Facilitate connections with business networks and mentors
 - Promote the development of vocational graduates as entrepreneurs
- 12. Continuous Professional Development:
 - Offer ongoing training and development opportunities for vocational trainers and instructors
 - Provide access to relevant workshops, conferences, and seminars
 - Foster a culture of continuous learning and improvement among staff

Resource requirements

To determine the resource requirements for each activity, it is important to consider various factors. Here is a breakdown of resource requirements for the activities mentioned earlier:

1. Training Programs:
 - Personnel: Vocational trainers, instructors, training coordinators
 - Facilities: Training rooms, workshops, classrooms
 - Equipment and Technology: Training equipment, tools, audiovisual aids
 - Materials and Supplies: Training materials, textbooks, handouts
 - Travel Expenses: Instructors' travel for off-site training programs

2. Curriculum Development:
 - Personnel: Curriculum developers, subject-matter experts
 - Facilities: Office space for curriculum development team
 - Equipment and Technology: Computers, software for curriculum design
 - Materials and Supplies: Research materials, reference books
3. Research and Innovation Initiatives:
 - Personnel: Research staff, project managers
 - Facilities: Research laboratories, office space for research team
 - Equipment and Technology: Research equipment, software, data analysis tools
 - Materials and Supplies: Research materials, consumables
4. Industry Partnerships:
 - Personnel: Partnership managers, industry liaison officers
 - Facilities: Meeting rooms, collaboration spaces
 - Travel Expenses: Visits to industry partners' locations
 - Materials and Supplies: Collaboration agreements, partnership materials
5. Student Support Services:
 - Personnel: Guidance counsellors, student advisors, mentors
 - Facilities: Counselling offices, student support Centres
 - Equipment and Technology: Counselling tools, software for student support
 - Materials and Supplies: Counselling resources, career development materials
6. Infrastructure Development:
 - Facilities: Renovation and maintenance costs for training facilities
 - Equipment and Technology: Upgrading or acquiring specialized equipment
 - Materials and Supplies: Tools, furniture, safety equipment
7. Quality Assurance and Evaluation:
 - Personnel: Quality assurance officers, evaluators
 - Equipment and Technology: Evaluation tools, software for data analysis
 - Materials and Supplies: Evaluation forms, surveys, assessment materials
8. Outreach and Promotion:
 - Personnel: Marketing and communication staff
 - Facilities: Event spaces, exhibition booths
 - Materials and Supplies: Promotional materials, brochures, banners
 - Travel Expenses: Attendance at industry events or educational fairs

9. Internationalization and Mobility:
 - Personnel: International program coordinators, mobility coordinators
 - Travel Expenses: Student and staff mobility costs (flights, accommodation, meals)
 - Materials and Supplies: Travel documents, insurance coverage
10. Partnerships with Educational Institutions:
 - Personnel: Partnership coordinators, collaboration facilitators
 - Facilities: Meeting rooms for partnership discussions
 - Materials and Supplies: Partnership agreements, collaboration materials
11. Entrepreneurship and Business Development:
 - Personnel: Entrepreneurship trainers, business development experts
 - Facilities: Incubation spaces, co-working areas
 - Equipment and Technology: Business development tools, software
 - Materials and Supplies: Entrepreneurship resources, startup support materials
12. Continuous Professional Development:
 - Personnel: Training coordinators, professional development trainers
 - Facilities: Training rooms, conference rooms
 - Equipment and Technology: Training materials, software for online learning
 - Materials and Supplies: Training resources, course materials

Estimate the quantities or volumes needed for each resource category

To estimate the quantities or volumes needed for each resource category, here are some considerations:

1. Training Programs:
 - Trainers or Instructors: Determine the number of trainers or instructors needed based on the expected number of training programs and class sizes. For example, if there are 20 training programs and each program requires 2 trainers, you would need 40 trainers.
 - Facilities: Estimate the size and number of facilities required based on the expected number of participants per session. For instance, if each training program accommodates 30 participants, and there are 4 programs running simultaneously, you would need facilities that can accommodate at least 120 participants.
 - Equipment and Technology: Identify the types and quantities of equipment needed for each training program. This may include laptops, projectors, whiteboards, training materials, and specialized equipment depending on the nature of the training.

- Expected number of students or participants: Estimate the number of students or participants expected to enrol in each training program. This will help determine the capacity and resources required.
2. Curriculum Development:
- Curriculum Developers: Estimate the number of curriculum developers based on the complexity and number of curriculum projects. Consider the workload and expertise needed to develop and update the curriculum materials.
 - Facilities: Allocate office space and facilities for the curriculum development team. The size will depend on the number of developers and their requirements.
 - Equipment and Technology: Provide computers, software, and other necessary tools for curriculum development.
 - Materials and Supplies: Estimate the amount of research materials, reference books, and other supplies needed for curriculum development.
3. Research and Innovation Initiatives:
- Research Staff: Determine the number of research staff based on the scope and scale of research projects. Consider the expertise and specialization required for the research areas.
 - Facilities: Estimate the size and number of research laboratories or dedicated spaces required for research activities. Consider the infrastructure, equipment, and safety requirements.
 - Equipment and Technology: Identify the types and quantities of equipment and technology required for research projects. This may include laboratory equipment, software, data analysis tools, and specialized technology.
 - Materials and Supplies: Estimate the amount of research materials, consumables, chemicals, and other supplies required for research projects.
4. Industry Partnerships:
- Partnership Managers and Liaison Officers: Determine the number of staff required to manage and facilitate industry partnerships. Consider the number of partnerships, level of engagement, and coordination required.
 - Facilities: Allocate space for meetings, collaboration, and partnership activities. Consider the size and requirements for effective collaboration.
 - Travel Expenses: Estimate the travel expenses associated with visiting industry partners or attending industry-related events and meetings.
 - Materials and Supplies: Prepare collaboration agreements, partnership materials, and other resources as required.
5. Student Support Services:

- Guidance Counsellors, Student Advisors, Mentors: Estimate the number of staff based on the student population and the level of support services required. Consider the range of services such as counselling, career guidance, and mentorship.
 - Facilities: Allocate counselling offices, support Centres, and other spaces for student support services. Consider the size and capacity based on the number of students seeking support.
 - Equipment and Technology: Provide necessary tools and technology for effective student support, such as counselling software, communication tools, and career development resources.
 - Materials and Supplies: Estimate the resources needed for counselling, career development, and other support materials.
6. Infrastructure Development:
- Facilities: Determine the size and scope of infrastructure development projects, such as constructing new buildings, renovating existing facilities, or expanding current infrastructure.

Research costs

To provide a simulation of the costs involved in different resource categories for the activities of the National SECOVE in Portugal, let's consider some hypothetical estimates based on general market rates and average costs:

1. Salaries and Personnel Costs:
 - Trainers/Instructors: Assuming 5 trainers with an average annual salary of €40,000 each, including benefits and training costs, the estimated personnel cost would be €200,000.
 - Research Staff: Considering 2 research staff with an average annual salary of €45,000 each, including benefits and training costs, the estimated personnel cost would be 90,000.
 - Support Service Staff: Assuming 4 support service staff with an average annual salary of €30,000 each, including benefits and training costs, the estimated personnel cost would be €120,000.
2. Facility Costs:
 - Rental Costs: Assuming the need for multiple facilities, including training rooms, laboratories, and offices, with an estimated annual cost of €150,000.
3. Equipment and Technology Costs:

- Equipment: Assuming the need for specialized equipment, technology, and software, with an estimated annual cost of €100,000, including maintenance and upgrades.
- 4. Material and Supply Costs:
 - Training Materials and Supplies: Assuming an estimated annual cost of €30,000 for training materials, textbooks, handouts, and other supplies.
- 5. Travel Expenses:
 - Travel Costs: Assuming an estimated annual cost of €20,000 for staff and participants' travel expenses, including airfare, accommodations, meals, and local transportation.
- 6. Infrastructure Development Costs:
 - Assuming no infrastructure development projects in the first year.
- 7. Other Expenses:
 - Miscellaneous Expenses: Assuming an estimated annual cost of €10,000 for marketing and communication, quality assurance, evaluation, and coordination expenses.

Annual expenses

Based on the quantities for trainers/instructors, research staff, and support service staff, let's calculate the annual expenses for each resource category and determine the total annual budget needed for the activities provided by the National SECOVE in Portugal:

1. Salaries and Personnel Costs:
 - Trainers/Instructors: 5 trainers x €40,000 = €200,000
 - Research Staff: 2 research staff x €45,000 = €90,000
 - Support Service Staff: 4 support service staff x €30,000 = €120,000

Total Salaries and Personnel Costs: €200,000 + €90,000 + €120,000 = €410,000
2. Facility Costs:
 - Rental Costs: €150,000
3. Equipment and Technology Costs:
 - Equipment: €100,000
4. Material and Supply Costs:
 - Training Materials and Supplies: €30,000
5. Travel Expenses:
 - Travel Costs: €20,000
6. Infrastructure Development Costs:

- No infrastructure development costs considered in this simulation.

7. Other Expenses:

- Miscellaneous Expenses: €10,000

Total Annual Expenses: €410,000 + €150,000 + €100,000 + €30,000 + €20,000 + €10,000 = €720,000

Therefore, based on the quantities and costs, the total annual budget needed for the activities provided by the National SECOVE in Portugal is approximately €720,000.

Quality Assurance

To ensure the effectiveness and continuous improvement of the Centre of Vocational Excellence (CoVE), a robust quality assurance system should be established. This system should include mechanisms for evaluation, feedback collection, and implementing necessary changes based on the CoVE's objectives and priorities. Here are the key steps to create a quality assurance system:

1. Establish Evaluation Framework:

- Define evaluation criteria and indicators aligned with the CoVE's objectives and priorities.
- Determine the frequency and scope of evaluations (e.g., annually, per program, per project).
- Identify responsible individuals or teams for conducting evaluations.

2. Conduct Regular Evaluations:

- Evaluate the performance and impact of CoVE activities and services based on the established criteria and indicators.
- Assess the effectiveness of training programs, teacher training initiatives, mobility programs, research and innovation projects, guidance and counselling services, and inclusivity measures.
- Gather feedback from students, teachers, trainers, industry partners, and other stakeholders.
- Utilize a mix of evaluation methods, such as surveys, interviews, focus groups, and data analysis.

3. Analyse Evaluation Results:

- Analyse the evaluation findings to identify strengths, weaknesses, and areas for improvement.
- Identify key patterns, trends, and success factors.
- Compare the CoVE's performance against set goals and benchmarks.
- Use quantitative and qualitative data to inform decision-making.

4. Implement Changes and Improvements:

- Based on the evaluation results, develop an action plan to address identified weaknesses or areas for improvement.
- Set specific objectives and timelines for implementing the necessary changes.
- Assign responsibilities to relevant individuals or teams to ensure accountability.
- Implement measures to enhance the quality and effectiveness of CoVE activities and services.

5. Monitor and Review Progress:

- Regularly monitor the progress of the implemented changes.
- Collect feedback from stakeholders on the effectiveness of the improvements.
- Track key performance indicators (KPIs) to measure progress.
- Conduct periodic reviews to assess the impact of the implemented changes and identify further opportunities for enhancement.

6. Continuous Stakeholder Engagement:

- Engage students, teachers, trainers, industry experts, and other stakeholders in the evaluation and improvement processes.
- Seek feedback on the relevance, quality, and impact of CoVE activities.
- Encourage open dialogue and collaboration to address concerns and gather diverse perspectives.
- Regularly communicate evaluation findings, improvement initiatives, and outcomes to stakeholders.

By implementing a comprehensive quality assurance system, the CoVE can ensure ongoing evaluation, feedback, and improvement. This will enable the CoVE to meet its objectives, align activities with industry needs, and provide high-quality vocational education and training to learners, thereby fostering regional growth and development.

5. Exploitation and sustainability

Creating impact

Communicating the results of the Centre of Vocational Excellence (CoVE) and showcasing its impact on vocational education and training, innovation, and regional development is crucial for ensuring transparency, accountability, and sustainability. Here are the key processes for effectively communicating the results and impact of the CoVE to stakeholders and the public:

1. Develop Communication Strategy:

- Define clear objectives for communication, including raising awareness, informing stakeholders, and promoting the CoVE's achievements.

- Identify target audiences, such as students, teachers, trainers, industry partners, government agencies, local communities, and the public.
 - Determine appropriate communication channels, such as websites, social media platforms, newsletters, reports, events, and press releases.
- 2. Prepare Impact Reports:**
- Regularly compile comprehensive reports that highlight the impact of the CoVE on vocational education and training, innovation, and regional development.
 - Include quantitative data, such as the number of learners trained, industry partnerships established, research projects conducted, and innovation outcomes.
 - Incorporate qualitative data, such as success stories, testimonials from stakeholders, and case studies showcasing real-world impact.
 - Present key findings, achievements, challenges, and future plans.
- 3. Disseminate Information:**
- Utilize various communication channels to reach different target audiences effectively.
 - Maintain an informative and up-to-date CoVE website, featuring news, success stories, testimonials, events, and resources.
 - Leverage social media platforms to share updates, engage with stakeholders, and foster dialogue.
 - Publish newsletters or bulletins to provide regular updates on CoVE activities, partnerships, and outcomes.
 - Organize public events, conferences, workshops, and seminars to share knowledge, best practices, and research findings.
- 4. Engage Stakeholders:**
- Foster active engagement and collaboration with stakeholders through regular communication and feedback mechanisms.
 - Conduct stakeholder consultations, focus groups, or surveys to gather input, insights, and suggestions.
 - Establish advisory boards or committees involving representatives from industry, education, government, and community organizations.
 - Maintain open lines of communication and promptly address stakeholder queries, concerns, and suggestions.
- 5. Showcase Success Stories and Case Studies:**
- Highlight success stories and case studies that demonstrate the positive impact of CoVE initiatives on individuals, organizations, and regional development.
 - Feature testimonials from learners, teachers, trainers, and industry partners who have benefited from CoVE programs and services.

- Illustrate how CoVE activities have contributed to improved skills, increased employability, enhanced innovation, and economic growth.

6. Collaborate with Media and Partners:

- Develop relationships with local, regional, and national media outlets to promote media coverage of CoVE achievements, events, and initiatives.
- Collaborate with industry partners, educational institutions, and government agencies to amplify the reach and impact of communication efforts.
- Seek opportunities for joint marketing campaigns, knowledge-sharing events, and collaborative projects.

7. Monitor and Evaluate Communication Efforts:

- Regularly assess the effectiveness of communication strategies and channels used to disseminate information about the CoVE.
- Collect feedback from stakeholders and the public to gauge the clarity, relevance, and usefulness of the communication materials.
- Monitor media coverage, social media engagement, website traffic, and other metrics to evaluate the reach and impact of communication efforts.

By effectively communicating the results and impact of the CoVE to stakeholders and the public, the CoVE can enhance its reputation, foster trust, attract further support, and promote the value of vocational education and training, innovation, and regional development.

Expanding the COVE

Include a plan for the future development and expanding of the CoVE, regarding cooperation partnerships with stakeholders and introduction of new activities covered by the CoVE.

Plan for Future Development and Expansion of the CoVE:

1. Identify Growth Opportunities:

- Conduct regular needs assessments to identify emerging skills and industries that require focused vocational education and training (VET) programs.
- Analyse market trends, technological advancements, and labour market demands to anticipate future skill requirements.
- Engage with stakeholders, including industry representatives, educational institutions, and government agencies, to gather insights and perspectives on potential areas for expansion.

2. Foster Collaboration and Partnerships:

- Strengthen existing partnerships with industry and employers and explore opportunities for new collaborations.

- Engage in dialogue with industry associations, trade organizations, and professional networks to understand their needs and align CoVE activities accordingly.
 - Forge partnerships with research institutions, universities, and technology providers to incorporate cutting-edge research and innovation into CoVE programs.
 - Seek funding opportunities through public-private partnerships, grants, and sponsorships to support the expansion of the CoVE.
3. Introduce New Activities and Services:
 - Conduct thorough research and analysis to identify new activities and services that align with the CoVE's objectives and priorities.
 - Explore the introduction of specialized training programs in emerging sectors and technologies, such as renewable energy, artificial intelligence, cybersecurity, and advanced manufacturing.
 - Expand the range of training modalities, including online and blended learning, to cater to the diverse needs and preferences of learners.
 - Offer customized training programs for specific target groups, such as marginalized communities, individuals with disabilities, or underrepresented populations.
 - Integrate entrepreneurship and business skills development programs to foster an entrepreneurial mindset among learners.
 4. Enhance International Cooperation:
 - Explore opportunities for international cooperation and exchange programs to promote knowledge sharing, cultural exchange, and global perspectives.
 - Establish partnerships with international vocational education institutions, organizations, and networks to exchange best practices, curriculum development, and joint research projects.
 - Facilitate mobility programs for learners, teachers, and trainers to gain international experience, exposure to different work environments, and cross-cultural competencies.
 5. Continuous Evaluation and Improvement:
 - Implement a robust monitoring and evaluation system to assess the effectiveness and impact of new activities introduced by the CoVE.
 - Collect feedback from learners, teachers, trainers, industry partners, and other stakeholders to identify areas for improvement and innovation.
 - Regularly review and update the strategic plan of the CoVE to adapt to changing needs and priorities in the vocational education landscape.
 - Embrace a culture of continuous improvement, encouraging innovation, experimentation, and the adoption of best practices.
 6. Communicate and Promote Expansion Efforts:

- Develop a comprehensive communication strategy to inform stakeholders and the public about the expansion plans and new activities of the CoVE.
- Utilize various communication channels, such as websites, social media platforms, newsletters, and events, to share updates and engage with the target audience.
- Highlight success stories and case studies that showcase the impact and outcomes of the expanded CoVE activities.
- Collaborate with media outlets, industry associations, and educational networks to amplify the reach and visibility of the CoVE's expansion efforts.

By following this plan for future development and expansion, the CoVE can proactively respond to emerging skill needs, foster partnerships with stakeholders, introduce new activities, and position itself as a leading provider of vocational education and training in the evolving landscape.

Future Funding

Include a plan for securing funding for the continuation of the national COVE, including financial projections, resources required and strategies for revenue generation. Identify current and future funding opportunities (private, public, European).

Plan for Securing Funding for the Continuation of the National COVE:

1. Financial Projections and Resource Needs:

- Conduct a thorough assessment of the financial requirements for the continuation and expansion of the national COVE.
- Determine the projected budget for ongoing operations, staff salaries, infrastructure development, training programs, research initiatives, and quality assurance activities.
- Identify the resources needed for maintaining and upgrading technology infrastructure, including software, hardware, and learning management systems.
- Estimate the costs associated with marketing, communication, and outreach efforts to promote the COVE and attract learners, industry partners, and funding opportunities.

2. Strategies for Revenue Generation:

- **Diversify Funding Sources:** Explore multiple avenues for funding to reduce dependency on a single source. These sources may include private sector contributions, government grants, European funding programs, partnerships with industry sponsors, and collaborations with philanthropic organizations.
- **Public Funding Opportunities:** Stay updated on public funding opportunities provided by relevant government agencies at the national and regional levels.

Research and apply for grants, subsidies, and initiatives aimed at supporting vocational education and training.

- **European Funding:** Leverage European Union funding programs, such as the European Social Fund (ESF) and the European Regional Development Fund (ERDF), to support the COVE's activities. Align projects and initiatives with EU priorities and seek opportunities for participation in EU-funded projects or consortiums.
- **Private Sector Partnerships:** Forge strategic partnerships with private sector companies that align with the COVE's objectives. Seek opportunities for joint initiatives, sponsorships, or donations to support specific programs or projects. Collaborate with industry partners to co-fund training programs or provide in-kind contributions, such as equipment, mentorship, or internship opportunities.
- **Fee-based Programs:** Explore the possibility of offering fee-based training programs or services to generate revenue. This could include customized training for corporate clients, executive education programs, or specialized certifications that have market demand and value.
- **Alumni and Stakeholder Contributions:** Engage with alumni, industry partners, and stakeholders to create a culture of giving back. Establish alumni networks and alumni fundraising campaigns to generate contributions that can be directed towards sustaining the COVE's activities.
- **Philanthropic Support:** Identify and approach philanthropic foundations and organizations that have a focus on education, training, or regional development. Develop compelling proposals and demonstrate the impact and outcomes of the COVE's initiatives to attract philanthropic funding.

3. Grant Writing and Proposal Development:

- Build a dedicated team or engage external consultants with expertise in grant writing and proposal development.
- Research and identify funding opportunities that align with the COVE's mission and priorities.
- Develop comprehensive grant proposals that clearly articulate the COVE's goals, activities, expected outcomes, and budgetary needs.
- Ensure that proposals highlight the COVE's unique selling points, its potential impact on vocational education and training, innovation, and regional development.
- Collaborate with relevant stakeholders, including industry partners and educational institutions, to strengthen grant proposals and demonstrate broad support for the COVE's initiatives.

4. Financial Management and Accountability:

- Establish robust financial management systems to track and monitor the allocation and utilization of funds.

- Implement transparent accounting practices and ensure compliance with financial regulations and reporting requirements.
- Regularly evaluate the financial performance of the COVE and make necessary adjustments to optimize resource allocation and maximize cost-effectiveness.
- Demonstrate accountability and transparency in financial matters to instil confidence in funders and stakeholders.

By implementing these strategies and actively pursuing funding opportunities, the national COVE can secure the financial resources required for its continued operation and expansion, ensuring the sustainability of its activities in vocational education and training, innovation, and regional development.

Strategic Partnerships (with other COVEs, projects, clusters etc)

Strategic Partnerships for the National COVE:

1. Collaboration with Other COVEs:
 - Identify and establish partnerships with other Centres of Vocational Excellence (COVEs) both within Portugal and internationally.
 - Share best practices, exchange knowledge, and collaborate on joint initiatives to enhance the quality and relevance of vocational education and training.
 - Explore opportunities for cross-training programs, where learners from different COVEs can benefit from specialized training offered by partner institutions.
 - Foster a network of COVEs to facilitate the exchange of experiences, research findings, and innovative approaches in vocational education.
2. Engagement with Research and Innovation Projects:
 - Identify relevant research and innovation projects in the field of vocational education and training, particularly those aligned with the COVE's objectives and priorities.
 - Seek opportunities to collaborate with research institutions, universities, and industry partners involved in these projects.
 - Participate in research consortia, joint initiatives, and pilot programs to contribute to the development and testing of innovative approaches, technologies, and curricula in vocational education.
 - Leverage the outcomes and findings of these projects to enhance the quality and relevance of the COVE's training programs.
3. Cooperation with Industry Clusters and Associations:
 - Establish partnerships with industry clusters and associations that are relevant to the key sectors addressed by the COVE.
 - Collaborate on the design and delivery of training programs that align with the specific needs and requirements of the industries represented by these clusters.

- Engage industry partners in the development of curricula, ensuring that the training provided by the COVE is up-to-date with the latest industry trends and practices.
 - Explore opportunities for work-based learning, internships, and apprenticeship programs with companies within the industry clusters.
4. European and International Cooperation:
- Engage with European networks and initiatives focused on vocational education and training, such as the European Vocational Skills Week and Erasmus+.
 - Participate in European projects and consortiums to exchange experiences, knowledge, and good practices with partners from different countries.
 - Leverage European funding opportunities to support international cooperation, mobility programs, and joint initiatives.
 - Foster partnerships with international institutions and organizations that specialize in vocational education and training, promoting knowledge sharing and collaboration.
5. Collaboration with Local and Regional Stakeholders:
- Strengthen partnerships with local and regional authorities, municipalities, and educational institutions to support the COVE's initiatives and enhance regional development.
 - Engage local businesses, employers, and community organizations to provide input on the design of training programs and ensure their relevance to the local labour market.
 - Collaborate with regional development agencies and economic clusters to align the COVE's activities with the strategic priorities of the region.
 - Seek opportunities for joint funding applications and coordinated efforts to maximize resources and impact.

By establishing strategic partnerships with other COVEs, research and innovation projects, industry clusters, and local stakeholders, the national COVE can leverage collective expertise, resources, and networks to enhance the quality and impact of its vocational education and training initiatives. These partnerships will foster collaboration, knowledge exchange, and innovation, ultimately benefiting learners, industry partners, and regional development.